Launching into the Next Millennium

4-H Achieves Liftoff!
“Houston? This is the Space Shuttle Columbus.”

“Good morning, Columbus. Is everyone aboard?”

“That’s affirmative, Houston. We have assembled our group of 4-H members and volunteer leaders and are destined for educational experiences and hands-on individual and group activities which are out of this world.”

“Roger, Columbus. Have you loaded sufficient resources to insure these educational experiences in orbital flight?”

“That’s affirmative, Houston. We brought the ‘Liftoff!’ notebook and will begin instruction on using it, once we reach cruising speed in orbit.”

“Columbus, we need some additional input in order for the computers to begin processing this information.”

“No need to plug in the computers, Houston. The ‘Liftoff!’ notebook is simple and easy to use.”

“Could you describe it for us, Columbus?”

“Affirmative, Houston. The ‘Liftoff!’ notebook is an educational resource, written by Extension professionals at The Ohio State University. It is arranged in Countdown Chapters, and will assist 4-H members and volunteers in getting their 4-H programs off of the ground.”

“Tell us more about these Countdown Chapters, Columbus.”

“Each Countdown Chapter focuses on a specific subject matter area in the 4-H Program. These include:

- Ten: Clothing
- Nine: Entomology and the Environment
- Eight: Engineering
- Seven: Human Development
- Six: Equine Science
- Five: Field and Garden
- Four: Food and Nutrition
- Three: Citizenship, International, Careers, Leadership, and Communications
- Two: Livestock
- One: Small Animals and Veterinary Science"
“One last question before countdown, Columbus. How will you utilize this revolutionary new resource?”

“That’s an important question, Houston. There is a seemingly endless list of ways to utilize the ‘Liftoff!’ notebook in 4-H clubs, meetings, and activities.”

“Could you focus in on some of them, Columbus?”

“Affirmative, Houston. Here are a few of them:

• A volunteer in a project club might utilize only activities from one Countdown Chapter, which pertain specifically to the focus of that club, and the interests of its members.

• The leader of a community or organizational club might select different activities from different Countdown Chapters, depending upon the kinds of projects which the 4-H members are enrolled in.

• A volunteer could select two or three activities, duplicate enough copies of the original so that each 4-H member had one, and let everyone work on them individually.

“Are all of these activities designed to be administered individually, Columbus?”

“Negative, Houston. These activities can be completed either individually or in groups. Let’s cite some additional examples.”

• 4-H members could work in pairs or in teams. 4-H members choose their own teammate, or they could be matched up in any of a number of ways. These could include a random order, older members paired with younger members (in a mentoring relationship), more experienced members could be matched with less experienced members (in an information sharing mode) or groups of youth could be teamed (in a cooperative learning style).

“Are there any other ways in which these activities can be implemented, Columbus?”

“Affirmative, Houston.”

• A volunteer could delegate the teaching responsibility to a 4-H member. The 4-H member could select the activities and instruct the other youth on how to complete them.

• These activities could be utilized by volunteers as “busy work” for 4-H members who arrive early and those whose parents are late to pick them up. This will keep them busy on an educational activity.

“Can these activities be utilized if a volunteer is unfamiliar with the subject matter?”

“Affirmative, Houston. Each workshop includes objectives and instructions, with the answers printed on the back. The volunteer may choose not to duplicate the answers, but could provide them at the end of the experience.”

“Roger, Columbus. You’ve answered all of our questions. Are you ready for liftoff?”

“That’s affirmative, Houston. We’re ready to set forth on this exciting new journey.”

“We’ll start our countdown now, Columbus. Ten, nine, eight, seven, six, five, four, three, two, one, and liftoff! Congratulations, Columbus. We have achieved Liftoff! And congratulations to you, as well! You’re about to embark on an exciting new journey. A journey filled with discovery and learning. Each of the activities contained in this notebook have been designed for use with 4-H club members and are arranged in a subject matter area. But these activities are designed to teach a lot more than subject matter information. Learning to make decisions, work together, and communicate effectively, to name just a few.
We want to acknowledge and express appreciation to several key individuals whose important contributions were invaluable to this project.

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Special appreciation is expressed to Kim Wintringham and Liz Cutler Gates whose expertise in converting the printed drafts into an edited format and converting the edited version into a printed resource was instrumental in the completion of the project.

Several graphics were adapted from the Learning Laboratory Kits. These kits are available from Curriculum Materials Service, The Ohio State University, 2120 Fyffe Road, Columbus, OH 43210, (614) 292-4848.

This resource is dedicated to all Ohio 4-H volunteers and 4-H members, with the hope that this tool will make their 4-H club meetings, programs and activities more educational and more fun, thereby strengthening the Ohio 4-H Program at the grassroots level.

Ken Culp, III, Ph.D.
Extension Specialist, Volunteerism
4-H Youth Development
“Liftoff!” Project Coordinator
Countdown Chapter 10

Clothing
Countdown Chapter 10
Clothing

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Clothing
Ready, Let’s Sew

Find the clothing and sewing words in the word search puzzle. The words go up, down, across, and diagonally. Some are spelled backwards.

- label
- press
- fabric
- pattern
- topstitch
- fuse
- grooming
- scissors
- pins
- stitch
- hem
- slip stitch
- sewing machine
- seam
- needle
- appliqué
- seven clues
- button
- measure
- care label
- iron
- marking pencil
- hem gauge
- thread

Developed by: Mary Farster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences
Clothing
Ready, Let’s Sew

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- needle
- appliqué
- seven clues
- button
- measure
- care label
- iron
- marking pencil
- hem gauge
- thread

Word Search—Key

In this activity you will:
- identify terms used when making 4-H clothing projects.
- identify sewing equipment terms used when making 4-H outfits.

Developed by: Mary Forster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences
Clothing
What’s in the Sewing Box?
Match each term with its correct definition by writing the letter of the term in front of the correct definition.

Definitions

1. keeps sewing tools in one place
2. used to cut fabric
3. used to take body measurements and to measure fabric
4. used to measure short distances
5. used for hand sewing
6. used to hold pieces of fabric together or to hold patterns to fabric
7. stores pins
8. used to transfer important markings from the pattern onto the fabric
9. keeps the needle from hurting your finger when sewing by hand
10. used in sewing stitches to hold fabric together
11. used to remove stitching mistakes
12. used to cut single or multiple layers of fabric; must be used with special cutting mat

Word List
A. pin cushion
B. seam ripper
C. rotary cutter
D. thimble
E. hem gauge
F. marking tools
G. sewing box
H. pins
I. needles
J. shears
K. thread
L. tape measure

Matching
In this activity you will:
• learn the names of the basic sewing tools needed for making 4-H clothing projects.
• learn the uses of each sewing tool.

Developed by: Mary Forster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences
Clothing
What’s in the Sewing Box?
Match each term with its correct definition by writing the letter of the term in front of the correct definition.

Definitions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>G</strong></td>
<td>1. keeps sewing tools in one place</td>
</tr>
<tr>
<td><strong>J</strong></td>
<td>2. used to cut fabric</td>
</tr>
<tr>
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Matching—Key

In this activity you will:

- learn the names of the basic sewing tools needed for making 4-H clothing projects.
- learn the uses of each sewing tool.

Word List

- A. pin cushion
- B. seam ripper
- C. rotary cutter
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- E. hem gauge
- F. marking tools
- G. sewing box
- H. pins
- I. needles
- J. shears
- K. thread
- L. tape measure

Developed by: Mary Forster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences
**Clothing**

**The Parts of the Sewing Machine**

Look at the drawing of a sewing machine. How many parts do you already know? Fill in as many parts as you know and then turn the page to check your answers.

- **A.** ____________  
- **B.** ____________  
- **C.** ____________  
- **D.** ____________  
- **E.** ____________  
- **F.** ____________  
- **G.** ____________  
- **H.** ____________  
- **I.** ____________

After completing this activity, find these parts on your own sewing machine. Do some of the parts of your machine look different than the picture?  
- **Yes**  
- **No**

Which parts? ________________________________________________________________  
__________________________________________________________  
__________________________________________________________  

---

*Developed by: Mary Farster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences*
Clothing

The Parts of the Sewing Machine

Look at the drawing of a sewing machine. How many parts do you already know? Fill in as many parts as you know and then turn the page to check your answers.

In this activity you will:
• identify the sewing machine parts.

A. stitch length adjustment
B. balance wheel
C. thread takeup lever
D. presser bar lever
E. presser foot
F. needle
G. feed dog
H. bobbin
I. spool pin

After completing this activity, find these parts on your own sewing machine. Do some of the parts of your machine look different than the picture? _____Yes   _____No
Which parts? ________________________________
Answers will vary.

Developed by: Mary Forster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences
Clothing
The Functions of the Sewing Machine

Match the correct name of the sewing machine part with the function it serves when sewing a garment. Place the letter of the correct answer in the blank provided.

<table>
<thead>
<tr>
<th>Number</th>
<th>Part</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Presser foot</td>
<td>A. Makes stitches longer or shorter.</td>
</tr>
<tr>
<td>2</td>
<td>Bobbin</td>
<td>B. Holds the spool of thread in place.</td>
</tr>
<tr>
<td>3</td>
<td>Needle</td>
<td>C. Small teeth that move fabric to needle as you sew.</td>
</tr>
<tr>
<td>4</td>
<td>Feed dog</td>
<td>D. Holds the fabric in place as you sew.</td>
</tr>
<tr>
<td>5</td>
<td>Spool pin</td>
<td>E. Moves up and down guiding the upper thread to the needle.</td>
</tr>
<tr>
<td>6</td>
<td>Balance wheel</td>
<td>F. Carries the top thread to make stitches.</td>
</tr>
<tr>
<td>7</td>
<td>Thread takeup lever</td>
<td>G. Helps the needle run up and down smoothly.</td>
</tr>
<tr>
<td>8</td>
<td>Presser bar lever</td>
<td>H. Holds the thread for the underside of the seam.</td>
</tr>
<tr>
<td>9</td>
<td>Stitch length adjustment</td>
<td>I. Raises and lowers the presser foot.</td>
</tr>
</tbody>
</table>

Developed by: Mary Forster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences
Clothing

The Functions of the Sewing Machine

Match the correct name of the sewing machine part with the function it serves when sewing a garment. Place the letter of the correct answer in the blank provided.

Matching—Key

In this activity you will:

- learn what each part of the sewing machine does.

In this activity you will:

1. Presser foot
2. Bobbin
3. Needle
4. Feed dog
5. Spool pin
6. Balance wheel
7. Thread takeup lever
8. Presser bar lever
9. Stitch length adjustment

A. Makes stitches longer or shorter.
B. Holds the spool of thread in place.
C. Small teeth that move fabric to needle as you sew.
D. Holds the fabric in place as you sew.
E. Moves up and down guiding the upper thread to the needle.
F. Carries the top thread to make stitches.
G. Helps the needle run up and down smoothly.
H. Holds the thread for the underside of the seam.
I. Raises and lowers the presser foot.

Developed by: Mary Forster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences
Clothing
The Seven Clues to Achieve a Total Look

Unscramble these words that are the seven clues to achieving a total look.

niohfas
siedng
ift
nsttoirucnoc
oomgingr
turosep nda esipo
lbeaonsrep lituaqies

Write each of the seven clues in the blank after its correct description below.

1. Is influenced through fabric, color, style, lines, garment, details, accessories, and/or personal presentation.

2. Positive presentation of self, pleasant smile.

3. Garment is balanced, overall smooth look, hangs on the body correctly.

4. Total outfit looks “smart” and put together. It is coordinated. Outfit is becoming to wearer.

5. Body and clothes are clean and neat.

6. Overall appearance is smooth. The proper techniques are used to have edges of collars smooth, even, and flat. Seams are clipped and trimmed to prevent bulk. Darts are smoothly stitched and pressed. Hem is neat and smooth.

7. The person walks, sits, and stands straight and tall. Movements are easy and smooth.

In this activity you will:

- learn the seven clues to a total look.
- learn how to use the seven clues to achieve the total look in a 4-H clothing project.

Developed by: Mary Forster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences
Clothing
The Seven Clues to Achieve a Total Look

Unscramble these words that are the seven clues to achieving a total look.

niohfas ________________________
fashion

siedng ________________________
design

ift ________________________
fit

nsttoirucnoc ________________________
construction

oomgingr ________________________
grooming

turosep nda esipo ________________________
posture and poise

lbeaonsrep lituaqies ________________________
personable qualities

Write each of the seven clues in the blank after its correct description below.

1. Is influenced through fabric, color, style, lines, garment, details, accessories, and/or personal presentation.

   ________________________
fashion

2. Positive presentation of self, pleasant smile.

   ________________________
personable qualities

3. Garment is balanced, overall smooth look, hangs on the body correctly.

   ________________________
fit

4. Total outfit looks “smart” and put together. It is coordinated. Outfit is becoming to wearer.

   ________________________
design

5. Body and clothes are clean and neat.

   ________________________
grooming

6. Overall appearance is smooth. The proper techniques are used to have edges of collars smooth, even, and flat. Seams are clipped and trimmed to prevent bulk. Darts are smoothly stitched and pressed. Hem is neat and smooth.

   ________________________
construction

7. The person walks, sits, and stands straight and tall. Movements are easy and smooth.

   ________________________
posture and poise

In this activity you will:

- learn the seven clues to a total look.
- learn how to use the seven clues to achieve the total look in a 4-H clothing project.

Developed by: Mary Forster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences
Countdown Chapter 9

Entomology and the Environment
Countdown Chapter 9
Entomology and the Environment

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Entomology

What Makes an Insect an Insect?

Using the group of words below, unscramble the words in parentheses to complete the sentences.

abdomen antennae arthropod head
phyla protection thorax three

1. The Animal Kingdom is divided into large groups called ____________ which have similar characteristics. (hlayp)
2. Insects have no backbone or an outer skeleton and are known as invertebrates. They are included in the Phylum ____________. (rapodhrot)
3. The skeleton on the outside of the insect’s body provides it with ____________ from predators and threats from the environment. (tncoptieo)
4. Insects have three body regions: the ____________, the ____________, and the ____________. (ehad, axothr, modbena)
5. All insects have ____________ pairs of legs. One pair is attached to each segment of the thorax. (heret)
6. Insects have two ____________ on the front of the head which serve as organs of touch and sometimes taste, smell, and hearing. (enatanen)
Entomology

What Makes an Insect an Insect?

Using the group of words below, unscramble the words in parentheses to complete the sentences.

abdomen antennae arthropod head
phyla protection thorax three

1. The Animal Kingdom is divided into large groups called _____phyla_____ which have similar characteristics. (hlayp)

2. Insects have no backbone or an outer skeleton and are known as invertebrates. They are included in the Phylum _____arthropod_____. (rapodhorot)

3. The skeleton on the outside of the insect’s body provides it with _____protection_____ from predators and threats from the environment. (tncorptieo)

4. Insects have three body regions: the _____head_____, the _____thorax_____, and the _____abdomen_____. (ehad, axothr, modbena)

5. All insects have _____three_____ pairs of legs. One pair is attached to each segment of the thorax. (heret)

6. Insects have two _____antennae_____ on the front of the head which serve as organs of touch and sometimes taste, smell, and hearing. (enatanen)
Entomology

Parts of an Insect

Learn about the three main body regions of insects: the head (which holds the eyes, mouth parts, and antenna or feelers), the thorax (to which the legs and wings are attached), and the abdomen (which contains the organs of digestion and reproduction). On the three insect pictures below, locate and identify the head, thorax, and abdomen regions by writing their names on the respective line.

Identification

In this activity you will:

- learn what differentiates insects from all other animals.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
Entomology

Parts of an Insect

Learn about the three main body regions of insects: the head (which holds the eyes, mouth parts, and antenna or feelers), the thorax (to which the legs and wings are attached), and the abdomen (which contains the organs of digestion and reproduction). On the three insect pictures below, locate and identify the head, thorax, and abdomen regions by writing their names on the respective line.

Identification—Key

In this activity you will:

- learn what differentiates insects from all other animals.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
Litter is a problem through much of the United States. It can be categorized by human sources and type of litter. Take a walk as a club. List the litter you find. Using the information below, note from where you think the litter came and whether it is recyclable. (Don’t leave that litter behind!) Use this activity as a service project for your club—just collect and properly dispose of the litter you find.

**Type** | **Examples**
---|---
Paper | newspaper, bags, boxes, wrappers, diapers, cups
Glass | bottles, broken glass
Metal | cans, nails, auto parts, old appliances
Cloth | rags, old clothes
Plastics | jugs, bottles
Polystyrene | foam cups, foam boxes
Rubber | tires
Miscellaneous | wood, food, any other

Record your findings using this table.

<table>
<thead>
<tr>
<th>Date</th>
<th>Item Seen</th>
<th>Type of Litter</th>
<th>Probable Source</th>
<th>Recyclable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
Being a “Waste-Wise” Shopper

Packaging has five purposes:

1. **contain** to hold the product
2. **inform** to provide information such as the brand name or content information
3. **protect** to prevent spoilage, leakage, breakage, theft, tampering, and to seal out contaminants
4. **transport** to easily and safely move the product from manufacturer to retailer to consumer
5. **display** to attractively display and use as a method of marketing the product

Although packaging can be an important part of the product, often products include excessive packaging, which can increase the cost as well as the amount of waste produced.

Collect several grocery store advertisement flyers (usually found in the weekend newspaper) and/or several magazines that include pictures of food and household products. Ask each participant to cut out ten pictures of food or household products that fit into the following three categories:

1. **Minimal Packaging**—Either no packaging is used (such as fresh fruit and vegetables) or the only packaging is for safety purposes (medicines in glass containers, certain liquids and foods).
2. **Recyclable**—Items are packaged in recyclable or reusable container (plastic liter bottles, plastic milk jugs, steel soup cans).
3. **Substantial Packaging**—Items are excessively, and possibly unnecessarily, packaged. (The product is wrapped several times in containers beyond what is necessary for safety or to provide product information or is wrapped in small, individual serving packages that could be purchased in slightly larger quantities, but with less packaging.)

After the pictures have been separated into the above categories, tape or glue each on separate poster boards that are labeled with the category names.

Discuss the items on each poster board.

- How did you know that the products belonged to the specific categories?
- Do you have any items that may not fit into one of the categories? If so, to what category would they belong?
- Does the packaging increase or decrease the price of the product?
- Could the amount of packaging be reduced on any of the products?
- What are some of the items you throw in your trash that are examples of excess packaging?
- How can you be a better “waste-wise” shopper when purchasing food or household items?

Give prizes to the individuals who found a food or household item that has the most packaging or who had the best idea for reducing the amount of packaging.

*Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development*
The Environment
Exploring the Diversity of Nature

In this activity you will:

- learn about the biological diversity that exists in different habitats.
- learn to identify plants and animals.

You will need:

- one Hula-Hoop for every three to five people.
- paper and pencils for each person.

Dependent on the group’s knowledge of natural surroundings, it may be necessary to utilize a number of wildlife guide books.

Prior to the club meeting, locate different habitats in which your group can explore. Examples of such habitats are: beach, grassy field, wooded area, pond edge, wetland, ecotone area between woods and grassy field, parking lot, neighborhood garden, etc. Also, an adult advisor should become familiar with and be able to define the following terms:

- biological diversity or biodiversity—the full range of variety and variability of living organisms within a specific habitat. This includes the species richness and the relative abundance of each species (number of individuals for each species found).

- species richness—the number of different species found within a specific habitat.

Give each group a Hula-Hoop, pencils, and paper. Travel to the first habitat and have each group place their Hula-Hoops on the ground at different spots in the habitat. Instruct each group to try to count, draw, and possibly identify the different plant and animal species that are located within the circumference of the Hula-Hoop. In addition, they will want to count how many of each species they are able to find. For example, how many individual grass plants (not blades of grass) or how many ants are within the Hula-Hoop? You may also encourage them to dig into the ground an inch or so to look beyond the plants and animals on the surface. They should carefully examine any plants to see if there are any animals living or feeding on the plant matter.

After five to ten minutes, ask each group for a summary of what they found. How many different species and how many of each species did they find? Share and describe some of their drawings. Comparing the different groups, did they find the same or different flora and/or fauna in each of their Hula-Hoops?

Move on to the next habitat and repeat the process. Ask the same questions, but also ask the groups to compare and contrast the first and second habitats. What flora and fauna were the same? What was different about the two habitats? For a species found in both habitats, which habitat had more individuals?

Continue this process with the additional habitats, and encourage them to think about the species diversity and richness they have discovered. After all habitats have been visited, close the program with a summary discussion on the number of species that were found, the number of individuals of each species, and the differences between each of the habitats.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
The Environment
Exploring a Web of Life

You will need:
• markers
• index cards
• tape
• string

Use the markers to write the following wildlife names on the index cards (one name per card): grass, flower, plant seeds, cranefly, ovenbird, owl, mouse, rabbit, squirrel, snake, fox, deer, wolf. Choose as many wildlife names as needed according to the size of group. Names of animals or plants also can be selected for this activity, and you may wish to select wildlife indigenous to the natural area that surrounds you: coniferous or deciduous woods, wetland, pond, etc.

Turn the cards face down on the ground. Ask each participant to select one card. Their card will identify the part of the food web which they will play. Have them wear the card like a name badge so they can be easily identified.

Review with the group the functions that each one of them has in a food web. Ask where their plant or animal would fit into the food web. Discussion can be as simple as from where each of the plants and animals receive energy and nutrients, to identification of which plants and animals are producers (plants), consumers (cranefly, mouse, squirrel, deer, rabbit, etc.), or predators (ovenbird, snake, owl, fox, wolf, etc.).

Select one participant to begin the food web. Ask all the members what of the remaining wildlife would eat or be eaten by the first student selected. For example, if the first person is representing the squirrel, then those who are portraying the plant seeds and owl would be the next to join the food web. When the owl and plant seeds members join the food web, they are to be connected to the squirrel with long pieces of string. Select subsequent members of the food web by what eats or is eaten by the members who have already joined the food web. Continue to join the new members to the food web with the string.

After all wildlife has been included in the food web, briefly summarize the importance of each food web member. Discuss how the diversity of wildlife is important to the existence of many species. What would happen if one of the food web members was removed, such as a squirrel? Members should note that two consequences would occur. First, the animals who depend on the squirrel for food will not be able to prey upon the squirrel population. Greater predatory pressure would be placed on the other animals the owl eats, and/or the owl would have to move to another habitat to find food. Second, the squirrel would not be in the food web to feed on the plant seeds. If no other animals fed on the plant seeds, there would no longer be a natural control for the reproduction of these plants, which could result in a population explosion.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
The Environment

Touch and Feel Hike

Make a copy of the following list for each person (or groups of two to three people). Instruct each person or group to touch and feel, not take, any of the objects found. They are to look for:

- the hairiest leaf
- the smoothest rock
- the roughest twig
- something warm
- something bumpy
- the softest leaf
- the roughest rock
- something cool
- something dry
- something crunchy

Ask questions like:
What did you find that was dry?
Why was it dry?
How might it be different tonight?
How might it be next summer/winter?
How did it get there?
Does it belong there?
Did people have anything to do with it being there? Has it always been the way it is?

Nature Grab Bag

Collect about 15 nature items such as pine cones, nuts, shells, leaves, rocks, etc., and place each in a small paper sack. Pass the sacks around the group and let each person try to identify the objects by feeling inside the bag, and without looking. After each member has attempted to identify the contents of the bag, remove the items and briefly discuss each item.

‘Leaves of three, let it be!’

Before this activity, teach your group to beware of poison ivy. Poison ivy can appear as a plant or thick vine growing up trees and around fences. Its leaves are arranged in groups of three (“leaves of three, let it be”) and usually have a shiny surface. The plant has white berries, is toxic year round, and is especially harmful if breathed while being burned.
The Environment
Outdoor Fun!

Using the group of words below, fill in the blanks to complete the sentences.

copperhead pocket knife
poison ivy bandana
insect repellent field guides
canteen first aid
backpack raisins

1. ___________________ helps to keep away insects when you are in a wooded area.

2. When hiking on a hot day or a long trip, you should carry a ________________ to provide you with a supply of water.

3. A _________________ kit should contain a few adhesive bandages (such as Band-Aids®), some antiseptic and adhesive tape, a needle and thread, burn ointment, a few aspirins, and some cotton.

4. When using a _________________, you should never cut toward you or use it for prying or as a screwdriver.

5. The rattlesnake, massasauga, and ___________________ are the only poisonous snakes in Ohio.

6. ___________________ is a climbing vine that grows with its leaves arranged in groups of three and has a shiny surface pebbled with sickly-looking warts.

7. Books called __________________ are excellent resources for identifying birds, trees, insects, and flowers and learning more about the flora and fauna you find while in nature.

8. A small box of ________________ makes an excellent snack for long hikes.

9. Bring along a large ________________ to protect your neck and face from the sun or to use as a sling.

10. Use a small _________________ to carry your outdoor equipment.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
The Environment
Outdoor Fun!

Using the group of words below, fill in the blanks to complete the sentences.

- copperhead
- poison ivy
- insect repellent
- canteen
- backpack
- pocket knife
- bandana
- field guides
- first aid
- raisins

1. **Insect repellent** helps to keep away insects when you are in a wooded area.

2. When hiking on a hot day or a long trip, you should carry a **canteen** to provide you with a supply of water.

3. A **first aid** kit should contain a few adhesive bandages (such as Band-Aids®), some antiseptic and adhesive tape, a needle and thread, burn ointment, a few aspirins, and some cotton.

4. When using a **pocket knife**, you should never cut toward you or use it for prying or as a screwdriver.

5. The rattlesnake, massasauga, and **copperhead** are the only poisonous snakes in Ohio.

6. **Poison ivy** is a climbing vine that grows with its leaves arranged in groups of three and has a shiny surface pebbled with sickly-looking warts.

7. Books called **field guides** are excellent resources for identifying birds, trees, insects, and flowers and learning more about the flora and fauna you find while in nature.

8. A small box of **raisins** makes an excellent snack for long hikes.

9. Bring along a large **bandana** to protect your neck and face from the sun or to use as a sling.

10. Use a small **backpack** to carry your outdoor equipment.

In this activity you will:

- learn about some basics of outdoor fun.
The Environment
Leaf Scavenger Hunt

To complete this activity, you will need to be close to an area that has a lot of different tree species (a wooded or residential area with a variety of tree plantings). Divide the group into teams of two to three people. Each team should have a copy of the leaf guide and terms below. Have each team find sets of leaves that match each of the descriptions and drawings. Set a limit of about ten minutes. Teams should collect only those leaves which have fallen to the ground instead of removing them from a tree.

**Alternate Branching**—Leaves are located on the twig at alternating intervals.

**Opposite Branching**—Leaves grow in pairs at opposite sides of the same point on the twig.

**Compound Leaves**—The leaf is divided into several different leaflets that are attached to the leaf stalk.

**Simple Leaves**—Only one blade is attached. Its stalk is attached to a twig or branch. The leaf is not divided into separate leaflets.

**Lobed Leaves**—The edge of these leaves is deeply cut, forming lobes.

**Leaf outline is smooth**—There are no teeth or lobes on leaf margin.

**Toothed Leaves**—The edge of the leaf is jagged with teeth-like indentations.

**Needle-Shaped Leaves**—Trees such as pine, spruce, and fir have needle-shaped leaves and these leaves are attached to the branches either singly or in bundles.

Once you have collected and shared your leaves with the group, use the Tree Road Map on page 18 to determine what kind of tree your leaves came from.

*Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development*
What kind is your tree?

**Tree Road Map**
Read The Signs and Follow The Arrows!
The Environment

Seeds of Trees

A picture of the seed plus a brief description of the tree will be given. Write in the tree name on the line provided.

This tree has 3- to 5-lobed leaves. Its wood is hard and close-grained and is used for cabinetwork. Its sap is a main source of delicious syrup. ______________________

Deer love to eat the acorns produced by this tree and its wood is used to make fine furniture. ________________

This coniferous evergreen tree has slender elongated needles and is valuable as timber or as an ornamental tree. ________________________________________________________________

A tree with hard strong heavy dark brown wood and oily edible nuts. ______________________

This plant can be either a shrub or a tree and it produces a nut that has been compared to the eye of a buck deer. ___________________________________________________________

A tall tree with star-shaped, toothed leaves which may be five- or seven-lobed. _________________

This medium sized tree has three patterns of leaves: 3 “finger,” a “thumb-and-mitten” outline, or a smooth egg-shaped leaf. Its roots are often used to make a soothing, medicinal tea. ______________________

Large thorns can be found on this tree. Its leathery seed pods grow to a foot or more in length and contain 12 to 14 dark brown seeds that are separated by a sweet, succulent pulp. ______________________

The nuts (seeds) from this tree may be dried, roasted, and ground for use as a coffee substitute, and are also used to provide flavoring to chewing gum. ________________________________

Identification

In this activity you will:

• learn to identify some of the different types of tree seeds found in your backyard or a wooded area.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
The Environment

Seeds of Trees

A picture of the seed plus a brief description of the tree will be given. Write in the tree name on the line provided.

This tree has 3- to 5-lobed leaves. Its wood is hard and close-grained and is used for cabinetwork. Its sap is a main source of delicious syrup.  ___________  Sugar Maple

Deer love to eat the acorns produced by this tree and its wood is used to make fine furniture.  ___________  Red Oak

This coniferous evergreen tree has slender elongated needles and is valuable as timber or as an ornamental tree.  ___________  Pine

A tree with hard strong heavy dark brown wood and oily edible nuts.  ___________  Black Walnut

This plant can be either a shrub or a tree and it produces a nut that has been compared to the eye of a buck deer.  ___________  Buckeye

A tall tree with star-shaped, toothed leaves which may be five- or seven-lobed.  ___________  Sweetgum

This medium sized tree has three patterns of leaves: 3 “finger,” a “thumb-and-mitten” outline, or a smooth egg-shaped leaf. Its roots are often used to make a soothing, medicinal tea.  ___________  Sassafras

Large thorns can be found on this tree. Its leathery seed pods grow to a foot or more in length and contain 12 to 14 dark brown seeds that are separated by a sweet, succulent pulp.  ___________  Honey Locust

The nuts (seeds) from this tree may be dried, roasted, and ground for use as a coffee substitute, and are also used to provide flavoring to chewing gum.  ___________  American Beech

In this activity you will:

• learn to identify some of the different types of tree seeds found in your backyard or a wooded area.
The Environment
So Much of My House Comes from a Tree!

For the next meeting, members should make a list of everything in their homes they believe is made from wood or a product of trees. Be certain to include items that contain chemicals manufactured from trees, such as medications, dye, varnish, paint, soap, ink, waxes, crayons, shoe polish, and chewing gum. Share the findings with the group.

<table>
<thead>
<tr>
<th>These items in my house came from a tree.</th>
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Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
Trees differ in many ways, including the texture of their leaves and bark.

Visit an area with different species of trees. This could be your backyard, a schoolyard, or a local park. Identifying the different species will help, but it is not a must.

Ask each member to find an interesting patch of bark and use masking tape to tape a piece of colored construction paper over it. Or, gather a number of leaves from one of the trees and place them on a flat surface. Tape the paper over the arrangement of leaves.

Holding a crayon with its flat side against the tree (or flat on the arrangement of leaves), rub up and down over the paper, pressing firmly. Keep coloring until an interesting pattern emerges. Remove the tape and inspect the bark or leaf rubbing. Try different trees and look at the variety of patterns obtained.

Use the paper with bark or leaf rubbing as stationery. Hold up each of the bark or leaf rubbings and ask if the members of your group can identify the tree species by the bark or leaf shape. Also, have the members write a letter that explains how they made their stationery.

**The Environment**

**Leaves or Bark Rubbing Stationery**

**In this activity you will:**

- learn how the leaves and bark of trees differ from one species to another.

---

*Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development*
The Environment

Pond Map Symbols

Write the letter of the description next to the appropriate map symbol. See the pond map for examples of how these symbols are used.

A. Creek or stream
B. Underwater mass
C. Spillway
D. Spring
E. Trees (on bank)
F. Fence
G. Pond shore line
H. Pier or boat dock
I. Water depth (in feet)
J. Drain pipe
K. Dam
L. Gully or water inlet
M. Fish nesting area
N. Shrubs or brush (on bank)
O. Shoreline plants

Matching

In this activity you will:

- learn about the different topographic symbols that can be used to make a pond map.

Example of Pond Map

Additional Activity

Contact the Ohio Department of Natural Resources to obtain copies of topographical maps of areas in proximity to the location where your club meets. Use these maps to find privately-owned ponds and compare the symbols with the symbols above.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
**The Environment**

**Pond Map Symbols**

Write the letter of the description next to the appropriate map symbol. See the pond map for examples of how these symbols are used.

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**Matching—Key**

In this activity you will:

- learn about the different topographic symbols that can be used to make a pond map.

**Example of Pond Map**

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Contact the Ohio Department of Natural Resources to obtain copies of topographical maps of areas in proximity to the location where your club meets. Use these maps to find privately-owned ponds and compare the symbols with the symbols above.

---

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
The Environment
Ponds and Their Different Uses

You will need markers or crayons and drawing paper (construction paper or notebook paper).

If you had a pond, how would you use it? Would you use it for swimming, boating, or fishing? How about raising fish to attract wildlife? If you live on a farm, how about using the pond to water livestock or to irrigate field crops?

Using the paper and markers or crayons, draw a picture of a pond. See page 26 for examples of pond map symbols. Include your ideas of how you would use the pond. Compare your drawing with the drawings made by the other members of your club.

In this activity you will:
• learn the many uses for ponds.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
The Environment

Birds and Beaks

**Activity I**

For this activity, you will need a large, clear area (such as an auditorium floor). Around on the floor, spread “food” represented by various small objects such as BB pellets, marbles, miniature marshmallows, dried beans or peas, dry macaroni, popcorn, two-inch pieces of yarn, bottle caps, etc.

Each participant is given a different kind of “beak” represented by plastic spoons, chopsticks, clothespins, knitting needles, tweezers, ice cream sticks, etc. Using the “beak,” each person is to pick up the food and place it in a paper cup which represents the bird’s mouth. No sweeping of food into the cup is allowed. After three to five minutes, have the participants spread out the food, trade beaks with another person, and repeat. Repeat until each person has tried a different “beak.”

Discuss the activity. Which bird beaks were easiest to use to gather food? Which were hardest? Which foods could be gathered easiest by each beak? What can you state about the relationship between a bird’s beak and its food?

**Experiment**

In this activity you will:

- learn about the types of bird beaks (sometimes known as bills).
- discover how the shape and size of the beak is related to the type of food the bird eats.

Herons, bitterns

Duck

Shorebird, snipes

Owls, hawks

Woodpecker

Crossbill

Nighthawk

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
The Environment

Birds and Beaks

Activity II
The shape and size of a bird’s beak indicate how the bird obtains and eats its food. Draw a line from one column to the other to match each of the bird beaks below with the types of food they eat.

- Long, slender bill (shorebirds, snipes)
  ![Long, slender bill](image)
  - Drilling to find insects

- Strong hooked beak (owls, hawks)
  ![Strong hooked beak](image)
  - Aquatic plants, algae, and insects

- Large, spooned bill (ducks)
  ![Large, spooned bill](image)
  - Probing for grubs and worms in the mud

- Straight and chisel like (woodpeckers)
  ![Straight and chisel like](image)
  - Fish

- Long, sharp-edged bills (herons, bitterns)
  ![Long, sharp-edged bills](image)
  - Flesh-eating

- Thick, cone shaped (finches, sparrows)
  ![Thick, cone shaped](image)
  - Seeds and insects

Matching
In this activity you will:
- learn about the types of bird beaks (sometimes known as bills).
- discover how the shape and size of the beak is related to the type of food the bird eats.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
The Environment
Birds and Beaks

Activity II
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Matching—Key

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Long, slender bill (shorebirds, snipes)

Strong hooked beak (owls, hawks)

Large, spooned bill (ducks)

Straight and chisel like (woodpeckers)

Long, sharp-edged bills (herons, bitterns)

Thick, cone shaped (finches, sparrows)

Drilling to find insects

Aquatic plants, algae, and insects

Probing for grubs and worms in the mud

Fish

Flesh-eating

Seeds and insects

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
The Environment
Feeding our Fine-Feathered Friends

Fill in the blanks using the following one or two word phrases.

seed eaters  grit  suet  metal guards  fall  trees
shrubs  insects  clean  do not  summer  sugar water

1. Bird feeding should be started in the early ____________ and continued until the beginning of ____________.

2. During the summer months, birds ____________ need food from the bird feeder because of the amount of natural food that is available in the wild.

3. ____________ is a great bird feeder food as it is made from beef and is a good source of protein and fat.

4. Feeders should be placed close to ____________ or ____________ so the birds can fly into them for protection and shelter.

5. ____________ on trees keep cats and squirrels away from bird nests and feeding stations.

6. About 5 percent of a bird feed mixture should be ____________ which is needed by the bird’s digestive system.

7. Birds that usually eat ____________ must be fed animal food such as suet or chopped meat.

8. Hummingbirds will eat from containers of ________________ which is similar to flower nectar.

9. Cardinals, chickadees, and titmice are examples of birds that are ________________.

10. Bird feeders should be kept very ____________ to prevent the spread of diseases and to keep the birds from getting ill.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
The Environment
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10. Bird feeders should be kept very _______ to prevent the spread of diseases and to keep the birds from getting ill.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development

In this activity you will:
- learn about feeding the birds that visit your yard and home.
- test your bird feeding knowledge.
The Environment
Make a Bird Feeder

Make ornaments and garlands from different fruits and nuts to help feed the birds in your yard.

1. A tasty and healthy garland for birds can be made by using a doubled length of heavy cotton thread and a needle. String whole cranberries and popped corn. Hang the garland on a pine tree or in a bushy area.

2. Slice an apple, a kiwi fruit, and an orange crosswise, so each slice has a pretty pattern. Make the slices about 1/4-inch thick. Put a loop of raffia or cord through the edge of each slice and tie directly to a tree.

3. Gather pine cones that have fallen to the ground. Tie a piece of raffia or cord to one end of a pine cone. Using a spoon, spread peanut butter over the pine cone until almost entirely covered. Roll the covered pine cone in raisins or birdseed. (The raisins and birdseed will stick to the peanut butter on the pine cone.) Hang on a tree that is close to underbrush so the birds feel safe.

Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
The Environment
Birds and Their Habitats

Below is a list of Ohio birds. Place each listed bird in its appropriate habitat by writing the name in one of the boxes. Use a birding field guide to help determine the correct answers.

Matching
In this activity you will:
• learn about which birds live in certain habitats.

Downy Woodpecker  Canada Goose  Great Horned Owl  Meadowlark
Eastern Bluebird  Song Sparrow  Rufous-Sided Towhee  Wood Thrush
Blue-Winged Teal  Great Blue Heron  American Kestrel  American Woodcock
Common Loon  Red-breasted Merganser  Indigo Bunting  Sora Rail

<table>
<thead>
<tr>
<th>Large Ponds and Lakes</th>
<th>Wetlands</th>
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<tbody>
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</table>

<table>
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<th>Open Fields</th>
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Developed by: Tina Milenovic, Extension Associate, 4-H Youth Development
**The Environment**

**Birds and Their Habitats**

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<td>Song Sparrow</td>
</tr>
<tr>
<td>Rufous-Sided Towhee</td>
<td>American Kestrel</td>
</tr>
<tr>
<td>Indigo Bunting</td>
<td>Meadowlark</td>
</tr>
<tr>
<td>Wood Thrush</td>
<td>American Woodcock</td>
</tr>
</tbody>
</table>

**Matching—Key**

In this activity you will:

- learn about which birds live in certain habitats.

- **Downy Woodpecker**
- **Canada Goose**
- **Great Horned Owl**
- **Meadowlark**

- **Eastern Bluebird**
- **Song Sparrow**
- **Rufous-Sided Towhee**
- **Wood Thrush**

- **Blue-Winged Teal**
- **American Kestrel**
- **American Woodcock**

- **Common Loon**
- **Great Blue Heron**
- **Indigo Bunting**
- **Sora Rail**
The Environment
Fish Found in Ohio

Ohio has more than 250 different species of fish, many of which make favorable catches-of-the-day!

Find the names of fish that inhabit the waters of Ohio.

- smallmouth bass
- largemouth bass
- longear sunfish
- bluegill
- pumpkinseed
- channel catfish
- walleye
- yellow perch
- northern pike
- grass pickerel
- saugeye
- great lakes muskellunge
- sauger
- carp
- redbase sucker
- brown bullhead
- white crappie
- black crappie
- rock bass
- white bass

In this activity you will:
- learn the names of some Ohio species of fish.
**The Environment**

**Fish Found in Ohio**

Ohio has more than 250 different species of fish, many of which make favorable catches-of-the-day!

Find the names of fish that inhabit the waters of Ohio.

smallmouth bass   largemouth bass   longear sunfish   bluegill  pumpkinseed
channel catfish   walleye          yellow perch      northern pike   grass pickerel
sauengeye         great lakes muskellunge   sauger        carp      redhorse sucker
brown bullhead    white crappie     black crappie   rock bass   white bass

---

**Word Search—Key**

- learn the names of some Ohio species of fish.

---

Developed by: Dennis Elliott, Extension Specialist, 4-H Youth Development
Fishing in the Grocery Store

For your next club meeting, ask the members to visit a grocery store and make a list of the kinds of fish that can be found in the seafood section. Encourage them to buy some of the fish and prepare and bring it to the next meeting.

At the next gathering, have a taste-testing party. Discuss the types of fish found at the grocery store. Ask which of the fish on their lists are fresh water (found in lakes, ponds, or streams) or sea-water (found in the oceans or gulfs). Also ask which of the fish can be found in Ohio.

Fish Found at the Grocery Store

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
6. ______________________________
7. ______________________________
8. ______________________________
9. ______________________________
10. ______________________________

Listing

In this activity you will:

- learn about the variety of fish that can be found at a grocery store.
**The Environment**

**Fish Part Identification**

Match the parts in the picture with the names of the parts listed below. Write the corresponding letter on the line provided.

A. Anal Fin  
B. Scales  
C. Pectoral Fin  
D. Caudal Fin  
E. Gill Cover  
F. Soft Dorsal Fin  
G. Upper Jaw  
H. Nostrils  
I. Spiny Dorsal Fin  
J. Lower Jaw  
K. Eye  
L. Pelvic Fin

---

**Matching**

In this activity you will:

- learn about the parts of a fish.

---

**Casting Contest**

Learn how to bait cast for fish. In an open field, place Hula-Hoops or old tires to use as targets. Members should bring their own fishing poles or borrow some for the event. (Check with a local public park or lake to borrow poles.) Remove all hooks from the lures. Tie plugs to the fishing lines and compete to see who can hit the target by casting their line.

---

Developed by: Dennis Elliott, Extension Specialist, 4-H Youth Development
**Fishing in Ohio**

**Fish Part Identification**

Match the parts in the picture with the names of the parts listed below. Write the corresponding letter on the line provided.

- **A. Anal Fin**
- **B. Scales**
- **C. Pectoral Fin**
- **D. Caudal Fin**
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- **F. Soft Dorsal Fin**
- **G. Upper Jaw**
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**Casting Contest**

Learn how to bait cast for fish. In an open field, place Hula-Hoops or old tires to use as targets. Members should bring their own fishing poles or borrow some for the event. (Check with a local public park or lake to borrow poles.) Remove all hooks from the lures. Tie plugs to the fishing lines and compete to see who can hit the target by casting their line.

*Developed by: Dennis Elliott, Extension Specialist, 4-H Youth Development*
Countdown Chapter 8

Engineering
# Countdown Chapter 8

## Engineering

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- Woodworking: Tools of the Trade ......................................................... 27
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In this activity you will:

- learn common words used while working with computers.

**Computer Madness**

Find the words hidden in the word search. Words can be across, down, diagonal, backwards, grouped, or “around-the-corner.”

artificial intelligence  magnetic  chips  modem  component

monitor  computer  path  CPU  printer

database  processor  disk  programs  floppy

random access memory  graphics  software  keyboard  terminal

---

L T N E N O P M O C U B I K
C R A D R I V E D A T A N E
G A C C E S S H T A P S T Y
R N G P R E A T R G E E B
A D P U C P R O G R A M L O
P O D A R T I F I C I A L A
H M E M O R Y Q U H F G I R
I O M O N I T O R I N G D
C F B D I S K T L P O E E X
S F Z E C R A S H S P T N E
D C O M P U T E R B P I C R
G P R O C E S S O R Y C E A
O T E R M I N A L S O F T W

Source: 4-H 565, Learning About Computers

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Computers

Computer Madness

Find the words hidden in the word search. Words can be across, down, diagonal, backwards, grouped, or “around-the-corner.”

artificial intelligence  magnetic  chips  modem  component
monitor  computer  path  CPU  printer
database  processor  disk  programs  floppy
random access memory  graphics  software  keyboard  terminal

Source: 4-H 565, Learning About Computers

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Healthy/Safety
### Computers

**Keyboard Crazy**

Match the keyboard in the left column with its function in the right column. Each key will match only one definition.

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPS LOCK</td>
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</tr>
<tr>
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<td>Lets you leave what you are doing.</td>
</tr>
<tr>
<td>END</td>
<td>Moves cursor down a whole screen.</td>
</tr>
<tr>
<td>ESC</td>
<td>Turns every character you type into a capital letter.</td>
</tr>
<tr>
<td>HOME</td>
<td>Moves cursor to the beginning of a word, line, or document.</td>
</tr>
<tr>
<td>INSERT</td>
<td>Moves cursor to the next line.</td>
</tr>
<tr>
<td>PAGE DOWN</td>
<td>Moves cursor to the end of a word, line, or document.</td>
</tr>
<tr>
<td>PAGE UP</td>
<td>Turns every character you type into a capital letter when it is held down.</td>
</tr>
<tr>
<td>RETURN (Enter)</td>
<td>Lets you type new characters in between other characters.</td>
</tr>
<tr>
<td>SHIFT</td>
<td>Allows you to remove the letter before the cursor.</td>
</tr>
</tbody>
</table>

Source: 4-H 565, Learning About Computers

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
### Computers

**Keyboard Crazy**

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*Source: 4-H 565, Learning About Computers*

*Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety*
All-Terrain Vehicles

ATV Action

Fill in the blanks using the following words.

adult sized  comfort  heels  operators
safety    all-terrain vehicle    double  helmet
passengers  shock  ankles  force
highways  prevented  six-hundred  boots
goggles  low-pressure  recommendations  supervision
manufacturers  responsible  trails  collapse
riding pants  width  gloves  illegal
appropriate-sized

1. ATVs are equipped with __________ - ________________ tires.
2. Riding gear worn to protect the eyes. ____________________
3. An ATV is 50 inches or less in _________________.
4. The inner liner of a helmet will slowly ________________ during a hit.
5. In most states, it is ________________ to ride on public roads.
6. Children under 16 should never ride __________ - _________ ATVs.
7. Wearing protective gear enhances _________________.
8. ATV stands for __________ - ____________________ ____________________
9. The outer shell of the helmet reduces the ________________ of impact.
10. Follow the age/size _________________.
11. Gloves offer ________________ from scratches and abrasion.
12. Follow the age/size recommendations adopted by the _________________.
13. Many accidents could have been _________________.
14. A passenger can interfere with the ________________ control.
15. It is best to ride on _________________.

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
16. Stay off public ____________________ when riding ATVs.
17. Constantly watch for ____________________ when riding.
18. Worn to protect the feet, ankles, and lower legs. ____________________
19. The weight of the ATV is _____________ - _____________ pounds or less.
20. ATVs were designed for ____________________ - ____________________ use only.
21. Never ride ____________________ on an ATV.
22. Protective gear for the hands. ____________________
23. Never ride on the ____________________.
24. Worn to protect the head from a serious blow. ____________________
25. Well-dressed riders wear these over their shirt for added protection. ____________________
26. By following the safety ____________________ many accidents can be prevented.
27. Carrying ____________________ can cause the operator to lose control.
28. Over-the-calf ATV boots offer the best protection for the ____________________.
29. Worn to protect the legs from scratches and burns during riding. ____________________
30. ATV riders are ____________________ for their actions.
31. Always ride an ____________________ - ____________________ ATV.
32. Gloves are worn not only for protection, but also for ____________________.
33. Children under 16 should always have adult ____________________.
34. Low ____________________ help prevent the feet from slipping off the footrests.
35. The inner liner of the helmet is designed to absorb ____________________.

Source: 4-H 555, All Terrain Vehicle
Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
All-Terrain Vehicles

ATV Action

Fill in the blanks using the following words.

- adult sized
- comfort
- heels
- operators
- safety
- all-terrain vehicle
- double
- helmet
- shock
- ankles
- force
- prevented
- six-hundred
- boots
- goggles
- responsible
- recommendations
- supervision
- manufacturers
- trails
- collapse
- riding pants
- gloves
- illegal
- appropriate-sized

1. ATVs are equipped with ______ low pressure _______ tires.

2. Riding gear worn to protect the eyes. ________ goggles ________

3. An ATV is 50 inches or less in __________ width ____________.

4. The inner liner of a helmet will slowly ______ collapse ______ during a hit.

5. In most states, it is ______ illegal _______ to ride on public roads.

6. Children under 16 should never ride ______ adult ______- ______ sized ______ ATVs.

7. Wearing protective gear enhances ______ safety ____________.

8. ATV stands for ______ all ______- ______ terrain ______- ______ vehicle ________.

9. The outer shell of the helmet reduces the ______ force ________ of impact.

10. Follow the age/size ______ recommendations ________.

11. Gloves offer ______ protection ________ from scratches and abrasion.

12. Follow the age/size recommendations adopted by the _____ manufacturers ______.

13. Many accidents could have been ______ prevented ________.

14. A passenger can interfere with the ______ operator’s ______ control.

15. It is best to ride on ______ trails ________.

In this activity you will:

- learn recommendations for safely riding an all-terrain vehicle.
- learn common riding gear for personal safety.

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
16. Stay off public highways when riding ATVs.

17. Constantly watch for hazards when riding.

18. Worn to protect the feet, ankles, and lower legs. boots

19. The weight of the ATV is six hundred pounds or less.

20. ATVs were designed for off-road use only.

21. Never ride double on an ATV.

22. Protective gear for the hands. gloves

23. Never ride on the street.

24. Worn to protect the head from a serious blow. helmet

25. Well-dressed riders wear these over their shirt for added protection. chest protectors

26. By following the safety guidelines many accidents can be prevented.

27. Carrying passengers can cause the operator to lose control.

28. Over-the-calf ATV boots offer the best protection for the ankles.

29. Worn to protect the legs from scratches and burns during riding. riding pants

30. ATV riders are responsible for their actions.

31. Always ride an appropriate sized ATV.

32. Gloves are worn not only for protection, but also for comfort.

33. Children under 16 should always have adult supervision.

34. Low heels help prevent the feet from slipping off the footrests.

35. The inner liner of the helmet is designed to absorb shock.

Source: 4-H 555, All Terrain Vehicle

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Bicycles
Rules of the Road

Match the sign or signal with the definition in the center column. Each word is used only once.

Matching
In this activity you will:
• learn to recognize road signs found on the streets of your neighborhood.
• learn important hand signals that should be used anytime you ride on the road.

bike crossing
caution
cautionsign
left turn signal
railroad crossing
right turn signal
slow
stop light
stop sign
yield

Source: 4-H 522, You and Your Bicycle, and 4-H 523, Caring For Your Bicycle
Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Bicycles
Rules of the Road

Match the sign or signal with the definition in the center column. Each word is used only once.

In this activity you will:

• learn to recognize road signs found on the streets of your neighborhood.
• learn important hand signals that should be used anytime you ride on the road.

Source: 4-H 522, You and Your Bicycle, and 4-H 523, Caring For Your Bicycle
Developed by: Dee Jepsen, Extension Associate, Ag Eng./Health/Safety
Bicycles
Maintaining Your Wheels

Read the story and insert the correct word in the blank. Use words from the list below only once.

air dry     bearings     grease     kerosene
maintenance  replaced    studied    washed

Joe was riding his bicycle one sunny afternoon, when he noticed it was becoming hard to operate. He had just received the bike for his birthday a few months ago and was puzzled by the problem. Joe decided to ask his father for help. His dad told him that an important part of owning a bike is _____________. After looking at the bike, Joe decided the problem was with the _____________. His father told him that they should be cleaned and lubricated. Taking his father’s advice, Joe began to work.

First he ____________ each piece as he removed it from the bike. Next, Joe placed each piece on clean paper in the order he removed it. Then he ____________ all of the parts with ____________ and a stiff brush. Joe allowed the pieces to ____________ for about 30 minutes. Next he ____________ the worn parts and repacked the ball bearings in fresh ____________. Finally Joe finished the job by putting every piece back in the correct order. After cleaning up Joe hopped on his bike. It handled like new!

Source: Ref. 4-H 525, Your Bicycle Community

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Bicycles
Maintaining Your Wheels

Read the story and insert the correct word in the blank. Use words from the list below only once.

- air dry
- bearings
- grease
- kerosene
- maintenance
- replaced
- studied
- washed

Joe was riding his bicycle one sunny afternoon, when he noticed it was becoming hard to operate. He had just received the bike for his birthday a few months ago and was puzzled by the problem. Joe decided to ask his father for help. His dad told him that an important part of owning a bike is **maintenance**. After looking at the bike, Joe decided the problem was with the **bearings**. His father told him that they should be cleaned and lubricated. Taking his father’s advice, Joe began to work.

First he **studied** each piece as he removed it from the bike. Next, Joe placed each piece on clean paper in the order he removed it. Then he **washed** all of the parts with **kerosene** and a stiff brush. Joe allowed the pieces to **air dry** for about 30 minutes. Next he **replaced** the worn parts and repacked the ball bearings in fresh **grease**. Finally Joe finished the job by putting every piece back in the correct order. After cleaning up Joe hopped on his bike. It handled like new!

**Fill in the Blanks—Key**

In this activity you will:

- learn proper care for your bicycle to keep it in good operating condition.
- learn the importance of taking good care of your bicycle because breakdowns cause accidents.

Source: Ref. 4-H 525, Your Bicycle Community

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Bicycles
The Serious Cyclist

Read each statement and determine if it is true or false. Circle the letter T for true or F for false.

T  F  1. If you ride when it is dark, you must have a taillight or red reflector and a headlight visible for 500 feet.
T  F  2. You may always ride in either direction on a one-way street.
T  F  3. A person riding a bike must obey the same traffic laws as a person driving a car.
T  F  4. For a right turn extend your right arm, bent at the elbow with your hand pointing up.
T  F  5. Slow bikers should ride in the opposite direction as traffic is moving.
T  F  6. Pedestrians always have the right-of-way at crosswalks.
T  F  7. All bicycles must have a bell or horn.
T  F  8. A round yellow highway sign means stop.
T  F  9. A flashing red signal light means be careful.
T  F  10. A red sign with eight sides always means yield.
T  F  11. It is safe for two people to ride on a bicycle.
T  F  12. Bicycle drivers are required by law to give the proper signal before turning.
T  F  13. Bicycles are not allowed on expressways.
T  F  14. When riding with others you should travel two side-by-side.
T  F  15. A stop sign means stop, yield right-of-way, and wait until it is safe to go.
T  F  16. When you turn a corner on your bicycle, you should signal with your foot.
T  F  17. Emergency vehicles never have the right-of-way at intersections.
T  F  18. Bicycles are allowed on sidewalks.
T  F  19. Carrying packages on your bicycle with you is not safe.
T  F  20. Before you go on a long trip, it is a good idea to inspect your bike to be certain it is working properly.

Source: 4-H 522, You and Your Bicycle; 4-H 523, Caring For Your Bicycle; 4-H 524, Mastering Bicycle Skills; 4-H 525, Your Bicycle Community
Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Bicycles
The Serious Cyclist

Read each statement and determine if it is true or false. Circle the letter T for true or F for false.

1. If you ride when it is dark, you must have a taillight or red reflector and a headlight visible for 500 feet.  
   T  F

2. You may always ride in either direction on a one-way street.  
   T  F

3. A person riding a bike must obey the same traffic laws as a person driving a car.  
   T  F

4. For a right turn extend your right arm, bent at the elbow with your hand pointing up.  
   T  F

5. Slow bikers should ride in the opposite direction as traffic is moving.  
   T  F

6. Pedestrians always have the right-of-way at crosswalks.  
   T  F

7. All bicycles must have a bell or horn.  
   T  F

8. A round yellow highway sign means stop.  
   T  F

9. A flashing red signal light means be careful.  
   T  F

10. A red sign with eight sides always means yield.  
    T  F

11. It is safe for two people to ride on a bicycle.  
    T  F

12. Bicycle drivers are required by law to give the proper signal before turning.  
    T  F

13. Bicycles are not allowed on expressways.  
    T  F

14. When riding with others you should travel two side-by-side.  
    T  F

15. A stop sign means stop, yield right-of-way, and wait until it is safe to go.  
    T  F

16. When you turn a corner on your bicycle, you should signal with your foot.  
    T  F

17. Emergency vehicles never have the right-of-way at intersections.  
    T  F

18. Bicycles are allowed on sidewalks.  
    T  F

19. Carrying packages on your bicycle with you is not safe.  
    T  F

20. Before you go on a long trip, it is a good idea to inspect your bike to be certain it is working properly.  
    T  F

Source: 4-H 522, You and Your Bicycle; 4-H 523, Caring For Your Bicycle; 4-H 524, Mastering Bicycle Skills; 4-H 525, Your Bicycle Community
Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Bicycles
Putting It All Together

Identify each of the numbered bicycle parts.

___ handlebar grips ___ chain guard ___ reflector ___ chain
___ kickstand ___ tire rim ___ saddle ___ crank bearings
___ rear fender ___ saddle post ___ handlebars ___ front wheel bearings
___ handlebar stem ___ front fender ___ tire valve ___ baggage carrier rack
___ fore bearings ___ frame ___ coaster brake and rear wheel bearings

Source: 4-H 522, You and Your Bicycle

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
In this activity you will:

- learn to recognize the various parts of a bicycle.

Bicycles
Putting It All Together
Identify each of the numbered bicycle parts.

1. handlebar grips
2. handlebars
3. handlebar stem
4. fore bearings
5. front fender
6. front wheel bearings
7. tire rim
8. tire valve
9. frame
10. saddle
11. saddle post
12. baggage carrier rack
13. rear fender
14. reflector
15. coaster brake and rear wheel bearings
16. chain
17. kickstand
18. crank bearings
19. chain guard

Source: 4-H 522, You and Your Bicycle

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
First Aid
Quick Response

Fill in the blanks using the following words.

abranation
bruse
help
nosebleed
sprain
hospital

Fill in the blanks using the following words.

abranation
bruse
dressing
emergency
frostbite
hypothermia
thermal
ingfection
prevention
infection
splotter
third
tick

• learn terms used to identify common symptoms and injuries.
• learn basic first aid treatments for quick reaction to injuries.

1. Use ____________________ to remove a tick from the scalp.
2. A serious degree of bum is ____________________.
3. A type of wound caused by rubbing or scraping is an ____________________.
4. Leaning forward is one way to treat a ____________________.
5. Safety or ____________________ is the key to stopping injuries.
6. Too much sun exposure can cause heat ____________________.
7. Something clean and without germs is said to be ____________________.
8. A small piece of wood beneath the skin surface is a ____________________.
9. Stumbling, slow speech, jerky movements, and blue skin are signs of ____________________.
10. A ____________________ is an injury to the soft tissue around a joint.
11. Use a sterile ____________________ to protect a wound from further injury or infection.
12. ____________________ burns are caused by moist or dry heat.
13. Anything you eat, drink or breathe that can cause illness or death is a ____________________.
14. When someone is poisoned, syrup of ____________________ may be used to cause vomiting.
15. Always call for ____________________ in an emergency.
16. A person choking on a piece of food is an example of an ____________________.
17. A way to treat teeth injuries, bruises, and insect stings is to put ____________________ on the injured area.
18. A ____________________ is an injury where the skin is blue or purple, painful, and swollen.
19. An insect that attaches itself to the skin surface is a ____________________.
20. Signs of a wound ____________________ are redness, warmth, swelling, and pain.
21. In an emergency, a person should go to a ____________________.
22. ____________________ is used to remove a foreign body from the ear.
23. An injury caused by exposure to too much cold is called ____________________.

Source: 4-H 352, Safety in Everyday Living
Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety

Lift-Off 8–17
First Aid
Quick Response

Fill in the blanks using the following words.

abrasion  bruise  dressing  emergency  frostbite
help  hypothermia  thermal  infection  ipecac
nosebleed  poison  prevention  splinter  tweezers
sprain  sterile  stress  third  tick
hospital  ice  oil

1. Use _______ tweezers to remove a tick from the scalp.
2. A serious degree of burn is _______ third _________.
3. A type of wound caused by rubbing or scraping is an _______ abrasion _________.
4. Leaning forward is one way to treat a _______ nosebleed _________.
5. Safety or _______ prevention ________ is the key to stopping injuries.
6. Too much sun exposure can cause heat _______ stress _________.
7. Something clean and without germs is said to be _______ sterile _________.
8. A small piece of wood beneath the skin surface is a _______ splinter _________.
9. Stumbling, slow speech, jerky movements, and blue skin are signs of _______ hypothermia _________.
10. A _______ sprain ________ is an injury to the soft tissue around a joint.
11. Use a sterile _______ dressing ________ to protect a wound from further injury or infection.
12. _______ Thermal ________ burns are caused by moist or dry heat.
13. Anything you eat, drink or breathe that can cause illness or death is a _______ poison _________.
14. When someone is poisoned, syrup of _______ ipecac ________ may be used to cause vomiting.
15. Always call for _______ help ________ in an emergency.
16. A person choking on a piece of food is an example of an _______ emergency _________.
17. A way to treat teeth injuries, bruises, and insect stings is to put _______ ice ________ on the injured area.
18. A _______ bruise ________ is an injury where the skin is blue or purple, painful, and swollen.
19. An insect that attaches itself to the skin surface is a _______ tick _________.
20. Signs of a wound _______ infection ________ are redness, warmth, swelling, and pain.
21. In an emergency, a person should go to a _______ hospital _________.
22. _______ Oil ________ is used to remove a foreign body from the ear.
23. An injury caused by exposure to too much cold is called _______ frostbite _________.

Source: 4-H 352, Safety in Everyday Living
Developed by: Dee Jepsen, Extension Associate, Ag Eng/Healthy/Safety
Rope

Tying It All Together

Find the words hidden in the word search. Words can be across, down, diagonal, or even backwords.

- bowline
- manila
- breaking strength
- nylon
- granny knot
- hackamore
- rope
- halter
- sheepshank
- hitch
- slip knot
- kink
- splice
- knot
- tackle
- lariat
- twist
- loop
- wire rope
- hemp

Source: 4-H 540, Rope

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Rope
Tying It All Together

Find the words hidden in the word search. Words can be across, down, diagonal, or even backwards.

bowline  manila  breaking strength  nylon  granny knot
hackamore  rope  halter  sheepshank  hitch
slip knot  kink  splice  knot  tackle
lariat  twist  loop  wire rope  hemp

Word Search—Key

In this activity you will:
• learn common words used in rope projects.

Source: 4-H 540, Rope

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Healthy/Safety
Lawn Care
Lawn Mower Lock-Up
Help Chris Clover put the lawnmower in a safe spot so you can play safely in the yard.

Puzzle
In this activity you will:

- learn where to store a lawn mower away from children.
- learn that keeping lawn mowers and other tools indoors helps protect equipment from weather damage.

Start Here
Lawn Care
Lawn Mower Lock-Up
Help Chris Clover put the lawnmower in a safe spot so you can play safely in the yard.

Puzzle—Key
In this activity you will:
- learn where to store a lawn mower away from children.
- learn that keeping lawn mowers and other tools indoors helps protect equipment from weather damage.

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Lawn Care
Mower Message

Decode the important secret message about lawnmowers below! Write the letter for each symbol using the decoder at the bottom of the page.

In this activity you will:
• learn a common danger to youth.

Decoding:

Ω ≈ ç √ ∫ ≤ ç ∂ † π
≈ † ∂ ∫ ≈ √ £ ∂ † ≤ ç π.

Decoder:

≈ ∫ ∂ £ Ω ∫
A D E G L M
√ ≤ † π ç ç
N O R S U W

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Lawn Care

Mower Message

Decode the important secret message about lawnmowers below! Write the letter for each symbol using the decoder at the bottom of the page.

Matching—Key

In this activity you will:

- learn a common danger to youth.

Decoding:

\[ \Omega \approx \partial \sqrt{\int \leq \partial \dagger \pi} \]

\[ \text{lawn mowers} \]

\[ \approx \dagger \partial \ll \approx \sqrt{\£ \partial \dagger \leq \psi \pi}. \]

\[ \text{are dangerous}. \]

Decoder:

\[ \approx \ll \partial \£ \Omega \int \]

\[ \text{A D E G L M} \]

\[ \sqrt{\leq \dagger \pi \psi \psi} \]

\[ \text{N O R S U W} \]
Woodworking
Measuring Up

Use the words below to complete each statement. Each word is used only once. The circled letters spell an important word for your woodworking projects. Unscramble the letters to reveal the important word.

bench grinder  chisel  clamps  coping saw
hardwoods  miter box  rip saw  safety goggles
shrinks  softwoods  trunk  veneer

1. __ __ __ __ __ __ __ __ __ have needle-like or scale-like leaves. Some examples are pine or cedar trees.
2. Wear __ __ __ __ __ __ __ __ __ __ __ __ __ when using electric saws.
3. The __ __ __ __ __ is divided into many parts. This is where most of the wood comes from we use.
4. __ __ __ __ __ __ __ __ __ have broad, flat leaves. Some examples are oak, maple, and cottonwood trees.
5. A __ __ __ __ __ __ __ __ __ is used to cut wood at 45 and 90 degree angles.
6. Wood __ __ __ __ __ when water within it evaporates into the air.
7. __ __ __ __ __ teeth are shaped like chisels. They cut like a group of chisels in a row.
8. __ __ __ __ __ __ __ __ __ are used to hold wood pieces together while you work.
9. A __ __ __ __ __ __ __ __ __ is used for cutting curves in wood.
10. A tool that is used for removing unwanted strips of wood is called a __ __ __ __ __ __.
11. __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ is used for sharpening woodworking tools. They come in many shapes and sizes.
12. Plywood is made by gluing together three or more thin layers of wood called __ __ __ __ __ __.

The important word is:

Source: 4-H 560, Working with Wood and Tools; 4-H 561, Wonderful World of Wood; 4-H 562, Building Bigger Things

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Woodworking
Measuring Up

Use the words below to complete each statement. Each word is used only once. The circled letters spell an important word for your woodworking projects. Unscramble the letters to reveal the important word.

bench grinder chisel clamps coping saw
hardwoods miter box rip saw safety goggles
shrinks softwoods trunk veneer

1. **Softwoods** have needle-like or scale-like leaves. Some examples are pine or cedar trees.
2. Wear **safety goggles** when using electric saws.
3. The **trunk** is divided into many parts. This is where most of the wood comes from we use.
4. **Hardwoods** have broad, flat leaves. Some examples are oak, maple, and cottonwood trees.
5. A **miter box** is used to cut wood at 45 and 90 degree angles.
6. Wood **shrinks** when water within it evaporates into the air.
7. **Rip saw** teeth are shaped like chisels. They cut like a group of chisels in a row.
8. **Clamps** are used to hold wood pieces together while you work.
9. A **coping saw** is used for cutting curves in wood.
10. A tool that is used for removing unwanted strips of wood is called a **chisel**.
11. **Bench grinder** is used for sharpening woodworking tools. They come in many shapes and sizes.
12. Plywood is made by gluing together three or more thin layers of wood called **veneer**.

The important word is: **measurements**

Source: 4-H 560, Working with Wood and Tools; 4-H 561, Wonderful World of Wood; 4-H 562, Building Bigger Things

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
**Woodworking**  
**Tools of the Trade**

Label the tool using the parts listed beside it.

---

**Identification**

**In this activity you will:**

- learn two important tools for woodworking projects.
- recognize the various parts of each tool.

---

**Wood Chisel**

- bevel
- bevel edge blade
- cutting edge
- handle
- head
- ferrule
- shoulder

---

**Hand Saw**

- back
- blade
- handle
- heel
- teeth
- toe

---

Source: 4-H 561, Wonderful World of Wood; 4-H 562, Building Bigger Things

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Woodworking
Tools of the Trade

Label the tool using the parts listed beside it.

**Wood Chisel**
- bevel
- bevel edge blade
- cutting edge
- handle
- head
- ferrule
- shoulder

**Hand Saw**
- back
- blade
- handle
- heel
- teeth
- toe

**Identification—Key**

**In this activity you will:**

- learn two important tools for woodworking projects.
- recognize the various parts of each tool.

Source: 4-H 561, Wonderful World of Wood; 4-H 562, Building Bigger Things

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Electricity
Plugging It Together

Complete the crossword puzzle using the words listed below.

- time switch
- element
- general purpose circuits
- size
- remove
- twelve
- contact switch
- plug
- grounding
- small appliance circuits

Across
1. The most common type of electrical connection is the __________.
4. An electrical outlet should be placed on every __________ feet of wall space.
7. These supply outlets where portable appliances are used most often.
8. This type of switch works like a doorbell push button.
9. The __________ of the wire determines the amount of electrical current that can flow through the wire.
10. This switch works like an alarm clock.

Down
2. These service lights all over the house. __________
3. __________ means permanently connecting to moist earth with a conductor of sufficient size.
5. Fuses contain a short, fine piece of wire or metal strip inside called the __________.
6. __________ the fuse before working on a circuit.

Source: 4-H 534, Working With Electricity
Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Electricity
Plugging It Together

Complete the crossword puzzle using the words listed below.

- time switch
- element
- general purpose circuits
- size
- remove
- twelve
- contact switch
- plug
- grounding
- small appliance circuits

**Across**

1. The most common type of electrical connection is the __________.
4. An electrical outlet should be placed on every __________ feet of wall space.
7. These supply outlets where portable appliances are used most often.
8. This type of switch works like a doorbell push button.
9. The __________ of the wire determines the amount of electrical current that can flow through the wire.
10. This switch works like an alarm clock.

**Down**

2. These service lights all over the house. __________
3. __________ means permanently connecting to moist earth with a conductor of sufficient size.
5. Fuses contain a short, fine piece of wire or metal strip inside called the __________.
6. __________ the fuse before working on a circuit.

Source: 4-H 534, Working With Electricity

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Healthy/Safety
**Tractors**

**Tractor Tips**

Complete the crossword puzzle.

---

**Crossword**

**In this activity you will:**

- learn the cause of most agricultural accidents.

---

1. Most accidents occur in the _____ industry.

2, 3. _____ and _____ are the primary type of tractor-related accidents.

4. No _____ riders!

5. Tractors are not ______. They have an important job to do on the farm.

6. Stay away from a ______ shaft at all times.

7. What is the cause of most agriculture injuries?

---

Source: 4-H 550, Safe Operation of Agricultural Equipment

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Tractors

Tractor Tips

Complete the crossword puzzle.

In this activity you will:
• learn the cause of most agricultural accidents.

1. Most accidents occur in the _____ industry.
2, 3. _____ and _____ are the primary type of tractor-related accidents.
4. No _____ riders!
5. Tractors are not ______. They have an important job to do on the farm.
6. Stay away from a _____ shaft at all times.
7. What is the cause of most agriculture injuries?

1. agriculture
2. rollovers
3. r
4. x
5. toys
6. tractor
7. o

Source: 4-H 550, Safe Operation of Agricultural Equipment

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
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**Human Development**

**Who Are You?**

List at least one characteristic that describes you and the people in your life in each of the nine puzzle pieces. Then share your completed puzzle with a partner.

**Listing**

*In this activity you will:*

- learn about who you are and the people in your life.
- develop self-understanding skills.

*Developed by: Scott Scheer and Kathryn Cox, Extension 4-H Specialist, Youth Development*
**Human Development**

*Meeting My Needs*

Using the column headings in the chart below, list some of the ways human needs are fulfilled or met. Add pictures of other ways you meet these needs. Look in magazines, catalogs, or newspapers for small pictures. Share what you listed and pictured with a partner.

### In this activity you will:

- learn about your physical, social, and emotional needs.
- develop social interaction and communication skills.

#### Meeting My Needs

<table>
<thead>
<tr>
<th>Hunger, Thirst</th>
<th>Safety</th>
<th>Love and Belonging</th>
<th>Recognition, Respect of Others and Self Respect</th>
<th>Doing My Best</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Human Development**

**Needs and Wants**

Circle the **N** if it is something you think you **need**; the **W** if it is primarily something you **want**; the **H** if it is something you already **have**.

Circle the number that best shows how you would react to the item. That is, 1, you’d stop to look at it, 2, you’d look at and buy it or, 3, you’d ask your parents to buy it for you.

If the item is one that does not interest you and you wouldn’t even look at it, don’t mark anything. Discuss your answers with a partner.

---

**Decision-Making**

**In this activity you will:**

- learn about differences between your wants and needs.
- develop decision making and analyzing information skills.
- think about things you need, want, or have.

---

<table>
<thead>
<tr>
<th>Item 1</th>
<th>Item 2</th>
<th>Item 3</th>
<th>Item 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera</td>
<td>Ring</td>
<td>Shoes</td>
<td>Bicycle</td>
</tr>
<tr>
<td>N</td>
<td>W</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Horse</td>
<td>Computer</td>
<td>Dog</td>
<td>Fishing Pole</td>
</tr>
<tr>
<td>N</td>
<td>W</td>
<td>H</td>
<td>N</td>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Bag</td>
<td>Sneaker</td>
<td>Jacket</td>
<td>TV</td>
</tr>
<tr>
<td>N</td>
<td>W</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Guitar</td>
<td>Sandwich</td>
<td>Books</td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>W</td>
<td>H</td>
<td>N</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>
Human Development

“Who Are You?” Interview

Do this activity with a partner. Have your friend act like a television reporter and interview you. To set an atmosphere of reality, he or she may want to begin by saying, “This is __________ reporting for 4-H news in __________, Ohio. Today, we are here to interview __________, a local member of our community.” After your partner is finished, conduct an interview with him or her.

In this activity you will:

- learn how to interview others.
- develop social interaction and communication skills.

Suggested Interview Questions

1. How old are you?
2. If you could be any age, what age would you like to be?
3. Did you go on vacation this year?
4. If you could go anywhere in the world next year, where would you go?
5. Do you have a pet? What kind?
6. What kind of work do you want to do when you are older?
7. Do you think you will go to college?
8. Do you like to be teased by other people?
9. Do you ever tease other people?
10. Would you want to be president of the United States? Why or why not?
11. Would you like to live in a city, in a small town, or on a farm? Why?
12. If you had $100 cash, what would you do with it?
13. Do you ever get mail? From whom do you get mail?
14. What’s a good 4-H member? Are you a good 4-H member?
15. If you could live anywhere in the world, where would you live? Why?
16. When you are sitting with a group of your friends, do you usually talk or listen?
17. Can you usually get your friends to do what you want?
18. What could we do to get more of your friends into 4-H?
19. Will you be a cigarette smoker? Why or why not?
20. What size is your family? Do you wish you had a larger or smaller family, or is your family just the right size?
21. Do you feel that you do your best work all of the time?
22. Who should do the work on a 4-H project? What is the purpose of 4-H projects?
23. Is it harder to win or to lose? Why?
24. Do you like to compete in contests?
25. How many years do you plan to be in 4-H? Why?
26. What is leadership?
27. Have you ever been a leader? What did you do?

Discussion

Discuss the following questions with your partner.

1. How were you honest about your answers?
2. In what way were the questions about values harder to answer?
3. How do you think answering value questions will help you later?
4. How can we show that people’s opinions are important?
**Human Development**

**“Who Are You?” Advertisement**

Each person has many parts. There is a physical part—the color of one’s hair, whether an individual is short or tall. There is a psychological part, which includes how one feels—such as happy or sad, and, how a person thinks, what someone likes to do. There is also a social part—the roles and relationships one has with other people, such as son, daughter, friend, or fellow 4-H member.

Make an advertisement about yourself in the space below. Look through magazines, newspapers, etc., to find words or pictures that describe or advertise you. Glue the words or pictures in the space.

---

**Listing**

In this activity you will:

- learn about the many aspects of yourself—physical, psychological, and social.
- develop self-understanding skills.

---

Discuss the following questions with a partner.

1. What things are most important about yourself that you had to include?
2. What things did you want to leave out?
3. How did you show your feelings?
4. What did this tell you about yourself?

*Developed by: Scott Scheer and Kathryn Cox, Extension 4-H Specialist, Youth Development*
Human Development
The Whisper Game

1. Using the space below, prepare a written message of about 10 to 15 words.
2. Gather together the group who will be playing the “whisper game.” It could be your family or a group of friends from school or your club.
3. The first person should whisper the message to the next person so no one else can see or hear the first message.
4. Each person repeats the message to the person next to him or her.
5. The last person should repeat the message aloud.

Answer these questions with the person next to you.

1. How did the message change?
2. What caused the message to change?
3. Are there times when messages get changed in daily life?
4. Is there anything you can do to keep messages from getting changed?

Developed by: Scott Scheer and Kathryn Cox, Extension 4-H Specialist, Youth Development
**Human Development**

**My Most Important People**

Draw a sketch of at least three important people in your life. List one reason why each is important to you.

In this activity you will:

- Learn about the significant people in your life and why they are important.
- Develop self-understanding skills.

| Name: ___________________ | Name: ___________________ | Name: ___________________ |
| Why Important: _____________ | Why Important: _____________ | Why Important: _____________ |
| ________________________ | ________________________ | ________________________ |
| ________________________ | ________________________ | ________________________ |
| ________________________ | ________________________ | ________________________ |

Discuss your answers to the following questions with one or two other members of your group.

1. Have the people on your list always been important to you?

2. Which people were important to you at other times in your life?

3. Why have your important people changed?

4. In whose life are you an important person?

5. Why are you important to that person?
## Human Development
### Making Decisions

Place an “X” in the space that shows the way you make decisions.

<table>
<thead>
<tr>
<th>Decision-Making</th>
<th>I think it through carefully</th>
<th>I give it some thought</th>
<th>I don’t stop to think</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Spending money on a bike.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Choosing hobbies.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Getting along with my friends.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Joining clubs, teams, or activities.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. What to eat for lunch.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How do you make decisions? Discuss your answers with the person sitting next to you.

1. Most of the time are you a thoughtful decision maker?

2. What other decisions do you make each day?

3. What decisions does your partner make each day?

4. Which are important to your partner?

5. Which are unimportant?

6. Which decisions are important to you?

7. Which are unimportant to you?
Human Development
Cooperating

Make a group of four people. If you have more than four people playing, you may need more than one group.

Each group is to make a machine, with each member becoming a moving part. Have the parts use sounds, move about, and work at different heights. Examples of machines are a lawn mower, vacuum cleaner, or record player. If you have more than one group, have those not in the group performing guess what the machine does.

Discuss with a partner the part you played in the machine.

1. Describe how the machine would work if your part were missing.

2. Describe how you felt being a part of a group that made a machine.

3. How is it similar to a machine when a group does a job together?

Developed by: Scott Scheer and Kathryn Cox, Extension 4-H Specialist, Youth Development

Role-Playing

In this activity you will:

- learn how to work and interact with others.
- develop social interaction and collaboration skills.
Human Development

What Do You Like?

Do this activity with a partner.

Talk about things you enjoy doing. When you have finished that subject, spend five minutes talking about people you like. Write your ideas on paper first and then talk about what you have written. Ask your partner to share his or her likes and favorite people.

Discuss the following questions with your partner.

1. What things do you enjoy doing that your partner also enjoyed?

2. How did some of the things you enjoyed relate to the people you like?

3. What things do you have in common with your partner, and/or the people you like?

Discussion

In this activity you will:

- learn about things and people you like and things and people a partner likes.
- develop communication and self-understanding skills.
Human Development
Physical Fitness Fun

Being physically fit makes everything else in life more enjoyable and better. When you are physically healthy, you think more clearly, feel more energetic, and are happier about yourself.

The best way to stay or get physically fit is to get the heart pumping faster than it does when you are sitting down.

Try some fun activities to increase your heart rate. (Check your pulse before starting by placing two fingers on the right side of the neck below the chin, then check after.)

1. Do jumping jacks.
2. Squat down then jump into the air.
3. Hold arms out extended perpendicularly from body. Try holding them for a minute. Is it easier to do when you are thinking about something other than what you are doing?
4. Pretend to climb a ladder in place. Don’t forget to use both arms and legs.
5. Run in place.

Physical Activity

In this activity you will:

- learn about the importance of physical fitness.
- learn physical activity skills.

Developed by: Scott Scheer and Kathryn Cox, Extension 4-H Specialist, Youth Development
Developed by: Scott Scheer and Kathryn Cox, Extension 4-H Specialist, Youth Development

**Human Development**

**Roles and Relationships**

The real you! Who are you? It is both who you are and what you are.

You find clues to who and what in the things you do and in the people around you.

The things you do are called **roles**. The way you get along with people and how you happen to know them are called **relationships**.

Let’s look at some examples of roles and relationships for Tina and Caleb:

The things they do are clues to some of their **roles**:

- Caleb swims. He is a swimmer.
- Tina dances. She is a dancer.

Another clue to their roles comes from **who** they are:

- Caleb is a boy. He is a son.
- Tina is a girl. She is a sister.

Another clue comes from the people Caleb and Tina know:

- Tina has an aunt. Tina is a niece.
- Caleb has a teacher. Caleb is a student.

When you see these clues to who you are and what you do, you can put them together with the people you know. This makes it easy to see the roles and the relationships with others.

Let’s look at more examples of roles and relationships for Caleb and Tina. Match each role with a relationship.

### Matching

**In this activity you will:**

- learn about roles and relationships in your life.
- develop self-understanding and analyzing skills.
- identify various roles and relationships.

<table>
<thead>
<tr>
<th>Roles and Relationships</th>
<th>Roles and Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tina is a(n)</strong></td>
<td><strong>Caleb is a(n)</strong></td>
</tr>
<tr>
<td>dancer</td>
<td>dancer</td>
</tr>
<tr>
<td>American</td>
<td>American</td>
</tr>
<tr>
<td>granddaughter</td>
<td>granddaughter</td>
</tr>
<tr>
<td>student</td>
<td>student</td>
</tr>
<tr>
<td>sister</td>
<td>sister</td>
</tr>
<tr>
<td>daughter</td>
<td>daughter</td>
</tr>
<tr>
<td>niece</td>
<td>niece</td>
</tr>
<tr>
<td>ball player</td>
<td>ball player</td>
</tr>
<tr>
<td>She has a relationship with</td>
<td>He has a relationship with</td>
</tr>
<tr>
<td>grandparent</td>
<td>uncle</td>
</tr>
<tr>
<td>teacher</td>
<td>son</td>
</tr>
<tr>
<td>brother or sister</td>
<td>4-H’er</td>
</tr>
<tr>
<td>dance members</td>
<td>employee</td>
</tr>
<tr>
<td>parent</td>
<td>student</td>
</tr>
<tr>
<td>other U.S. citizens</td>
<td>pet owner</td>
</tr>
<tr>
<td>team members</td>
<td>grandson</td>
</tr>
<tr>
<td>aunt or uncle</td>
<td>4-H members</td>
</tr>
<tr>
<td></td>
<td>employer</td>
</tr>
<tr>
<td></td>
<td>pet</td>
</tr>
<tr>
<td></td>
<td>grandparent</td>
</tr>
<tr>
<td></td>
<td>choir members</td>
</tr>
<tr>
<td></td>
<td>parent</td>
</tr>
<tr>
<td></td>
<td>school</td>
</tr>
</tbody>
</table>

Developed by: Scott Scheer and Kathryn Cox, Extension 4-H Specialist, Youth Development

Lift-Off 7-23
Developed by: Scott Scheer and Kathryn Cox, Extension 4-H Specialist, Youth Development

Human Development
Roles and Relationships
The real you! Who are you? It is both who you are and what you are.
You find clues to who and what in the things you do and in the people around you.
The things you do are called roles. The way you get along with people and how
you happen to know them are called relationships.
Let’s look at some examples of roles and relationships for Tina and Caleb:
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When you see these clues to who you are and what you do, you can put them together with the people you know. This makes it easy to see the roles and the relationships with others.

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<table>
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<tr>
<th>Roles and Relationships</th>
<th>Tina is a(n)</th>
<th>She has a relationship with</th>
</tr>
</thead>
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<tr>
<td>dancer</td>
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<td>grandparent</td>
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<tr>
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<td></td>
<td>teacher</td>
</tr>
<tr>
<td>granddaughter</td>
<td></td>
<td>brother or sister</td>
</tr>
<tr>
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<td></td>
<td>dance members</td>
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<tr>
<td>sister</td>
<td></td>
<td>parent</td>
</tr>
<tr>
<td>daughter</td>
<td></td>
<td>other U.S. citizens</td>
</tr>
<tr>
<td>niece</td>
<td></td>
<td>team members</td>
</tr>
<tr>
<td>ball player</td>
<td></td>
<td>aunt or uncle</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Roles and Relationships</th>
<th>Caleb is a(n)</th>
<th>He has a relationship with</th>
</tr>
</thead>
<tbody>
<tr>
<td>dancer</td>
<td></td>
<td>niece or nephew</td>
</tr>
<tr>
<td>American</td>
<td></td>
<td>uncle</td>
</tr>
<tr>
<td>granddaughter</td>
<td></td>
<td>son</td>
</tr>
<tr>
<td>student</td>
<td></td>
<td>4-H members</td>
</tr>
<tr>
<td>sister</td>
<td></td>
<td>employer</td>
</tr>
<tr>
<td>daughter</td>
<td></td>
<td>4-H’er</td>
</tr>
<tr>
<td>niece</td>
<td></td>
<td>pet</td>
</tr>
<tr>
<td>ball player</td>
<td></td>
<td>grandparent</td>
</tr>
<tr>
<td>other U.S. citizens</td>
<td></td>
<td>school</td>
</tr>
</tbody>
</table>

Developed by: Scott Scheer and Kathryn Cox, Extension 4-H Specialist, Youth Development

Matching—Key
In this activity you will:
- learn about roles and relationships in your life.
- develop self-understanding and analyzing skills.
- identify various roles and relationships.

Lift-Off
Living With Others

The journey through life is not made alone. It is made with other people. One of the most important things we learn as we move through life is how to see the other side. Getting along with others occurs when we stop and think of the other person’s point of view.

There are three keys in getting to know someone else: courtesy, awareness, and thoughtfulness. These keys can become habits that will help you be happier and help those you are with be glad you are there!

Courtesy is not just manners, but consideration for others. Saying “thank you” is a courtesy which often means: “I like you, you’re a nice person.”

List other ways we can communicate courtesy.

__________________________________
__________________________________
__________________________________
__________________________________
__________________________________
__________________________________
__________________________________

Awareness is looking, listening, seeing, and feeling the world around you and showing others you care about the things you see, hear, and feel. For example: speaking to the new boy who is shy or visiting the lady next door who is lonely.

List other ways you can show you are aware and care about other people.

__________________________________
__________________________________
__________________________________
__________________________________
__________________________________
__________________________________
__________________________________

Thoughtfulness is remembering to think before speaking or acting. It is also thinking about ways to show others you care about them. For example: not interrupting someone else when they are talking or being quiet when someone is on the telephone.

List things you do to show you are thoughtful of others.

__________________________________
__________________________________
__________________________________
__________________________________
__________________________________
__________________________________
__________________________________

Developed by: Scott Scheer and Kathryn Cox, Extension 4-H Specialist, Youth Development
Countdown Chapter 6

Equine Science
Countdown Chapter 6
Equine Science

Contents

Horse Breeds ................................................................................................................. 1
Horse Parts (Beginner) .................................................................................................. 3
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Horse Feet and Leg Structure ...................................................................................... 7
How to Read a Feed Tag .............................................................................................. 9
Equine Science
Horse Breeds

In this activity you will:
• become familiar with horse breeds.

1. This breed originated in Kentucky and comes in many colors. It is known for its great style and animation, under saddle and in fine harness.

2. The ancestors of this breed originated in Fergana, Central Asia. Colors are most often variable over the loin and hips with dark spots. Eyes are typically encircled by white, their skin is mottled, and hooves have vertical stripes.

3. This breed originated in Arabia. Typical colors include bay, gray, and chestnut, and their skin is always dark. They are known for their refined heads, great endurance, and gay way of going.

4. Originating in Belgium, this breed is predominantly sorrels and chestnuts, often with flaxen mane and tail. They do not have feathers.

5. This breed originated in the United States. Their body is usually a shade of yellow, with dark brown, black, red, or flaxen points. Red, grulla, or those with white points must have a dorsal stripe.

6. Originating in Austria, this breed are usually sorrel with flaxen manes and tails. They are between 50 and 59 inches tall.

7. This breed originated in the United States, New England area. They usually come in bay, brown, black, or chestnut but do not often have extensive white markings. They are known to be easy keepers and have docile temperaments.

8. Originating in the United States, this spotted horse is a combination of white and any other color. There are usually two distinct color patterns, but animals with Appaloosa characteristics or breeding are not allowed in the registry.

9. This breed originated in the United States and is known to be well muscled and powerfully built. Chestnut, sorrel, bay, and dun are the most common colors. Others can be registered though excessive white is a disqualification.

10. Originating in Tennessee, these horses come in all colors. White markings on the face and legs are common. They have a unique way of moving called a running walk.

11. This breed originated in England and is often used in racing or jumping. They come in many colors, though roans and grays are less common. White markings are common. They are known for their fineness of conformation and long straight, well-muscled legs.

12. This pony originated in Wales and can be any color except piebald or skewbald. Often used as a children’s mount, this pony is very versatile and can be shown under saddle on the flat or jumping, or can be shown in harness.

Reference: 4-H 172, Basic Horse Science, pp. 6–9; and Horse Learning Laboratory Kit. The Horse Learning Laboratory Kit contains breed photos, trait descriptions, and breed name labels which are helpful but not necessary for this exercise.
Prepared by: Cheryl Porr, State Equine Extension Associate, Animal Sciences; Andrea Auker, OSU Animal Sciences Student
Equine Science

Horse Breeds

Read the descriptions and fill in the blanks with the breed names.

1. This breed originated in Kentucky and comes in many colors. It is known for its great style and animation, under saddle and in fine harness. ________ American Saddlebred

2. The ancestors of this breed originated in Fergana, Central Asia. Colors are most often variable over the loin and hips with dark spots. Eyes are typically encircled by white, their skin is mottled, and hooves have vertical stripes. ________ Appaloosa

3. This breed originated in Arabia. Typical colors include bay, gray, and chestnut, and their skin is always dark. They are known for their refined heads, great endurance, and gay way of going. ________ Arabian

4. Originating in Belgium, this breed is predominantly sorrels and chestnuts, often with flaxen mane and tail. They do not have feathers. ________ Belgian

5. This breed originated in the United States. Their body is usually a shade of yellow, with dark brown, black, red, or flaxen points. Red, grulla, or those with white points must have a dorsal stripe. ________ Buckskin

6. Originating in Austria, this breed are usually sorrel with flaxen manes and tails. They are between 50 and 59 inches tall. ________ Haflinger

7. This breed originated in the United States, New England area. They usually come in bay, brown, black, or chestnut but do not often have extensive white markings. They are known to be easy keepers and have docile temperaments. ________ Morgan

8. Originating in the United States, this spotted horse is a combination of white and any other color. There are usually two distinct color patterns, but animals with Appaloosa characteristics or breeding are not allowed in the registry. ________ Paint Horse

9. This breed originated in the United States and is known to be well muscled and powerfully built. Chestnut, sorrel, bay, and dun are the most common colors. Others can be registered though excessive white is a disqualification. ________ Quarter Horse

10. Originating in Tennessee, these horses come in all colors. White markings on the face and legs are common. They have a unique way of moving called a running walk. ________ Tennessee Walking Horse

11. This breed originated in England and is often used in racing or jumping. They come in many colors, though roans and grays are less common. White markings are common. They are known for their fineness of conformation and long straight, well-muscled legs. ________ Thoroughbred

12. This pony originated in Wales and can be any color except piebald or skewbald. Often used as a children’s mount, this pony is very versatile and can be shown under saddle on the flat or jumping, or can be shown in harness. ________ Welsh Pony

Reference: 4-H 172, Basic Horse Science, pp. 6–9; and Horse Learning Laboratory Kit. The Horse Learning Laboratory Kit contains breed photos, trait descriptions, and breed name labels which are helpful but not necessary for this exercise.

Prepared by: Cheryl Porr, State Equine Extension Associate, Animal Sciences; Andrea Auker, OSU Animal Sciences Student
Equine Science
Horse Parts

Beginner level: Write in the number that corresponds to the correct part of the animal.

1. Point of Shoulder
2. Forearm
3. Chestnut
4. Gaskin
5. Hip
6. Elbow
7. Chin
8. Chest
9. Stifle
10. Back
11. Point of Hip
12. Fetlock Joint
13. Heartgirth
14. Arm
15. Hoof
16. Face
17. Withers
18. Poll
19. Hock
20. Cannon
21. Knee
22. Loin
23. Ergot
24. Abdomen
25. Neck
26. Bridge/Nose
27. Throatlatch
28. Lower Lip
29. Barrel Area
30. Muzzle
31. Coronet
32. Forehead
33. Flank
34. Crest
35. Nostril
36. Shoulder
37. Croup
38. Upper Lip
39. Buttock
40. Pastern

Reference: 4-H 175, Light Horse Selection
Prepared by: Cheryl Porr, State Equine Extension Associate, Animal Sciences; Andrea Auker, OSU Animal Sciences Student
In this activity you will:

- learn the parts of a horse.

**Identification—Key**

Beginner level: Write in the number that corresponds to the correct part of the animal.

<table>
<thead>
<tr>
<th>1</th>
<th>5</th>
<th>11</th>
<th>20</th>
<th>22</th>
<th>4</th>
<th>40</th>
<th>2</th>
<th>21</th>
<th>27</th>
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<td>24</td>
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<td>12</td>
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<td>26</td>
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<td>14</td>
<td>31</td>
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<td>17</td>
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<td>15</td>
<td>30</td>
<td>36</td>
<td>29</td>
<td>25</td>
<td>30</td>
<td>16</td>
</tr>
</tbody>
</table>
### Equine Science

**Horse Parts**

Advanced level: Write in the name that corresponds to the correct part of the animal.

| 1.   | 13.  |
| 2.   | 14.  |
| 3.   | 15.  |
| 4.   | 16.  |
| 5.   | 17.  |
| 6.   | 18.  |
| 7.   | 19.  |
| 8.   | 20.  |
| 9.   | 21.  |
| 10.  | 22.  |
| 11.  | 23.  |
| 12.  | 24.  |

| 25.  |
| 26.  |
| 27.  |
| 28.  |
| 29.  |
| 30.  |
| 31.  |
| 32.  |
| 33.  |
| 34.  |
| 35.  |
| 36.  |
| 37.  |
| 38.  |
| 39.  |
| 40.  |
| 41.  |

Reference: 4-H 175, Light Horse Selection

Prepared by: Cheryl Porr, State Equine Extension Associate, Animal Sciences; Andrea Auker, OSU Animal Sciences Student
Equine Science
Horse Parts

Advanced level: Write in the name that corresponds to the correct part of the animal.

1. Point of Shoulder 13. Barrel Area
3. Arm 15. Flank
4. Elbow 16. Pastern
5. Forearm 17. Coronet
6. Knee 18. Fetlock Joint
7. Hoof 19. Hock
8. Ergot 20. Gaskin
11. Chestnut 23. Buttock
12. Heartgirth 24. Point of Hip
25. Croup

26. Loin
27. Back
28. Withers
29. Shoulder
30. Crest
31. Neck
32. Poll
33. Forehead
34. Face
35. Bridge/Nose
36. Nostril
37. Muzzle
38. Upper Lip
39. Lower Lip
40. Chin
41. Throatlatch

Reference: 4-H 175, Light Horse Selection
Prepared by: Cheryl Porr, State Equine Extension Associate, Animal Sciences; Andrea Auker, OSU Animal Sciences Student
Equine Science

Horse Feet and Leg Structure

On the blanks, write the letter of the term that corresponds to the diagram below.

Side view of the rear legs:
A. Ideal
B. Sickle Hocked
C. Camped Out

Front view of the front legs:
D. Ideal
E. Knock Knees
F. Pigeon Toed
G. Splay Footed

Rear view of the rear legs:
H. Base narrow
I. Cow Hocked
J. Bow/Bandy Legs

Identification

In this activity you will:
- identify the various feet and leg structure diagrams.

Reference: 4-H 175, Light Horse Selection; and Horse Learning Laboratory Kit. The Horse Learning Laboratory Kit contains breed photos, trait descriptions, and breed name labels which are helpful but not necessary for this exercise.

Prepared by: Cheryl Porr, State Equine Extension Associate, Animal Sciences; Andrea Auker, OSU Animal Sciences Student
**Equine Science**

**Horse Feet and Leg Structure**

On the blanks, write the letter of the term that corresponds to the diagram below.

**Identification—Key**

In this activity you will:

- identify the various feet and leg structure diagrams.

Side view of the rear legs:
- A. Ideal
- B. Sickle Hocked
- C. Camped Out

Front view of the front legs:
- D. Ideal
- E. Knock Knees
- F. Pigeon Toed
- G. Splay Footed

Rear view of the rear legs:
- H. Base narrow
- I. Cow Hocked
- J. Bow/Bandy Legs

---

Reference: 4-H 175, Light Horse Selection; and Horse Learning Laboratory Kit. The Horse Learning Laboratory Kit contains breed photos, trait descriptions, and breed name labels which are helpful but not necessary for this exercise.

Prepared by: Cheryl Porr, State Equine Extension Associate, Animal Sciences; Andrea Auker, OSU Animal Sciences Student
In this activity you will:

• learn how to read a feed tag.

**Decision-Making**

1. What is the main ingredient (or group of ingredients) in this feed?

2. What is the 4th main ingredient (or group of ingredients) in this feed?

3. What is the minimum % of Crude Protein in this feed?

4. What is the minimum % of Crude Fat in this feed?

5. Does this feed contain salt?
Equine Science
How to Read a Feed Tag

Use the feed tag below to answer the questions.

FEED TAG:
50 lb. (22.7 Kg)
Net Wt.

GENERIC NUTRITION
PERFORMER-10 SWEET HORSE FEED

Description/Use: A texturized horse feed, formulated to be fed to horses over 2 years old when their forage (hay or pasture) is over 50% alfalfa or clover.

GUARANTEED ANALYSIS

<table>
<thead>
<tr>
<th>Component</th>
<th>Minimum/Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRUDE PROTEIN, MINIMUM</td>
<td>10.00%</td>
</tr>
<tr>
<td>CRUDE FAT, MINIMUM</td>
<td>4.50%</td>
</tr>
<tr>
<td>CRUDE FIBER, MAXIMUM</td>
<td>7.00%</td>
</tr>
<tr>
<td>CALCIUM (Ca), MINIMUM</td>
<td>0.20%</td>
</tr>
<tr>
<td>MAX. 0.60%</td>
<td></td>
</tr>
<tr>
<td>PHOSPHORUS (P), MINIMUM</td>
<td>0.60%</td>
</tr>
<tr>
<td>MAGNESIUM (Mg), MINIMUM</td>
<td>0.20%</td>
</tr>
<tr>
<td>MANGANESE (Mn), MINIMUM</td>
<td>60 ppm</td>
</tr>
<tr>
<td>IRON (Fe), MINIMUM</td>
<td>200 ppm</td>
</tr>
<tr>
<td>COPPER (Cu), MINIMUM</td>
<td>50 ppm</td>
</tr>
<tr>
<td>ZINC (Zn), MINIMUM</td>
<td>120 ppm</td>
</tr>
<tr>
<td>SELENIUM (Se), MINIMUM</td>
<td>5 ppm</td>
</tr>
<tr>
<td>VITAMIN A, MINIMUM</td>
<td>5,000 IU/lb.</td>
</tr>
<tr>
<td>VITAMIN D, MINIMUM</td>
<td>500 IU/lb.</td>
</tr>
<tr>
<td>VITAMIN E, MINIMUM</td>
<td>70 IU/lb.</td>
</tr>
<tr>
<td>THIAMINE (B-1), MINIMUM</td>
<td>7 mg/lb.</td>
</tr>
</tbody>
</table>

INGREDIENTS
CRIMPED OATS, HEAT PROCESSED FLAKED CORN, CRACKED CORN, WHEAT MIDDINGS, MAIZE DISTILLERS DRIED GRAINS, DRIED WHEY, CANE MOLASSES, VEGETABLE OIL, L-LYSINE, DL-METHIONINE, CALCIUM PHOSPHATE, CALCIUM CARBONATE, SALT, MAGNESIUM OXIDE, MANGANOUS OXIDE, MANGANESE SULFATE, FERROUS SULFATE, COPPER SULFATE, ZINC OXIDE, POLYSACCHARIDE COMPLEXES OF IRON, COPPER, ZINC, AND MANGANESE, COBALT SULFATE, ETILENEDIAMINE DICYCLIC HEMIHYDROCHLORIDE, SODIUM Selenite, VITAMIN A SUPPLEMENT, VITAMIN D3 SUPPLEMENT, THIAMINE MONONITRATE, RIBOFLAVIN SUPPLEMENT, NIACIN SUPPLEMENT, BIOTIN, D-CALCIUM PANTOTHENATE, CHOLINE CHLORIDE, VITAMIN B-12 SUPPLEMENT, FOLIC ACID, ASCORBIC ACID.

1. What is the main ingredient (or group of ingredients) in this feed?
   **Crimped Oats**

2. What is the 4th main ingredient (or group of ingredients) in this feed?
   **Wheat Middlings**

3. What is the minimum % of Crude Protein in this feed?
   **10%**

4. What is the minimum % of Crude Fat in this feed?
   **4.5%**

5. Does this feed contain salt?
   **Yes**

Prepared by: Robert Kline, State Equine Extension Specialist; Andrea Auker, OSU Animal Sciences Student
Countdown Chapter 5

Field and Garden
Chapter 5: Field and Garden

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Field and Garden
Parts of a Grass Plant

Identify the parts of the plant. Write the letter in front of the word.

In this activity you will:

- learn the parts of the grass plant.

Diagram:

1. ___ roots
2. ___ ligule
3. ___ seedhead
4. ___ leaf blade
5. ___ seed
6. ___ midrib
7. ___ node
8. ___ crown
9. ___ leaf tip

Developed by: Angie Eckert, M.S.
Identify the parts of the plant. Write the letter in front of the word.

In this activity you will:

- learn the parts of the grass plant.

**Identification—Key**

1. **I** roots
2. **G** ligule
3. **A** seedhead
4. **B** leaf blade
5. **E** seed
6. **F** midrib
7. **H** node
8. **C** crown
9. **D** leaf tip

Developed by: Angie Eckert, M.S.
**Field and Garden Soil Shakes**

In this activity, each person or group will need:

- soil from outside
- a pint or quart-sized jar with a lid (clean plastic peanut butter jars work best)
- water
- alum (optional: can be found in the spice section of most grocery stores)

Soils are made of three kinds of particles: sand, silt, and clay. Good garden soil is made up of a balanced mixture of these three particles: sand, silt, and clay. Make a soil shake to observe the particles in your soil.

1. Collect soil from outside and fill a jar two-thirds full with the soil.
2. Fill the jar almost to the top with water. Leave one to two inches of air space at the top. *Optional: Add one tablespoon of alum. Alum speeds the soil settling process.*
3. Put the lid on tightly.
4. Shake the jar for three to five minutes until all the clumps of soil are mixed well with the water. *You may need a spoon to break apart some of the clumps.*
5. Set the jar down and wait for three minutes.

What does the soil inside the jar look like?

<table>
<thead>
<tr>
<th>After Three Minutes</th>
<th>After Ten Minutes</th>
<th>After One Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay</td>
<td>Silt</td>
<td>Sand</td>
</tr>
</tbody>
</table>

Do you think your soil would be a good soil for growing plants? Why or why not?

Compare your “soil shake” to another person’s or another group’s shake. How are they similar? How are they different?
Field and Garden
Soil Shakes

In this activity, each person or group will need:

- soil from outside
- a pint or quart-sized jar with a lid (clean plastic peanut butter jars work best)
- water
- alum (optional: can be found in the spice section of most grocery stores)

Soils are made of three kinds of particles: sand, silt, and clay. Good garden soil is made up of a balanced mixture of these three particles: sand, silt, and clay. Make a soil shake to observe the particles in your soil.

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What does the soil inside the jar look like?

<table>
<thead>
<tr>
<th>After Three Minutes</th>
<th>After Ten Minutes</th>
<th>After One Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some experimenters may observe more than three layers. Encourage them to name these layers with a combination of the soil terms such as: coarse sand and fine sand.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you think your soil would be a good soil for growing plants? Why or why not?

**Answers will vary.** If the soil has a balanced mixture of all three particles, it is likely to be a soil that is good for growing garden plants.

Compare your “soil shake” to another person’s or another group’s shake. How are they similar? How are they different?

**Answers will vary.**

Developed by: Angie Eckert, M.S.
In this activity you will do two experiments. Follow the instructions and answer the questions in the space provided.

**Experiment 1**
Each group will need:
- glass jar or cup
- measuring cup
- warm water
- food coloring
- celery stalk with leaves
- knife

1. Fill the jar or cup with 1 cup warm water.
2. Add 10 to 15 drops of food coloring to the water.
3. Cut the bottom of your celery stalk carefully with the knife.
4. Place the bottom part of the celery stem in the water.
5. What do you think will happen to the celery stem and leaves? ____________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
6. Wait 20 minutes. (You may want to begin Experiment 2 of this activity.)
7. What happened to the celery stalk? ____________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
8. What is happening to the water? ____________________________________________
   ____________________________________________________________________
   ____________________________________________________________________
   ____________________________________________________________________

In this activity you will:
- learn about water movement in trees.
Experiment 2
Each group will need:
- well-watered plant or tree
- small plastic bag
- twist tie
- paper towel

1. Select a plant outside (preferably one that is in the sun).
2. Cover at least three leaves on the end of the stem or twig of the plant with the plastic bag.
3. Fasten the twist tie around the plastic bag being careful not to damage the plant.
4. What do you think will happen inside the plastic bag? ______________________________________
   ____________________________________________________________________________
5. Wait twenty minutes.
6. Remove the plastic bag and the twist tie.
7. Wipe the inside of the plastic bag with a paper towel.
8. What do you see on the towel? _____________________________________________________
   ____________________________________________________________________________
9. What does this tell you about the plant? _____________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________
Field and Garden

Tree-erific Movement

In this activity you will do two experiments. Follow the instructions and answer the questions in the space provided.

Experiment 1

Each group will need:

- glass jar or cup
- measuring cup
- warm water
- food coloring
- celery stalk with leaves
- knife

1. Fill the jar or cup with 1 cup warm water.
2. Add 10 to 15 drops of food coloring to the water.
3. Cut the bottom of your celery stalk carefully with the knife.
4. Place the bottom part of the celery stem in the water.
5. What do you think will happen to the celery stem and leaves? ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________

6. Wait 20 minutes. (You may want to begin Experiment 2 of this activity.)
7. What happened to the celery stalk? ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________

8. What is happening to the water? ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________

   Water in drawn from the glass, up the stem, to the leaves. This shows that trees take up water from the soil with their roots.

Answers will vary.

Observation—Key

In this activity you will:

- learn about water movement in trees.

Developed by: Angie Eckert, M.S.
Experiment 2
Each group will need:

- well-watered plant or tree
- small plastic bag
- twist tie
- paper towel

1. Select a plant outside (preferably one that is in the sun).
2. Cover at least three leaves on the end of the stem or twig of the plant with the plastic bag.
3. Fasten the twist tie around the plastic bag being careful not to damage the plant.
4. What do you think will happen inside the plastic bag? **Answers will vary.**

5. Wait twenty minutes.
6. Remove the plastic bag and the twist tie.
7. Wipe the inside of the plastic bag with a paper towel.
8. What do you see on the towel? **water**

9. What does this tell you about the plant? **This shows that plants lose water through their leaves. This process is called transpiration.**
Field and Garden
Careers in Horticulture

In this activity you will:

In this activity you will:

• learn about careers in horticulture.

A. Landscape designer
B. Nursery employee
C. Golf course manager
D. Groundskeeper
E. Orchardist
F. Interiorscaper
G. Florist
H. Extension agent
I. Horticultural salesperson
J. Greenhouse employee
K. Garden center employee
L. Professor or teacher
M. Arborist

___ 1. Grows plants (mostly trees and shrubs) used for landscaping, producing fruit, or replanting forests.
___ 2. Maintains indoor plant displays in places such as malls, office buildings, and hotels.
___ 3. Designs attractive outdoor arrangements of plants, lawns, and recreational spaces.
___ 4. Cares for and prunes large shrubs and trees. Job involves tree climbing.
___ 5. Cares for, grows, transports, and sells plants and gardening supplies. May also place orders and assist customers.
___ 6. Creates and sells arrangements of cut flowers and plants, works with customers, orders supplies, and prices arrangements.
___ 7. Shares horticultural information with the public.
___ 8. Plants and maintains turf and plants on the golf course.
___ 9. Maintains turf and/or plants in areas such as shopping malls, apartment complexes, cemeteries, airports, schools, parks, private estates, or businesses.
___ 10. Manages fruit trees.
___ 11. Teaches horticulture at a high school, technical school, college, or university.
___ 12. Sells supplies needed for growing and caring for plants.
___ 13. Grows and maintains plants and operates equipment in greenhouses.

Questions
1. Which jobs involve designing and creating? _____________________________________________
2. Which jobs might involve working outdoors year-round? _________________________________
3. Which jobs are primarily indoor jobs? ________________________________________________
4. Assuming you had enough knowledge of the subject, which of these jobs could you start as your own business? ________
5. List five businesses in your area that employ horticulturists. ___________________________

Developed by: Angie Eckert, M.S.
Field and Garden
Careers in Horticulture

Match the career with the description and fill in the blank.

A. Landscape designer
B. Nursery employee
C. Golf course manager
D. Groundskeeper
E. Orchardist
F. Interiorscaper
G. Florist
H. Extension agent
I. Horticultural salesperson
J. Greenhouse employee
K. Garden center employee
L. Professor or teacher
M. Arborist

In this activity you will:
- learn about careers in horticulture.

Questions
1. Which jobs involve designing and creating? landscape designer, florist
2. Which jobs might involve working outdoors year-round? landscape maintenance, turf maintenance
3. Which jobs are primarily indoor jobs? interiorscaper, florist, Extension agent, professor or teacher, horticultural supply salesperson, horticultural manager, greenhouse employee
4. Assuming you had enough knowledge of the subject, which of these jobs could you start as your own business? greenhouse employee, groundskeeper, nursery employee, vegetable grower, orchardist
5. List five businesses in your area that employ horticulturists. Answers will vary.

Developed by: Angie Eckert, M.S.
Field and Garden  
Parts of a Worm

Refer to the drawing to answer the following questions. Pronunciations of worm body parts are in brackets.

1. What are the rings with grooves that make up a worm’s body called? _______________________________
2. What are the bristles on each segment of a worm that help it move called? ____________________________
3. What is the end of a worm called? ___________________________________________________
4. What is the head end of a worm called? ________________________________________________
5. What is the flap on a worm’s head above the mouth called? ____________________________________
6. What is the swollen band that a worm uses to make a cocoon called? _______________________________
7. Do you want worms in your garden? Why or why not?  _________________________________________
   _____________________________________________________________________________
   _____________________________________________________________________________
Field and Garden
Parts of a Worm

Refer to the drawing to answer the following questions. Pronunciations of worm body parts are in brackets.

1. What are the rings with grooves that make up a worm’s body called? _______________________________

2. What are the bristles on each segment of a worm that help it move called? ____________________________

3. What is the end of a worm called? ___________________________________________________

4. What is the head end of a worm called? ________________________________________________

5. What is the flap on a worm’s head above the mouth called? ____________________________________

6. What is the swollen band that a worm uses to make a cocoon called? _______________________________

7. Do you want worms in your garden? Why or why not?  Yes. Worms tunnel underground, making room for air, water, and roots. Worms excrete waste in the soil, which acts as a fertilizer.

Identification—Key
In this activity you will:
• learn about the parts of a worm.

Developed by: Angie Eckert, M.S.
Field and Garden
Investigating Worms

Did you know worms are good for the soil? Worms tunnel underground, making room in the soil for air, water, and plant roots. When worms eat food scraps and bacteria in the soil, they excrete their waste in the soil. Their waste, called castings, contains many bacteria, organic matter, and nutrients which help plants grow. Pronunciations of worm body parts are in brackets.

In this activity you will:

• discover what worms do for the soil and where worms like to live.

You will need:

- an earthworm (available from bait shops or find your own outside in moist soil)
- paper towels
- water
- hand lens
- ruler
- flashlight

Be gentle with the worm. Do not allow it to dry out. When you are finished with your investigation, release the worm outside in a cool damp place.

1. Carefully place your worm on a wet paper towel. Use the hand lens to look for the parts of the worm. Can you find them?

2. How long is your worm? Be very gentle not to hurt the worm as you stretch it out to measure it with the ruler.

3. Does your worm like light? Shine the flashlight on the worm. What does it do?

4. Does your worm respond to sound? (Whistle, clap, or shout.)

5. Does your worm like wet or dry? Put a dry paper towel beside the wet paper towel. Place the worm in the middle so that half of its body is on the wet towel and half is on the dry towel. Which way does the worm move?
Field and Garden
Small Grain Crops

In this activity you will do a word search, answer questions, and research grain products.

For this activity, you will need: food labels or boxes from hot and cold cereals, crackers, breads, and other snacks.

Find the Grains
In the sequence of letters, find and circle the 4 small grains grown in Ohio.

g r a y e s w h e a t s f a m b a r l e y i o a t s l y

What plant family do grains belong to? (Hint: look at the uncircled letters above)

Small grains are used in many ways. From the list below, circle the numbers that describe uses of grain.

1. ground into flour for bread, cake, cookies, crackers, snacks
2. food for animals
3. straw for bedding and mulch
4. planted to control erosion
5. planted to replenish nutrients to the soil (green manure)
6. used to produce malt for beverages
7. used to make paper and cardboard

Grain Scoreboard
Collect food labels or containers of hot and cold cereals, crackers, breads, and other snacks. Read the ingredient labels and record the types of grains in each product on the score sheet. Draw a bar graph on graph paper to show your results.

<table>
<thead>
<tr>
<th>Oats</th>
<th>Wheat</th>
<th>Rye</th>
<th>Barley</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

List four foods made from grain:

1. ____________________________ 3. ____________________________
2. ____________________________ 4. ____________________________

Developed by: Angie Eckert, M.S.

Lift-Off 5-15
**Field and Garden**

**Small Grain Crops**

In this activity you will do a word search, answer questions, and research grain products.

For this activity, you will need: food labels or boxes from hot and cold cereals, crackers, breads, and other snacks.

**Find the Grains**

In the sequence of letters, find and circle the 4 small grains grown in Ohio.

gr a r y e s w h e a t s f a m b a r l e y i o a t s l y

What plant family do grains belong to? (Hint: look at the uncircled letters above) ___________________________

Small grains are used in many ways. From the list below, circle the numbers that describe uses of grain.

1. ground into flour for bread, cake, cookies, crackers, snacks
2. food for animals
3. straw for bedding and mulch  
   All are uses. All should be circled.
4. planted to control erosion
5. planted to replenish nutrients to the soil (green manure)
6. used to produce malt for beverages
7. used to make paper and cardboard

**Grain Scoreboard**

Collect food labels or containers of hot and cold cereals, crackers, breads, and other snacks. Read the ingredient labels and record the types of grains in each product on the score sheet. Draw a bar graph on graph paper to show your results.

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</tr>
</tbody>
</table>

List four foods made from grain:

1. ___________________________  
2. ___________________________  
3. ___________________________  
4. ___________________________

Answers will vary, but could include breads, cereals, pasta, crackers, oatmeal, cream of wheat, noodles, etc.

Developed by: Angie Eckert, M.S.
Field and Garden
Wonderful Wheat

In this activity you will:
• learn about the parts of a wheat kernel.
• discover unique facts about wheat.
• learn how wheat is harvested.

True or False
Which of the following are true? Mark true or false next to the statement.

1. One acre of land can produce enough wheat for bread for a family for ten years.  
2. One bushel of wheat will make seventy one-pound loaves of bread.  
3. The average person consumes an average of 123 pounds of wheat products each year.  
4. A building that stores grain is called a "grain escalator."  
5. Bread, which is made of wheat, is the most widely eaten food.  
6. Wheat can be grown in the summer and the winter.  
7. Wheat plants are not damaged by diseases or weeds.

Matching
This is a picture of a kernel of wheat. The kernel is the part of the seed used in food products. Look at the letters on the drawing. Write the letter next to the coordinating description.

A. Germ is the smallest part of the kernel. It is the sprouting part of the seed and is also included in whole wheat flour.
B. Endosperm is the largest portion of the kernel. It is the only part of the kernel that is used in white flour.
C. Bran is the second largest part of the kernel. It is included in whole wheat flour and bran cereals and is high in protein and fiber. It is the outermost layer of the kernel.

Arrange in Correct Order
Imagine you are growing a winter crop of wheat. Number the steps of wheat production order that they occur, 1 through 9.

1. Chemicals are sprayed on the wheat to control weeds and insects.  
2. The wheat is planted with a grain drill and fertilized in fall.  
3. The wheat plants produce a milk-like fluid inside their seeds.  
4. The plants turn from green to brown.  
5. Wheat seeds become dry and hard.  
6. The wheat plants sprout.  
7. Harvest the wheat with a combine.  
8. The wheat begins to grow again.  
9. The plant stops growing during the cold months. The snow serves as a blanket to protect the crop from cold temperatures.

Parts of this activity were adapted from the Ohio Ag in the Classroom: Fourth Grade Curriculum Guide.

Developed by: Angie Eckert, M.S.
Field and Garden
Wonderful Wheat

True or False
Which of the following are true? Mark true or false next to the statement.

True 1. One acre of land can produce enough wheat for bread for a family for ten years.
True 2. One bushel of wheat will make seventy one-pound loaves of bread.
True 3. The average person consumes an average of 123 pounds of wheat products each year.
False 4. A building that stores grain is called a “grain escalator.”  It is called a grain elevator.
True 5. Bread, which is made of wheat, is the most widely eaten food.
True 6. Wheat can be grown in the summer and the winter.
False 7. Wheat plants are not damaged by diseases or weeds.  Diseases and weeds attack wheat. Farmers must use methods to control them.

Matching
This is a picture of a kernel of wheat. The kernel is the part of the seed used in food products. Look at the letters on the drawing. Write the letter next to the coordinating description.

C Germ is the smallest part of the kernel. It is the sprouting part of the seed and is also included in whole wheat flour.
B Endosperm is the largest portion of the kernel. It is the only part of the kernel that is used in white flour.
A Bran is the second largest part of the kernel. It is included in whole wheat flour and bran cereals and is high in protein and fiber. It is the outermost layer of the kernel.

Arrange in Correct Order
Imagine you are growing a winter crop of wheat. Number the steps of wheat production order that they occur, 1 through 9.

5 Chemicals are sprayed on the wheat to control weeds and insects.
1 The wheat is planted with a grain drill and fertilized in fall.
6 The wheat plants produce a milk-like fluid inside their seeds.
7 The plants turn from green to brown.
8 Wheat seeds become dry and hard.
2 The wheat plants sprout.
9 Harvest the wheat with a combine.
4 The wheat begins to grow again.
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Parts of this activity were adapted from the Ohio Ag in the Classroom: Fourth Grade Curriculum Guide.
Developed by: Angie Eckert, M.S.
**Field and Garden**

**Inside of a Tree**

The inside of a tree is like a highway! Trees have networks inside of them that move water from the roots, through the trunk, to the leaves, and out into the air.

### Activities

**In this activity you will:**
- learn about the insides of a tree.

### Matching

Draw a line from the words to their definitions.

<table>
<thead>
<tr>
<th>veins</th>
<th>1. These microscopic openings on the undersides of leaves open and close to release water from the leaves into the air.</th>
</tr>
</thead>
<tbody>
<tr>
<td>cuticle</td>
<td>2. The underground network of a tree.</td>
</tr>
<tr>
<td>root hairs</td>
<td>3. These underground parts of a tree absorb 95 percent of the plant’s water and nutrients.</td>
</tr>
<tr>
<td>roots</td>
<td>4. The “pipes” inside the trunk that move nutrients up from the roots to the other parts of the tree.</td>
</tr>
<tr>
<td>xylem</td>
<td>5. These “pipes” move food made by the leaves down to the stems, trunk, and the roots.</td>
</tr>
<tr>
<td>bark</td>
<td>6. This waxy coating on the leaf prevents the plant from losing too much water through its leaves.</td>
</tr>
<tr>
<td>phloem (flow-um)</td>
<td>7. The network in a leaf that moves water and nutrients from the stem to the parts of the leaf.</td>
</tr>
<tr>
<td>stomata</td>
<td>8. The outside layer of the tree that protects the inside of the tree.</td>
</tr>
</tbody>
</table>

### Counting Rings

Look at the end of the piece of firewood. (If you don’t have a piece of firewood, look at the drawing of the tree on this page.) As the tree ages, the inside of the tree hardens which gives strength to the tree.

A tree shows a new ring for each year of its life. Count the number of rings you see. How old do you think this tree was when it was cut? ____________________
Field and Garden
Inside of a Tree

The inside of a tree is like a highway! Trees have networks inside of them that move water from the roots, through the trunk, to the leaves, and out into the air.

Matching

Draw a line from the words to their definitions.

- veins
- cuticle
- root hairs
- roots
- xylem
- bark
- phloem (flow-um)
- stomata

1. These microscopic openings on the undersides of leaves open and close to release water from the leaves into the air.
2. The underground network of a tree.
3. These underground parts of a tree absorb 95 percent of the plant’s water and nutrients.
4. The “pipes” inside the trunk that move nutrients up from the roots to the other parts of the tree.
5. These “pipes” move food made by the leaves down to the stems, trunk, and the roots.
6. This waxy coating on the leaf prevents the plant from losing too much water through its leaves.
7. The network in a leaf that moves water and nutrients from the stem to the parts of the leaf.
8. The outside layer of the tree that protects the inside of the tree.

Counting Rings

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A tree shows a new ring for each year of its life. Count the number of rings you see. How old do you think this tree was when it was cut? ________ 8 years ________

Activities—Key

In this activity you will:

• learn about the insides of a tree.

Developed by: Angie Eckert, M.S.
Field and Garden
Leaf Identification

Find a leaf. Draw your leaf below or tape your leaf to the page. Look closely at the veins.

Are the veins parallel (side-by-side)? _____________________________

Does it have one main vein or several main veins? ____________________

Can you count the number of branching veins? __________________________

What would happen to a tree if it had leaves without veins? __________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Field and Garden

Identification

In this activity you will:

• learn about leaves.

Developed by: Angie Eckert, M.S.
Field and Garden
Leaf Identification

Find a leaf. Draw your leaf below or tape your leaf to the page. Look closely at the veins.

Are the veins parallel (side-by-side)? ____________________________

Does it have one main vein or several main veins? ____________________________

Can you count the number of branching veins? ____________________________

What would happen to a tree if it had leaves without veins? The tree would die from a lack of nourishment.

Developed by: Angie Eckert, M.S.
**Field and Garden**

**The Name Game**

Plants are given a common name (like Ohio Buckeye) and a Latin name (like *Aesculus glabra*). This allows people from different parts of the world to talk about plants using the same names. Latin is the world-wide language of plants.

**Key of Latin Terms**

- cyan = blue
- purpurea = purple
- chlora = green
- lutea = yellow
- ruber = red
- japonica = from Japan
- lavendula = lavender
- phylla = leaf
- giganteum = giant
- cordata = heart
- rosea = rosy

**Solve the Mystery**

Use the key to solve the mystery of the names.

1. What color are this plant’s flowers? *Trillium lutea*
2. In what country do you think this plant was discovered? *Acer japonica*
3. What kind of shape would you expect this plant’s leaves to be? *Viola cordata*
4. What color flowers does this plant have? *Coreopsis rosea*
5. What color do you think this tree’s leaves are? *Acer purpurea*
6. What might the flowers of this plant be like? *Allium giganteum*

**Matching**

Guess the answer to the questions using plants from this list:

- *Cotoneaster horizontalis*
- *Picea abies compacta*
- *Viburnum cylindricum*
- *Pilea microphylla*
- *Dracena fragrans*
- *Cucurbita maxima*

1. Which plant grows low to the ground?
2. Which plant is small?
3. Which plant has small leaves?
4. Which plant grows tall and narrow (like a cylinder)?
5. Which plant has fragrant leaves?
6. Which plant produces large fruits?

---

*Developed by: Angie Eckert, M.S.*
Field and Garden

The Name Game

Plants are given a common name (like Ohio Buckeye) and a Latin name (like Aesculus glabra). This allows people from different parts of the world to talk about plants using the same names. Latin is the world-wide language of plants.

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cyan = blue
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phylla = leaf
giganteum = giant
cordata = heart
rosea = rosy

Solve the Mystery

Use the key to solve the mystery of the names.

1. What color are this plant’s flowers? Trillium lutea yellow

2. In what country do you think this plant was discovered? Acer japonica Japan

3. What kind of shape would you expect this plant’s leaves to be? Viola cordata heart-shaped

4. What color flowers does this plant have? Coreopsis rosea rose-colored or pink

5. What color do you think this tree’s leaves are? Acer purpurea purple

6. What might the flowers of this plant be like? Allium giganteum large in size

Matching

Guess the answer to the questions using plants from this list:

Cotoneaster horizontalis
Picea abies compacta
Viburnum cylindricum
Dracena fragrans
Pilea microphylla
Cucurbita maxima

1. Which plant grows low to the ground? Cotoneaster horizontalis

2. Which plant is small? Picea abies compacta

3. Which plant has small leaves? Pilea microphylla

4. Which plant grows tall and narrow (like a cylinder)? Viburnum cylindricum

5. Which plant has fragrant leaves? Dracena fragrans

6. Which plant produces large fruits? Cucurbita maxima

Developed by: Angie Eckert, M.S.
Field and Garden

Lawn Pests

A lawn pest is an organism that interferes with the healthy growth or appearance of the grass. Lawn pests include diseases, insects, weeds, and animals.

Find the following in the word search:

- annual weeds (live for one year)
- perennial weeds (live for more than one year)
- insects
- diseases
- animals

- chickweed
- crabgrass
- purslane
- henbit
- Canada thistle
- ground ivy
- dandelion
- oxalis

- cinch bug
- billbug
- sod webworm
- white grub
- aphid

- rust
- powdery mildew
- red thread
- dollar spot
- skunk
- dog
- mole
- chipmunk
- rabbit

Word Search

In this activity you will:

- learn some of the names of common lawn pests.
- complete a lawn pest word search.

Developed by: Angie Eckert, M.S.
Field and Garden

Lawn Pests

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Find the following in the word search:

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- **perennial weeds** (live for more than one year)
- **insects**
- **diseases**
- **animals**

- chickweed
- crabgrass
- purslane
- henbit
- Canada thistle
- ground ivy
- dandelion
- oxalis
- cinch bug
- billbug
- sod webworm
- white grub
- aphid
- rust
- powdery mildew
- red thread
- dollar spot
- skunk
- dog
- mole
- chipmunk
- rabbit

Developed by: Angie Eckert, M.S.

5-26 Lift-Off
Field and Garden
Compost for Your Garden

In this activity you will do a word circle and a word search.

Composting is a way to recycle kitchen and yard wastes into an organic matter that can be used in the garden. Over time, the wastes decompose into a rich soil-like material containing nutrients that plants need to grow.

What Belongs?
Circle the things that you think belong in a compost pile.

- flowers
- leaves
- dead animals
- large twigs
- grass clippings
- twigs
- weeds
- bread
- wood chips
- coffee grounds
- soil
- yarn
- eggshells
- dairy products
- meat
- fertilizer
- cooking oil
- apple peels
- bones
- fatty foods
- fish
- water
- vegetables and fruits
- manure

Word Search
All the items named in the search are good for a compost pile. Things that should not be added to the compost pile will not be found in the word search. Check your answers to see if you found all fifteen!

V G D W C O M P O S T E W Y I
B E R A P P L E P E E L S A W
I H G T H S S R E W O L F R O
M V F E R T I L I Z E R U N V
L U C R T B G H M A O P M T
D N L A Q A D K V N G H B A W
P G A C U N B E F M S W B N I
S R R S H D S L F T H E R U G
C O F F E E Q N E Z E E E R S
J U I K F R U I T S L D A E J
U N C L C L Y M O J L S D Y A
Z D C L I P P I N G S B X L G
A S P I H C D O O W K S E T W

Developed by: Angie Eckert, M.S.
Field and Garden
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In this activity you will do a word circle and a word search.

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- meat
- fish
- large twigs
- coffee grounds
- fertilizer
- water
- grass clippings
- soil
- cooking oil
- vegetables and fruits
- twigs
- yarn
- apple peels
- manure
- manure

Word Search
All the items named in the search are good for a compost pile. Things that should not be added to the compost pile will not be found in the word search. Check your answers to see if you found all fifteen!

In this activity you will:

- learn what kinds of kitchen wastes and lawn wastes can be added to a compost pile.

Developed by: Angie Eckert, M.S.
Field and Garden
Recipe for Compost

Compost piles are made by layering material. (It’s like making lasagna!) Circle the correct answer in each of the steps.

Step 1 Select a site for the compost pile in **full sun** or **shade**.

Step 2 Build a compost pile on **concrete** or **soil**.

Step 3 Add **6 to 8 inches** or **12 to 15 inches** of yard waste.

Step 4 Add one inch of **soil** or **fertilizer**.

Step 5 Sprinkle a thin layer of **soil** or **fertilizer**.

Step 6 Repeat the layers until the pile is **one foot** or **three feet** or **nine feet** tall.

Step 7 Turn the compost pile **once a day** or **every few weeks**.

Step 8 In **several months** or **one year** the compost is ready for use in the garden.

Cross Section of a Compost Pile—It’s Like Making Lasagna!

**Recipe for Compost**

Cross Section of a Compost Pile—It’s Like Making Lasagna!

Developed by: Angie Eckert, M.S.

**Activity**
In this activity you will:

- learn the steps in building a compost pile.
Field and Garden
Recipe for Compost

Compost piles are made by layering material. (It’s like making lasagna!) Circle the correct answer in each of the steps.

Step 1 Select a site for the compost pile in **full sun** or **shade**.
Step 2 Build a compost pile on **concrete** or **soil**.
Step 3 Add **6 to 8 inches** or **12 to 15 inches** of yard waste.
Step 4 Add one inch of **soil** or **fertilizer**.
Step 5 Sprinkle a thin layer of **soil** or **fertilizer**.
Step 6 Repeat the layers until the pile is **one foot** or **three feet** or **nine feet** tall.
Step 7 Turn the compost pile **once a day** or **every few weeks**.
Step 8 In **several months** or **one year** the compost is ready for use in the garden.

Cross Section of a Compost Pile—It’s Like Making Lasagna!
**Field and Garden Vegetable Chart**

What part of the plant do we eat? Sort the following vegetables into categories:

<table>
<thead>
<tr>
<th>Stems We Eat</th>
<th>Leafy Greens We Eat</th>
<th>Flowers We Eat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ( )</td>
<td>1. ( )</td>
<td>1. ( )</td>
</tr>
<tr>
<td>2. ( )</td>
<td>2. ( )</td>
<td>2. ( )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plants With Underground Edible Parts</th>
<th>Vine Crops</th>
<th>Seeds We Eat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ( )</td>
<td>1. ( )</td>
<td>1. ( )</td>
</tr>
<tr>
<td>2. ( )</td>
<td>2. ( )</td>
<td>2. ( )</td>
</tr>
<tr>
<td>3. ( )</td>
<td>3. ( )</td>
<td>3. ( )</td>
</tr>
<tr>
<td>4. ( )</td>
<td>4. ( )</td>
<td></td>
</tr>
<tr>
<td>5. ( )</td>
<td>5. ( )</td>
<td></td>
</tr>
</tbody>
</table>

**Word Scramble**

Unscramble these words to answer the questions. Choose from these possible words: asparagus, collards, legume, pumpkin, rhubarb, and spinach.

1. Which vegetables are perennials (plants that will come back next year)?
   pasugaras__________________________  barrhbu__________________________

2. Which family of plants can make nitrogen in the soil available to plants?
   gluseme__________________________
**Field and Garden Vegetable Chart**

What part of the plant do we eat? Sort the following vegetables into categories:

<table>
<thead>
<tr>
<th>Stems We Eat</th>
<th>Leafy Greens We Eat</th>
<th>Flowers We Eat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. celery</td>
<td>1. collards</td>
<td>1. broccoli</td>
</tr>
<tr>
<td>2. rhubarb</td>
<td>2. lettuce</td>
<td>2. cauliflower</td>
</tr>
<tr>
<td></td>
<td>3. spinach</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. kale</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Swiss chard</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. cabbage</td>
<td></td>
</tr>
</tbody>
</table>

**Plants With Underground Edible Parts**

<table>
<thead>
<tr>
<th>Plants With Underground Edible Parts</th>
<th>Leafy Greens We Eat</th>
<th>Flowers We Eat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. radish</td>
<td></td>
<td>1. corn</td>
</tr>
<tr>
<td>2. carrots</td>
<td></td>
<td>2. peas</td>
</tr>
<tr>
<td>3. turnip</td>
<td></td>
<td>3. beans</td>
</tr>
<tr>
<td>4. beets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. potatoes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Vine Crops**

<table>
<thead>
<tr>
<th>Vine Crops</th>
<th>Seeds We Eat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. cucumber</td>
<td>1. corn</td>
</tr>
<tr>
<td>2. muskmelon</td>
<td>2. peas</td>
</tr>
<tr>
<td>3. watermelon</td>
<td>3. beans</td>
</tr>
<tr>
<td>4. pumpkin</td>
<td></td>
</tr>
<tr>
<td>5. squash</td>
<td></td>
</tr>
</tbody>
</table>

**Word Scramble**

Unscramble these words to answer the questions. Choose from these possible words: asparagus, collards, legume, pumpkin, rhubarb, and spinach.

1. Which vegetables are perennials (plants that will come back next year)?
   - pasugaras ______ asparagus _______ barhbu ______ rhubarb

2. Which family of plants can make nitrogen in the soil available to plants?
   - gluseme _______ legume

Developed by: Angie Eckert, M.S.
**Field and Garden**

**Order Up**

Use a seed catalog (or visit a store) to find the information necessary to complete the chart. There are many correct answers for each category. When you have found the price of seeds for each category, add the costs to find the total.

You will need:

- at least one seed catalog or
- to visit a store that sells seeds.

---

### Information, Please

In this activity you will:

- learn how to select and order vegetable seeds.

---

#### Find a vegetable that:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Name of the Seed or Vegetable</th>
<th>Number of Seeds in the Packet</th>
<th>Cost Per Packet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has oval-shaped vegetables.</td>
<td>Milano Hybrid Tomato</td>
<td>30</td>
<td>$1.69</td>
</tr>
<tr>
<td>Has oval-shaped vegetables.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produces giant tomatoes.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can be harvested in 50 days or less.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produces a yellow vegetable.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needs at least 80 days to grow before harvest.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerates cool weather.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produces edible roots.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grows like a vine.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produces a giant squash.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tastes “hot.”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produces a purple vegetable.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Cost**
## Field and Garden

### Order Up

Use a seed catalog (or visit a store) to find the information necessary to complete the chart. There are many correct answers for each category. When you have found the price of seeds for each category, add the costs to find the total.

You will need:
- at least one seed catalog or
- to visit a store that sells seeds.

### Information, Please

In this activity you will:
- learn how to select and order vegetable seeds.

Find a vegetable that: | Name of the Seed or Vegetable | Number of Seeds in the Packet | Cost Per Packet |
--- | --- | --- | ---
Has oval-shaped vegetables. | Milano Hybrid Tomato | 30 | $1.69 |
Has oval-shaped vegetables. |  |  |  |
Produces giant tomatoes. | Big Boy |  |  |
Can be harvested in 50 days or less. | Radishes |  |  |
Produces a yellow vegetable. | Summer Squash |  |  |
Needs at least 80 days to grow before harvest. | Pumpkin |  |  |
Tolerates cool weather. | Peas |  |  |
Produces edible roots. | Carrots, Radishes, Parsnips |  |  |
Grows like a vine. | Pumpkin, Squash |  |  |
Produces a giant squash. |  |  |  |
Tastes “hot.” | Jalapeno Peppers |  |  |
Produces a purple vegetable. | Eggplant |  |  |

**Total Cost**

Developed by: Angie Eckert, M.S.
You will need:
- two glass jars with lids
- masking tape
- litmus paper (available from teacher supply stores or science suppliers)
- spoon
- limestone (available at garden centers)
- iron sulfate (available at garden centers)
- measuring cup
- water
- soil from the lawn or garden

Nutrients in the soil are only available to plants if the pH of the soil is between 5.5 and 7.0. If the soil pH is too acidic or too basic, the plants will not grow. Gardeners test the soil with a kit or send it to a lab to have the pH measured. Then they decide whether to add limestone and iron sulfate to the soil to change the pH.

Experiment with pH by using litmus paper. Litmus paper changes color when it touches acidic or basic solutions. Blue litmus paper turns red when it touches an acidic solution. Red litmus paper will turn blue if it touches a basic solution.

**Experiment**
Use the chart above to help you with the experiment.

Test the pH of limestone and iron sulfate.

Step 1   Label two jars with masking tape.
Step 2   Put a strip of litmus paper at the bottom of each jar.
Step 3   Put a spoonful of limestone in one jar and a spoonful of iron sulfate in the other.
Step 4   Add 1/2 to 1 cup water to each jar.
Step 5   Place the lid on the jar and shake it.
Step 6   Look at the litmus paper.
1. What color is the litmus paper in the jar with limestone? __________________________________________

2. Is limestone acidic or basic? _____________________________________________________________

3. What color is the litmus paper in the jar with iron sulfate? ________________________________

4. Is iron sulfate acidic or basic? __________________________________________________________

5. Circle which one you would add to the soil if the pH was too high. iron sulfate limestone

6. Circle which one you would add to the soil if the pH was too low. iron sulfate limestone

**Soil Test**

Collect a sample of soil from outside. Perform the litmus test on the soil. Is the soil acidic, neutral, or basic? Do you need to add anything to change the pH to the desirable range?

Practice testing the pH of items such as fruits, drinking water, beverages, soapy water, vinegar, milk, juice, tomatoes, potatoes, etc.
Field and Garden

Soil pH

You will need:

❑ two glass jars with lids
❑ masking tape
❑ litmus paper (available from teacher supply stores or science suppliers)
❑ spoon
❑ limestone (available at garden centers)
❑ iron sulfate (available at garden centers)
❑ measuring cup
❑ water
❑ soil from the lawn or garden

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Step 5 Place the lid on the jar and shake it.

Step 6 Look at the litmus paper.

Developed by: Angie Eckert, M.S.

Soil Test—Key

In this activity you will:

- learn about soil pH and why it is important to plants.
- do an experiment with a partner to measure pH.
1. What color is the litmus paper in the jar with limestone? ___________________________ blue
2. Is limestone acidic or basic? ___________________________ basic
3. What color is the litmus paper in the jar with iron sulfate? ___________________________ pink
4. Is iron sulfate acidic or basic? ___________________________ acidic
5. Circle which one you would add to the soil if the pH was too high. iron sulfate limestone
6. Circle which one you would add to the soil if the pH was too low. iron sulfate limestone

**Soil Test**

Collect a sample of soil from outside. Perform the litmus test on the soil. Is the soil acidic, neutral, or basic? Do you need to add anything to change the pH to the desirable range?

Practice testing the pH of items such as fruits, drinking water, beverages, soapy water, vinegar, milk, juice, tomatoes, potatoes, etc.

*Answers will vary.*
Field and Garden
Parts of a Flower
Identify the parts of a flower and design your own flower. Number the parts of a flower on the drawing and match them with the correct description.

1. stamen ____
2. anther ____
3. filament ____
4. pistil ____
5. stigma ____
6. style ____
7. ovary ____
8. ovule ____
9. petal ____
10. sepals ____

A. made up of the stigma, style, and the ovary
B. the brightly colored parts of a flower that surround the pistil and the stamens
C. the male part of the flower that includes the filament and the anther
D. connects the stigma to the ovary
E. the long, stem-like tube that attaches to the anther
F. the tip of the filament that holds pollen
G. the sticky part of the pistil that collects pollen
H. the outer part of the flower, look like leaves outside the petals in many flowers
I. the part of the flower that holds the ovule
J. the part of the ovary that becomes the seed

Developed by: Angie Eckert, M.S.
Create Your Own Flower

Work by yourself or with a partner to make your own flower out of the following materials: colored construction paper, glue, cotton swabs, pipe cleaners, straws, gumdrops, small beads and/or beans. Be sure to include all the parts from the drawing on the previous page in your model.
Field and Garden

Parts of a Flower

Identify the parts of a flower and design your own flower. Number the parts of a flower on the drawing and match them with the correct description.

Matching—Key

In this activity you will:
- learn the parts of a flower.

1. stamen C
2. anther F
3. filament E
4. pistil A
5. stigma G
6. style D
7. ovary I
8. ovule J
9. petal B
10. sepals H

A. made up of the stigma, style, and the ovary
B. the brightly colored parts of a flower that surround the pistil and the stamens
C. the male part of the flower that includes the filament and the anther
D. connects the stigma to the ovary
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I. the part of the flower that holds the ovule
J. the part of the ovary that becomes the seed

Developed by: Angie Eckert, M.S.
Field and Garden
First Class Travelers

In this activity you will:
- learn about seeds that travel with the help of their special adaptations.

In this activity you will need:
- beans
- glue
- tape

miscellaneous supplies (several of the following: paper clips, rubber bands, cotton swabs, feathers, aluminum foil, tape, cotton balls, paper, plastic wrap (such as Saran Wrap™), balloons, scissors, adhesive bandages, plastic bags)

Seeds cannot walk or drive as people do, so they have to find other ways to move themselves to a place where they can grow.

Unscramble the words to see how seeds travel. Can you think of an example of a plant that travels each way? For example, raspberries, which contain seeds, can travel by animal (birds often carry them away).

<table>
<thead>
<tr>
<th>Seeds can travel by</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>nwid</td>
<td>________</td>
</tr>
<tr>
<td>mnalsia</td>
<td>________</td>
</tr>
<tr>
<td>terwa</td>
<td>________</td>
</tr>
<tr>
<td>eeoelp</td>
<td>________</td>
</tr>
</tbody>
</table>

Make Your Own Seeds

Use one bean seed and the materials of your choice to design each of the following seeds.

1. A seed that can float on water for more than one minute.
2. A seed that can fly in the air for five feet.
3. A seed that attracts an animal.
4. A seed that sticks to you while you walk 15 feet.
In this activity you will:

- learn about seeds that travel with the help of their special adaptations.

**Field and Garden**

**First Class Travelers**

In this activity you will need:

- beans
- glue
- tape

miscellaneous supplies (several of the following: paper clips, rubber bands, cotton swabs, feathers, aluminum foil, tape, cotton balls, paper, plastic wrap (such as Saran Wrap™), balloons, scissors, adhesive bandages, plastic bags)

Seeds cannot walk or drive as people do, so they have to find other ways to move themselves to a place where they can grow.

Unscramble the words to see how seeds travel. Can you think of an example of a plant that travels each way? For example, raspberries, which contain seeds, can travel by animal (birds often carry them away).

Seeds can travel by:

<table>
<thead>
<tr>
<th>Scrambled Word</th>
<th>Unscrambled Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>nwid</td>
<td>wind</td>
</tr>
<tr>
<td>mnalsia</td>
<td>animals</td>
</tr>
<tr>
<td>terwa</td>
<td>water</td>
</tr>
<tr>
<td>eeoplp</td>
<td>people</td>
</tr>
</tbody>
</table>

**Make Your Own Seeds**

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3. A seed that attracts an animal.
4. A seed that sticks to you while you walk 15 feet.

Developed by: Angie Eckert, M.S.
Field and Garden
Plant Nutrients

Use words from the list below to help you fill in the missing letters and unscramble the words.

- molybdenum
- oxygen
- carbon
- magnesium
- hydrogen
- nitrogen
- sulfur
- phosphorus
- calcium
- boron
- zinc
- manganese
- copper
- iron
- potassium
- chlorine

**Fill in the Blanks**

Plants get these nutrients from the air.

___ R ___ N
O ___ ___ ___ ___

Plants need these primary nutrients for healthy growth.

___ I ___ ___ G ___ N
___ H ___ S ___ O ___ U ___
___ T ___ S I ___ ___

Plants need these micronutrients in smaller amounts than the primary nutrients.

CA _____________ M ___________ UM
S _____________ B ___________ N
_________________ C C ___________ R
_________________ SE I ___________ N
_________________ BD _______

**Word Scramble**

Plants get these nutrients from the rain:

ygodreh _____________
uulfrs _____________
lorinche _____________

Plants get these nutrients from organic matter in the soil:

rabnoc _____________
gdroyhen _____________
togrinne _____________
gonexy _____________
furuls _____________

Which nutrients do you find on more than one of these lists? _____________________________

Developed by: Angie Eckert, M.S.
Field and Garden
Plant Nutrients

Use words from the list below to help you fill in the missing letters and unscramble the words.

molybdenum        oxygen        carbon        magnesium        hydrogen
nitrogen           sulfur        phosphorus     calcium          boron
zinc               manganese     copper         iron             potassium
chlorine

**Fill in the Blanks**
Plants get these nutrients from the air.

Carbon
Oxygen

Plants need these primary nutrients for healthy growth.

Nitrogen
Phosphorus
Potassium

Plants need these micronutrients in smaller amounts than the primary nutrients.

Calcium
Magnesium
Manganese
Molybdenum

**Word Scramble—Key**
In this activity you will:

- learn what nutrients plants need to survive and grow.

**Word Scramble**
Plants get these nutrients from the rain:

hydrogen
sulfur
chlorine

Plants get these nutrients from organic matter in the soil:

carbon
hydrogen
nitrogen
oxygen
sulfur

Which nutrients do you find on more than one of these lists? oxygen, carbon, hydrogen, nitrogen, sulfur

Developed by: Angie Eckert, M.S.
Field and Garden
Adopt a Plant

Using a garden catalog or a book about garden plants, cut out a picture or draw a picture of a plant that interests you.

Answer as many of the following questions as you can from the information about the plant.

1. Where does the plant grow?
2. How tall does the plant grow?
3. How wide does the plant grow?
4. What color are the flowers?
5. What color are the leaves?
6. Are the leaves deciduous (fall off in winter)? Are they evergreen (remain on the plant year-round)?
7. What is special about this plant?
8. Where could you plant this plant? In a pot? In your lawn? In a garden?
Field and Garden

Corn Plant and Seed Part Identification

Identify the parts by writing its name on the respective line.

**Plant**

Seminal roots  Part of the root system that develops early in the plant’s growth and helps to anchor the plant and supply it with nourishment.

Prop Roots  Roots which add stability and support to the corn plant and are especially important because of the height of the corn plant.

Leaves  Use water and nutrients provided by the roots and energy provided by the sunlight and photosynthesis process to manufacture food for the plant.

Stalk  The portion which gives the plant its internal structure and to which the leaves and ears are attached.

Tassel  The flowers of the plant which usually appear during the hottest part of the growing season and which produce and disburse the plant’s pollen.

**Seed**

Pericarp  The hard, outer coat that protects the seed both before and after planting.

Endosperm  Has the chief function of providing food energy for the young plant after germination and until the plant is mature enough to produce its own food.

Plumule  The five to six miniature new leaves of the young corn plant.

Radicle  The main root of the seedling that takes up water and nutrients from the soil to nourish the seedling.

Cotyledon  Provides food for the tiny new plant during germination.

Developed by: Angie Eckert, M.S.
**Field and Garden**

**Corn Plant and Seed Part Identification**

Identify the parts by writing its name on the respective line.

### Plant

- **Seminal roots**: Part of the root system that develops early in the plant’s growth and helps to anchor the plant and supply it with nourishment.
- **Prop Roots**: Roots which add stability and support to the corn plant and are especially important because of the height of the corn plant.
- **Leaves**: Use water and nutrients provided by the roots and energy provided by the sunlight and photosynthesis process to manufacture food for the plant.
- **Stalk**: The portion which gives the plant its internal structure and to which the leaves and ears are attached.
- **Tassel**: The flowers of the plant which usually appear during the hottest part of the growing season and which produce and disburse the plant’s pollen.

### Seed

- **Pericarp**: The hard, outer coat that protects the seed both before and after planting.
- **Endosperm**: Has the chief function of providing food energy for the young plant after germination and until the plant is mature enough to produce its own food.
- **Plumule**: The five to six miniature new leaves of the young corn plant.
- **Radicle**: The main root of the seedling that takes up water and nutrients from the soil to nourish the seedling.
- **Cotyledon**: Provides food for the tiny new plant during germination.

**Identification—Key**

In this activity you will:

- learn about the parts of a corn plant and seed.
In this activity you will:

- learn about corn and its production in the United States.

Using the words below, fill in the blanks to complete these sentences about corn.

weed          one-half          livestock          silage
nitrogen       annual            cornstarch        bushels
sweet corn     wallboard         fifty-six         grass
corn belt      maturity

1. In the United States, 80 percent of the corn produced is used to feed ________.
2. When corn is used for feeding cattle, the entire plant is often harvested and used to make ________.
3. ________ is a popular American vegetable and may be purchased fresh, canned, or frozen.
4. Gasohol is made from fermented ________.
5. The stalk of the corn plant can be used to manufacture paper and ________.
6. Much of the United States’ corn is produced in the fertile, well drained land of the north central United States, an area often called the ________.
7. Ohio farmers produce approximately 450 million ________ of corn each year.
8. The United States produces more than ________ of the corn grown in the world.
9. Corn is a tall member of the ________ family of plants.
10. Corn is an ________ plant, meaning that it cannot survive the winter and must be planted anew each year.
11. The length of time that it takes for corn to grow from the day it is planted until the ears have filled out is called its ________ time.
12. ________ is a primary nutrient that is required for sturdy stalks and wide leaves, and is a major portion of the protein found in the corn kernel.
13. A ________ is a plant growing in a place where it isn’t wanted or needed.
14. There are ________ pounds of corn in a bushel.
**Field and Garden**

**Corn Fill-In**

Using the words below, fill in the blanks to complete these sentences about corn.

- weed
- one-half
- livestock
- silage
- nitrogen
- annual
- cornstarch
- bushels
- sweet corn
- wallboard
- fifty-six
- grass
- corn belt
- maturity

1. In the United States, 80 percent of the corn produced is used to feed __________.

2. When corn is used for feeding cattle, the entire plant is often harvested and used to make __________.

3. **Sweet corn** is a popular American vegetable and may be purchased fresh, canned, or frozen.

4. Gasohol is made from fermented __________.

5. The stalk of the corn plant can be used to manufacture paper and __________.

6. Much of the United States’ corn is produced in the fertile, well drained land of the north central United States, an area often called the __________.

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9. Corn is a tall member of the __________ family of plants.

10. Corn is an __________ plant, meaning that it cannot survive the winter and must be planted anew each year.

11. The length of time that it takes for corn to grow from the day it is planted until the ears have filled out is called its __________ time.

12. **Nitrogen** is a primary nutrient that is required for sturdy stalks and wide leaves, and is a major portion of the protein found in the corn kernel.

13. A __________ is a plant growing in a place where it isn’t wanted or needed.

14. There are __________ pounds of corn in a bushel.

**Fill-In—Key**

In this activity you will:

- learn about corn and its production in the United States.

---

Developed by: Angie Eckert, M.S.
In this activity you will:

- learn about the parts of a soybean plant and seed.

**Soybean Plant and Seed Parts**

Identify the part by writing its name on the respective line.

**Plant**
- Growing Point: This is the tip or point where the epicotyl continues to grow upward producing more stems and leaves.
- Trifoliate Leaf: The leaves which develop above the pair of unifoliate leaves.
- Petiole: The slender stalk which supports the trifoliate leaves.
- Node: The point at which the petiole is connected with the main stem of the plant.
- Nodules: A swelling of the roots due to the presence of the bacterium *Rhizobia japonicum*.

**Seed**
- Hypocotyl: The lower portion of the seedling’s stem.
- Hilum: Part of the seed where it was once attached to the soybean pod.
- Radicle: Main root of the seedling that takes up water and nutrients from the soil to nourish the seedling.
- Epicotyl: The uppermost part of the seedling which has two leaves that are unifoliate.
- Cotyledon: The part of the seed in which food for the seedling is stored. Each bean seed has two cotyledons which form a protective shield around the seedling.

**Identification**

Field and Garden

Developed by: Angie Eckert, M.S.
Field and Garden
Soybean Plant and Seed Parts

Identify the part by writing its name on the respective line.

**Plant**
- Growing Point
- Trifoliate Leaf
- Petiole
- Node
- Nodules

**Seed**
- Hypocotyl
- Hilum
- Radicle
- Epicotyl
- Cotyledon
- Seed Coat
- Radicle

**Identification—Key**

In this activity you will:
- learn about the parts of a soybean plant and seed.

**Soybean Plant and Seed Parts**

- **Growing Point**
  - This is the tip or point where the epicotyl continues to grow upward producing more stems and leaves.

- **Trifoliate Leaf**
  - The leaves which develop above the pair of unifoliate leaves.

- **Petiole**
  - The slender stalk which supports the trifoliate leaves.

- **Node**
  - The point at which the petiole is connected with the main stem of the plant.

- **Nodules**
  - A swelling of the roots due to the presence of the bacterium *Rhizobia japonicum*.

- **Hypocotyl**
  - The lower portion of the seedling’s stem.

- **Hilum**
  - Part of the seed where it was once attached to the soybean pod.

- **Radicle**
  - Main root of the seedling that takes up water and nutrients from the soil to nourish the seedling.

- **Epicotyl**
  - The uppermost part of the seedling which has two leaves that are unifoliate.

- **Cotyledon**
  - The part of the seed in which food for the seedling is stored. Each bean seed has two cotyledons which form a protective shield around the seedling.
Field and Garden
Sensational Soybeans

Soybeans are included in a number of food products that you eat regularly or household products that you use — and you probably don’t even know that you are eating or using soybeans.

In these two activities, you and your club will learn more about which food and household products are made with soybeans. One bushel (or 60 pounds) of soybeans produces about 11 pounds of soybean oil or 47 pounds of soybean meal. Both soybean oil and soybean meal are used to make food and other usable products.

**It’s in There!**

Give each individual three index cards and a copy of the SoyOil™ symbol. Ask members to visit a local grocery store and look for food items that include the symbol on the label. They can also check the list of ingredients for soy meal or other soybean products.

Once they locate a food item made with soybeans, the students should write the name and list of ingredients on one of the index cards. They should make special note of where soybeans occur in the ingredient list (ingredients are listed in the order by amount included in the food item; i.e., if soybeans are listed first, there are more soybeans in the food item than any other ingredient). At your next gathering, have each person share what they learned.

**Soy Oil versus Soy Meal**

Each member will need a copy of the Soy Oil versus Soy Meal worksheet.

Both soy oil and soy meal are used to make several products that you eat or use every day. Write on the line whether the food was made with soy oil or soy meal.

<table>
<thead>
<tr>
<th>Product</th>
<th>Soy Oil</th>
<th>Soy Meal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margarine</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>Salad Oil</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>Soaps</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>Paint</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>Cosmetics</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>Chocolate</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>Mayonnaise</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>Feed for livestock</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>Meat extenders</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>Baby food</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>Adhesives/Glue</td>
<td>_______</td>
<td>_______</td>
</tr>
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Developed by: Angie Eckert, M.S.
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<td>Soy Meal</td>
<td></td>
</tr>
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Developed by: Angie Eckert, M.S.
Countdown Chapter 4
Food and Nutrition

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Eating Healthy ............................................................................ 5
Is a Tomato a Fruit or a Vegetable? ........................................... 7
What Should You Eat? ............................................................... 9
Food and Nutrition
Are You a Couch Potato?

Select someone to read the statements below. After each statement is read, decide if it is a couch potato activity or a “get moving” activity.

Use the following gestures to give your answer:
• thumbs down—couch potato activity
• thumbs up—get moving activity

1. I think riding a bike is exercise.
2. I think watching TV is exercise.
3. I think riding in a car is exercise.
4. I think running is exercise.
5. I think walking is exercise.
6. I think dancing is exercise.
7. I think sleeping is exercise.
8. I think studying is exercise.
9. I think lifting weights is exercise.
10. I think swimming is exercise.
11. I think switching the TV channels is exercise.
12. I think jumping rope is exercise.
13. I think playing basketball is exercise.
14. I think playing baseball is exercise.
15. I think talking on the phone is exercise.

In this activity you will:
• learn that exercise is a key to staying healthy.
• learn fun activities you can do to stay fit.

Developed by: Mary Forster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences
Food and Nutrition
Are You a Couch Potato?

Select someone to read the statements below. After each statement is read, decide if it is a couch potato activity or a “get moving” activity.

Use the following gestures to give your answer:
• thumbs down—couch potato activity
• thumbs up—get moving activity

1. I think riding a bike is exercise. thumbs up
2. I think watching TV is exercise. thumbs down
3. I think riding in a car is exercise. thumbs down
4. I think running is exercise. thumbs up
5. I think walking is exercise. thumbs up
6. I think dancing is exercise. thumbs up
7. I think sleeping is exercise. thumbs down
8. I think studying is exercise. thumbs down
9. I think lifting weights is exercise. thumbs up
10. I think swimming is exercise. thumbs up
11. I think switching the TV channels is exercise. thumbs down
12. I think jumping rope is exercise. thumbs up
13. I think playing basketball is exercise. thumbs up
14. I think playing baseball is exercise. thumbs up
15. I think talking on the phone is exercise. thumbs down

Decision-Making—Key

In this activity you will:
• learn that exercise is a key to staying healthy.
• learn fun activities you can do to stay fit.

Developed by: Mary Forster, Extension Associate, 4-H Youth Development/Family and Consumer Sciences
Food and Nutrition

Fitness Fun

Use the words below to complete each statement. Each word is used only once. Unscramble the circled letters to spell an important word.

- aerobic
- easily
- calories
- heart
- stretch
- strong
- unhealthy

In this activity you will:
- learn concepts for keeping fit and staying healthy.

1. Jumping rope is an __ __ __ __ __ __ activity.

2. __ __ __ __ __ __ before you work out.

3. The __ __ __ __ pumps blood and oxygen through your body.

4. Smoking can cause __ __ __ __ __ __ __ lungs.

5. Flexibility is the ability to stretch __ __ __ __.

6. You burn __ __ __ __ __ __ __ while exercising.

7. Exercise makes muscles __ __ __ __ __.

The important word is ___ ___ ___ ___ ___ ___

Source: 4-H 355, Keeping Fit
Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Food and Nutrition

Fitness Fun

Use the words below to complete each statement. Each word is used only once. Unscramble the circled letters to spell an important word.

<table>
<thead>
<tr>
<th>aerobic</th>
<th>easily</th>
<th>calories</th>
<th>heart</th>
</tr>
</thead>
<tbody>
<tr>
<td>stretch</td>
<td>strong</td>
<td>unhealthy</td>
<td></td>
</tr>
</tbody>
</table>

In this activity you will:
- learn concepts for keeping fit and staying healthy.

1. Jumping rope is an **aerobic** activity.
2. **stretch** before you work out.
3. The **heart** pumps blood and oxygen through your body.
4. Smoking can cause **unhealthy** lungs.
5. Flexibility is the ability to stretch **easily**.
6. You burn **calories** while exercising.
7. Exercise makes muscles **strong**.

The important word is **healthy**.

Source: 4-H 355, Keeping Fit
Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Food and Nutrition

Eating Healthy

Find the words hidden in the word search. Words can be across, down, diagonal, or backwards.

fats fruit oils bread sweets

cereal milk pasta yogurt pyramid

cheese two vegetables five meat

poultry four fish eleven eggs

• learn important words to know when choosing healthy foods.

Eating Healthy

Find the words hidden in the word search. Words can be across, down, diagonal, or backwards.

fats fruit oils bread sweets
cereal milk pasta yogurt pyramid
cheese two vegetables five meat
poultry four fish eleven eggs

Word Search

In this activity you will:

Source: 4-H 460, Adventures With Food
Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
Food and Nutrition

Eating Healthy

Find the words hidden in the word search. Words can be across, down, diagonal, or backwards.

In this activity you will:

- learn important words to know when choosing healthy foods.

fats  fruit  oils  bread  sweets

cheese  two  vegetables  five  meat

poultry  four  fish  eleven  eggs

food groups  pear

Source: 4-H 460, Adventures With Food

Developed by: Dee Jepsen, Extension Associate, Ag Eng/Health/Safety
**Food and Nutrition**

*Is a Tomato a Fruit or a Vegetable?*

Match the different foods with their correct food groups.

| A. Apple  | N. Baked Beans |
| B. Banana | O. Oatmeal |
| C. Carrots| P. Peanut Butter |
| D. Spaghetti | Q. Milk |
| E. Cereal  | R. Rice |
| F. Fish    | S. Steak |
| G. Green Beans | T. Tomatoes |
| H. Hamburger | U. Turkey |
| I. Strawberries | V. Cheese |
| J. Potato Chips | W. Coke |
| K. Cucumbers | X. Bread |
| L. Margarine | Y. Yogurt |
| M. Macaroni | Z. Zucchini |

In this activity you will:

- learn how to classify different foods into each food group.

**Decision-Making**

**Is a Tomato a Fruit or a Vegetable?**

<table>
<thead>
<tr>
<th>Breads &amp; Cereals</th>
<th>Vegetables</th>
<th>Meats</th>
<th>Fruits</th>
<th>Dairy (Milk Products)</th>
<th>Fats, Sweets, &amp; Oils</th>
</tr>
</thead>
</table>

Developed by: Ken Culp, III, Extension Specialist, Volunteerism
Food and Nutrition

Is a Tomato a Fruit or a Vegetable?

Match the different foods with their correct food groups.

A. Apple  N. Baked Beans
B. Banana  O. Oatmeal
C. Carrots  P. Peanut Butter
D. Spaghetti  Q. Milk
E. Cereal  R. Rice
F. Fish  S. Steak
G. Green Beans  T. Tomatoes
H. Hamburger  U. Turkey
I. Strawberries  V. Cheese
J. Potato Chips  W. Coke
K. Cucumbers  X. Bread
L. Margarine  Y. Yogurt
M. Macaroni  Z. Zucchini

Breads & Cereals ___________________________
Vegetables ___________________________
Meats ___________________________
Fruits ___________________________
Dairy (Milk Products) ___________________________
Fats, Sweets, & Oils ___________________________

D, E, M, O, R, X
C, G, K, P, Z
F, H, B, P, S, U
A, B, I, T
M, V, Y
J, L, W

Developed by: Ken Culp, III, Extension Specialist, Volunteerism
What Should You Eat?

In this activity you will:

- understand the food pyramid.
- learn how many foods to eat from each group daily.

Chris Clover says you need __________ servings of each food group each day.

- Fats, oils, and sweets
- Milk, yogurt, and cheese
- Vegetables
- Meat, fish, and eggs
- Breads and cereals
- Fruits

Source: 4-H 460, Adventures with Foods
Developed by: Dee Jepsen, Extension Associate, Safety, and Ken Culp, III, Extension Specialist, Volunteerism
Food and Nutrition
What Should You Eat?

Fill in the Blanks—Key

In this activity you will:

- understand the food pyramid.
- learn how many foods to eat from each group daily.

Chris Clover says you need __ servings of each food group each day.

Fats, oils, and sweets __ sparingly __
Milk, yogurt, and cheese __ 2-3 __
Vegetables __ 3-5 __
Meat, fish, and eggs __ 2-3 __
Breads and cereals __ 6-11 __
Fruits __ 2-3 __

Source: 4-H 460, Adventures with Foods
Developed by: Dee Jepsen, Extension Associate, Safety, and Ken Culp, III, Extension Specialist, Volunteerism
Countdown Chapter 3

Citizenship, International, Careers, Leadership, and Communications
Countdown Chapter 3
Citizenship, International, Careers, Leadership, and Communications

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Citizenship
Citizenship Vocabulary

Circle these words arranged vertically, horizontally, diagonally, forwards, and backwards in the puzzle. Then with a partner discuss the meaning of each word and how it relates to developing citizenship.

- citizen
- government
- service
- vote
- election
- county
- state
- federal
- contribute
- help
- assist
- involved
- flag
- patriot
- responsible
- respect

Word Search

In this activity you will:

- learn to identify sixteen concepts related to developing citizenship.
- circle sixteen words related to citizenship.
- discuss the meaning of these words with a partner.

AZICTATTSBR
CONTRIBUTETE
EEVCLFLAGNCS
NLOPROGZEEEP
HELPSUMNZNPO
FCVIRUNLSISN
ESTETERSPTES
DIDQEZLILIYIRI
EOHVOITEHLCBP
RNOPATRIOTK
AGMKSERVICE
LASTISSAGOSN

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
Citizenship

Citizenship Vocabulary

In this activity you will:

- learn to identify sixteen concepts related to developing citizenship.
- circle sixteen words related to citizenship.
- discuss the meaning of these words with a partner.

Circle these words arranged vertically, horizontally, diagonally, forwards, and backwards in the puzzle. Then with a partner discuss the meaning of each word and how it relates to developing citizenship.

citizen  election  contribute  flag

government  county  help  patriot

service  state  assist  responsible

vote  federal  involved  respect

Word Search—Key

AZICTS
ESTATS

CONTRIBUTETE

EEVCIFLAGNCS

NLOPORZEEEEP

HELP

SULMNZP

CVRUNSISN

ETESTIRGPTES

DIDQELYIIRI

EOHVOTEHLCPB

RNPATRIOTK

AGMKSERVICEE

ATISSAGOSN

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
Citizenship
Ohio County Names

Fill in the blanks with the name of an Ohio county.

1. __________________ helps to make a successful farmer.
2. A president of the United States __________________________
3. A famous elm tree __________________________
4. Inventor of the steamboat __________________________
5. Three Indian tribes a) ______________ b) ______________ c) ______________
6. A fish __________________
7. A railroad __________________
8. Found in rich man’s home __________________
9. A candy bar __________________
10. A breed of cattle __________________
11. A breed of chickens __________________
12. A body of water __________________
13. To carry from one lake to another __________________
14. Some children are afraid of the __________________
15. What every child dislikes __________________
16. A famous gelatin __________________
17. An admiral of Great Lakes history __________________
18. Who discovered electricity __________________
19. A famous Greek city __________________
20. A man’s given name __________________

Compare your answers with those of a partner, and discuss these questions:

1. Which of the counties have you visited? Describe what you did there.
2. Which of the counties do you know least about? How could you learn more?
## Citizenship
### Ohio County Names

Fill in the blanks with the name of an Ohio county.

1. **Richland** helps to make a successful farmer.

2. A president of the United States, **Adams, Harding, Harrison, Jackson, Jefferson, Madison, Monroe, and Washington**

3. A famous elm tree, **Logan**

4. Inventor of the steamboat, **Fulton**

5. Three Indian tribes a) **Seneca** b) **Wyandot** c) **Tuscarawas**

6. A fish, **Pike**

7. A railroad, **Erie**

8. Found in rich man's home, **Butler**

9. A candy bar, **Clark**

10. A breed of cattle, **Guernsey**

11. A breed of chickens, **Wyandot**

12. A body of water, **Lake**

13. To carry from one lake to another, **Portage**

14. Some children are afraid of the, **Darke**

15. What every child dislikes, **Licking**

16. A famous gelatin, **Knox**

17. An admiral of Great Lakes history, **Perry**

18. Who discovered electricity, **Franklin**

19. A famous Greek city, **Athens**

20. A man's given name, **Henry**

Compare your answers with those of a partner, and discuss these questions:

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---

*Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program*
Citizenship
State Slogans

Here is a list of slogans found on some state automobile license plates. How many can you identify with the right state? Work with a partner and place the number of the slogan on the map below.

1. Vacationland
2. The Wheat State
3. Scenic
4. Land of Opportunity
5. Colorful
6. Drive Safely
7. America’s Dairyland
8. See
9. Peace Garden State
10. Heart of Dixie
11. Empire State
12. Sportsman’s Paradise
13. 10,000 Lakes
14. The Beef State
15. Sunshine State
16. Water Wonderland
17. Grand Canyon State
18. Famous Potatoes
19. Land of Enchantment
20. Peach State
21. Land of Lincoln

Discuss these questions with a partner.
1. Which of the slogans and states were easy to match? Why?
2. Which were hard to match? Why?
3. Why do you think states use slogans?
4. How are slogans used in advertising other organizations? How many slogans can you think of that are used in commercials today? How do they compare with the state slogans?

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
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Citizenship
Ohio Facts

Identification
In this activity you will:
• Work with a partner to answer these questions. See which team or group learns the most about Ohio!

1. What Ohio city was the rubber capital of the world? ____________________________
2. Six of the 100 largest U.S. cities are located in Ohio. Can you name them? ____________________________
3. What city boasts of the world’s largest soap factory? ____________________________
4. In what town was the McGuffey Reader originated? ____________________________
5. What Ohio city is the world’s largest coal shipping port? ____________________________
6. What Ohio city produces the most lawn fertilizer? ____________________________
7. What city fielded the first major league baseball team? What year? ____________________________
8. Which president of the U.S. used the red carnation in his lapel? ____________________________
9. What Ohio city boasts of the first concrete street? ____________________________
10. Can you name America’s first billionaire? From what Ohio city? ____________________________
11. In what city was the song, “Down By The Old Mill Stream” written? Who wrote it? ____________________________
12. At what elevation is the highest point in Ohio? ____________________________
13. Ohio’s first capital was not in Columbus. Can you name the city? ____________________________
14. What Ohio city housed the first Japanese auto plant to ship cars to Japan? ____________________________
Citizenship
Ohio Facts

In this activity you will:
- Work with a partner to answer these questions. See which team or group learns the most about Ohio!

1. What Ohio city was the rubber capital of the world? Akron
2. Six of the 100 largest U.S. cities are located in Ohio. Can you name them? Columbus, Cleveland, Cincinnati, Toledo, Akron, Dayton
3. What city boasts of the world’s largest soap factory? Cincinnati
4. In what town was the McGuffey Reader originated? Cincinnati
5. What Ohio city is the world’s largest coal shipping port? Toledo
6. What Ohio city produces the most lawn fertilizer? Marysville
7. What city fielded the first major league baseball team? What year? Cincinnati, 1869
8. Which president of the U.S. used the red carnation in his lapel? Garfield
9. What Ohio city boasts of the first concrete street? Bellefontaine
10. Can you name America’s first billionaire? From what Ohio city? John D. Rockefeller, Cleveland
11. In what city was the song, “Down By The Old Mill Stream” written? Who wrote it? Findlay, Tell Taylor
12. At what elevation is the highest point in Ohio? 1,550 feet near Bellefontaine
13. Ohio’s first capital was not in Columbus. Can you name the city? Chillicothe
14. What Ohio city housed the first Japanese auto plant to ship cars to Japan? Marysville
Citizenship
Labels and Stereotypes

It’s the week before the holidays and you are given the task of buying a present for each of the following people:

_____ 1. Harry Skinner, a cab driver
_____ 2. Marsha Truelove, a Red Cross volunteer
_____ 3. Freddy Faster, a sixth grade “A” student
_____ 4. Abigail Watson, a senior citizen

Which of the following gifts would you choose for each? Write the letter of the gift you would choose beside each person’s name.

A. a desk dictionary
B. a rocking chair
C. two tickets to the opera
D. a pair of skis
E. a leather jacket
F. a make-up kit
G. a Michael Bolton album
H. a first-aid kit

Discuss the following questions with a partner:

1. Why did you choose these gifts?
2. Would you choose different gifts if you knew the following information? Why?

Harry is a voice student who drives a cab in his spare time. He has nothing against leather jackets, but he’d prefer opera tickets. He hopes to be an opera singer.

Marsha thinks Michael Bolton is “super” and listens to his records while doing volunteer work at the Red Cross canteen.

Freddy is working on a clown routine for the school talent show right now. A make-up kit would help his act a lot more than a dictionary would!

Abigail, born in Vermont, enjoys skiing on winter days. She would put new skis to good use and has no need for a rocking chair.

3. What, if any difference does it make if you stereotype people? Do you think stereotypes are a form of prejudice?
International
Major Food Exporters

Circle the names of the countries that export more food out of their country than they import into their country.

After completing the word search, discuss these questions with a partner.

1. Were any of the six countries easy or hard to identify?
2. What are two or three reasons why people go hungry in some countries?
3. What do you think needs to be done to make sure all the children in the world get enough to eat?

In this activity you will:

- find the names of the six food exporting countries.
- identify factors which contribute to world hunger.
- consider possible ways to reduce world hunger.
- discuss alternatives to world hunger with a partner.

Source: Minnesota 4-H Global Awareness

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
International
Major Food Exporters

Circle the names of the countries that export more food out of their country than they import into their country. Only six countries export more food out of their countries than they buy from other countries. They are Argentina, the United States, South Africa, Australia, New Zealand, and Canada.

After completing the word search, discuss these questions with a partner.
1. Were any of the six countries easy or hard to identify?
2. What are two or three reasons why people go hungry in some countries?
3. What do you think needs to be done to make sure all the children in the world get enough to eat?

Source: Minnesota 4-H Global Awareness

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
International Countries and Capitals

Match the countries with their capitals. Discuss the purpose of capitals with a partner.

<table>
<thead>
<tr>
<th>Country</th>
<th>Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. India</td>
<td>a. Buenos Aires</td>
</tr>
<tr>
<td>2. Thailand</td>
<td>b. Bangkok</td>
</tr>
<tr>
<td>3. Switzerland</td>
<td>c. Paris</td>
</tr>
<tr>
<td>4. Argentina</td>
<td>d. Warsaw</td>
</tr>
<tr>
<td>5. Sweden</td>
<td>e. Lisbon</td>
</tr>
<tr>
<td>6. Hungary</td>
<td>f. Vienna</td>
</tr>
<tr>
<td>7. Taiwan</td>
<td>g. Budapest</td>
</tr>
<tr>
<td>8. Spain</td>
<td>h. Lima</td>
</tr>
<tr>
<td>9. Turkey</td>
<td>i. Tehran</td>
</tr>
<tr>
<td>10. Austria</td>
<td>j. Taipei</td>
</tr>
<tr>
<td>12. Venezuela</td>
<td>l. Gaborone</td>
</tr>
<tr>
<td>13. Greece</td>
<td>m. Brussels</td>
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<tr>
<td>14. United States</td>
<td>n. Bern</td>
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<tr>
<td>15. Belgium</td>
<td>o. Dublin</td>
</tr>
<tr>
<td>17. Poland</td>
<td>q. Caracas</td>
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<tr>
<td>18. France</td>
<td>r. Madrid</td>
</tr>
<tr>
<td>19. Iran</td>
<td>s. Stockholm</td>
</tr>
<tr>
<td>20. Botswana</td>
<td>t. New Delhi</td>
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<tr>
<td>21. Philippines</td>
<td>u. Athens</td>
</tr>
<tr>
<td>22. Finland</td>
<td>v. Edinburgh</td>
</tr>
<tr>
<td>23. Ireland</td>
<td>w. Manila</td>
</tr>
<tr>
<td>24. Peru</td>
<td>x. Helsinki</td>
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Discuss these questions with a partner:

1. Which countries were easy to match with their capitals? Which were hard? Why?
2. Why do you think countries have capitals? What purpose do capitals serve?
3. Why do we have governments?
4. Do you think governments serve people, or do people serve governments? Why?
International Countries and Capitals

Match the countries with their capitals. Discuss the purpose of capitals with a partner.

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<td>c</td>
<td>Paris</td>
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<td>d</td>
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<td>e</td>
<td>Lisbon</td>
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<td>f</td>
<td>Vienna</td>
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<td>g</td>
<td>Budapest</td>
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<td>h</td>
<td>Lima</td>
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<td>i</td>
<td>Tehran</td>
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<td>j</td>
<td>Taipei</td>
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<td>t</td>
<td>New Delhi</td>
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Discuss these questions with a partner:

1. Which countries were easy to match with their capitals? Which were hard? Why?
2. Why do you think countries have capitals? What purpose do capitals serve?
3. Why do we have governments?
4. Do you think governments serve people, or do people serve governments? Why?

Matching—Key

In this activity you will:
- learn to identify the capitals of 24 countries.
- learn why nations make capitals.

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
International

International Issues: What Do You Think?

This is not a true/false test. Decide whether you agree (A) or disagree (D) with each statement. Circle your answer. Then compare your answers with those of a partner, and discuss why you agree and why you disagree about your responses.

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>A</td>
<td>D</td>
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<tr>
<td>A</td>
<td>D</td>
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<tr>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>A</td>
<td>D</td>
</tr>
</tbody>
</table>

1. The U.S. should be independent of foreign energy sources.
2. The U.S. should greatly reduce its foreign aid to those countries without effective birth control programs.
3. The United Nations should control world rationing of energy and mineral resources.
4. The U.S. should give food to needy nations to promote world peace.
5. The U.S. should play an active role in spreading our political and economic systems abroad.
6. All exports of nuclear technology should be banned until importing nations agree to effective controls.
7. The ideal family consists of two children.
# International Cross-Cultural Understanding: International Bingo

Move among the members of your group and have them write their names in the box for any of the 16 items that describe them. Then discuss how many people in your group match each of the descriptions. Discuss possible ways members of the group could participate in international experiences. If everyone is able to fill in all the boxes on their bingo card, play a game of international bingo by pulling members’ names out of a box and seeing who gets four in a row first.

<table>
<thead>
<tr>
<th>Has used something made in another country.</th>
<th>Speaks two languages.</th>
<th>Knows a dance from another country.</th>
<th>A former 4-H exchange participant or host.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has lived in another country.</td>
<td>Is wearing something made in another country.</td>
<td>Can name a game from another country.</td>
<td>Can cook an international food.</td>
</tr>
<tr>
<td>Has traveled in a foreign country.</td>
<td>Has received a letter from another country.</td>
<td>Was born in another country.</td>
<td>Writes to someone in another country.</td>
</tr>
<tr>
<td>Likes a food from another country.</td>
<td>Has traveled in Canada or Mexico.</td>
<td>Has eaten in a restaurant serving food from another country.</td>
<td>Can count to five in another language.</td>
</tr>
</tbody>
</table>

**Matching In this activity you will:**
- learn to develop cross-cultural understanding.
- learn about other people’s international experiences.
Careers
Goal Setting and Values

Complete the following sentences. Answer how you honestly feel at the moment.

1. I wish I could ______________________________________________________________.
2. I don’t like ________________________________________________________________.
3. What is most important to me is ________________________________________________.
4. Going to school is ____________________________________________________________.
5. I’m happiest when ___________________________________________________________.
6. Working is ________________________________________________________________.
7. My friends think I’m ________________________________________________________.
8. I admire ________________________________________________________________.

List your most important career or education goals:

In one year ________________________________________________________________.
In three years ________________________________________________________________.
In five years ________________________________________________________________.

List your most important personal goals (family, recreational, organizational, etc.).

In one year ________________________________________________________________.
In three years ________________________________________________________________.
In five years ________________________________________________________________.

Discuss your answers with a partner.

Source: Rose Fisher Merkowitz, Highland County Extension Agent, “Developing Backbone for Career Choices”

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
Careers
Personal Values: Job Openings

There are five applicants for one job opening. Rank the candidates from 1st through 5th in the order you would hire them if you were the employer.

_____ A woman whose husband recently died. She has four young children, ages one to six, whom she now must support. She will be getting $200 a month from insurance, but this is not enough to live on.

_____ A former drug addict who has kept away from drugs for eleven months. He is a very serious young man who is determined to do well. He has had trouble finding jobs because of his former addiction, and his psychologist and priest say there is a strong possibility he will return to drugs if he is not employed soon.

_____ A highly intelligent black man who lives in a slum. He needs the job to continue his college education and to help support his brothers and sisters. He wants to become a doctor and help the poor in his neighborhood.

_____ A young woman who left her parent’s home to try to make it on her own. She has a strong interest in this type of work, and is the best qualified of all the applicants.

_____ A recent immigrant to this country who is the father of four. His knowledge of English is poor, and this will probably slow him down on the job at first. But he is a clever and confident person who learns quickly.

Discuss these questions with a partner.

1. Why did you rank the candidates in the order you did?

2. What personal or group values do your choices indicate?

3. As you make job decisions is it important to consider the requirements of the job task or the needs of the people involved?

Adapted from: “Values: Developing Backbones for Career Choices,” Kelly Manion, Clark County Extension Agent
**Materials Needed**
A candy bar with a list of ingredients on the wrapper for each participant.

With a partner, examine the wrapper of a candy bar and brainstorm the types of jobs and careers associated with producing candy bars for consumers. Then list the types of job skills and training required for each job/career you identify.

<table>
<thead>
<tr>
<th>Job/Career</th>
<th>Skill</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>ex: advertiser</td>
<td>professional</td>
<td>college (marketing or business)</td>
</tr>
<tr>
<td>ex: cocoa farmer</td>
<td>skilled and unskilled</td>
<td>tech school or college</td>
</tr>
</tbody>
</table>

Discuss these questions with a partner.

1. In which of these jobs would you be most interested, if you had to pick one? Why?
2. Which of these jobs are least interesting to you?
3. What types of work are you interested in doing as an adult? Why?
4. What training will you need?

Adapted from: Career Education Resources by Fred Bruny, Extension 4-H Specialist, Emeritus and Becky Cropper, Brown County Extension Agent
Careers

Study Yourself Wheel

The Study Yourself Wheel has 12 different areas. Write short statements that describe how you feel about each area. There are no correct answers, only what is right for you. Then discuss your answers with a partner, and talk about what types of jobs or careers you think would be best for you.

In this activity you will:

- learn your personal preferences and abilities which should be considered in making career decisions.
- identify your preferences, abilities, and experiences in 12 areas.
- discuss your answers and how they relate to your job and career decisions with a partner.

Adapted from: Developing Backbones for Career Choices Interest Survey by Becky Cropper, Brown County Extension Agent

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
# Careers
## Recognizing Assertive vs. Aggressive Behavior

In each of these situations, check whether each response is assertive, non-assertive, or aggressive in each of these situations. Discuss your answers with a partner and describe what improvements you can make to develop positive assertiveness.

### Identification

<table>
<thead>
<tr>
<th>In this activity you will:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• learn to recognize assertive, non-assertive, and aggressive behavior.</td>
</tr>
<tr>
<td>• develop habits of positive assertiveness which are needed for success in the workforce.</td>
</tr>
</tbody>
</table>

### In-Activity

<table>
<thead>
<tr>
<th>Assertive</th>
<th>Non-Assertive</th>
<th>Aggressive</th>
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#### Situation 1
A friend has just complimented you on your new suit. It’s the first time you’ve worn it and you really like it. You say:

1a. Thank you
1b. This? It’s nothing special.
1c. Well...I picked it up at a sale...well...

#### Situation 2
You’re out with a group of friends. You’re all deciding which movie to see. One person has just mentioned a movie you don’t want to see. You say:

2a. You always pick movies I don’t like. You only think about yourself. You’re very selfish.
2b. I don’t want to see that one. How about a movie over at the Plaza Theater?
2c. Well, I don’t know much about the movie. But, I guess, if you want to, we can see it.

Adapted from: Developing Backbones for Career Choices by Nikki Eyre, Highland County Extension Agent

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program

Lift-Off
What’s So Important?

Step 1: Make a list of things you use around the house that use electricity. This includes anything that plugs into an electric outlet that you use fairly often:

_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________
_____________________________________________

Leadership

• learn your personal decision-making style.
• determine factors which make decisions easier or harder to make.
• learn the importance of priority-setting in leadership.
• make decisions and set priorities based on importance of items.
• work with a partner to discuss implications of decision-making and priority setting.

Step 2: Draw a line through the three things you could live without the easiest. For example, if the power went out, which things could you live without most easily?

Step 3: Draw circles around three things that would be the last things you would want to give up.

Step 4: Discuss these questions with a partner:

1. Why were the circled items most important?
2. What made the decisions or choices hard to make?
3. What other situations can you think of that might have decisions that are hard to make?
4. What does this tell you about yourself?
5. What are the similarities and differences in how you decide personal priorities and priorities of groups in which you are a member or a leader?

Source: Adapted from “Leadership Skills You Never Outgrow,” Kathryn J. Cox, 10/96

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
Leadership Skills Vocabulary

Match each of these leadership skills with the correct definition.

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<td>a. skill in building acceptance and support</td>
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<td>2. consensus-building</td>
<td>b. skill in getting people to make decisions during conflict, usually involving give-and-take</td>
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<td>3. negotiation</td>
<td>c. skill in getting people to have an image or mission for the future</td>
</tr>
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<td>4. creating rewards</td>
<td>d. skill in uniting groups to achieve mutual goals</td>
</tr>
<tr>
<td>5. creating an image</td>
<td>e. skill in seeing situations from different points of view</td>
</tr>
<tr>
<td>6. gaining legitimacy</td>
<td>f. skill in getting people to make decisions which everyone accepts as the best solution</td>
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<td>7. advocacy</td>
<td>g. skill in establishing credibility, and gaining respect and trust</td>
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<td>8. coalition-building</td>
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<td>9. perspective-taking</td>
<td>i. skill in persuading people to support ideas and plans</td>
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Discuss these questions with a partner.

1. Which of these leadership skills are most important in our group right now?

2. Which are least important? Why?

3. Which of these skills are needed by 4-H advisors? Teen leaders? Committee chairs and members? Other 4-H leaders?

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
**Leadership**

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---

**Matching—Key**

In this activity you will:

- learn to identify and define nine leadership skills that work.
- match leadership skills with their correct definition.
- discuss which leadership skills are most important for your group.
Leadership
How I Make Decisions
Consider the ways you make seven types of decisions.
Place an “X” in the space that shows the way you make decisions, then compare your answers with a partner.

Discuss these questions with a partner:
1. How do you usually make decisions?
2. What kinds of decisions do you carefully think about, and what kinds of decisions are easier to make?
3. Which kinds of decisions are most important to you? Which kinds of decisions are least important to you?
4. What are the similarities and differences between your answers and your partner’s answers? Why do you differ, and why are you similar?
5. What are the differences and similarities in how you make personal decisions, and how you make decisions as a member or leader in a group?

Source: Adapted from “Leadership Skills You Never Outgrow,” Kathryn J. Cox, 10/96
Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
Leadership
Are You an “N” or an “S”?

Check which item in each of the following seven pairs you prefer:

N1 _____being called imaginative or intuitive, or
S1 _____being called factual and accurate?

S2 _____using methods you know well that get the job done, or
N2 _____trying to think of new methods of doing tasks?

N3 _____thinking about possibilities, or
S3 _____dealing with actualities and real life?

S4 _____concrete and real things, or
N4 _____ideas and theories?

N5 _____possible views of the whole, or
S5 _____the factual details available?

S6 _____facts, or
N6 _____ideas?

N7 _____designing plans without necessarily carrying them out, or
S7 _____carrying out carefully laid, detailed plans with precision?

Next, score your responses. Did you check more “N’s” or “S’s”?

If you checked more “N’s” than “S’s,” you rely on intuition. “N” (intuitive) leaders prefer looking for possibilities and relationships rather than working with facts. You like solving new problems, dislike doing the same things over and over, enjoy learning new skills, work in bursts of energy, reach conclusions quickly, and are impatient with routine details.

If you checked more “S’s” than “N’s,” you rely on your senses. “S” (sensory) leaders prefer working with facts rather than looking for possibilities and relationships. You dislike new problems unless there are standard ways to solve them. You like an established way of doing things, using old skills, seldom make errors, and are good at precise work.

Discuss with these questions with a partner.

How well does the description describe you? Are you similar or different?

Are there situations in which “N’s” would be better leaders? How about “S’s”?

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
Leadership
Cone of Experience

Arrange the ten types of experience in order from least effective on the top to most effective on the bottom of this puzzle. Write the letter of each type of experience on the cone to show which experience should go in each of the ten blanks.

least effective

a. taking part in role playing
b. reading words
c. listening to recordings or looking at still slides or pictures
d. practicing with specimens, objects, or models
e. watching television or videos

f. taking part in field trips
g. actual hands-on “learn-by-doing” activities
h. viewing habits
i. observing demonstrations
j. looking at symbols

most effective

Compare your rankings with the correct ranking, and discuss these questions with a partner.

1. Why do you think the most effective method is better than the least effective method?

2. In what situations might a leader want to use a less effective method, rather than one of the most effective methods?

3. What factors do leaders need to consider in deciding which methods to use?
Leadership
Cone of Experience

Arrange the ten types of experience in order from least effective on the top to most effective on the bottom of this puzzle. Write the letter of each type of experience on the cone to show which experience should go in each of the ten blanks.

In this activity you will:
- learn to select as a leader experience which maximize the development of people in groups you lead.
- arrange ten types of experiences in order of their effectiveness in helping people learn, and discuss your responses with a partner.

Decision-Making—Key

Compare your rankings with the correct ranking, and discuss these questions with a partner.

1. Why do you think the most effective method is better than the least effective method?

2. In what situations might a leader want to use a less effective method, rather than one of the most effective methods?

3. What factors do leaders need to consider in deciding which methods to use?

Developed by: Kathryn J. Cox, Extension 4-H Specialist, Youth Development; David Farrell, Extension Associate, 4-H Communications; Mary Lynn Thalheimer, Extension Associate, 4-H International Exchange Program
Communications
Ways of Communication

1. Think of the many ways people communicate. In the box below, write (or draw a picture of) those methods. Consider how you communicate with other people and then think about how people with different backgrounds might communicate with and without words. For example, people might talk face-to-face or by drawing pictures, etc.

2. Compare your responses with a partner. Discuss reasons why people might choose to communicate in one way rather than another. For example, why might someone communicate with a smile when they like what you are doing rather than telling you with words?

Developed by: David Farrell, Extension Associate, Communications
Communications
Non-Verbal Communication

Before this activity, prepare at least eight slips of paper, each describing a way a participant might feel about the group or its activities. It can be a personal feeling or mood.

1. In this activity, talk to the group about the importance of non-verbal messages. Point out that sometimes what you don’t say vocally can send just as strong of a message as what is spoken out loud.

2. Give each person (or team) a slip of paper listing a specific feeling or mood.

<table>
<thead>
<tr>
<th>Suggested Feelings/Moods</th>
</tr>
</thead>
<tbody>
<tr>
<td>anxious</td>
</tr>
<tr>
<td>happy</td>
</tr>
<tr>
<td>worried</td>
</tr>
<tr>
<td>tired</td>
</tr>
<tr>
<td>stuck up</td>
</tr>
</tbody>
</table>

3. Give each person (or team) time to privately practice and discuss how to act out the feeling listed on the paper.

4. Without revealing what the feeling is, have each person (or team) use facial expressions and/or body language to try and show the group how he or she is feeling.

5. Have the group members guess what feeling is being portrayed. Talk about other ways people might express the emotion.
Communications
Body Language

1. Tell the group that this activity is a way of exploring how body postures can communicate feeling and meaning.

2. Ask group members to find partners. One partner will be a “statue builder” and the other will be the “statue material.” Ask the partners to decide who will play which role first.

3. Explain that when you call out a feeling or situation, the job of the “statue builder” is to move his or her partner (the “statue material”) into a posture that expresses the feeling. Show them appropriate ways they can move their partner’s arms, legs, and heads to express the word you give them.

4. Demonstrate the activity by using a volunteer to serve as “material” for you to “build” a statue expressing one of the words listed below. Then call out one of the other situations or feelings and give the pairs time to create their statues.

<table>
<thead>
<tr>
<th>Situations</th>
<th>Feelings</th>
</tr>
</thead>
<tbody>
<tr>
<td>dancing, waiting</td>
<td>tired, joyful</td>
</tr>
<tr>
<td>being very happy</td>
<td>happy</td>
</tr>
<tr>
<td>skating</td>
<td>grieving</td>
</tr>
<tr>
<td>thinking</td>
<td>discouraged</td>
</tr>
<tr>
<td></td>
<td>amused</td>
</tr>
</tbody>
</table>

5. When each builder has created a statue, invite group members to look around at what others have built. Statues can move their eyes, but not their bodies.

6. Have the partners switch roles. Call out different feelings to have the new builders create statues.

7. Have each pair secretly pick a feeling, create a “statue” to show the feeling, and then have a group try to guess what the statue expresses.

8. Discuss what members could learn from this activity.
Communications
Cross-Cultural Communication

1. Have everyone in the group form teams of two.

2. Pretend each team member is from a different country and speaks a language that the others cannot understand.

3. Using non-verbal signs only, have one member of the team ask one of the questions below and have the other member of the team answer the question non-verbally.

4. Afterwards, have the entire group discuss why communicating with someone who speaks a different language can be difficult. Also, discuss what seems to work when trying to communicate if you are unable to speak someone else’s language.

Questions

1. How old are you?

2. Are you hungry?

3. What is your name?

4. Where are you from?

5. Are you thirsty?

6. Are we friends?

7. Are you tired or sleepy?

Developed by: David Farrell, Extension Associate, Communications
Communications
Public Speaking Roll Call

Think of five different roll call responses your club could use at meetings and write them in the box below. These might be about subjects that each club member could respond to to show that he or she is present. Think of a subject everyone shares and that most people would find interesting. A good idea is “my favorite hobby.” Discuss your ideas with the group and decide which roll call ideas would be appropriate. Use the roll call subjects at the rest of your meetings.

Note: Be sensitive to the fact there might be topics that not all members of your group can respond to. Also, respect the fact that there might be some topics that club members would not want to answer.
Communications
Group Discussion

In this activity you will:
• learn basic public speaking skills.

Have each person list their favorite activities (sports, free-time activities, hobbies, school activities, etc.) in the box below. After a few minutes have the group sit in a circle. Then have each person in the group stand up one at a time and share something they like to do and why. Discuss the activity and recognize participants for speaking in public.

Developed by: David Farrell, Extension Associate, Communications
Communications
Performing Skits

1. Form teams of three to five people. Have each team pick one of the situations listed below and develop a skit to illustrate the situation. Each team member should have some acting role in the skit. Then have each team perform the skit in front of the whole group.

2. After the skits are finished, discuss what participants think makes a “good” skit compared with an “average” one. If participants were helping younger 4-H’ers plan a skit, what advice would they give them?

Situations

1. Your group is sitting and waiting for the bus. Act out what kind of things you would do and what kind of things you would talk about while you wait.

2. Your group is doing warm-up exercises to get ready to go outside for gym class. Act out what kind of things you would do and what kind of things you would talk about while you warm up.

3. Your group is traveling to Grandma’s house in a car. Act out what kind of things you would do and what kind of things you would talk about while you are riding to Grandma’s.

4. Your group is part of a family getting ready to have their picture taken at a studio. Act out what kind of things you would do and what you would talk about while waiting to have your picture taken.

5. Your group is watching a television show. Act out what kind of things you would do and what you would talk about while you watch television.

6. Your group is eating breakfast. Act out what kind of things you would do and what you would talk about while you eat breakfast.

7. Your group is on a canoe trip. Act out what kind of things you would do and what you would talk about while you canoe.

Note: If you or anyone in your group is interested in participating in a skit contest, ask your county OSU Extension office for more information.
Communications
Show and Tell

Volunteer to “show and tell” something about your favorite project. Your subject may be something you made in the project, a tool you used, or a general activity you enjoy. Explain why you picked this project, what you learned, what you like best about it, and how to make or use the item you brought. For example, you could tell about a birdhouse made in woodworking or a picture taken in photography.

In this activity you will:
- learn effective communication skills through giving a project talk.

List some reasons why you picked this subject/item. _____________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

What have you learned about this subject/item? _____________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

What do you like best about it? _______________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

What has been the most difficult thing about it? _____________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

Other things of interest about it: _______________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
Communications
Illustrated Talk

Before this activity, prepare ten to fifteen blank note cards. Write a simple task on each card. Some examples of tasks are: tying a shoe, sharpening a pencil, opening a carton of milk, unwrapping and chewing a stick of gum, zipping a jacket, or opening a can with a can opener.

1. Explain that this activity will provide experience in giving directions as part of an illustrated talk or demonstration.

2. Give each person (or team) one of the cards which contains a simple task.

3. Give each person (or team) time to privately practice giving verbal instructions on how to perform the task.

4. Without revealing what the task is, have each person (or team) give verbal directions to the group in his or her own words as if he or she were actually doing the task.

5. Have the group members guess what the task is. Then discuss what tips or pointers participants think are important when giving directions.

Note: If you or anyone in your group is interested in participating in a Demonstration Contest, ask your county OSU Extension office for more information.

Suggested Tasks

<table>
<thead>
<tr>
<th>Tying a shoe</th>
<th>Sharpening a pencil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening a carton of milk</td>
<td>Zipping a jacket</td>
</tr>
<tr>
<td>Making a peanut butter sandwich</td>
<td>Unwrapping and chewing a stick of gum</td>
</tr>
<tr>
<td>Opening a can with a can opener</td>
<td>Reading a book</td>
</tr>
<tr>
<td>Answering the telephone</td>
<td>Climbing up and going down a slide</td>
</tr>
<tr>
<td>Brushing your teeth</td>
<td>Painting a picture</td>
</tr>
<tr>
<td>Mailing a birthday card</td>
<td>Popping popcorn</td>
</tr>
<tr>
<td>Catching a fish in a pond</td>
<td>Climbing a ladder</td>
</tr>
</tbody>
</table>

Public Speaking
In this activity you will:

- learn how to effectively give directions as part of an illustrated talk.

Developed by: David Farrell, Extension Associate, Communications
Communications
Photography Vocabulary

Determine the correct answer to each statement. Place the letters of each answer in the correct squares of the crossword puzzle. When everyone has finished the puzzle, discuss the correct answers to each item.

**Crossword**

In this activity you will:
- learn basic definitions and terms used in photography.

**Down**
1. An __________ camera adjusts itself.
2. A __________ controls the amount of time that the light reaches the film.
3. __________ is recorded on the film in the camera.
4. __________ is the amount of light that reaches the film when the shutter is released.
5. __________ occurs when too much light reaches the film.
6. __________ is necessary in order for the invisible image on the film to be a picture.
7. Film __________ is the sensitivity of the film to light.
8. The __________ collects light reflected from a subject to form an image on the film.
9. Camera __________ are various positions of the camera in relation to the subject.
10. What you take a picture of is your __________.
11. An __________ camera has controls so a person can make adjustments.
12. A __________ controls the amount of time that the light reaches the film.
13. A __________ holds the flash in place on the camera.
14. The developed film that contains a reversed-tone image is a __________.
15. Your __________ is a precision instrument.
16. Film __________ is the sensitivity of the film to light.
17. __________ is the arrangement of all elements in a picture.
18. An __________ camera has no adjustments.

**Across**
1. An __________ camera has controls so a person can make adjustments.
4. A __________ controls the amount of time that the light reaches the film.
8. The developed film that contains a reversed-tone image is a __________.
9. Camera __________ are various positions of the camera in relation to the subject.
11. What you take a picture of is your __________.
13. A __________ is used to frame the picture area.
15. Your __________ is a precision instrument.
17. The __________ is the arrangement of all elements in a picture.
18. An __________ camera produces a finished print soon after you take the picture.
19. A __________ camera has no adjustments.

Developed by: David Farrell, Extension Associate, Communications
Communications
Photography Vocabulary

Determine the correct answer to each statement. Place the letters of each answer in the correct squares of the crossword puzzle. When everyone has finished the puzzle, discuss the correct answers to each item.

Crossword—Key
In this activity you will:
• learn basic definitions and terms used in photography.

Across
1. An __________ camera has controls so a person can make adjustments.
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3. __________ is recorded on the film in the camera.
4. A __________ holds the flash in place on the camera.
5. __________ is the amount of light that reaches the film when the shutter is released.
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8. The developed film that contains a reversed-tone image is a __________.
9. Camera __________ are various positions of the camera in relation to the subject.
10. Film __________ is the sensitivity of the film to light.
11. What you take a picture of is your __________.
12. The __________ collects light reflected from a subject to form an image on the film.
13. A __________ is used when lighting is inadequate.
14. The material that records the light which comes through the camera lens is __________.

Developed by: David Farrell, Extension Associate, Communications
Communications
Photography Basics

Research
In this activity you will:
• learn basic photography information.

Answer each question. If you are unsure about the correct response, ask others in your group for help.

1. Why is light essential to photography?

2. How should you clean the lens on your camera?

3. Why does the lens need to be cleaned?

4. What are two tips you should follow when using an eye-level viewfinder?

5. Explain the conditions that would be present when you use a fast-speed film, a medium-speed film, and a slow-speed film.

6. Explain the use of front-lighting, side-lighting, and back-lighting.

7. What are two tips for taking indoor flash pictures?

8. What occurs if your pictures are underexposed?

9. How should you clean the inside of your camera?

10. List three ways to add interest to a picture of your dog.

Developed by: David Farrell, Extension Associate, Communications
Communications
Photography Basics

Answer each question. If you are unsure about the correct response, ask others in your group for help.

1. Why is light essential to photography? ____________ Light is what is recorded on film.

2. How should you clean the lens on your camera? ____________ Blow away dust or grit on surface, breathe on lens surface, and gently wipe lens clean with lint-free cloth or lens-cleaning paper.

3. Why does the lens need to be cleaned? ____________ The lens acts as a window for the film; the film will see a blurry scene with a dirty lens.

4. What are two tips you should follow when using an eye-level viewfinder? ____________ Keep your eye close to the viewfinder; the bottom of the viewfinder should be level with the horizon.

5. Explain the conditions that would be present when you use a fast-speed film, a medium-speed film, and a slow-speed film. ____________ Fast-speed film—poor lighting conditions; Medium-speed film—used for most picture-taking conditions on sunny or bright cloudy days; Slow-speed film—bright light conditions

6. Explain the use of front-lighting, side-lighting, and back-lighting. ____________ Front-lighting—the sun is at your back and shines on the side of your subject that is facing you; Side-lighting—the sun shines on the subject from one side; Back-lighting—the sun shines from behind your subject.

7. What are two tips for taking indoor flash pictures? ____________ Don’t take any pictures if you’re directly facing a mirror, window, or shiny surface. Use flash extension so people’s or animal’s eyes won’t have red glow.

8. What occurs if your pictures are underexposed? ____________ Too little light reaches the film so the pictures are dark.

9. How should you clean the inside of your camera? ____________ Blow out any dirt with a rubber syringe or brush it out with a soft brush.

10. List three ways to add interest to a picture of your dog. ____________ Give the dog an object to play with, take an “action shot,” and/or include a person in the picture.

Research—Key
In this activity you will: ____________ learn basic photography information.
Communications
Evaluating Photographs

Look through a magazine and cut out a photograph that you think is a good picture. Paste the picture in the box below.

Discuss or list what things make a good photograph (such as lighting, colors, subject, distance, etc.).
Communications
Writing Practice

In this activity you will:

• learn how to effectively communicate by writing.
• rewrite the scrambled sentences so they are in the right order.

1. Read the six-sentence paragraph below and rewrite the paragraph on the lines provided below. Remember: the ideas in the paragraph should be in the correct order.

2. Discuss what determines whether something is in the correct order and why order is important in communication.

How I Polish My Shoes
Buff the extra polish off of the shoes. Clean the shoes to be polished. Find the equipment needed to polish your shoes. Put the laces back into the shoes and store the shoe polish equipment. Remove the shoe laces. Apply the polish to the shoes.
Communications
Writing About Myself

Write a story that you can share with others. This story should be about you and should not be more than one page long. Include your name and hometown, and then go on to tell whether you are a happy person, a quiet person, or the kind of person you see yourself as. Write about what makes you that way. You may want to mention any hobbies or things you like to do. Discuss with a friend how accurate your personal story is from his or her viewpoint.

________________________________________________________________________
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Developed by: David Farrell, Extension Associate, Communications
Communications
Evaluating News Stories

Find a news story in a newspaper. Cut the story out of the paper and paste it in this box. Study the story and then read a few paragraphs out loud. Explain why it is news. What makes it newsworthy?

Discussion

In this activity you will:

- study a news story.
Communications
Conducting Interviews

1. Choose someone to interview.

2. Pretend you are a reporter and are doing a personal interest story. Be sure to ask the person you interview some basic questions such as who they are, where they are from, what they do with their time, when he or she does those things, and why he or she likes to do the things they do.

3. Write their answers during the interview.

4. Give a short verbal report to the group about what you learned.

5. At a later time, try writing a short news story about the person using the information you wrote down while interviewing him or her.

Interview Notes

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# Countdown Chapter 2
## Livestock

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Livestock
Beef Breeds

Read the descriptions and fill in the blanks with the breed names.

1. __ __ __ __ __
2. __ __ __ __ __ __ __
3. __ __ __ __ __ __ __ __ __ __ __
4. __ __ __ __ __ __ __ __ __
5. __ __ __ __ __ __ __ __ __
6. __ __ __ __ __ __ __ __ __
7. __ __ __ __ __ __ __ __ __
8. __ __ __ __ __ __ __ __ __ __ __ __ __
9. __ __ __ __ __ __ __ __ __ __ __ __ __
10. __ __ __ __ __ __ __ __ __
11. __ __ __ __ __ __ __ __ __
12. __ __ __ __ __ __ __ __ __ __ __ __ __ __ __

Clues

1. This breed originated in Scotland, is polled with a black smooth coat, and is known for carcass quality, milking, mothering, and reproductive abilities.

2. This breed was developed in the southwestern United States by crossing Angus with Brahman cattle from India. It is black and known for the ability to withstand heat and insects.

3. This breed was developed in France and imported into the United States from Mexico in 1936. It is large, white, and is noted for fast growth and lean carcasses.

4. Developed in Italy, this breed is white with black pigmentation. It is the largest breed and is noted for growth and beef producing abilities.

5. Originating in Germany, this breed is a solid cream to a reddish-yellow in color. It is a general purpose breed with good mothering abilities.

6. This breed was developed in England and brought to the United States in 1817. It is red with a white face, and is known for its vigor, hardiness, foraging ability, and quiet disposition.

7. This is a breed that originated in west-central France. It is light to golden red in color with lighter circles around the eyes and muzzle. When this breed is slaughtered at an early age, it yields a high percentage of lean meat with a minimum amount of fat.

8. Developed in the United States from the Hereford breed, this breed displays the same characteristics as Herefords except for the polled trait.

9. This breed was developed on the King Ranch in Texas, is five-eighths Shorthorn and three-eighths Brahman, and is known for its hardiness, growth rate, long life, heat tolerance, and insect resistance.

10. This breed was brought to the United States from England in 1783. Animals can be red, white, or roan in color, and are also noted for their good disposition, mothering, and milking ability.

11. Imported into the United States from Switzerland, France, and Germany, this breed is red to dark red, spotted with a white face, and is noted for its fast growth and milking ability.

12. This breed originated from Spanish Antilysin cattle and has long horns and several different color patterns. It is known for longevity, hardiness, strong survival instincts, and resistant to disease and parasites.

References: Beef Learning Laboratory Kit; 4-H Beef Resource Handbook
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock

Beef Breeds

Read the descriptions and fill in the blanks with the breed names.

1. **Angus**
2. **Brahman**
3. **Charolais**
4. **Chianina**
5. **Gelbvieh**
6. **Hereford**
7. **Limousin**
8. **Polled Hereford**
9. **Santa Gertrudis**
10. **Shorthorn**
11. **Simmental**
12. **Texas Longhorn**

**Clues**

1. This breed originated in Scotland, is polled with a black smooth coat, and is known for carcass quality, milking, mothering, and reproductive abilities.
2. This breed was developed in the southwestern United States by crossing Angus with Brahman cattle from India. It is black and known for the ability to withstand heat and insects.
3. This breed was developed in France and imported into the United States from Mexico in 1936. It is large, white, and is noted for fast growth and lean carcasses.
4. Developed in Italy, this breed is white with black pigmentation. It is the largest breed and is noted for growth and beef producing abilities.
5. Originating in Germany, this breed is a solid cream to a reddish-yellow in color. It is a general purpose breed with good mothering abilities.
6. This breed was developed in England and brought to the United States in 1817. It is red with a white face, and is known for its vigor, hardiness, foraging ability, and quiet disposition.
7. This is a breed that originated in west-central France. It is light to golden red in color with lighter circles around the eyes and muzzle. When this breed is slaughtered at an early age, it yields a high percentage of lean meat with a minimum amount of fat.
8. Developed in the United States from the Hereford breed, this breed displays the same characteristics as Herefords except for the polled trait.
9. This breed was developed on the King Ranch in Texas, is five-eighths Shorthorn and three-eighths Brahman, and is known for its hardiness, growth rate, long life, heat tolerance, and insect resistance.
10. This breed was brought to the United States from England in 1783. Animals can be red, white, or roan in color, and are also noted for their good disposition, mothering, and milking ability.
11. Imported into the United States from Switzerland, France, and Germany, this breed is red to dark red, spotted with a white face, and is noted for its fast growth and milking ability.
12. This breed originated from Spanish Antilysin cattle and has long horns and several different color patterns. It is known for longevity, hardiness, strong survival instincts, and resistant to disease and parasites.

References: Beef Learning Laboratory Kit; 4-H Beef Resource Handbook
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Dairy Cattle Breeds

Read the descriptions and fill in the blanks with the breed names.

1. __ __ __ __ __ __ __ __
2. __ __ __ __ __ __ __ __ __ __
3. __ __ __ __ __ __ __ __ __
4. __ __ __ __ __ __ __ __ __
5. __ __ __ __ __ __ __
6. __ __ __ __ __ __ __ __ __ __ __ __ __

**Clues**

1. This breed was developed in 1750 in the county of Ayr, Scotland, is medium in size with average milk production, and has strongly-attached, well-shaped udders. Cows are known for their extreme hardiness and good foraging ability. They are red or mahogany, and white in color.

2. Originated in Switzerland, this breed is large with high milk production and was developed to graze the mountains and produce high protein milk for cheese. Cows are known for their strength, ruggedness, and good feet and leg structure. Animals are solid brown with a black nose, switch, and hooves.

3. This breed was developed on an island in the English Channel to produce high fat milk for making butter. Cows are known for their gentle nature and their yellow-tinted milk, and they can be characterized by their fawn and white markings.

4. This breed originated in the Netherlands. It is largest and most numerous breed. Cows are known for producing the highest volume of milk of all breeds. They are black and white, or red and white in color.

5. This breed was developed on an island in the English Channel. They are the smallest cows and produce milk that is the highest in fat and protein. They are characterized by a shade of fawn with or without white markings.

6. Developed from an English breed of cattle, this breed association was formed in 1972, from cattle who are intermediate in size and milk production, are efficient in converting feed into meat or milk, and have a high heat tolerance. They can be red, white, or roan in color.

Reference: Dairy Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Dairy Cattle Breeds

Read the descriptions and fill in the blanks with the breed names.

1. **Ayshire**
2. **Brown Swiss**
3. **Gournsey**
4. **Holstein**
5. **Jersey**
6. **Milking Shorthorn**

**Clues**

1. This breed was developed in 1750 in the county of Ayr, Scotland, is medium in size with average milk production, and has strongly-attached, well-shaped udders. Cows are known for their extreme hardiness and good foraging ability. They are red or mahogany, and white in color.

2. Originated in Switzerland, this breed is large with high milk production and was developed to graze the mountains and produce high protein milk for cheese. Cows are known for their strength, ruggedness, and good feet and leg structure. Animals are solid brown with a black nose, switch, and hooves.

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Reference: Dairy Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Goat Breeds

Read the descriptions and fill in the blanks with the breed names.

1. __ __ __ __ __ __
2. __ __ __ __ __ __
3. __ __ __ __ __ __ __ __
4. __ __ __ __ __
5. __ __ __ __ __ __ __ __
6. __ __ __ __
7. __ __ __ __
8. __ __ __ __ __ __ __ __ __ __

Clues

1. This breed originated in France, has upright ears, and can be any color or combination of colors. It has a straight face, medium to short hair, and is medium to large in size.

2. This is the only breed developed in the United States. It has either “gopher” or “elf ears.” Any color or combination of colors is acceptable, and it has short, fine, glossy hair.

3. A Swiss breed of rugged bone, it is medium to large in size, and either white or cream in color. It has short and fine hair, is erect-eared, and has either a straight or dished face.

4. A Swiss breed known for upright ears, straight faces, and chamiosee color, it has a black belly and a light gray to black udder. One of the smaller Swiss breeds, it is a minimum of 28 inches in height and is the newest recognized breed by the A.D.G.A.

5. This breed was originated in the Himalaya Mountains of Asia, has a straight or concave nose, pendulous ears, and twisted horns. It is usually a small, white, breed, with a long, fine, and lustrous mohair fiber coat. The fine underwool is a valuable product called cashmere. This breed is known primarily as a browsing animal.

6. This breed came from West and Central Africa and the Caribbean. Dwarf, short legged, hardy and alert, its profile should have a dished appearance with a broad, strong, and well-muscled jaw. It has a small compact body and its main colors are white caramel, caramel, gray agouti, black agouti, and charcoal.

7. This breed originated in India and Egypt, is known for its high quality, high butterfat, and milk production. It has a strong convex facial profile between the ears and the muzzle and long, bell shaped, wide ears. It can have any color pattern and have short, glossy, fine hair.

8. Of Swiss origin, this breed is medium in size, has upright ears and a dished or straight face, is solid colored varying from light fawn to dark chocolate. It has white ears with dark spots in the middle, two white stripes down the face from each eye to the muzzle, white hind legs, and a white triangle on either side of the tail. It is known for its high milk productivity.

References: Goat Learning Laboratory Kit; 4-H Goat Resource Handbook
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock

Goat Breeds

Read the descriptions and fill in the blanks with the breed names.

1. **Alpine**
2. **Angora**
3. **Lamancha**
4. **Nubian**
5. **Oberhasli**
6. **Pygmy**
7. **Saanen**
8. **Toggenburg**

Clues

1. This breed originated in France, has upright ears, and can be any color or combination of colors. It has a straight face, medium to short hair, and is medium to large in size.

2. This is the only breed developed in the United States. It has either “gopher” or “elf ears.” Any color or combination of colors is acceptable, and it has short, fine, glossy hair.

3. A Swiss breed of rugged bone, it is medium to large in size, and either white or cream in color. It has short and fine hair, is erect-eared, and has either a straight or dished face.

4. A Swiss breed known for upright ears, straight faces, and chamiosee color, it has a black belly and a light gray to black udder. One of the smaller Swiss breeds, it is a minimum of 28 inches in height and is the newest recognized breed by the A.D.G.A.

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6. This breed came from West and Central Africa and the Caribbean. Dwarf, short legged, hardy and alert, its profile should have a dished appearance with a broad, strong, and well-muscled jaw. It has a small compact body and its main colors are white caramel, caramel, gray agouti, black agouti, and charcoal.

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8. Of Swiss origin, this breed is medium in size, has upright ears and a dished or straight face, is solid colored varying from light fawn to dark chocolate. It has white ears with dark spots in the middle, two white stripes down the face from each eye to the muzzle, white hind legs, and a white triangle on either side of the tail. It is known for its high milk productivity.

References: Goat Learning Laboratory Kit; 4-H Goat Resource Handbook
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Sheep Breeds

Read the descriptions and fill in the blanks with the breed names. The circled letters will then spell out one remaining breed.

1. __ __ __ __ __ __ __ __ __
2. __ __ __ __ __ __ __ __ __ __
3. __ __ __ __ __ __ __ __
4. __ __ __ __ __ __ __ __ __ __
5. __ __ __ __ __ __ __
6. __ __ __ __ __ __ __ __
7. __ __ __ __ __
8. __ __ __ __
9. __ __ __ __ __ __ __ __ __ __ __

Clues

1. This breed is fine-boned, produces medium grade wool, reaches sexual maturity early, and is very prolific, producing two to four lambs each lambing.

2. This breed is white faced and was developed in New Zealand from a Lincoln and Leicester X Merino crosses. It is medium in size and yields heavy, medium wool fleeces.

3. This breed was developed in the United States from a Lincoln ram and Rambouillet ewe cross. It is known for size, wool producing ability, and productivity under range conditions. It is a white faced, polled breed and has wool on the legs.

4. This breed was developed in England, is dark faced, polled, has wool on the head and face, and is heavy muscled and milks well.

5. This breed is polled with a black head and legs and has the greatest number of purebred registrations in the United States. It is a sire breed known for its meatiness and carcass quality.

6. This is the oldest breed from England and is known for producing a meaty carcass. It is polled with a gray to a mouse-brown colored face, has wool on the legs, and produces a medium wool.

7. This breed was developed in Scotland and is adaptable to a variety of climates. It is small in size, white faced, bare legged and headed, and is a good milker possessing excellent lamb vigor.

8. This breed, developed in Southern England, is polled, scurred, or horned. A ewe breed, it is known for breeding out of season, heavy milking ability, and producing more than one lamb crop per year. This breed also yields heavily muscled carcasses.

9. This breed was developed in France. It is long lived, rugged, and will breed out of season. It has fine wool, is large and white faced, and has wool on the head and legs.

References: Sheep Learning Laboratory Kit; 4-H Sheep Resource Handbook
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Sheep Breeds

Read the descriptions and fill in the blanks with the breed names. The circled letters will then spell out one remaining breed.

1. **F**i**n**n**s**__ **s**heep
2. **C**or**r**ie**d**a**l**e
3. **C**ol**u**mb**i**a
4. **S**h**r**o**p**s**h**i**r**e
5. **S**u**f**f**o**l**k
6. **S**o**u**t**h**d**o**w**n
7. **C**he**v**i**o**t
8. **D**o**r**s**e**t
9. **R**a**m**b**b**o**u**i**l**l**e**t

**Clues**

1. This breed is fine-boned, produces medium grade wool, reaches sexual maturity early, and is very prolific, producing two to four lambs each lambing.

2. This breed is white faced and was developed in New Zealand from a Lincoln and Leicester X Merino crosses. It is medium in size and yields heavy, medium wool fleeces.

3. This breed was developed in the United States from a Lincoln ram and Rambouillet ewe cross. It is known for size, wool producing ability, and productivity under range conditions. It is a white faced, polled breed and has wool on the legs.

4. This breed was developed in England, is dark faced, polled, has wool on the head and face, and is heavy muscled and milks well.

5. This breed is polled with a black head and legs and has the greatest number of purebred registrations in the United States. It is a sire breed known for its meatiness and carcass quality.

6. This is the oldest breed from England and is known for producing a meaty carcass. It is polled with a gray to a mouse-brown colored face, has wool on the legs, and produces a medium wool.

7. This breed was developed in Scotland and is adaptable to a variety of climates. It is small in size, white faced, bare legged and headed, and is a good milker possessing excellent lamb vigor.

8. This breed, developed in Southern England, is polled, scurred, or horned. A ewe breed, it is known for breeding out of season, heavy milking ability, and producing more than one lamb crop per year. This breed also yields heavily muscled carcasses.

9. This breed was developed in France. It is long lived, rugged, and will breed out of season. It has fine wool, is large and white faced, and has wool on the head and legs.

The last breed name is **Hampshire**.

The circled answer is a breed that was developed in Southern England. It is large framed, wool capped, black faced, and medium wooled. It has good milking ability and high carcass cutability.

References: Sheep Learning Laboratory Kit; 4-H Sheep Resource Handbook
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Swine Breeds

Read the descriptions and fill in the blanks with the breed names.

1. __ __ __ __ __ __ __ __ __ __ __
2. __ __ __ __ __ __ __ __ __ __ __ __
3. __ __ __ __ __ __ __ __ __ __ __ __
4. __ __ __ __ __ __ __ __ __ __ __ __
5. __ __ __ __ __ __ __ __ __ __ __ __
6. __ __ __ __ __ __ __ __ __ __ __ __
7. __ __ __ __ __ __ __ __ __ __ __ __
8. __ __ __ __ __ __ __ __ __ __ __ __

Clues

1. This breed originated in England. It is black with white feet, tail, and face. It is known for having sound skeletons, dish-faced snouts, and short erect ears.
2. This breed was developed in Pennsylvania, is white, has medium sized droopy ears, and is a maternal breed.
3. Developed in America from a cross between red hogs from New York and red hogs from New Jersey, these hogs are light red to dark red and droopy eared. They are quick, efficient growers and are good mothers.
4. This breed, developed in England, is black with a white belt around the shoulders and both front legs. They are erect-eared and heavily muscled.
5. Originally from Denmark, this is a long bodied breed with large floppy ears and strong maternal traits.
6. This breed, developed in Ohio, is black with six white points (four white legs, tail, and nose). It is lean, droopy eared, and heavily muscled.
7. This breed was developed in Indiana. It is medium in size with black and white spots, and droopy eared. It is a fast gainer and an aggressive breeder.
8. This breed came from England. It is white colored, erect eared, and has a long, large frame. It is known as the mother breed because they produce large litters and are heavy milkers.

References: Swine Learning Laboratory Kit; 4-H Swine Resource Handbook
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Swine Breeds

Read the descriptions and fill in the blanks with the breed names.

1. **Berkshire**
2. **Chester White**
3. **Duroc**
4. **Hampshire**
5. **Landrace**
6. **Poland China**
7. **Spotted**
8. **Yorkshire**

**Clues**

1. This breed originated in England. It is black with white feet, tail, and face. It is known for having sound skeletons, dish-faced snouts, and short erect ears.
2. This breed was developed in Pennsylvania, is white, has medium sized droopy ears, and is a maternal breed.
3. Developed in America from a cross between red hogs from New York and red hogs from New Jersey, these hogs are light red to dark red and droopy eared. They are quick, efficient growers and are good mothers.
4. This breed, developed in England, is black with a white belt around the shoulders and both front legs. They are erect-eared and heavily muscled.
5. Originally from Denmark, this is a long bodied breed with large floppy ears and strong maternal traits.
6. This breed, developed in Ohio, is black with six white points (four white legs, tail, and nose). It is lean, droopy eared, and heavily muscled.
7. This breed was developed in Indiana. It is medium in size with black and white spots, and droopy eared. It is a fast gainer and an aggressive breeder.
8. This breed came from England. It is white colored, erect eared, and has a long, large frame. It is known as the mother breed because they produce large litters and are heavy milkers.

References: Swine Learning Laboratory Kit; 4-H Swine Resource Handbook
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock

Beef Parts

Activity level: Beginners or members ages 9 to 11

Write in the number that corresponds to the correct part of the animal.

Identification

In this activity you will:

• learn the parts of a steer.

____ throat  _______ crest  _______ knee  _______ cannon
____ neck  _______ face  _______ rib  _______ stifle joint
____ point of shoulder  _______ pin  _______ sheath/navel  _______ forearm
____ loin  _______ muzzle  _______ rear flank  _______ switch
____ hoof  _______ dewlap  _______ ear  _______ tail head
____ heart girth  _______ rump  _______ hook  _______ hindquarter
____ pastern  _______ brisket  _______ dewclaw  _______ belly
____ poll  _______ back  _______ hock
Livestock

Beef Parts

Activity level: Beginners or members ages 9 to 11

Write in the number that corresponds to the correct part of the animal.

In this activity you will:

- learn the parts of a steer.

References: Ohio 4-H Beef, Sheep, and Swine Selection and Evaluation Book #103R; Beef Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock

Beef Parts

Activity level: Intermediate and advanced members ages 12 to 18

Write in the name that corresponds to the correct part of the animal.

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________
11. ____________________
12. ____________________
13. ____________________
14. ____________________
15. ____________________
16. ____________________
17. ____________________
18. ____________________
19. ____________________
20. ____________________
21. ____________________
22. ____________________
23. ____________________
24. ____________________
25. ____________________
26. ____________________
27. ____________________
28. ____________________
29. ____________________
30. ____________________
31. ____________________

References: Ohio 4-H Beef, Sheep, and Swine Selection and Evaluation Book #103R; Beef Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Beef Parts
Activity level: Intermediate and advanced members ages 12 to 18

In this activity you will:
• learn the parts of a steer.

Write in the name that corresponds to the correct part of the animal.

1. ____________________
   2. ____________________
   3. ____________________
   4. ____________________
   5. ____________________
   6. ____________________
   7. ____________________
   8. ____________________
   9. ____________________
   10. ____________________
   11. ____________________

12. ____________________
   13. ____________________
   14. ____________________
   15. ____________________
   16. ____________________
   17. ____________________
   18. ____________________
   19. ____________________
   20. ____________________
   21. ____________________
   22. ____________________
   23. ____________________
   24. ____________________
   25. ____________________
   26. ____________________
   27. ____________________
   28. ____________________
   29. ____________________
   30. ____________________
   31. ____________________

References: Ohio 4-H Beef, Sheep, and Swine Selection and Evaluation Book #103R; Beef Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Dairy Cow Parts
Activity level: Beginners or members ages 9 to 11

In this activity you will:
• learn the parts of a dairy cow.

Write in the number that corresponds to the correct part of the animal.

Reference: The Dairy Livestock Learning Laboratory Kit
Prepared By: Andrea Auker, Animal Sciences Student
Livestock
Dairy Cow Parts

Activity level: Beginners or members ages 9 to 11

Write in the number that corresponds to the correct part of the animal.

Identification—Key
In this activity you will:
- learn the parts of a dairy cow.

Reference: The Dairy Livestock Learning Laboratory Kit
Prepared By: Andrea Auker, Animal Sciences Student
Livestock
Dairy Cow Parts
Activity level: Intermediate and advanced members ages 12 to 18

Write in the name that corresponds to the correct part of the animal.

1. __________________
2. __________________
3. __________________
4. __________________
5. __________________
6. __________________
7. __________________
8. __________________
9. __________________
10. __________________
11. __________________
12. __________________
13. __________________
14. __________________
15. __________________
16. __________________
17. __________________
18. __________________
19. __________________
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21. __________________
22. __________________
23. __________________
24. __________________
25. __________________
26. __________________
27. __________________

Reference: The Dairy Livestock Learning Laboratory Kit
Prepared By: Andrea Auker, Animal Sciences Student
**Livestock**

**Dairy Cow Parts**

*Activity level: Intermediate and advanced members ages 12 to 18*

Write in the name that corresponds to the correct part of the animal.

<table>
<thead>
<tr>
<th>Number</th>
<th>Part Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>pin bone</td>
</tr>
<tr>
<td>2</td>
<td>rump</td>
</tr>
<tr>
<td>3</td>
<td>hip (hooks)</td>
</tr>
<tr>
<td>4</td>
<td>loin</td>
</tr>
<tr>
<td>5</td>
<td>back</td>
</tr>
<tr>
<td>6</td>
<td>chine</td>
</tr>
<tr>
<td>7</td>
<td>crops</td>
</tr>
<tr>
<td>8</td>
<td>withers</td>
</tr>
<tr>
<td>9</td>
<td>neck</td>
</tr>
<tr>
<td>10</td>
<td>muzzle</td>
</tr>
<tr>
<td>11</td>
<td>throat</td>
</tr>
<tr>
<td>12</td>
<td>shoulder blade</td>
</tr>
<tr>
<td>13</td>
<td>point of shoulder</td>
</tr>
<tr>
<td>14</td>
<td>hoof</td>
</tr>
<tr>
<td>15</td>
<td>chest floor</td>
</tr>
<tr>
<td>16</td>
<td>fore udder</td>
</tr>
<tr>
<td>17</td>
<td>teat</td>
</tr>
<tr>
<td>18</td>
<td>pastern</td>
</tr>
<tr>
<td>19</td>
<td>hock</td>
</tr>
<tr>
<td>20</td>
<td>rear udder</td>
</tr>
<tr>
<td>21</td>
<td>thigh</td>
</tr>
<tr>
<td>22</td>
<td>tail</td>
</tr>
<tr>
<td>23</td>
<td>thurl</td>
</tr>
<tr>
<td>24</td>
<td>stifle</td>
</tr>
<tr>
<td>25</td>
<td>barrel</td>
</tr>
<tr>
<td>26</td>
<td>ribs</td>
</tr>
<tr>
<td>27</td>
<td>heart girth</td>
</tr>
</tbody>
</table>

*Reference: The Dairy Livestock Learning Laboratory Kit*

Prepared By: Andrea Auker, Animal Sciences Student
Livestock
Goat Parts
Activity level: Beginners or members ages 9 to 11

Write in the number that corresponds to the correct part of the animal.

References: Goat Resource 4-H Handbook; Goat Livestock Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Goat Parts
Activity level: Beginners or members ages 9 to 11

Write in the number that corresponds to the correct part of the animal.

References: Goat Resource 4-H Handbook; Goat Livestock Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Goat Parts
Activity level: Intermediate and advanced members ages 12 to 18

Write in the name that corresponds to the correct part of the animal.

Identification
In this activity you will:

- learn the parts of a goat.

References: Goat Resource 4-H Handbook; Goat Livestock Learning Laboratory Kit

Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Goat Parts
Activity level: Intermediate and advanced members ages 12 to 18

Write in the name that corresponds to the correct part of the animal.

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________
11. ____________________
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31. ____________________
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34. ____________________
35. ____________________
36. ____________________
37. ____________________
38. ____________________

References: Goat Resource 4-H Handbook; Goat Livestock Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Sheep Parts
Activity level: Beginners or members ages 9 to 11

Write in the number that corresponds to the correct part of the animal.

References: Sheep Breeding and Market Lamb 4-H Resource Handbook; Sheep Livestock Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
**Livestock**

**Sheep Parts**

Activity level: Beginners or members ages 9 to 11

Write in the number that corresponds to the correct part of the animal.

<table>
<thead>
<tr>
<th>Number</th>
<th>Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>muzzle</td>
</tr>
<tr>
<td>2</td>
<td>face</td>
</tr>
<tr>
<td>3</td>
<td>twist</td>
</tr>
<tr>
<td>4</td>
<td>poll</td>
</tr>
<tr>
<td>5</td>
<td>neck</td>
</tr>
<tr>
<td>6</td>
<td>top of shoulder</td>
</tr>
<tr>
<td>7</td>
<td>back/rack</td>
</tr>
<tr>
<td>8</td>
<td>loin</td>
</tr>
<tr>
<td>9</td>
<td>hip</td>
</tr>
<tr>
<td>10</td>
<td>rump</td>
</tr>
<tr>
<td>11</td>
<td>loin</td>
</tr>
<tr>
<td>12</td>
<td>middle</td>
</tr>
<tr>
<td>13</td>
<td>shoulder</td>
</tr>
<tr>
<td>14</td>
<td>leg</td>
</tr>
<tr>
<td>15</td>
<td>hock</td>
</tr>
<tr>
<td>16</td>
<td>pastern</td>
</tr>
<tr>
<td>17</td>
<td>rear flank</td>
</tr>
<tr>
<td>18</td>
<td>hoof</td>
</tr>
<tr>
<td>19</td>
<td>belly</td>
</tr>
<tr>
<td>20</td>
<td>fore flank</td>
</tr>
<tr>
<td>21</td>
<td>cannon</td>
</tr>
<tr>
<td>22</td>
<td>knee</td>
</tr>
<tr>
<td>23</td>
<td>forearm</td>
</tr>
<tr>
<td>24</td>
<td>breast/brisket</td>
</tr>
<tr>
<td>25</td>
<td>shoulder</td>
</tr>
</tbody>
</table>

References: Sheep Breeding and Market Lamb 4-H Resource Handbook; Sheep Livestock Learning Laboratory Kit

Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Sheep Parts

Activity level: Intermediate and advanced members ages 12 to 18

Write in the name that corresponds to the correct part of the animal below.

1. ________________
2. ________________
3. ________________
4. ________________
5. ________________
6. ________________
7. ________________
8. ________________
9. ________________
10. ________________
11. ________________
12. ________________
13. ________________
14. ________________
15. ________________
16. ________________
17. ________________
18. ________________
19. ________________
20. ________________
21. ________________
22. ________________
23. ________________
24. ________________
25. ________________

References: Sheep Breeding and Market Lamb 4-H Resource Handbook; Sheep Livestock Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Sheep Parts

Activity level: Intermediate and advanced members ages 12 to 18

Write in the name that corresponds to the correct part of the animal below.

References: Sheep Breeding and Market Lamb 4-H Resource Handbook; Sheep Livestock Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Pig Parts
Activity level: Beginners or members ages 9 to 11

Write in the number that corresponds to the correct part of the animal.

In this activity you will:
• learn the parts of a pig.

References: Market Hog 4-H Handbook #135R; Beef, Sheep, and Swine Selection and Evaluation 4-H Book #103R; Swine Livestock Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock

Pig Parts

Activity level: Beginners or members ages 9 to 11

Write in the number that corresponds to the correct part of the animal.

Identification—Key

In this activity you will:

- learn the parts of a pig.

References: Market Hog 4-H Handbook #135R; Beef, Sheep, and Swine Selection and Evaluation 4-H Book #103R; Swine Livestock Learning Laboratory Kit

Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock

Pig Parts

Activity level: Intermediate and advanced members ages 12 to 18

Write in the name that corresponds to the correct part of the animal.

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________
11. ____________________
12. ____________________
13. ____________________
14. ____________________
15. ____________________
16. ____________________
17. ____________________
18. ____________________
19. ____________________
20. ____________________
21. ____________________
22. ____________________
23. ____________________
24. ____________________
25. ____________________
26. ____________________
27. ____________________

References: Market Hog 4-H Handbook #135R; Beef, Sheep, and Swine Selection and Evaluation 4-H Book #103R; Swine Livestock Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Identification—Key

In this activity you will:
- learn the parts of a pig.

Livestock
Pig Parts
Activity level: Intermediate and advanced members ages 12 to 18

Write in the name that corresponds to the correct part of the animal.

1. snout
2. head
3. ear
4. neck
5. shoulder
6. forerib area
7. back
8. loin
9. rump
10. tail
11. vulva (Guilt)
12. ham
13. stifle joint
14. hock
15. dewdaw
16. sheath (Barrow)
17. belly
18. teats
19. foot (toes)
20. pastern
21. cannon
22. knee
23. jowl
24. elbow
25. fore flank
26. side
27. rear flank

References: Market Hog 4-H Handbook #135R; Beef, Sheep, and Swine Selection and Evaluation 4-H Book #103R; Swine Livestock Learning Laboratory Kit
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock

Beef Feet and Leg Structure

On the blanks, write the letter of the term that corresponds to the diagram below.

A. Knock kneed or splayfooted
B. Bowlegged or pigeon toed
C. Correct
D. Cow hocked or splayfooted
E. Bowlegged or pigeon toed
F. Correct
G. Buck kneed
H. Calf kneed
I. Sickle hocked
J. Postlegged

References: Beef Resource 4-H Handbook; Beef Livestock Learning Laboratory Kit; Beef, Sheep and Swine Selection and Evaluation 4-H #103R
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Beef Feet and Leg Structure

In this activity you will:

Identification—Key

• identify the various feet and leg structure diagrams.

On the blanks, write the letter of the term that corresponds to the diagram below.

A. Knock kneed or splayfooted
B. Bowlegged or pigeon toed
C. Correct
D. Cow hocked or splayfooted
E. Bowlegged or pigeon toed
F. Correct
G. Buck kneed
H. Calf kneed
I. Sickle hocked
J. Postlegged

References: Beef Resource 4-H Handbook; Beef Livestock Learning Laboratory Kit; Beef, Sheep and Swine Selection and Evaluation 4-H #103R
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
**Livestock**

**Dairy Cattle Feet and Leg Structure**

On the blanks, write the letter of the term that corresponds to the diagram below.

A. Weak Pastern, Shallow Heel  
B. Thurls Too Far Back  
C. Sickle-Hocked  
D. Cow-Hocked  
E. Correct, Ideal Pastern

---

**Identification**

*In this activity you will:*

- identify the various feet and leg structure diagrams.

---

Reference: Dairy Livestock Learning Laboratory Kit

Prepared By: Andrea Auker, Animal Sciences Student
Livestock
Dairy Cattle Feet and Leg Structure

On the blanks, write the letter of the term that corresponds to the diagram below.

A. Weak Pastern, Shallow Heel  F. Correct Set
B. Thurls Too Far Back  G. Correct, Ideal Rear Legs
C. Sickle-Hocked  H. Post Legged
D. Cow-Hocked  I. Correct, Thurl Placement
E. Correct, Ideal Pastern

Identification—Key
In this activity you will:
• identify the various feet and leg structure diagrams.

Reference: Dairy Livestock Learning Laboratory Kit
Prepared By: Andrea Auker, Animal Sciences Student
Livestock
Goat Mammary Structure

On the blanks, write the letter of the term that corresponds to the diagram below.

A. Fore Udder Attachments, Broken
B. Rear Udder Attachments, Ideal
C. Medial Suspensory Ligaments, Broken
D. Medial Suspensory Ligaments, Ideal
E. Medial Suspensory Ligaments, Weakened

F. Bottle-shaped teats
G. Spur teat
H. Teats that point sideways
I. Pencil-shaped teats
J. Uneven teats
K. Extremely small teats
L. Ideal teats

In this activity you will:
- identify the various udder structure diagrams.

References: 4-H Goat Handbook; Goat Learning Laboratory Kit
Prepared By: Andrea Auker, Animal Sciences Student
Livestock

Goat Mammary Structure

On the blanks, write the letter of the term that corresponds to the diagram below.

A. Fore Udder Attachments, Broken
B. Rear Udder Attachments, Ideal
C. Medial Suspensory Ligaments, Broken
D. Medial Suspensory Ligaments, Ideal
E. Medial Suspensory Ligaments, Weakened
F. Bottle-shaped teats
G. Spur teat
H. Teats that point sideways
I. Pencil-shaped teats
J. Uneven teats
K. Extremely small teats
L. Ideal teats

Identification—Key

In this activity you will:

• identify the various udder structure diagrams.

References: 4-H Goat Handbook; Goat Learning Laboratory Kit

Prepared By: Andrea Auker, Animal Sciences Student
Livestock

Sheep Feet and Leg Structure

On the blanks, write the letter of the term that corresponds to the diagram below.

A. Side View Rear Legs, Sickle-Hocked
B. Side View Front Legs, Correct
C. Side View Front Legs, Calf-Kneed
D. Front View, Pigeon-Toed
E. Side View Front Legs, Weak Pasterns
F. Rear View, Correct
G. Side View Front Legs, Buck-Kneed
H. Front View, Knock-Kneed
I. Front View, Splay-footed
J. Rear View, Cow-Hocked
K. Side View Rear Legs, Post-Legged
L. Front View, Bowlegged

References: Sheep Resource 4-H Handbook; Sheep Livestock Learning Laboratory Kit; Beef, Sheep and Swine Selection and Evaluation 4-H #103R

Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
**Livestock**

**Sheep Feet and Leg Structure**

In this activity, you will:

- **Identification—Key**
  - Identify the various feet and leg structure diagrams.

A. Side View Rear Legs, Sickle-Hocked  
B. Side View Front Legs, Correct  
C. Side View Front Legs, Calf-Kneed  
D. Front View, Pigeon-Toed  
E. Side View Front Legs, Weak Pasterns  
F. Rear View, Correct  
G. Side View Front Legs, Buck-Kneed  
H. Front View, Knock-Kneed  
I. Front View, Splay-footed  
J. Rear View, Cow-Hocked  
K. Side View Rear Legs, Post-Legged  
L. Front View, Bowlegged

![Diagram of various sheep feet and leg structures]

**References:** Sheep Resource 4-H Handbook; Sheep Livestock Learning Laboratory Kit; Beef, Sheep and Swine Selection and Evaluation 4-H #103R

Prepared by: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Swine Feet and Leg Structure

On the blanks, write the letter of the term that corresponds to the diagram below.

A. Normal  D. Weak pastern  G. Splayfooted
B. Sickle-hocked  E. Normal  H. Pigeon-toed
C. Post-legged  F. Buck-kneed

Identification
In this activity you will:
- identify the various feet and leg structure diagrams.

Reference: National Pork Producers Council, “Producers to Evaluate Market Hogs”
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Swine Feet and Leg Structure

On the blanks, write the letter of the term that corresponds to the diagram below.

A. Normal
B. Sickle-hocked
C. Post-legged
D. Weak pastern
E. Normal
F. Buck-kneed
G. Splayfooted
H. Pigeon-toed

Reference: National Pork Producers Council, “Producers to Evaluate Market Hogs”
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock

Beef Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

Situation Statement

“Curly,” the hereford steer (#351) you are planning to take to the fair next month, is lame in the left front leg. Today your veterinarian has diagnosed the steer’s problem as foot rot and has given it an initial treatment at the time of the examination. The veterinarian has left additional prescribed medication with you to continue the treatment. The directions on the medication tell you to give the steer 1 cc per 50 pounds body weight once daily for 4 days, beginning tomorrow, and to give it by intramuscular injection. Your steer weighs 1,000 pounds. Remember, your veterinarian treated the steer today, April 3, around 4:00 p.m. and you will treat it 4 more days as directed. The hold time on this product is 14 days.

Bottle Label

Emily Edwards, DVM
100 Quality Avenue
Hometown, OH 43200
614-555-5050

Owner: Jennifer Wilson  Date: April 3
Animal ID: Hereford #351  Indications: Foot rot
Directions: 1 cc per 50 pounds body weight IM once daily for four days.
Precaution: Avoid injection into muscle of high carcass value.
Warning: Use of this drug must be discontinued for 14 days before slaughter or market for food.
Product/Active Ingredient(s): Hydrocillin
Expiration Date: September 30

Treatment Record

<table>
<thead>
<tr>
<th>Treatment Date</th>
<th>Animal ID • Name</th>
<th>Condition Being Treated</th>
<th>Estimated Weight</th>
<th>Treatment Given (Medication dispensed, amount, and route)</th>
<th>Instructed Meat/Milk/Egg Withdrawal</th>
<th>Results</th>
<th>Date Withdrawal Complete</th>
<th>If this is an extra label or Rx drug, list the name, address, and phone number of the licensed veterinarian who prescribed or directed the treatment.</th>
</tr>
</thead>
</table>

Teaching References: Caring for Animals Discussion Guide and video, and the 4-H Beef Resource Handbook. The Beef Learning Laboratory Kit contains a medicine bottle, syringe, and skeletal poster which are helpful but not necessary for this exercise.

Lesson plan by: Dr. Bill Shulaw, OSU Extension Veterinarian
Livestock

Beef Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

Situation Statement

“Curly,” the hereford steer (#351) you are planning to take to the fair next month, is lame in the left front leg. Today your veterinarian has diagnosed the steer’s problem as foot rot and has given it an initial treatment at the time of the examination. The veterinarian has left additional prescribed medication with you to continue the treatment. The directions on the medication tell you to give the steer 1 cc per 50 pounds body weight once daily for 4 days, beginning tomorrow, and to give it by intramuscular injection. Your steer weighs 1,000 pounds. Remember, your veterinarian treated the steer today, April 3, around 4:00 p.m. and you will treat it 4 more days as directed. The hold time on this product is 14 days.

Bottle Label

Emily Edwards, DVM
100 Quality Avenue
Hometown, OH 43200
614-555-5050

Owner: Jennifer Wilson  Date: April 3
Animal ID: Hereford #351  Indications: Foot rot
Directions: 1 cc per 50 pounds body weight IM once daily for four days.
Precaution: Avoid injection into muscle of high carcass value.
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<th>Date Withdrawal Complete</th>
<th>If this is an extra label or Rx drug, list the name, address, and phone number of the licensed veterinarian who prescribed or directed the treatment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>Steer #351</td>
<td>Foot rot</td>
<td>1,000 lb</td>
<td>Hydrocillin 20 cc IM</td>
<td>14 days Meat</td>
<td>X</td>
<td>4-17</td>
<td>Emily Edwards, DVM 100 Quality Avenue Hometown, OH 43200 614-555-5050</td>
</tr>
<tr>
<td>44</td>
<td>Steer #351</td>
<td>Foot rot</td>
<td>1,000 lb</td>
<td>Hydrocillin 20 cc IM</td>
<td>14 days Meat</td>
<td>X</td>
<td>4-18</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Steer #351</td>
<td>Foot rot</td>
<td>1,000 lb</td>
<td>Hydrocillin 20 cc IM</td>
<td>14 days Meat</td>
<td>X</td>
<td>4-19</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Steer #351</td>
<td>Foot rot</td>
<td>1,000 lb</td>
<td>Hydrocillin 20 cc IM</td>
<td>14 days Meat</td>
<td>X</td>
<td>4-20</td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>Steer #351</td>
<td>Foot rot</td>
<td>1,000 lb</td>
<td>Hydrocillin 20 cc IM</td>
<td>14 days Meat</td>
<td>X</td>
<td>4-21</td>
<td></td>
</tr>
</tbody>
</table>

X = This information was not supplied in the situation, therefore you do not need to complete this box.

Teaching References: Caring for Animals Discussion Guide and video, and the 4-H Beef Resource Handbook. The Beef Learning Laboratory Kit contains a medicine bottle, syringe, and skeletal poster which are helpful but not necessary for this exercise.

Lesson plan by: Dr. Bill Shulaw, OSU Extension Veterinarian
Livestock

Dairy Cattle Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

Situation Statement

Today is February 5. At the afternoon milking today, you notice the right front quarter on cow #28, a 1,200 pound Holstein, has abnormal milk. You saw several flakes and thick milk on the strip plate while preparing the cow for milking. You decide she has mastitis. The udder feels normal as is the cow’s temperature and appetite. At the end of the milking, you medicate the right front quarter using an over-the-counter (OTC) intramammary infusion product called SUPER-MAST™. The time of the treatment is 6:00 p.m. The label of the product is seen below. You mark the cow as treated by attaching a red leg band to the rear leg. Fill out the treatment record for today’s treatment.

Bottle Label

SUPER-MAST™
Hydrocillin
Lactating Cow Intramammary Infusion

Each 10 ml single dose disposable syringe contains 50 mg hydrocillin in a base suitable for the treatment of bovine mastitis during the lactating period.

Indications: For the intramammary treatment of bovine mastitis caused by susceptible bacteria.

Administration: After milking, clean and disinfect the teat end with an alcohol swab. Remove the protective covering from the tip and insert the tip into the teat orifice. Express the contents of the tube into the quarter with gentle pressure. Withdraw the syringe and massage the medication up into the affected quarter. Milk out the quarter at the next routine milking.

Storage: Store between 45 and 75 degrees F.

WARNING: Milk that has been taken from animal during treatment and for 72 hours (3 days) after the last treatment must be discarded. Treated animal should not be slaughtered for food purposes for 10 days following the last treatment.

Net contents: 10 ml

SKILLATHON ANIMAL HEALTH COMPANY
Veterinary use only—not for human use

Treatment Record

<table>
<thead>
<tr>
<th>Treatment Date</th>
<th>Animal ID • Name • Species • ID Number • Description</th>
<th>Condition Being Treated</th>
<th>Estimated Weight</th>
<th>Treatment Given (Medication dispensed, amount, and route)</th>
<th>Instructed Meat/Milk/Egg Withdrawal</th>
<th>Results</th>
<th>Date Withdrawal Complete</th>
<th>If this is an extra label or Rx drug, list the name, address, and phone number of the licensed veterinarian who prescribed or directed the treatment.</th>
</tr>
</thead>
</table>

Teaching References: Dairy Learning Laboratory Kit, Curriculum Guide and video. The dairy kit contains a medicine bottle, syringe, and skeletal poster which are helpful but not necessary for this exercise.

Lesson plan by: Dr. Bill Shulaw, OSU Extension Veterinarian
Livestock

Dairy Cattle Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

Situation Statement

Today is February 5. At the afternoon milking today, you notice the right front quarter on cow #28, a 1,200 pound Holstein, has abnormal milk. You saw several flakes and thick milk on the strip plate while preparing the cow for milking. You decide she has mastitis. The udder feels normal as is the cow’s temperature and appetite. At the end of the milking, you medicate the right front quarter using an over-the-counter (OTC) intramammary infusion product called SUPER-MAST™. The time of the treatment is 6:00 p.m. The label of the product is seen below. You mark the cow as treated by attaching a red leg band to the rear leg. Fill out the treatment record for today’s treatment.

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Net contents: 10 ml
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Treatment Record

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<th>Animal ID</th>
<th>Condition</th>
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<th>Estimated Weight</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2/5 6 p.m.</td>
<td>#28 Holstein cow</td>
<td>mastitis</td>
<td>1,200 lb</td>
<td>Super-Mast 10 ml intramammary in right front quarter</td>
<td>Milk—3 days</td>
<td>Meat—10 days</td>
<td>X</td>
<td>Milk—2/8 6 p.m.</td>
<td></td>
</tr>
</tbody>
</table>

Teaching References: Dairy Learning Laboratory Kit, Curriculum Guide and video. The dairy kit contains a medicine bottle, syringe, and skeletal poster which are helpful but not necessary for this exercise.

Lesson plan by: Dr. Bill Shulaw, OSU Extension Veterinarian
Livestock

Goat Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

Situation Statement

The market goat you have been planning to take to the fair is lame. Today your veterinarian diagnosed the goat’s problem as foot rot and gave it an initial treatment at the time of the examination. The veterinarian left additional medication with you to continue the treatment. The directions on the medication tell you to give the goat 2 cc’s per 100 pounds body weight once daily for 3 days, beginning tomorrow, and to give it by intramuscular injection. Your goat weighs 50 pounds. Remember, your veterinarian treated the goat today, June 8, and you will treat the goat 3 more days as directed.

Bottle Label

Susan Q. Veterinarian, DVM
100 Quality Drive
Anywhere, OH 43210
614-555-0000

Owner: Keith Young  Date: June 8
Animal ID: Goat 101-Saanen  Indications: Foot rot
Directions: Give 2 cc per 100 pounds body weight once daily intramuscularly for 3 days.
Precaution: Avoid muscle of high carcass value.
Warning: Use of this drug must be discontinued for 30 days before slaughter or market for food.
Product/Active Ingredient(s): Hydrocillin

Treatment Record

<table>
<thead>
<tr>
<th>Treatment Date</th>
<th>Animal ID</th>
<th>Condition Being Treated</th>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
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Teaching References: Caring for Animals Discussion Guide and video; the 4-H Goat Handbook; and the Goat Learning Laboratory Kit, which contains a medicine bottle, syringe, and skeletal poster which are helpful but not necessary for this exercise.

Lesson plan by: Dr. Gary Bowman, OSU Extension Veterinarian
Livestock
Goat Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

Situation Statement
The market goat you have been planning to take to the fair is lame. Today your veterinarian diagnosed the goat’s problem as foot rot and gave it an initial treatment at the time of the examination. The veterinarian left additional medication with you to continue the treatment. The directions on the medication tell you to give the goat 2 cc’s per 100 pounds body weight once daily for 3 days, beginning tomorrow, and to give it by intramuscular injection. Your goat weighs 50 pounds. Remember, your veterinarian treated the goat today, June 8, and you will treat the goat 3 more days as directed.

Bottle Label

Susan Q. Veterinarian, DVM
100 Quality Drive
Anywhere, OH 43210
614-555-0000

Owner: Keith Young
Date: June 8
Animal ID: Goat 101-Saanen
Indications: Foot rot
Directions: Give 2 cc per 100 pounds body weight once daily intramuscularly for 3 days.
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<th>Date Withdrawal Complete</th>
<th>If this is an extra label or Rx drug, list the name, address, and phone number of the licensed veterinarian who prescribed or directed the treatment</th>
</tr>
</thead>
</table>
| 6-9            | Goat 101-Saanen | foot rot | 50 lb | Hydrocillin 1 cc IM | 30 days meat | X | 7/9 | Susan Q. Veterinarian, DVM
100 Quality Drive
Anywhere, OH 43210
614-555-0000 |
| 6-10           | Goat 101-Saanen | foot rot | 50 lb | Hydrocillin 1 cc IM | 30 days meat | X | 7/10 |
| 6-11           | Goat 101-Saanen | foot rot | 50 lb | Hydrocillin 1 cc IM | 30 days meat | X | 7/11 |

Teaching References: Caring for Animals Discussion Guide and video; the 4-H Goat Handbook; and the Goat Learning Laboratory Kit, which contains a medicine bottle, syringe, and skeletal poster which are helpful but not necessary for this exercise.

Lesson plan by: Dr. Gary Bowman, OSU Extension Veterinarian
Livestock

Sheep Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

Situation Statement

Today is May 15. Your name is Lynn Monroe. Your Suffolk market lamb “Elmo” (ear tag #3159) you are planning to take to the county fair July 2–7 is lame on the left front leg. When you examine it, you find the foot smells bad and the hoof wall is separating from the sole. These findings lead you to believe the lamb has foot rot. The veterinarian who regularly cares for your animals is Angela Adams, DVM. She examined the animal and gave you (prescribed) the bottle of medication listed below and instructed you to give the treatment today at 3:00 p.m. Your lamb weighs about 100 pounds.

Bottle Label

Angela Adams, DVM
100 Quality Avenue
Hometown, OH 43200
614-555-5050

Owner: Lynn Monroe
Date: May 15
Animal ID: Lamb #3159
Indications: Foot rot
Directions: Give 5 ml (cc) intramuscularly on May 15, at 3 p.m.
Precaution: Avoid the muscle tissues of high carcass value.
Warning: Use of this drug must be discontinued for 10 days before slaughter or market for food.
Product/Active Ingredient(s): Biomycin
Expiration Date: August 15

Treatment Record

<table>
<thead>
<tr>
<th>Treatment Date and Time</th>
<th>Animal ID</th>
<th>Condition Being Treated</th>
<th>Estimated Weight</th>
<th>Treatment Given (Medication dispensed, amount, and route)</th>
<th>Instructed Meat/Milk/Egg Withdrawal</th>
<th>Results</th>
<th>Date and Time Withdrawal Complete</th>
<th>If this is an extra label or Rx drug, list the name, address, and phone number of the licensed veterinarian who prescribed or directed the treatment.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Teaching References: Caring for Animals Discussion Guide and video, the 4-H Market Lamb Resource Handbook #250R, and the 4-H Sheep Breeding Handbook #194R. The Sheep Learning Laboratory Kit contains a medicine bottle, syringe, and skeletal poster which are helpful but not necessary for this exercise.

Lesson plan by: Dr. Bill Shulaw, OSU Extension Veterinarian
Livestock
Sheep Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

Situation Statement
Today is May 15. Your name is Lynn Monroe. Your Suffolk market lamb “Elmo” (ear tag #3159) you are planning to take to the county fair July 2–7 is lame on the left front leg. When you examine it, you find the foot smells bad and the hoof wall is separating from the sole. These findings lead you to believe the lamb has foot rot. The veterinarian who regularly cares for your animals is Angela Adams, DVM. She examined the animal and gave you (prescribed) the bottle of medication listed below and instructed you to give the treatment today at 3:00 p.m. Your lamb weighs about 100 pounds.

Bottle Label

<table>
<thead>
<tr>
<th>Owner</th>
<th>Lynn Monroe</th>
<th>Date:  May 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal ID:</td>
<td>Lamb #3159</td>
<td>Indications:  Foot rot</td>
</tr>
<tr>
<td>Directions:</td>
<td>Give 5 ml (cc) intramuscularly on May 15, at 3 p.m.</td>
<td></td>
</tr>
<tr>
<td>Precaution:</td>
<td>Avoid the muscle tissues of high carcass value.</td>
<td></td>
</tr>
<tr>
<td>Warning:</td>
<td>Use of this drug must be discontinued for 10 days before slaughter or market for food.</td>
<td></td>
</tr>
<tr>
<td>Product/Active Ingredient(s):</td>
<td>Biomycin</td>
<td></td>
</tr>
<tr>
<td>Expiration Date:</td>
<td>August 15</td>
<td></td>
</tr>
</tbody>
</table>

Treatment Record

<table>
<thead>
<tr>
<th>Treatment Date and Time</th>
<th>Animal ID</th>
<th>Condition Being Treated</th>
<th>Estimated Weight</th>
<th>Treatment Given</th>
<th>Instructed Meat/Milk/Egg Withdrawal</th>
<th>Results</th>
<th>Date and Time Withdrawal Complete</th>
<th>If this is an extra label or Rx drug, list the name, address, and phone number of the licensed veterinarian who prescribed or directed the treatment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/15 3:00 p.m.</td>
<td>Elmo Mkt lamb #3159 Suffolk</td>
<td>Foot rot</td>
<td>100lb</td>
<td>Biomycin 5 ml IM</td>
<td>10 days Meat</td>
<td>X</td>
<td>5-25 3:00 p.m.</td>
<td>Angela Adams, DVM 100 Quality Avenue Hometown, OH 43200 614-555-5050</td>
</tr>
</tbody>
</table>

Teaching References: Caring for Animals Discussion Guide and video, the 4-H Market Lamb Resource Handbook #250R, and the 4-H Sheep Breeding Handbook #194R. The Sheep Learning Laboratory Kit contains a medicine bottle, syringe, and skeletal poster which are helpful but not necessary for this exercise.

Lesson plan by: Dr. Bill Shulaw, OSU Extension Veterinarian
Livestock
Swine Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

Situation Statement
Today is July 11, and your name is Jenny Jones. The market hog “Spot” (a 200-pound blue-butt barrow with ear notch 36-7) you have been raising since April started having difficulty breathing yesterday. This morning the hog failed to eat its feed and was reluctant to move unless forced to do so. At your request, Dr. Bruce E. Losis, the local veterinarian, examined your hog and diagnosed its problem as pneumonia. He administered medications at the time of the examination. He has left more medicine for you to give tomorrow, July 12 at 2:00 p.m.

Bottle Label

Bruce E. Losis, DVM
100 Quality Avenue
Hometown, OH 43200
614-555-5050

Owner: Jenny Jones Date: July 11
Animal ID: Hog 36-7 Indications: Pneumonia
Directions: Give 15 ml (cc) subcutaneously on July 12.
Precaution: Use care in injections to avoid infections.
Warning: Use of this drug must be discontinued for 7 days before slaughter or market for food.
Product/Active Ingredient(s): Biomycin
Expiration Date: August 1

Treatment Record

<table>
<thead>
<tr>
<th>Treatment Date and Time</th>
<th>Animal ID</th>
<th>Condition Being Treated</th>
<th>Estimated Weight</th>
<th>Treatment Given (Medication dispensed, amount, and route)</th>
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Teaching References: Caring for Animals Discussion Guide and video, and the 4-H Market Hog Handbook #135R. The Swine Learning Laboratory Kit contains a medicine bottle, syringe, and skeletal poster which are helpful but not necessary for this exercise.

Lesson plan by: Dr. Gary Bowman, OSU Extension Veterinarian
Livestock

Swine Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

Situation Statement

Today is July 11, and your name is Jenny Jones. The market hog “Spot” (a 200-pound blue-butt barrow with ear notch 36-7) you have been raising since April started having difficulty breathing yesterday. This morning the hog failed to eat its feed and was reluctant to move unless forced to do so. At your request, Dr. Bruce E. Losis, the local veterinarian, examined your hog and diagnosed its problem as pneumonia. He administered medications at the time of the examination. He has left more medicine for you to give tomorrow, July 12.

Bottle Label

Bruce E. Losis, DVM
100 Quality Avenue
Hometown, OH 43200
614-555-5050
Owner: Jenny Jones  Date: July 11
Animal ID: Hog 36-7  Indications: Pneumonia
Directions: Give 15 ml (cc) subcutaneously on July 12.
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Warning: Use of this drug must be discontinued for 7 days before slaughter or market for food.
Product/Active Ingredient(s): Biomycin
Expiration Date: August 1

Treatment Record

<table>
<thead>
<tr>
<th>July</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
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<td>29</td>
<td>30</td>
<td>31</td>
<td></td>
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<table>
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<th>Results</th>
<th>Date Withdrawal Complete</th>
<th>If this is an extra label or Rx drug, list the name, address, and phone number of the licensed veterinarian who prescribed or directed the treatment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-12 2:00 p.m.</td>
<td>“Spot” Market Hog 36-7 Blue-Butt barrow</td>
<td>Pneumonia</td>
<td>200 lb</td>
<td>Biomycin 15 ml SQ</td>
<td>7 days Meat</td>
<td>X</td>
<td>7-19 2:00 p.m.</td>
<td>Bruce E. Losis, DVM 100 Quality Avenue Hometown, OH 43200 614-555-5050</td>
</tr>
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</table>

Teaching References: Caring for Animals Discussion Guide and video, and the 4-H Market Hog Handbook #135R. The Swine Learning Laboratory Kit contains a medicine bottle, syringe, and skeletal poster which are helpful but not necessary for this exercise.

Lesson plan by: Dr. Gary Bowman, OSU Extension Veterinarian
Livestock
Poultry Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

**Situation Statement**
Today is May 12. You notice several of the flock of 20 White Leghorn pullets you purchased 3 weeks ago have a discharge today from their nostrils, watery eyes, and are coughing. These are the only chickens you have. The flock did not eat nearly as much feed the past day as usual. Because you could tell your chickens are sick, you take two to the local veterinarian for diagnosis and treatment of the illness. The veterinarian diagnoses the condition as a respiratory infection called air sacculitis and tells you that, while he does not carry the needed medication, Superbiotic™, it is available as an over-the-counter (OTC) drug at the nearby farm supply center. He tells you to medicate the chickens’ drinking water starting today, continue for a total of 4 days, and replace the medicated water with clear water on the morning of May 16. Complete the treatment record for May 15.

**Packet Label**
Superbiotic
(10% Hydrocycline Tartrate)
A broad spectrum antibiotic for oral administration in the treatment and prevention of respiratory diseases of poultry caused by susceptible bacteria.

**Directions:** Mix the contents of this packet in 10 gallons of drinking water. This medicated drinking water should be the sole source of drinking water during the period of medication which must not exceed 14 days.

**WARNING:** Discontinue use in poultry 5 days before slaughter.

- Store below 77 degrees F. Keep packet dry.
- Net Contents: 25 grams
- Distributed by USA Animal Health, Inc.

**Treatment Record**

<table>
<thead>
<tr>
<th>Treatment Date and Time</th>
<th>Animal ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Name</td>
<td></td>
</tr>
<tr>
<td>- Species</td>
<td></td>
</tr>
<tr>
<td>- ID Number</td>
<td></td>
</tr>
<tr>
<td>- Description</td>
<td></td>
</tr>
<tr>
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<tr>
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<tr>
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<tr>
<td>Results</td>
<td></td>
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<tr>
<td>Date and Time Withdrawal Complete</td>
<td></td>
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<tr>
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References: Caring for Animals Discussion Guide and video. The Poultry Learning Laboratory Kit contains items which are helpful but not necessary for this exercise.
Prepared by Drs. Gary Bowman and Teresa Morishita, Ohio State University Extension Veterinarians
Livestock
Poultry Quality Assurance

Read the situation statement and label of the medication and complete the treatment record.

Situation Statement
Today is May 12. You notice several of the flock of 20 White Leghorn pullets you purchased 3 weeks ago have a discharge today from their nostrils, watery eyes, and are coughing. These are the only chickens you have. The flock did not eat nearly as much feed the past day as usual. Because you could tell your chickens are sick, you take two to the local veterinarian for diagnosis and treatment of the illness. The veterinarian diagnoses the condition as a respiratory infection called air sacculitis and tells you that, while he does not carry the needed medication, Superbiotic™, it is available as an over-the-counter (OTC) drug at the nearby farm supply center. He tells you to medicate the chickens’ drinking water starting today, continue for a total of 4 days, and replace the medicated water with clear water on the morning of May 16. Complete the treatment record for May 15.

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<th>Treatment Date and Time</th>
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<th>Condition Being Treated</th>
<th>Estimated Weight</th>
<th>Treatment Given (Medication dispensed, amount, and route)</th>
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<th>If this is an extra label or Rx drug, list the name, address, and phone number of the licensed veterinarian who prescribed or directed the treatment.</th>
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</thead>
<tbody>
<tr>
<td>5/15</td>
<td>20 White Leghorn Pullets</td>
<td>Air Sacculitis</td>
<td>X</td>
<td>Superbiotic 1 packet/10 gallons of drinking water</td>
<td>5 days</td>
<td>X</td>
<td>5-20</td>
<td>No extra label or Rx drug was given.</td>
</tr>
</tbody>
</table>

References: Caring for Animals Discussion Guide and video. The Poultry Learning Laboratory Kit contains items which are helpful but not necessary for this exercise.
Prepared by Drs. Gary Bowman and Teresa Morishita, Ohio State University Extension Veterinarians
Livestock

Beef: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

1. What is the main ingredient in this feed?

2. What is the active drug ingredient in this ration?

3. For how many days prior to slaughter should this feed be removed?

4. What is the crude fat level of this diet?

5. What is the crude protein level for this diet?
Livestock

Beef: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

MGA HEIFER SUPPLEMENT
MEDICATED

SUPPLEMENT FOR GROWING/FINISHING BEEF HEIFERS

FOR INCREASED RATE OF WEIGHT GAIN, IMPROVED FEED EFFICIENCY AND SUPPRESSION OF ESTRUS (HEAT) IN HEIFERS FEED FOR SLAUGHTER.

ACTIVE DRUG INGREDIENT
MELENGESTROL ACETATE ................................................... 0.00022%
(EQUIVALENT TO 1.0 MG/LB.)

GUARANTEED ANALYSIS
CRUDE PROTEIN ............................................................ MIN 10.00%
CRUDE FAT ..................................................................... MIN 2.00%
CRUDE FIBER ................................................................ MAX 25.00%
CALCIUM ........................................................................ MIN 5.50%
CALCIUM ........................................................................ MAX 6.50%
SALT .............................................................................. MIN 4.50%
SALT .............................................................................. MAX 5.50%
POTASSIUM .................................................................... MIN 0.60%
SELENIUM ................................................................ MIN 13.00 PPM
VITAMIN A ...................................................... MIN 100,000.0 IU/LB

INGREDIENTS
PROCESSED GRAIN BY-PRODUCTS, ROUGHAGE PRODUCTS, GROUND LIMESTONE, SLAT, POTASSIUM SULFATE, MAGNESIUM SULFATE, SODIUM SELENITE, VITAMIN A ACETATE, VITAMIN D-3 SUPPLEMENT, VITAMIN E SUPPLEMENT, ZINC SULFATE, ZINC OXIDE, COPPER SULFATE, MANGANOUS OXIDE, CALCIUM IODATE, COBALT CARBONATE FERROUS SULFATE.

FEEDING DIRECTIONS
Each pound of supplement will provide 1.0 mg. of melengestrol acetate. Thoroughly mix and feed at the rate of 0.5 pound per head per day to provide 0.5 mg. of melengestrol acetate per head per day. Feed continuously throughout period heifers are being grown and finished for slaughter. This supplement should be fed in controlled amounts with roughage and other feed ingredients.

NOTE
NOT EFFECTIVE FOR SPAYED HEIFERS AND STEERS.

MANUFACTURED BY:
SKILLATHON FEED

NET WEIGHT 50 POUNDS (22.7 KILOGRAMS)
OR AS SHOWN ON SHIPPING DOCUMENT

1. What is the main ingredient in this feed?
processed grain by-products

2. What is the active drug ingredient in this ration?
melengestrol acetate

3. For how many days prior to slaughter should this feed be removed?
None required

4. What is the crude fat level of this diet?
2%

5. What is the crude protein level for this diet?
10%

Adapted from materials created by Dan Frobose, Agr. & Nat. Res. Agent, Wood County
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences

Decision-Making—Key
In this activity you will:
• learn how to read a feed tag.
**LIVESTOCK**

**DAIRY CONCENTRATE**

**CONCENTRATE FOR LACTATING DAIRY CATTLE**

**GUARANTEED ANALYSIS**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Protein</td>
<td>Min 18.00%</td>
</tr>
<tr>
<td>Crude Fat</td>
<td>Min 2.50%</td>
</tr>
<tr>
<td>Crude Fiber</td>
<td>Max 7.00%</td>
</tr>
<tr>
<td>Acid Detergent Fiber</td>
<td>Max 9.00%</td>
</tr>
<tr>
<td>Calcium</td>
<td>Min 0.50%</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>Min 0.60%</td>
</tr>
<tr>
<td>Selenium</td>
<td>Min 0.70 PPM</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>Min 7,000.00 IU/LB</td>
</tr>
</tbody>
</table>

**INGREDIENT USAGE**

Processed grain by-products, grain products, plant protein products, roughage products, ground limestone, salt, lignin sulfonate, sodium selenite, potassium sulfate, magnesium sulfate, calcium phosphate, magnesium oxide, vitamin A acetate, vitamin D-3 supplement, vitamin E supplement, zinc sulfate, zinc oxide, copper sulfate, manganese oxide, calcium iodate, cobalt carbonate, ferrous sulfate.

**FEEDING DIRECTIONS**

Feed dairy concentrate as the concentrate portion of the dairy ration. This concentrate is intended for use when the roughage portion of the diet consists of 60% or more corn silage (on a dry matter basis). This feed contains in addition to other nutrients, 0.7 ppm selenium. Intake of selenium should not exceed 0.3 ppm on a complete feed basis. Therefore, this concentrate should not exceed 42.8% of the total ration. Provide clean, fresh water free choice at all times. Salt may be fed for free choice consumption.

Dairy concentrate feeds are formulated to regulate the amount of both soluble and insoluble protein and to regulate the amount of non-structural carbohydrates.

Dairy concentrate feeds are formulated to regulate the amount of ruminally available protein.

**PATENT NO. X,XXX,XXX**

**PATENT NOS. X,XXX,XXX & X,XXX,XXX**

Manufactured by: Skillathon Feeds

Net weight 50 pounds (22.7 kilograms)

Or as shown on shipping document

---

**Decision-Making**

In this activity you will:

- learn how to read a feed tag.

---

1. What is the main ingredient in this feed?
2. What is the minimum crude protein level?
3. Is this a medicated feed?
4. Is there a withdrawal time for this ration?
5. What is the minimum crude fat level of this diet?
6. Is ground limestone included in the ingredients of this diet?
7. What is the range for calcium content?

---

Adapted from materials created by Dan Frobose, Agr. & Nat. Res. Agent, Wood County
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Maurice Eastridge, State Extension Specialist, Animal Sciences
Livestock
Dairy: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

1. What is the main ingredient in this feed?  
   **processed grain by-products**

2. What is the minimum crude protein level?  
   **18%**

3. Is this a medicated feed?  
   **no**

4. Is there a withdrawal time for this ration?  
   **none required or “no”**

5. What is the minimum crude fat level of this diet?  
   **2.5%**

6. Is ground limestone included in the ingredients of this diet?  
   **yes**

7. What is the range for calcium content?  
   **0.5%–1.0%**

---

### DAIRY CONCENTRATE

**CONCENTRATE FOR LACTATING DAIRY CATTLE**

**GUARANTEED ANALYSIS**

- **CRUDE PROTEIN**: MIN 18.00%
- **CRUDE FAT**: MIN 2.50%
- **CRUDE FIBER**: MAX 7.00
- **ACID DETERGENT FIBER**: MAX 9.00%
- **CALCIUM**: MIN 0.50%
- **PHOSPHORUS**: MIN 0.60%
- **SELENIUM**: MIN 0.70 PPM
- **VITAMIN A**: MIN 7,000.00 IU/LB

**INGREDIENT USAGE**

- PROCESSED GRAIN BYPRODUCTS
- GRAIN PRODUCTS
- PLANT PROTEIN PRODUCTS
- ROUGHAGE PRODUCTS
- GROUND LIMESTONE
- SALT
- LIGNIN SULFONATE
- SODIUM SELENITE
- POTASSIUM SULFATE
- MAGNESIUM SULFATE
- CALCIUM PHOSPHATE
- MAGNESIUM OXIDE
- CALCIUM IODATE
- COBALT CARBONATE
- FERROUS SULFATE

**FEEDING DIRECTIONS**

FEED DAIRY CONCENTRATE AS THE CONCENTRATE PORTION OF THE DAIRY RATION. THIS CONCENTRATE IS INTENDED FOR USE WHEN THE ROUGHAGE PORTION OF THE DIET CONSISTS OF 60% OR MORE CORN SILAGE (ON A DRY MATTER BASIS). THIS FEED CONTAINS IN ADDITION TO OTHER NUTRIENTS, 0.7 PPM SELENIUM. INTAKE OF SELENIUM SHOULD NOT EXCEED 0.3 PPM ON A COMPLETE FEED BASIS, THEREFORE, THIS CONCENTRATE SHOULD NOT EXCEED 42.8% OF THE TOTAL RATION. PROVIDE CLEAN, FRESH WATER FREE CHOICE AT ALL TIMES. SALT MAY BE FED FOR FREE CHOICE CONSUMPTION.

**DAIRY CONCENTRATE FEEDS ARE FORMULATED TO REGULATE THE AMOUNT OF BOTH SOLUBLE AND INSOLUBLE PROTEIN AND TO REGULATE THE AMOUNT OF NON-STRUCTURAL CARBOHYDRATES.**

**DAIRY CONCENTRATE FEEDS ARE FORMULATED TO REGULATE THE AMOUNT OF RUMINALLY AVAILABLE PROTEIN.**

**PATENT NO. X,XXX,XXX**

**PATENT NOS. X,XXX,XXX & X,XXX,XXX**

**MANUFACTURED BY:**

**SKILLATHON FEEDS**

**NET WEIGHT 50 POUNDS (22.7 KILOGRAMS)**

**OR AS SHOWN ON SHIPPING DOCUMENT**

---

Adapted from materials created by Dan Frobose, Agr. & Nat. Res. Agent, Wood County

Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Maurice Eastridge, State Extension Specialist, Animal Sciences
Livestock

Goat: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

**NET WEIGHT 50 POUNDS**

**SKILLATHON GOAT RATION**

Feed for Goats Older Than Four Months of Age

CAUTION: Use Only As Directed

**GUARANTEED ANALYSIS**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Protein</td>
<td>17.0000%</td>
</tr>
<tr>
<td>Crude Fat</td>
<td>2.5000%</td>
</tr>
<tr>
<td>Crude Fiber</td>
<td>9.0000%</td>
</tr>
<tr>
<td>Calcium (Ca)</td>
<td>0.8000%</td>
</tr>
<tr>
<td>Calcium (Ca)</td>
<td>1.3000%</td>
</tr>
<tr>
<td>Phosphorus (P)</td>
<td>0.6000%</td>
</tr>
<tr>
<td>Salt (NaCl)</td>
<td>0.7500%</td>
</tr>
<tr>
<td>Salt (NaCl)</td>
<td>1.2500%</td>
</tr>
<tr>
<td>Copper (Cu)</td>
<td>18.0000 PPM</td>
</tr>
<tr>
<td>Copper (Cu)</td>
<td>23.0000 PPM</td>
</tr>
<tr>
<td>Selenium (Se)</td>
<td>0.6000 PPM</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>4000.0000 IU/LB</td>
</tr>
</tbody>
</table>

**INGREDIENTS**

Grain products, processed grain by-products, molasses products, calcium carbonate, salt, dicalcium phosphate, soybean oil, sodium selenite, propionic acid (a preservative), tetrasodium pyrophosphate, vitamin E supplement, vitamin A supplement, vitamin D3 supplement, ferrous carbonate, manganous oxide, zinc oxide, cobalt carbonate, calcium iodate, sodium molybdate.

**DIRECTIONS**

This goat ration can be fed to dry does, growing does, bucks, and as a milking ration. Feed one pound for every three pounds of milk produced. Use free-choice for young kids. Feed with good quality roughage to all goats after four months of age.

**IMPORTANT**

1. When making a ration change, allow 3-5 days for animals to adjust to the new ration.
2. Do not let fine material accumulate in feeders.
3. Provide adequate bunk space for each animal. Bunks should be well protected and well managed to prevent feed from becoming wet and molding.
4. Provide a source of fresh, clean water at all times.
5. Feed salt free-choice.
6. Consult your veterinarian for a recommended health program for your local area. This includes internal and external parasite control.
7. This product contains copper and should not be fed to sheep.

**CAUTION**

Store in a dry area away from insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

**MANUFACTURED BY:**

SKILLATHON FEED

---

1. What is the main ingredient in this feed?

2. Is this a medicated feed?

3. What is the minimum crude protein level?

4. What is the minimum crude fat level of this diet?

5. Is calcium carbonate included in the ingredients of this diet?

6. Can this feed be given to lactating does?
Livestock

Goat: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

**NET WEIGHT 50 POUNDS**

**SKILLATHON**

**GOAT RATION**

Feed for Goats Older Than Four Months of Age

CAUTION: Use Only As Directed

**GUARANTEED ANALYSIS**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Minimum Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Protein not less than</td>
<td>17.0000%</td>
</tr>
<tr>
<td>Crude Fat not less than</td>
<td>2.5000%</td>
</tr>
<tr>
<td>Crude Fiber not more than</td>
<td>9.0000%</td>
</tr>
<tr>
<td>Calcium (Ca) not less than</td>
<td>0.8000%</td>
</tr>
<tr>
<td>Calcium (Ca) not more than</td>
<td>1.3000%</td>
</tr>
<tr>
<td>Phosphorus (P) not less than</td>
<td>0.6000%</td>
</tr>
<tr>
<td>Salt (NaCl) not less than</td>
<td>0.7500%</td>
</tr>
<tr>
<td>Salt (NaCl) not more than</td>
<td>1.2500%</td>
</tr>
<tr>
<td>Copper (Cu) not less than</td>
<td>18.0000 PPM</td>
</tr>
<tr>
<td>Copper (Cu) not more than</td>
<td>23.0000 PPM</td>
</tr>
<tr>
<td>Selenium (Se) not less than</td>
<td>0.6000 PPM</td>
</tr>
<tr>
<td>Vitamin A not less than</td>
<td>4000.0000 IU/LB</td>
</tr>
</tbody>
</table>

**INGREDIENTS**

Grain products, processed grain by-products, molasses products, calcium carbonate, salt, dicalcium phosphate, soybean oil, sodium selenite, propionic acid (a preservative), tetrasodium pyrophosphate, vitamin E supplement, vitamin A supplement, vitamin D3 supplement, ferrous carbonate, manganese oxide, zinc oxide, cobalt carbonate, calcium iodate, sodium molybdate.

**DIRECTIONS**

This goat ration can be fed to dry does, growing does, bucks, and as a milking ration. Feed one pound for every three pounds of milk produced. Use free-choice for young kids. Feed with good quality roughage to all goats after four months of age.

**IMPORTANT**

1. When making a ration change, allow 3-5 days for animals to adjust to the new ration.
2. Do not let fine material accumulate in feeders.
3. Provide adequate bunk space for each animal. Bunks should be well protected and well managed to prevent feed from becoming wet and molding.
4. Provide a source of fresh, clean water at all times.
5. Feed salt free-choice.
6. Consult your veterinarian for a recommended health program for your local area. This includes internal and external parasite control.
7. This product contains copper and should not be fed to sheep.

**CAUTION**

Store in a dry area away from insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

**MANUFACTURED BY:**

SKILLATHON FEED

1. What is the main ingredient in this feed?
   - **grain products**

2. Is this a medicated feed?
   - **no**

3. What is the minimum crude protein level?
   - **17%**

4. What is the minimum crude fat level of this diet?
   - **25%**

5. Is calcium carbonate included in the ingredients of this diet?
   - **yes**

6. Can this feed be given to lactating does?
   - **yes**

Prepared by Drs. Gary Bowman and Bill Shulaw, Extension Specialists, Veterinary Medicine, and Jodi Black, State 4-H Animal Sciences Extension Associate
Lamb: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

**LAMB STARTER**
**MEDICATED**
**STARTER FOR GROWING LAMBS**

FOR THE PREVENTION OF COCCIDIOSES CAUSED BY *Eimeria ovina*, *Eimeria crandallis*, *Eimeria ovinaoidalis*, *Eimeria ninakohlyakimovae*, *Eimeria parva* AND *Eimeria intricata* IN SHEEP MAINTAINED IN CONFINEMENT.

**ACTIVE DRUG INGREDIENT**
LASALOCID (AS LASALOCID SODIUM) .................................... 90 G/TON

**GUARANTEED ANALYSIS**
CRUDE PROTEIN .............................................................. MIN 20.00%
CRUDE FAT ....................................................................... MIN 2.50%
CRUDE FIBER ................................................................. MAX 10.00%
CALCIUM .......................................................................... MIN 0.75%
CALCIUM ......................................................................... MAX 1.25%
PHOSPHORUS ..................................................................... MIN 0.55%
SALT ................................................................................ MIN 0.40%
SALT ............................................................................... MAX 0.90%
SELENIUM ................................................................... MIN 0.30 PPM
VITAMIN A .......................................................... MIN 2,000.00 IU/LB

**INGREDIENT USAGE**
Processed Grain By-Products, Grain Products, Plant Protein Products, Forage Products, Roughage Products, Molasses Products, Ground Limestone, Salt, Lignin Sulfonate, Potassium Sulfate, Magnesium Sulfate, Magnesium Oxide, Sodium Selenite, Calcium Propionate, Vitamin E Supplement, Vitamin A Acetate, Vitamin D-3 Supplement, Zinc Sulfate, Zinc Oxide, Sodium Molybdate, Manganese Oxide, Calcium Iodate, Cobalt Carbonate, Ferrous Sulfate.

**FEEDING DIRECTIONS**
LAMB STARTER MEDICATED contains 45 mgs. of lasalocid per pound. Feed continuously as the sole ration to growing lambs from 1 to 6 weeks of age at the rate of 0.33-1.55 pounds per head per day to provide not less than 15 mgs. and not more than 70 mgs. of lasalocid per head per day. Provide clean, fresh water at all times.

**CAUTION**
The safety of lasalocid in unapproved species has not been established; do not allow horses or other equines access to lasalocid as ingestion may be fatal; feeding undiluted or mixing errors resulting in excessive concentrations of lasalocid could be fatal to sheep.

**MANUFACTURED BY:**
SKILLATHON FEEDS

**NET WEIGHT 50 POUNDS (22.7 KILOGRAMS)**
OR AS SHOWN ON SHIPPING DOCUMENT

---

1. What is the main ingredient in this feed?
2. What is the active drug ingredient?
3. What is the minimum crude protein level?
4. What is the minimum crude fat level of this diet?
5. Is this a medicated feed?
6. At what growth state of development should this ration to be fed?

**Adapted from materials created by Dan Frobose, Agr. & Nat. Res. Agent, Wood County**

Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Roger High, State Sheep Extension Associate
Livestock
Lamb: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

**LAMB STARTER MEDICATED**
STARTER FOR GROWING LAMBS

FOR THE PREVENTION OF COCCIDIOSIS CAUSED BY Eimeria ovina, Eimeria crandallis, Eimeria ovina, Eimeria ninae, Eimeria parva, AND Eimeria intricata IN SHEEP MAINTAINED IN CONFINEMENT.

**ACTIVE DRUG INGREDIENT**
LASALOCID (AS LASALOCID SODIUM) .................. 90 G/TON

**GUARANTEED ANALYSIS**
CRUDE PROTEIN .................................................. MIN 20.00%
CRUDE FAT ......................................................... MIN 2.50%
CRUDE FIBER ......................................................... MAX 10.00%
CALCIUM ............................................................... MIN 0.75%
CALCIUM ............................................................... MAX 1.25%
PHOSPHORUS ....................................................... MIN 0.55%
SALT ................................................................. MIN 0.40%
SALT ................................................................. MAX 0.90%
SELENIUM ......................................................... MIN 0.30 PPM
VITAMIN A ....................................................... MIN 2,000.00 IU/LB

**INGREDIENT USAGE**
Processed Grain By-Products, Grain Products, Plant Protein Products, Forage Products, Roughage Products, Molasses Products, Ground Limestone, Salt, Lignin Sulfonate, Potassium Sulfate, Magnesium Sulfate, Magnesium Oxide, Sodium Selenite, Calcium Propionate, Vitamin E Supplement, Vitamin A Acetate, Vitamin D-3 Supplement, Zinc Sulfate, Zinc Oxide, Sodium Molybdate, Manganese Oxide, Calcium Iodate, Cobalt Carbonate, Ferrous Sulfate.

**FEEDING DIRECTIONS**
LAMB STARTER MEDICATED contains 45 mgs. of lasalocid per pound. Feed continuously as the sole ration to growing lambs from 1 to 6 weeks of age at the rate of 0.33-1.55 pounds per head per day to provide not less than 15 mgs. and not more than 70 mgs. of lasalocid per head per day. Provide clean, fresh water at all times.

**CAUTION**
The safety of lasalocid in unapproved species has not been established; do not allow horses or other equines access to lasalocid as ingestion may be fatal; feeding undiluted or mixing errors resulting in excessive concentrations of lasalocid could be fatal to sheep.

**MANUFACTURED BY:**
SKILLATHON FEEDS

**NET WEIGHT 50 POUNDS (22.7 KILOGRAMS)**
OR AS SHOWN ON SHIPPING DOCUMENT

---

### Decision-Making—Key

In this activity you will:

- learn how to read a feed tag.

1. What is the main ingredient in this feed? **processed grain by-products**
2. What is the active drug ingredient? **lasalocid**
3. What is the minimum crude protein level? **20%**
4. What is the minimum crude fat level of this diet? **25%**
5. Is this a medicated feed? **yes**
6. At what growth state of development should this ration to be fed? **1-6 weeks of age**

Adapted from materials created by Dan Frobose, Agr. & Nat. Res. Agent, Wood County
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Roger High, State Sheep Extension Associate
Livestock

Pig: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

---

**PIG GROWER**
**MEDICATED**
FOR PIGS FROM 30 POUNDS TO 75 POUNDS

ADMINISTER TO SWINE IN A COMPLETE FEED FOR REDUCTION OF CERVICAL ABSCESSES; TREATMENT OF BACTERIAL SWINE ENTERITIS (SALMONELLOSIS OR NECROTIC ENTERITIS CAUSED BY Salmonella choleraesuis AND VIBRIONIC DYSENTERY), MAINTENANCE OF WEIGHT GAINS IN THE PRESENCE OF ATROPHIC RHINITIS.

**ACTIVE DRUG INGREDIENTS**
- CHLORTETRACYCLINE ................................................................................ 100 G/TON
- SULFATHIAZOLE ......................................................................... 0.011% (100 G/TON)
- PENICILLIN ................................................................................................ 50 G/TON

**GUARANTEED ANALYSIS**
- CRUDE PROTEIN ...................................................................................... MIN 18.00%
- LYSINE .................................................................................................... MIN 1.10%
- CRUDE FIBER ............................................................................................... MAX 6.50%
- CRUDE FIBER ............................................................................................... MAX 4.00%
- CALCIUM .................................................................................................. MIN 0.60%
- CALCIUM ................................................................................................. MAX 1.10%
- PHOSPHORUS ............................................................................................ MIN 0.55%
- SALT ........................................................................................................ MIN 0.40%
- SALT ....................................................................................................... MAX 0.90%
- SELENIUM ........................................................................................... MIN 0.30 PPM
- ZINC ............................................................................................... MIN 140.00 PPM

**INGREDIENTS**
Grain Products, Plant Protein Products, Processed Grain By-Products, Animal Fat, Animal Protein Products, Calcium Phosphate, Lignin Sulfonate, Ground Limestone, Salt, L-Lysine Monohydrochloride, Methionine Supplement, Zinc Oxide, Zinc Sulfate, Ferrous Sulfate, Manganese Oxide, Copper Sulfate, Calcium Iodate, Sodium Selenite, Vitamin A Acetate, Vitamin D-3 Supplement, Vitamin E Supplement, Menadione Dimethylpyrimidinol Bisulfite, Riboflavin Supplement, Niacin, Calcium Pantothenate, Vitamin B-12 Supplement, Thiamine Mononitrate, Folic Acid, Choline Chloride, Pyridoxine Hydrochloride, Biotin, Ethoxyquin (As A Preservative)

**FEEDING DIRECTIONS**
Feed as the only ration to pigs weighing from 30 pounds to 75 pounds bodyweight.

CAUTION: In order to obtain the desired performance results, the animals should be self fed.

WARNING: Withdraw 7 days prior to slaughter; contains high levels of copper; do not feed to sheep.

---

1. What is the main ingredient in this feed?
2. How many active drug ingredients are in this feed?
3. What is the minimum crude protein level?
4. For how many days prior to slaughter should this feed be removed?
5. What is the minimum crude fat level of this diet?
6. Is ground limestone included in the ingredients of this diet?
7. At what weight range should this ration be fed?
8. What is the range for the calcium content of this feed?
**Pig: How to Read a Feed Tag**

Use the feed tag below to answer the following questions.

**PIG GROWER**
**MEDICATED**
FOR PIGS FROM 30 POUNDS TO 75 POUNDS

ADMINISTER TO SWINE IN A COMPLETE FEED FOR REDUCTION OF THE INCIDENCE OF CERVICAL ABSCESS; TREATMENT OF BACTERIAL SWINE ENTERITIS (SALMONELLOSID OR NECROTIC ENTERITIS CAUSED BY SALMONELLA CHOLERAESUIS AND VIBRIONIC DYSENTERY), MAINTENANCE OF WEIGHT GAINS IN THE PRESENCE OF ATROPHIC RHINITIS.

**ACTIVE DRUG INGREDIENT**

<table>
<thead>
<tr>
<th>Drug Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHLOROTETRACYCLINE</td>
<td>100 G/TON</td>
</tr>
<tr>
<td>SULFATHIAZOLE</td>
<td>0.011% (100 G/TON)</td>
</tr>
<tr>
<td>PENICILLIN</td>
<td>50 G/TON</td>
</tr>
</tbody>
</table>

**GUARANTEED ANALYSIS**

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRUDE PROTEIN</td>
<td>MIN 18.00%</td>
</tr>
<tr>
<td>LYSINE</td>
<td>MIN 1.10%</td>
</tr>
<tr>
<td>CRUDE FIBER</td>
<td>MIN 6.50%</td>
</tr>
<tr>
<td>CALCIUM</td>
<td>MAX 0.60%</td>
</tr>
<tr>
<td>CALCIUM</td>
<td>MAX 1.10%</td>
</tr>
<tr>
<td>PHOSPHORUS</td>
<td>MIN 0.55%</td>
</tr>
<tr>
<td>SALT</td>
<td>MIN 0.40%</td>
</tr>
<tr>
<td>SALT</td>
<td>MAX 0.90%</td>
</tr>
<tr>
<td>SEDINEUM</td>
<td>MIN 0.30 PPM</td>
</tr>
<tr>
<td>ZINC</td>
<td>MIN 140.00 PPM</td>
</tr>
</tbody>
</table>

**INGREDIENTS**

Grain Products, Plant Protein Products, Processed Grain By-Products, Animal Fat, Animal Protein Products, Calcium Phosphate, Lignin Sulfonate, Ground Limestone, Salt, L-Lysine Monohydrochloride, Methionine Supplement, Zinc Oxide, Zinc Sulfate, Ferrous Sulfate, Manganese Oxide, Copper Sulfate, Calcium Iodate, Sodium Selenite, Vitamin A Acetate, Vitamin D-3 Supplement, Vitamin E Supplement, Menadione Dimethylpyrimidinol Bisulfite, Riboflavin Supplement, Niacin, Calcium Pantothenate, Vitamin B-12 Supplement, Thiamine Mononitrate, Folic Acid, Choline Chloride, Pyridoxine Hydrochloride, Biotin, Ethoxyquin (As A Preservative)

**FEEDING DIRECTIONS**

Feed as the only ration to pigs weighing from 30 pounds to 75 pounds bodyweight.

**CAUTION:** In order to obtain the desired performance results, the animals should be self fed.

**WARNING:** Withdraw 7 days prior to slaughter; contains high levels of copper; do not feed to sheep.

**MANUFACTURED BY:**
SKILLATHON FEED

**NET WEIGHT 50 POUNDS (22.7 KILOGRAMS)**
OR AS SHOWN ON SHIPPING DOCUMENT

---

1. What is the main ingredient in this feed?
   - **grain products**

2. How many active drug ingredients are in this feed?
   - **3**

3. What is the minimum crude protein level?
   - **18%**

4. For how many days prior to slaughter should this feed be removed?
   - **7**

5. What is the minimum crude fat level of this diet?
   - **6.5%**

6. Is ground limestone included in the ingredients of this diet?
   - **Yes**

7. At what weight range should this ration be fed?
   - **pigs weighing between 30 and 75 pounds**

8. What is the range for the calcium content of this feed?
   - **0.60%–1.10%**
Livestock

Broiler: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

**BROILER STARTER MEDICATED**

COMPLETE FEED FOR STARTING BROILERS

FOR USE AS AN AID IN THE PREVENTION OF COCCIDIOSIS IN POULTRY FLOCKS; GROWTH PROMOTION AND FEED EFFICIENCY, AND IMPROVING PIGMENTATION.

ACTIVE DRUG INGREDIENT

NICARBAZIN 0.0125%
BACITRACIN METHYLENE DISALICYLATE 50 G/TON
ROXARSONE 0.005%) 45.4 G/TON

GUARANTEED ANALYSIS

CRUDE PROTEIN MIN 22.00%
LYSINE MIN 1.13%
METHIONINE MIN 0.54%
CRUDE FAT MIN 3.00%
CRUDE FIBER MAX 5.00%
CALCIUM MIN 0.75%
CALCIUM MAX 1.25%
PHOSPHORUS MIN 0.60%
SALT MIN 0.30%
SALT MAX 0.80%

INGREDIENTS

GRAIN PRODUCTS, PLANT PROTEIN PRODUCTS, ANIMAL PROTEIN PRODUCTS, HYDROLYZED ANIMAL AND VEGETABLE FAT, CALCIUM PHOSPHATE, GROUND LIMESTONE, SALT, METHIONINE SUPPLEMENT, PROPIONIC ACID (ADDED TO RETARD MOLD GROWTH), VITAMIN A ACETATE, VITAMIN D-3 SUPPLEMENT, VITAMIN E SUPPLEMENT, MENADIONE DIMETHYLPYRIMIDINOL BISULPHITE, CHOLINE CHLORIDE, RIBOFLAVIN SUPPLEMENT, CALCIUM PANTOTHENATE, NIACIN, VITAMIN B-12 SUPPLEMENT, PYRIDOXINE HYDROCHLORIDE, THIAMINE MONONITRATE, FOLIC ACID, BIOTIN, ZINC OXIDE, MANGANOUS OXIDE, MANGANESE SULFATE, FERROUS SULFATE, COBALT CARBONATE, CALCIUM IODATE, SODIUM SELENITE.

FEEDING DIRECTIONS

FOR BROILERS AND FRYER CHICKENS ONLY, FEED CONTINUOUSLY AS THE SOLE RATION.

SEE BACK OF TAG FOR WARNING

MANUFACTURED BY:

SKILLATHON FEEDS

NET WEIGHT 50 POUNDS (22.7 KILOGRAMS)
OR AS SHOWN ON SHIPPING DOCUMENT

WARNING

DO NOT FEED TO LAYING HENS. WITHDRAW 5 DAYS BEFORE SLAUGHTER. USE AS THE SOLE SOURCE OF ORGANIC ARSENIC. FEED CONTINUOUSLY AS THE SOLE RATION FROM TIME CHICKS ARE PLACED ON LITTER UNTIL PAST THE TIME WHEN COCCIDIOSIS IS ORDINARILY A HAZARD; DO NOT USE AS A TREATMENT FOR COCCIDIOSIS; DO NOT USE IN FLUSHING MASHES.

DO NOT FEED TO CATTLE OR OTHER RUMINANTS.

In this activity you will:

- learn how to read a feed tag.

1. What is the main ingredient in this broiler ration?
2. What is the minimum crude protein level of this broiler starter ration?
3. For how many days prior to slaughter should this feed be removed?
4. How many pounds of ingredients are included in this bag?
5. Should this diet be fed to laying hens?
6. What is the minimum crude fat level of this diet?

Prepared by Drs. Gary Bowman and Bill Shulaw, Extension Specialists, Veterinary Medicine
# Broiler: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

**BROILER STARTER MEDICATED**

COMPLETE FEED FOR STARTING BROILERS

FOR USE AS AN AID IN THE PREVENTION OF COCCIDIOSIS IN Poultry Flocks; GROWTH PROMOTION AND FEED EFFICIENCY, AND IMPROVING PIGMENTATION.

**ACTIVE DRUG INGREDIENT**

N I C A R B A Z I N  0.0125%
B A C I T R A C I N M ETHYLENE DISALICYLATE  50 G/TON
R O X A R S O N E  0.005)% 45.4 G/TON

**GUARANTEED ANALYSIS**

**CRUDE PROTEIN** MIN 22.00%
**LYSINE** MIN 1.13%
**METHIONINE** MIN 0.54%
**CRUDE FAT** MIN 3.00%
**CRUDE FIBER** MAX 5.00%
**CALCIUM** MIN 0.75%
**CALCIUM** MAX 1.25%
**PHOSPHORUS** MIN 0.60%
**SALT** MIN 0.30%
**SALT** MAX 0.80%

**INGREDIENTS**

GRAIN PRODUCTS, PLANT PROTEIN PRODUCTS, ANIMAL PROTEIN PRODUCTS, HYDROLYZED ANIMAL AND VEGETABLE FAT, CALCIUM PHOSPHATE, GROUND LIMESTONE, SALT, METHIONINE SUPPLEMENT, PROPIONIC ACID (ADDED TO RETARD MOLD GROWTH), VITAMIN A ACETATE, VITAMIN D-3 SUPPLEMENT, VITAMIN E SUPPLEMENT, MENADIONE DIMETHYLAMINOANTHRANILIC ACID SUPPLEMENT, CHOLINE CHLORIDE, RIBOFLAVIN SUPPLEMENT, CALCIUM PANTOTHENATE, Niacin, Vitamin B-12 SUPPLEMENT, PYRIDOXINE HYDROCHLORIDE, THIAMINE MONONITRATE, FOLIC ACID, BIOTIN, CALCIUM IODATE, SODIUM SELENITE.

**FEEDING DIRECTIONS**

FOR BROILERS AND FRYER CHICKENS ONLY, FEED CONTINUOUSLY AS THE SOLE RATION.

*SEE BACK OF TAG FOR WARNING*

**MANUFACTURED BY:**

SKILLATHON FEEDS

**NET WEIGHT 50 POUNDS (22.7 KILOGRAMS)**

*OR AS SHOWN ON SHIPPING DOCUMENT*

**WARNING**

DO NOT FEED TO LAYING HENS. WITHDRAW 5 DAYS BEFORE SLAUGHTER. USE AS THE SOLE SOURCE OF ORGANIC ARSENIC. FEED CONTINUOUSLY AS THE SOLE RATION FROM TIME CHICKS ARE PLACED ON LITTER UNTIL PAST THE TIME WHEN COCCIDIOSIS IS ORDINARILY A HAZARD; DO NOT USE AS A TREATMENT FOR COCCIDIOSIS; DO NOT USE IN FLUSHING MASHES.

DO NOT FEED TO CATTLE OR OTHER RUMINANTS.

## Decision-Making—Key

In this activity you will:

- learn how to read a feed tag.

1. What is the main ingredient in this broiler ration?
   - **Grain Products**

2. What is the minimum crude protein level of this broiler starter ration?
   - **22%**

3. For how many days prior to slaughter should this feed be removed?
   - **5**

4. How many pounds of ingredients are included in this bag?
   - **50**

5. Should this diet be fed to laying hens?
   - **No, because the medication will end up in the eggs**

6. What is the minimum crude fat level of this diet?
   - **3%**
Turkey Prestarter Medicated

Complete Feed for Poults

For the prevention of coccidiosis in growing turkeys caused by *Eimeria adenoeides*, *Eimeria meleagrimitis* and *Eimeria gallapavonis*.

**Active Ingredients**

- Halofuginone Hydrobromide .................................................... 1.90 g/ton

**Guaranteed Analysis**

- Crude Protein .......................................................... MIN 26.00%
- Lysine .......................................................... MIN 1.55%
- Methionine .......................................................... MIN 0.60%
- Crude Fat .......................................................... MIN 2.00%
- Crude Fiber ......................................................... MAX 5.00%
- Calcium .......................................................... MIN 1.15%
- Calcium .......................................................... MAX 1.65%
- Phosphorus ......................................................... MIN 0.90%
- Salt .......................................................... MIN 0.15%
- Salt .......................................................... MAX 0.65%

**Ingredients**

- Grain Products, Plant Protein Products, Animal Protein Products,
- Calcium Phosphate, Animal Fat, Ground Limestone, Methionine
- Supplement, L-Lysine Monohydrochloride, Calcium Propionate, Salt
- Choline Chloride, Zinc Oxide, Copper Sulfate, Manganese Oxide,
- Manganese Sulfate, Ferrous Sulfate, Calcium Iodate, Sodium
- Selenite, Vitamin A Acetate, Vitamin D-3 Supplement, Vitamin E
- Supplement, Menadione Dinethylypyrimidinol Bisulfite, Niacin,
- Calcium Pantothenate, Riboflavin Supplement, Vitamin B-12
- Supplement, Biotin, Folic Acid, Thiamine Mononitrate, Pyridoxine
- Hydrochloride.

**Feeding Directions**

Feed as the only ration to starting poults from 1 day to 21 days of age. Refer to current feeding schedules for feeding according to body weight or consumption.

**Warning**

Feed continuously as sole ration. Withdraw 7 days before slaughter.

**Manufactured By:**

Skillathon Feeds

---

1. What is the main ingredient in this feed?

2. What is the active drug ingredient?

3. What is the minimum crude protein level?

4. For how many days prior to slaughter should this feed be removed?

5. What is the minimum crude fat level of this diet?

6. Is ground limestone included in the ingredients of this diet?

7. This ration should be fed to turkey poults of what age?
Livestock

Turkey: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

**TURKEY PRESTARTER**
**MEDICATED**

COMPLETE FEED FOR POULTS

For the prevention of coccidiosis in growing turkeys caused by *Eimeria adenoeides*, *Eimeria melagarmitis* and *Eimeria gallapavonis*.

**ACTIVE INGREDIENTS**

Halofuginone Hydrobromide .................................................... 1.90 g/ton

**GUARANTEED ANALYSIS**

<table>
<thead>
<tr>
<th>Component</th>
<th>Min/MAX (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRUDE PROTEIN</td>
<td>MIN 26.00%</td>
</tr>
<tr>
<td>LYSINE</td>
<td>MIN 1.55%</td>
</tr>
<tr>
<td>METHIONINE</td>
<td>MIN 0.60%</td>
</tr>
<tr>
<td>CRUDE FAT</td>
<td>MIN 2.00%</td>
</tr>
<tr>
<td>CRUDE FIBER</td>
<td>MAX 5.00%</td>
</tr>
<tr>
<td>CALCIUM</td>
<td>MIN 1.15%</td>
</tr>
<tr>
<td>CALCIUM</td>
<td>MAX 1.65%</td>
</tr>
<tr>
<td>PHOSPHORUS</td>
<td>MIN 0.90%</td>
</tr>
<tr>
<td>SALT</td>
<td>MIN 0.15%</td>
</tr>
<tr>
<td>SALT</td>
<td>MAX 0.65%</td>
</tr>
</tbody>
</table>

**INGREDIENTS**

GRAIN PRODUCTS, PLANT PROTEIN PRODUCTS, ANIMAL PROTEIN PRODUCTS, CALCIUM PHOSPHATE, ANIMAL FAT, GROUND LIMESTONE, METHIONINE SUPPLEMENT, L-lysine monohydrochloride, calcium propionate, salt choline chloride, zinc oxide, copper sulfate, manganese oxide, manganese sulfate, ferrous sulfate, calcium iodate, sodium selenite, vitamin A acetate, vitamin D-3 supplement, vitamin E supplement, menadione dimethylpyrimidinol bisulphite, niacin, calcium pantothenate, riboflavin supplement, vitamin B-12 supplement, biotin, folic acid, thiamine mononitrate, pyridoxine hydrochloride.

**FEEDING DIRECTIONS**

Feed as the only ration to starting poults from 1 day to 21 days of age. Refer to current feeding schedules for feeding according to body weight or consumption.

**WARNING**

Feed continuously as sole ration. Withdraw 7 days before slaughter.

**MANUFACTURED BY:**

SKILLATHON FEEDS

---

1. What is the main ingredient in this feed?
   - **grain products**

2. What is the active drug ingredient?
   - **halofuginone hydrobromide**

3. What is the minimum crude protein level?
   - **26%**

4. For how many days prior to slaughter should this feed be removed?
   - **7**

5. What is the minimum crude fat level of this diet?
   - **2%**

6. Is ground limestone included in the ingredients of this diet?
   - **yes**

7. This ration should be fed to turkey poults of what age?
   - **from 1 day to 21 days**

---

Prepared by Drs. Gary Bowman and Bill Shulaw, Extension Specialists, Veterinary Medicine
Livestock

Rabbit: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

RABBIT PELLETS
MEDICATED

For the prevention of coccidiosis caused by Eimeria stiedae.

ACTIVE INGREDIENT
Lasalocid (as lasalocid sodium) ............................................. 113 g/ton

GUARANTEED ANALYSIS
CRUDE PROTEIN ............................................................... MIN 16.00%
CRUDE FAT ........................................................................ MIN 3.00%
CRUDE FIBER ................................................................. MIN 13.0%
CRUDE FIBER .................................................................... MAX 18.00%
CALCIUM ............................................................................. MIN .75%
CALCIUM .......................................................................... MAX 1.25%
PHOSPHORUS ..................................................................... MIN 0.5%
SALT ................................................................................... MIN .30%
SALT .................................................................................. MAX .80%
VITAMIN A .................................................................... 4,000.0 IU/LB

INGREDIENTS
DEHYDRATED ALFALFA MEAL, WHEAT MIDDINGNS, DRIED DISTILLERS GRAINS
WITH SOLUBLES, CANE MOLASSES, ANIMAL FAT (PRESERVED WITH
BHAANDBHT), DICALCIUM PHOSPHATE, CALCIUM CARBONATE, SOYBEAN
MEAL, SALT, VITAMIN A ACETATE IN GELATIN, VITAMIN D3 SUPPLEMENT,
VITAMIN E SUPPLEMENT, RIBOFLAVIN SUPPLEMENT, D-CALCIUM
PANTOTHEATE, NIACIN SUPPLEMENT, VITAMIN B12 SUPPLEMENT,
MENADIONE DIMETHYL PYRIMIDINOL BISULFITE (SOURCE OF VITAMIN K
ACTIVITY), CHOLINE CHLORIDE, FOLIC ACID, B-BIOTIN, ZINC OXIDE, FERROUS
SULFATE, MANGOUS OXIDE, COPPER OXIDE, ETHYLENE DIAMINE
DIHYDRODIDE, COBALT CARBONATE, AND SODIUM SELENITE.

USE DIRECTIONS
Feed continuously to young rabbits as sole ration up to 6 1/2 weeks of age.

CAUTION
The safety of lasalocid in unapproved species has not been established.

MANUFACTURED BY:
SKILLATHON FEED

NEW WEIGHT 50 POUNDS (22.7 KILOGRAMS)
OR AS SHOWN ON SHIPPING DOCUMENT

Net Weight 20 lbs. (9.7 Kg.)

1. What is the main ingredient in this feed?

2. What is the active drug ingredient?

3. What is the minimum crude protein level?

4. Does this feed require withholding before slaughter?

5. What is the minimum crude fat level of this diet?

6. Is calcium carbonate included in the ingredients of this diet?

7. To what age should this ration be fed?
Livestock

Rabbit: How to Read a Feed Tag

Use the feed tag below to answer the following questions.

RABBIT PELLETS
MEDICATED

For the prevention of coccidiosis caused by Eimeria stiedae.

ACTIVE INGREDIENT
Lasalocid (as lasalocid sodium) ............................................. 113 g/ton

GUARANTEED ANALYSIS

CRUDE PROTEIN ............................................................... MIN 16.00%
CRUDE FAT ........................................................................ MIN 3.00%
CRUDE FIBER ..................................................................... MIN 13.0%
CRUDE FIBER .................................................................. MAX 18.00%
CALCIUM ............................................................................. MIN .75%
CALCIUM .......................................................................... MAX 1.25%
PHOSPHORUS ..................................................................... MIN 0.5%
SALT ................................................................................... MIN .30%
SALT .................................................................................. MAX .80%
VITAMIN A .................................................................... 4,000.0 IU/LB

INGREDIENTS
DEHYDRATED ALFALFA MEAL, WHEAT MIDDINGS, DRIED DISTILLERS GRAINS WITH SOLUBLES, CANE MOLASSES, ANIMAL FAT (PRESERVED WITH BHAANDHT), DICALCIUM PHOSPHATE, CALCIUM CARBONATE, SOYBEAN MEAL, SALT, VITAMIN A ACETATE IN GELATIN, VITAMIN D3 SUPPLEMENT, VITAMIN E SUPPLEMENT, RIBOFLAVIN SUPPLEMENT, D-CALCIUM PANTOTHENATE, NIACIN SUPPLEMENT, VITAMIN B12 SUPPLEMENT, MENADIONE DIMETHYLPYRIMIDINOL BISULFITE/SOURCE OF VITAMIN K ACTIVITY), CHOLINE CHLORIDE, FOLIC ACID, B-BIOTIN, ZINC OXIDE, COPPER OXIDE, ETHYLENE DIAMINE DIHYDROIODIDE, COBALT CARBONATE, AND SODIUM SELENITE.

USE DIRECTIONS
Feed continuously to young rabbits as sole ration up to 6 1/2 weeks of age.

CAUTION
The safety of lasalocid in unapproved species has not been established.

MANUFACTURED BY:
SKILLATHON FEED

NEW WEIGHT 50 POUNDS (22.7 KILOGRAMS)
OR AS SHOWN ON SHIPPING DOCUMENT

Net Weight 20 lbs. (9.7 Kg.)

1. What is the main ingredient in this feed?
   dehydrated alfalfa meal

2. What is the active drug ingredient?
   lasalocid

3. What is the minimum crude protein level?
   16%

4. Does this feed require withholding before slaughter?
   no

5. What is the minimum crude fat level of this diet?
   3%

6. Is calcium carbonate included in the ingredients of this diet?
   yes

7. To what age should this ration be fed?
   up to 6 1/2 weeks of age
# Livestock

## Beef Word Search

Circle the beef words listed in the puzzle below.

<table>
<thead>
<tr>
<th>Wholesale Cuts</th>
<th>Beef Types</th>
<th>Grading</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>round</td>
<td>steer</td>
<td>prime</td>
<td>black</td>
</tr>
<tr>
<td>loin</td>
<td>heifer</td>
<td>choice</td>
<td>white</td>
</tr>
<tr>
<td>flank</td>
<td>cow</td>
<td>select</td>
<td>gray</td>
</tr>
<tr>
<td>rib</td>
<td>calf</td>
<td>standard</td>
<td>red</td>
</tr>
<tr>
<td>plate</td>
<td></td>
<td>commercial</td>
<td>cream</td>
</tr>
<tr>
<td>chuck</td>
<td></td>
<td>utility</td>
<td>roan</td>
</tr>
<tr>
<td>shank</td>
<td></td>
<td>cutter</td>
<td></td>
</tr>
<tr>
<td>brisket</td>
<td></td>
<td>canner</td>
<td></td>
</tr>
</tbody>
</table>

Reference: Beef Learning Laboratory Kit and the Beef, Sheep and Swine Evaluation and Selection Book

Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock

Beef Word Search

In this activity you will:

- learn words and associate them with particular groups.

### Wholesale Cuts
- round
- loin
- flank
- rib
- plate
- chuck
- shank
- brisket

### Beef Types
- steer
- heifer
- cow
- calf

### Grading
- prime
- choice
- select
- standard
- commercial
- utility
- cutter
- canner

### Color
- black
- white
- gray
- red
- cream
- roan

### Wholesale Cuts

**Reference:** Beef Learning Laboratory Kit and the Beef, Sheep and Swine Evaluation and Selection Book

Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock

Goat Word Search

Circle the goat words listed in the puzzle below.

Wholesale Cuts
- shoulder
- rack
- loin
- leg
- fore shank
- breast

Color
- black
- gray
- cream
- white
- tan
- brown
- reddish brown
- fawn
- chocolate
- lavender

Goat Types
- doe
- buck
- kids
- dairy
- meat
- harness

References: Goat Learning Laboratory Kit and the 4-H Goat Manual
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Goat Word Search

Circle the goat words listed in the puzzle below.

Wholesale Cuts  Color  Goat Types
shoulder  black  brown  doe
rack  gray  reddish brown  buck
loin  cream  fawn  kids
leg  white  chocolate  dairy
fore shank  tan  lavender  meat
breast

Word Search—Key

In this activity you will:
• learn words and associate them with particular groups.

References: Goat Learning Laboratory Kit and the 4-H Goat Manual
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
**Livestock**

**Sheep Word Search**

Circle the sheep words listed in the puzzle below.

<table>
<thead>
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<th>Sheep Types</th>
<th>Mouth Structure</th>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>leg</td>
<td>breeding</td>
<td>parrot</td>
<td>prime</td>
</tr>
<tr>
<td>loin</td>
<td>market</td>
<td>monkey</td>
<td>choice</td>
</tr>
<tr>
<td>rack</td>
<td>ewe</td>
<td></td>
<td>good</td>
</tr>
<tr>
<td>shoulder</td>
<td>ram</td>
<td></td>
<td>utility</td>
</tr>
<tr>
<td>breast</td>
<td>lamb</td>
<td></td>
<td>cull</td>
</tr>
<tr>
<td>foreshank</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

References: Sheep Learning Laboratory Kit; 4-H Beef, Sheep and Swine Evaluation and Selection Book; 4-H Sheep Resource Handbook

Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock

Sheep Word Search

Circle the sheep words listed in the puzzle below.

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<td>shoulder</td>
<td>ram</td>
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<td>utility</td>
</tr>
<tr>
<td>breast</td>
<td>lamb</td>
<td></td>
<td>cull</td>
</tr>
<tr>
<td>foreshank</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sheep Types
- breeding
- market
- ewe
- ram
- lamb

Mouth Structure
- parrot
- monkey

Wholesale Cuts
- leg
- loin
- rack
- shoulder
- breast
- foreshank

Grading
- prime
- choice
- good
- utility
- cull

References: Sheep Learning Laboratory Kit; 4-H Beef, Sheep and Swine Evaluation and Selection Book; 4-H Sheep Resource Handbook

Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Swine Word Search

In this activity you will:

• learn words and associate them with particular groups.

Wholesale Cuts
Boston butt
picnic
loin
side
ham

Meat Cuts
bacon
chops
ribs

Swine Types
breeding
market
gilt
boar
barrow
sow

Grading
acceptable
unacceptable

Colors
white
black
red

References: 4-H Beef, Sheep and Swine Evaluation and Selection Book; 4-H Swine Resource Handbook
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
Livestock
Swine Word Search

Circle the swine words listed in the puzzle below.

Wholesale Cuts  Meat Cuts  Swine Types  Grading
Boston butt  bacon  breeding  acceptable
picnic  chops  market  unacceptable
loin  ribs  gilt  
side  
ham  

Wholesale Cuts:
- Boston butt
- picnic
- loin
- side
- ham

Meat Cuts:
- bacon
- chops
- ribs

Swine Types:
- breeding
- market
- gilt
- boar
- barrow
- sow

Grading:
- acceptable
- unacceptable

Colors:
- white
- black
- red

References: 4-H Beef, Sheep and Swine Evaluation and Selection Book; 4-H Swine Resource Handbook
Prepared By: Jodi Black, State Extension Associate, 4-H/Animal Sciences; Andrea Auker, Animal Sciences Student
# Countdown Chapter 1

**Small Animals and Veterinary Science**

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- Breeds of Dogs—Group 4: Terriers ............................................... 15
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**Small Animals and Veterinary Science**

**Small Animals Crossword**

Complete the crossword puzzle below to learn small animals terms.

**Across**
1. Prized for fur
2. Hare
4. Mus Musculus
7. R. norvegicus
9. Feline

**Down**
3. Spiny Insectivore
5. Canine
6. Has cheek pouches
8. Rodent from Mongolia
9. Guinea Pig

*Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team*
Small Animals and Veterinary Science

Small Animals Crossword

Complete the crossword puzzle below to learn small animals terms.

**Across**
3. Spiny Insectivore
5. Canine
6. Has cheek pouches
8. Rodent from Mongolia
9. Guinea Pig

**Down**
1. Prized for fur
2. Hare
4. Mus Musculus
6. Hamster
7. R. norvegicus
9. Feline

![Crossword Puzzle](image-url)
Fill in the blanks with the words from the word list.

Aharoni  chinchilla  ferret  hamster  litter  polecats  Russian
burrow  crepuscular  deer  hedghog  nocturnal  rat  spines
cheek  diastema  grow  jill  omnivorous  Rodentia  zoonoses

1. An animal that is most active at night is __________.
2. One dwarf species of hamster is the __________ hamster.
3. This rodent’s gestation period is 15 to 17 days.
4. *Mus musculus* is called the __________ mouse.
5. These agile mice run and hop through fields and thick underbrush. __________
6. Rodents belong to the order __________.
7. The gap present between a rodent’s molars and incisors, where there are no teeth, is called the __________.
8. A rodent’s teeth continually __________.
9. The hamster was discovered in this country.
10. Professor __________ led the expedition to capture the first wild golden hamster.
11. This rodent is native to the desert and semi-desert areas of Mongolia and northeastern China.
12. The bubonic plague is associated with this animal.
13. __________ refer to diseases transmitted from animals to humans.
14. __________ is derived from the Latin verb “rodere” meaning “to gnaw.”
15. *Rattus norvegicus*, or the __________ rat, is now found throughout the United States. Fancy rats are direct ancestors of this rat.
16. Hamsters are __________ meaning they are most active at dusk and at dawn.
17. Hamsters and gerbils __________ underground during the day in their natural habitat.
18. Chinchillas were prized by the native Inca Indians for their __________.
19. Noise and sudden movement upsets this pet.
20. Hamsters use their __________ pouches to carry their food.
21. Domestic ferrets were derived from the __________.
22. Ferrets are easily __________ trained.
23. A female ferret is called a __________.
24. The hollow, horny hairs of a hedgehog are called __________.
25. A hob is a male __________.
26. __________ refers to eating foods of both plant and animal origins.
27. A frightened hedgehog rolls into a __________.
28. This animal is an insectivore. __________

**Developed by:** Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
**Small Animals and Veterinary Science**

**Small Animal Vocabulary**

Fill in the blanks with the words from the word list.

<table>
<thead>
<tr>
<th>Aharoni</th>
<th>chinchilla</th>
<th>ferret</th>
<th>hamster</th>
<th>litter</th>
<th>polecats</th>
<th>Russian</th>
</tr>
</thead>
<tbody>
<tr>
<td>ball</td>
<td>crepuscular</td>
<td>fur</td>
<td>hedgehog</td>
<td>nocturnal</td>
<td>rat</td>
<td>spines</td>
</tr>
<tr>
<td>burrow</td>
<td>deer</td>
<td>gerbil</td>
<td>house</td>
<td>Norway</td>
<td>rodent</td>
<td>Syria</td>
</tr>
<tr>
<td>cheek</td>
<td>diastema</td>
<td>grow</td>
<td>jill</td>
<td>omnivorous</td>
<td>Rodentia</td>
<td>zoonoses</td>
</tr>
</tbody>
</table>

1. An animal that is most active at night is **nocturnal**.
2. One dwarf species of hamster is the **Russian** hamster.
3. This rodent’s gestation period is 15 to 17 days. **hamster**
4. *Mus musculus* is called the **house** mouse.
5. These agile mice run and hop through fields and thick underbrush. **deer**
6. Rodents belong to the order **Rodentia**.
7. The gap present between a rodent’s molars and incisors, where there are no teeth, is called the **diastema**.
8. A rodent’s teeth continually **grow**.
9. The hamster was discovered in this country. **Syria**
10. Professor **Aharoni** led the expedition to capture the first wild golden hamster.
11. This rodent is native to the desert and semi-desert areas of Mongolia and northeastern China. **gerbil**
12. The bubonic plague is associated with this animal. **rat**
13. **Zoonoses** refer to diseases transmitted from animals to humans.
14. **Rodent** is derived from the Latin verb “rodere” meaning “to gnaw.”
15. *Rattus norvegicus*, or the **Norway** rat, is now found throughout the United States. Fancy rats are direct ancestors of this rat.
16. Hamsters are **crepuscular** meaning they are most active at dusk and at dawn.
17. Hamsters and gerbils **burrow** underground during the day in their natural habitat.
18. Chinchillas were prized by the native Inca Indians for their **fur**.
19. Noise and sudden movement upsets this pet. **chinchilla**
20. Hamsters use their **cheek** pouches to carry their food.
21. Domestic ferrets were derived from the **polecats**.
22. Ferrets are easily **litter** trained.
23. A female ferret is called a **jill**.
24. The hollow, horny hairs of a hedgehog are called **spines**.
25. A hob is a male **ferret**.
26. **Omnivorous** refers to eating foods of both plant and animal origins.
27. A frightened hedgehog rolls into a **ball**.
28. This animal is an insectivore. **hedgehog**

---

**Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team**

1–4 Lift-Off
Small Animals and Veterinary Science

Parts of a Dog

On the diagram below, fill in the names of the parts of the dog on the lines that point to each part. After filling in the names of the parts of a dog, point to the part on your body that most closely resembles the dog’s parts.

Scenario: A family member forgot to close the gate to your fenced in back yard. Your dog ran out through the opened gate into the street. A car hit your dog and injured him. Before taking him to the veterinarian for treatment, you call to let her know you are coming. She asks you to tell her the visible injuries to your dog. Using at least five of a dog’s body parts, describe your dog’s injuries.


Graphic property of Curriculum Materials Service.

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Parts of a Dog

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Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
The American Kennel Club (AKC) is the largest dog registry in the United States. It recognizes more than 130 breeds of dogs with more being accepted in the future. These breeds have been categorized into seven groups according to their purpose. They are: Group 1: Sporting Dogs; Group 2: Hounds; Group 3: Working Dogs; Group 4: Terriers; Group 5: Toys; Group 6: Non-Sporting Dogs; and Group 7: Herding Group. There is also a Miscellaneous category recognized by AKC and granted an Indefinite Listing Privilege (ILP). Dogs in this category are eligible to compete in shows and obedience trials. Once they are accepted into the regular groups, they become eligible for points toward AKC championships and can compete in Variety Groups.

Draw a line from each group description to the correct dog breed.

### Group Descriptions

1. The dogs in this group are alert and bold. These breeds were developed to dig out the small animals chased underground by the tracking hounds. Many are small and can burrow through tunnels with ease. They are ferocious fighters once they corner their quarry.

2. These breeds of dogs were developed to help move livestock from pasture to pasture or barn to pasture. They are more prone to chasing cars because of their natural instincts.

3. This group has the smallest breeds of dogs, ranging from four to 16 pounds. They were developed for the purpose of pleasure and companionship to their owners. Many of the breeds were prized by the royalty of ancient times. They are long-lived breeds of dogs.

4. The breeds in this group include pointers, setters, retrievers, and spaniels. The pointers and setters are hunters that cover the ground with great speed and freeze like a statue at the scent of game birds. The retrievers are expert swimmers and excel at retrieving game, either in the field or water. Spaniels flush out game from underbrush and thickets.

5. The breeds in this group were developed for serving humans by drawing sleds and carts, driving cattle to market, and protecting property. More recently they have been developed for guiding the blind and detecting bombs and narcotics.

6. In this group, the breeds vary a great deal in their historical and physical characteristics. They also vary greatly in disposition and size. Although they were developed to perform certain tasks, today they serve mainly as pets.

7. This group of breeds includes those dogs with long legs developed for speed, endurance, and keen vision. It also includes dogs, ranging from small to large, which trail by scent with diligence and patience.

### Dog Breeds

<table>
<thead>
<tr>
<th>Group Descriptions</th>
<th>Dog Breeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The dogs in this group are alert and bold. These breeds were developed to dig out the small animals chased underground by the tracking hounds. Many are small and can burrow through tunnels with ease. They are ferocious fighters once they corner their quarry.</td>
<td>Group 1 Sporting Dogs</td>
</tr>
<tr>
<td>2. These breeds of dogs were developed to help move livestock from pasture to pasture or barn to pasture. They are more prone to chasing cars because of their natural instincts.</td>
<td>Group 2 Hounds</td>
</tr>
<tr>
<td>3. This group has the smallest breeds of dogs, ranging from four to 16 pounds. They were developed for the purpose of pleasure and companionship to their owners. Many of the breeds were prized by the royalty of ancient times. They are long-lived breeds of dogs.</td>
<td>Group 3 Working Dogs</td>
</tr>
<tr>
<td>4. The breeds in this group include pointers, setters, retrievers, and spaniels. The pointers and setters are hunters that cover the ground with great speed and freeze like a statue at the scent of game birds. The retrievers are expert swimmers and excel at retrieving game, either in the field or water. Spaniels flush out game from underbrush and thickets.</td>
<td>Group 4 Terriers</td>
</tr>
<tr>
<td>5. The breeds in this group were developed for serving humans by drawing sleds and carts, driving cattle to market, and protecting property. More recently they have been developed for guiding the blind and detecting bombs and narcotics.</td>
<td>Group 5 Toys</td>
</tr>
<tr>
<td>6. In this group, the breeds vary a great deal in their historical and physical characteristics. They also vary greatly in disposition and size. Although they were developed to perform certain tasks, today they serve mainly as pets.</td>
<td>Group 6 Non-Sporting Dogs</td>
</tr>
<tr>
<td>7. This group of breeds includes those dogs with long legs developed for speed, endurance, and keen vision. It also includes dogs, ranging from small to large, which trail by scent with diligence and patience.</td>
<td>Group 7 Herding Group</td>
</tr>
</tbody>
</table>
Small Animals and Veterinary Science

Breeds of Dogs: The Groups

The American Kennel Club (AKC) is the largest dog registry in the United States. It recognizes more than 130 breeds of dogs with more being accepted in the future. These breeds have been categorized into seven groups according to their purpose. They are: Group 1: Sporting Dogs; Group 2: Hounds; Group 3: Working Dogs; Group 4: Terriers; Group 5: Toys; Group 6: Non-Sporting Dogs; and Group 7: Herding Group. There is also a Miscellaneous category recognized by AKC and granted an Indefinite Listing Privilege (ILP). Dogs in this category are eligible to compete in shows and obedience trials. Once they are accepted into the regular groups, they become eligible for points toward AKC championships and can compete in Variety Groups.

Draw a line from each group description to the correct dog breed.

**Group Descriptions**

1. The dogs in this group are alert and bold. These breeds were developed to dig out the small animals chased underground by the tracking hounds. Many are small and can burrow through tunnels with ease. They are ferocious fighters once they corner their quarry.

2. These breeds of dogs were developed to help move livestock from pasture to pasture or barn to pasture. They are more prone to chasing cars because of their natural instincts.

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**Source:** Dog Care, No. 200 Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breeds of Dogs

Group 1: Sporting Dogs

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled either forward or backward.

<table>
<thead>
<tr>
<th>Brittany</th>
<th>Clumber Spaniel</th>
<th>English Setter</th>
<th>Field Spaniel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golden</td>
<td>Gordon Setter</td>
<td>Irish Setter</td>
<td>Labrador</td>
</tr>
<tr>
<td>Pointer</td>
<td>Retriever</td>
<td>Sussex Spaniel</td>
<td>Vizsla</td>
</tr>
<tr>
<td>Weimaraner</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Word Search**

**In this activity you will:**

- become familiar with several breeds of dogs within the AKC Sporting Dog Group.

Brittany  Clumber Spaniel  English Setter  Field Spaniel
Golden    Gordon Setter   Irish Setter    Labrador
Pointer   Retriever       Sussex Spaniel  Vizsla
Weimaraner

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
**Small Animals and Veterinary Science**

**Breeds of Dogs**

**Group 1: Sporting Dogs**

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled either forward or backward.

Brittany     Clumber Spaniel     English Setter     Field Spaniel
Golden       Gordon Setter       Irish Setter       Labrador
Pointer      Retriever           Sussex Spaniel     Vizsla
Weimaraner

Word Search—Key

- become familiar with several breeds of dogs within the AKC Sporting Dog Group.

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breeds of Dogs

Group 2: Hounds

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, diagonally, and spelled either forward or backward.

Afghan Hound  Basenji  Basset Hound
Beagle        Bloodhound  Borzoi
Deerhound     Elkhound    Foxhound
Greyhound     Harrier     Otterhound
Saluki        Whippet     Wolfhound

D R D D B I O Z R O B N T L K
A N N N N B N I Y S A L U K I
L E U U E U J W G Y S E F O B
B L O O D H O U N D E D C M K
F G H H H E F H F N N Q H M R
P A R Y P N E P F U J K A R X
J E E E V E A R O L I O P U R
T B T R I P L H H A O H X R G
K N T G T R T K G O X W R R C
D B O C J E R L H F U D W A Q
X T V G S H W A C O A N C I H
T K G S U F O X H O U N D R R
J X A W H I P P E T I N E V M
O B J N A O P X R E L H D Q S

Source: Dog Care, No. 200, Ohio State University Extension
Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breed of Dogs

Group 2: Hounds

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, diagonally, and spelled either forward or backward.

Afghan Hound  Basenji  Bassett Hound
Beagle  Bloodhound  Borzoi
Deerhound  Elkhound  Foxhound
Greyhound  Harrier  Otterhound
Saluki  Whippet  Wolfhound

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breeds of Dogs
Group 3: Working Dogs

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled either forward or backward.

Akita  Boxer  Bullmastiff
Doberman  Giant Schnauzer  Great Dane
Great Pyrenees  Komondor  Malamute
Mastiff  Newfoundland  Rottweiler
Saint Bernard  Samoyed  Siberian Husky

Word Search

In this activity you will:

• become familiar with several breeds of dogs within the AKC Working Dog Group.

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breeds of Dogs

Group 3: Working Dogs

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled either forward or backward.

- Akita
- Doberman
- Great Pyrenees
- Mastiff
- Saint Bernard
- Boxer
- Giant Schnauzer
- Komondor
- Newfoundland
- Samoyed
- Bullmastiff
- Great Dane
- Malamute
- Rottweiler
- Siberian Husky

In this activity you will:

- become familiar with several breeds of dogs within the AKC Working Dog Group.

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breed of Dogs
Group 4: Terriers

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled either forward or backward.

Airedale       Bedlington       Border Terrier
Bull Terrier   Cairn Terrier    Dandie Dinmont
Fox Terrier    Irish Terrier    Kerry Blue
Manchester     Norfolk Terrier  Norwich Terrier
Scotty         Sealyham        Skye Terrier
Staffordshire  Welsh Terrier

N O R W I C H T E R R I E R C
O W R E I R R E T H S I R I A
R E R E I R R E T L L U B A I
F L K E R R Y B L U E R Y Y R
O S L R E E R Y T T O C S M N
L H D A N D I E D I N M O N T
K T R Y Z F I R T W R X T R E
T E S K Y E T E R R I E R L R
E R A I R E D A L E E I U V R
R R M A H Y L A E S T D O Z I
R I L G A Y C S P J D X R D E
I E N O T G N I L D E B O O R
E R I H S D R O F F A T S F B
R E T S E H C N A M C A T A O

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
In this activity you will:
• become familiar with several breeds of dogs within the AKC Terriers Group.

Word Search—Key

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled either forward or backward.

Airedale  Bedlington  Border Terrier
Bull Terrier  Cairn Terrier  Dandie Dinmont
Fox Terrier  Irish Terrier  Kerry Blue
Manchester  Norfolk Terrier  Norwich Terrier
Scotty  Sealyham  Skye Terrier
Staffordshire  Welsh Terrier

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breeds of Dogs

Group 5: Toys

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled forward or backward.

Affenpinscher Chihuahua Chinese Crested
Japanese Chin Maltese Papillon
Pekingese Pomeranian Pug
Shih Tzu Silky Terrier Toy Poodle
Yorkshire

Word Search

In this activity you will:

- become familiar with several breeds of dogs within the AKC toys Group.

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breeds of Dogs
Group 5: Toys

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled forward or backward.

Affenpinscher Chihuahua Chinese Crested
Japanese Chin Maltese Papillon
Pekingese Pomeranian Pug
Shih Tzu Silky Terrier Toy Poodle
Yorkshire

Word Search—Key

In this activity you will:
• become familiar with several breeds of dogs within the AKC Toys Group.

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team

Lift-Off
Small Animals and Veterinary Science

Breeds of Dogs
Group 6: Non-Sporting

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled either forward or backward.

Bichons Frise       Boston Terrier       Bulldog
Chinese SharPei     Chow Chow           Dalmation
Finnish Spitz       Keeshond            Lhasa Apso
Poodle             Schipperke          Shibu Inu
Tibetan Spaniel     Tibetan Terrier

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breeds of Dogs

Group 6: Non-Sporting

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled either forward or backward.

Bichons Frise
Chinese SharPei
Finnish Spitz
Poodle
Tibetan Spaniel

Boston Terrier
Chow Chow
Keeshond
Schipperke
Tibetan Terrier

Bulldog
Dalmation
Lhasa Apso
Shibu Inu

Word Search—Key

In this activity you will:

• become familiar with several breeds of dogs within the AKC Non-Sporting Dog Group.

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breeds of Dogs
Group 7: Herding

Find the breeds in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled either forward or backward.

Aussie  Bearded Collie  Belgian Malinoi
Border Collie  Bouviers  Briard
Cardigan Corgi  Collie  German Shepherd
Old English Corgi  Pembroke Corgi  Puli
Sheepdog  Sheltie  Welsh Corgi

Word Search
In this activity you will:

- become familiar with several breeds of dogs within the AKC Herding Group.

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breeds of Dogs
Group 7: Herding

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Aussie    Bearded Collie    Belgian Malinoi
Border Collie    Bouviers    Briard
Cardigan Corgi    Collie    German Shepherd
Old English    Pembroke Corgi    Puli
Sheepdog    Sheltie    Welsh Corgi

Source: Dog Care, No. 200, Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

The Body Language of Dogs

Dogs use body language to communicate their social and emotional states to other dogs and humans. Along with their body language, vocalizations, such as barks and growls, add to the dog’s intended message.

Match the picture of the dog to the description of the type of behavior the dog is portraying in the picture by drawing a line from the picture to the correct definition.

- **Play Initiation:** The dog is inviting someone to play.

- **Passive Submission:** A dog in this body position communicates complete surrender, submission, and fear.

- **Active Submission:** This dog shows some signs of fear and becomes submissive to avoid any further threats.

- **Frightened yet Threatening:** This dog is frightened and may attack if pressed.

- **Aggressive Threat:** This dominant dog is aggressive and threatening.

- **Attentive and Interested:** This alert dog is interested in something in its surroundings.

- **Content and Unthreatened:** This dog is relaxed and unconcerned about the activities going on around it. It does not feel threatened by anything.

Source: The Intelligence of Dogs, Stanley Coren, pp. 98-99, 110-113

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
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Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Parts of a Cat

The names of the parts of a cat are listed below. Place the number of the correct part next to the line that points to that part of the cat. Point to the part on your body that most closely resembles the cat part.

1. metatarsus 8. croup (rump) 14. toes 20. back 26. forehead
2. nose 9. lips 15. occiput 21. lower thigh 27. metacarpus (pastern)
3. hock (heel) 10. tail 16. tarsal joint (hock) 22. eyes 28. abdomen
4. nostrils 11. whiskers 17. forearm 23. loin 29. claws
5. shoulder 12. elbow 18. nape 24. chest 30. throat
6. withers 13. stifle (knee joint) 19. carpus (knee) 25. upper arm 31. ears
7. upper thigh

Scenario: You find an injured kitten in your backyard. Even though it is not your kitten, you know that the humane action is to call a veterinarian. You make the phone call and the veterinarian asks you to describe the visible injuries. Using at least eight of the cat’s body parts, describe the injuries to the veterinarian.

Source: Cats, 4-H 218 Ohio State University Extension

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

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Source: Cats, 4-H 218 Ohio State University Extension
Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breed of Cats

Find the breeds of cats in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled either forward or backward.

<table>
<thead>
<tr>
<th>Abyssinian</th>
<th>American Curl</th>
<th>Balinese</th>
<th>Bengal</th>
<th>Birman</th>
<th>Bombay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burmese</td>
<td>Burmilla</td>
<td>Cornish Rex</td>
<td>Cymric</td>
<td>Egyptian Mau</td>
<td>Havana Brown</td>
</tr>
<tr>
<td>Himalayan</td>
<td>Javanese</td>
<td>Korat</td>
<td>Maine Coon Cat</td>
<td>Manx</td>
<td>Oicat</td>
</tr>
<tr>
<td>Persian</td>
<td>Ragdoll</td>
<td>Russian Blue</td>
<td>Scottish Fold</td>
<td>Siamese</td>
<td>Snowshoe</td>
</tr>
<tr>
<td>Somali</td>
<td>Sphynx</td>
<td>Tonkinese</td>
<td>Turkish Van</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Word Search

In this activity you will:

- become familiar with several breeds of cats.

Abyssinian American Curl Balinese Bengal Birman Bombay
Burmese Burmilla Cornish Rex Cymric Egyptian Mau Havana Brown
Himalayan Javanese Korat Maine Coon Cat Manx Oicat
Persian Ragdoll Russian Blue Scottish Fold Siamese Snowshoe
Somali Sphynx Tonkinese Turkish Van

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breeds of Cats

Find the breeds of cats in the word search puzzle below. The breeds will be listed vertically, horizontally, or diagonally, and spelled either forward or backward.

Abyssinian  American Curl  Balinese  Bengal
Burmese  Burmilla  Cornish Rex  Cymric
Himalayan  Javanese  Korat  Maine Coon Cat
Persian  Ragdoll  Russian Blue  Scottish Fold
Somali  Sphynx  Tonkinese  Turkish Van

Birman  Bombay
Egyptian Mau  Havana Brown
Manx  Ociat
Siamese  Snowshoe

In this activity you will:
• become familiar with several breeds of cats.
Small Animals and Veterinary Science
Cat Talk

In this activity you will:
- become familiar with vocabulary used in your 4-H cat project.

Complete the crossword puzzle below by filling in the puzzle with terms pertaining to cats.

**Crossword**


**Developed by:** Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science
Cat Talk

Complete the crossword puzzle below by filling in the puzzle with terms pertaining to cats.

**Across**
1. Extra toes
4. Feline
5. Primary hairs
6. Overall health
7. Swallowed fur
9. Giving birth
10. Wild cats

**Down**
1. Upright ears
2. Kittens born
3. Cat lover
8. Unspayed female

**Crossword—Key**

- become familiar with vocabulary used in your 4-H cat project.


Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
**Small Animals and Veterinary Science**

**Cat Talk 2**

Complete the crossword puzzle below by filling in the puzzle with terms pertaining to cats.

**Across**

5. Striped markings  
6. Place to board cats

**Down**

1. Male cat  
2. Remove ovaries  
3. Orange, black, white  
4. Young cat  


Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team.
In this activity you will:

- become familiar with vocabulary used in your 4-H cat project.

Complete the crossword puzzle below by filling in the puzzle with terms pertaining to cats.

**Across**

5. Striped markings  
6. Place to board cats

**Down**

1. Male cat  
2. Remove ovaries  
3. Orange, black, white  
4. Young cat

---


Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Cat Vocabulary

Match each term with its correct definition by writing the number of the term in front of the correct definition.

Match each term with its correct definition by writing the number of the term in front of the correct definition.

1. ailurophile
2. agouti
3. angora
4. bicolor
5. breed
6. calico
7. calling
8. cat
9. catnip
10. cat fancy
11. cattery
12. CFA
13. condition
14. feline
15. feral
16. fleas
17. ghost markings
18. guard hairs
19. hair balls
20. hybrid
21. kitten
22. litter
23. litter box
24. pedigree
25. points
26. polydactyly
27. pricked
28. purebred
29. queen
30. queening
31. quick
32. tabby
33. third eyelid
34. tomcat
35. tortoiseshell
36. undercoat

Definitions

_____ A. These markings on a cat are either striped, spotted, or blotched.

_____ B. The most common parasite found on a cat’s skin live by feeding on blood. An infestation of these could cause a cat to become anemic.

_____ C. Cats that have an extra number of toes are called this.

_____ D. This breed of cat has long hair and a long, slim body. It lacks the woolly undercoat of the true long-haired cats.

_____ E. This is a young cat, usually under 15 months of age.

_____ F. This faint tabby pattern seen in young kittens usually disappears as the kitten becomes older.

_____ G. An unspayed female cat of breeding age.

_____ H. A collective term used to cover cat clubs, cat fanciers, and pedigree cats.

_____ I. When cats wash themselves with their tongues, they swallow some of their fur. If they swallow more fur than they can digest, they may vomit this compacted mass of fur.

_____ J. This document contains the first three to five generations of a cat’s predecessors. It includes the known names, titles, colors, and registration numbers of these cats.


Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
**K.** Usually females, these cats have a black and orange coat color. The coat results from a linkage of dominant and recessive orange genes, both carried by the female chromosomes.

**L.** This is a person who loves cats.

**M.** Markings such as a Siamese cat has where the ears, face, legs, feet, and tail are a different color than the body color.

**N.** A member of the family Felidae.

**O.** The vein in a cat’s claw. When trimming the nails, you must be careful not to cut into the quick, which will result in bleeding.

**P.** The yowling sound a female cat in heat often makes.

**Q.** The sandy color located between the black stripes of a tabby.

**R.** Eyelid that is often seen at the corners of a cat’s eye.

**S.** Cat Fancier’s Association

**T.** Kittens born from the female cat at the same time during one gestation. Also the absorbent materials used in a litter box.

**U.** Upright or forward ears.

**V.** The overall health, cleanliness, and well-being of a cat.

**W.** A male cat that has not been neutered.

**X.** A group of cats with a related ancestry and similar characteristics.

**Y.** A cat whose ancestors are of the same variety or allowable varieties.

**Z.** Giving birth to kittens.

**AA.** Tame cats that have reverted back to the wild state.

**BB.** Derived from the herb, Nepeta Cataria, often used in cat toys. Most cats like this herb.

**CC.** The thick layer of insulating fur under the topcoat.

**DD.** This is a shallow box filled with absorbent material used as an indoor cat’s toilet.

**EE.** This is a tortoise-shell and white-haired cat, almost always a female.

**FF.** These are the primary hairs, or the outer and longest hairs in a cat’s fur.

**GG.** A cat’s fur consisting of white hair mixed with one other color.

**HH.** A place where cats are bred and/or boarded.

**II.** Belonging to the cat family, which includes jungle cats, wild and domestic cats.

**JJ.** A cat produced from breeding cats of different breeds.


*Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team*
# Small Animals and Veterinary Science

## Cat Vocabulary

Match each term with its correct definition by writing the number of the term in front of the correct definition.

<table>
<thead>
<tr>
<th>Number</th>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ailurophile</td>
<td>A. These markings on a cat are either striped, spotted, or blotched.</td>
</tr>
<tr>
<td>2</td>
<td>agouti</td>
<td>B. The most common parasite found on a cat’s skin live by feeding on blood. An infestation of these could cause a cat to become anemic.</td>
</tr>
<tr>
<td>3</td>
<td>angora</td>
<td>C. Cats that have an extra number of toes are called this.</td>
</tr>
<tr>
<td>4</td>
<td>bicolor</td>
<td>D. This breed of cat has long hair and a long, slim body. It lacks the woolly undercoat of the true long-haired cats.</td>
</tr>
<tr>
<td>5</td>
<td>breed</td>
<td>E. This is a young cat, usually under 15 months of age.</td>
</tr>
<tr>
<td>6</td>
<td>calico</td>
<td>F. This faint tabby pattern seen in young kittens usually disappears as the kitten becomes older.</td>
</tr>
<tr>
<td>7</td>
<td>calling</td>
<td>G. An unspayed female cat of breeding age.</td>
</tr>
<tr>
<td>8</td>
<td>cat</td>
<td>H. A collective term used to cover cat clubs, cat fanciers, and pedigree cats.</td>
</tr>
<tr>
<td>9</td>
<td>catnip</td>
<td>I. When cats wash themselves with their tongues, they swallow some of their fur. If they swallow more fur than they can digest, they may vomit this compacted mass of fur.</td>
</tr>
<tr>
<td>10</td>
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Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Matching

In this activity you will:

• become familiar with terms and definitions relating to a cat’s health.

Definitions

_____ A. To surgically remove the ovaries of a cat so it will not be able to reproduce.

_____ B. This virus decreases the ability of the immune system to respond to infection and may cause leukemia. It is passed from cat to cat by direct contact. It is not contagious to humans or other animals.

_____ C. This is a common respiratory infection with symptoms of sneezing, decreased appetite, and fever. It may provide an opportunity for the development of more serious bacterial complications. Rarely fatal, it may recur when the cat is ill or stressed.

_____ D. An inflammation of the skin.

_____ E. Symptoms of this disease include loss of appetite, vomiting, and diarrhea. It is widespread and highly contagious. It is often fatal in both kittens and adult cats.

_____ F. This is a fatal viral infection of the central nervous system that can affect all mammals, including humans. The virus is transmitted through the bite of an infected animal.

_____ G. A localized collection of pus in the tissues of the body.

_____ H. This respiratory infection often leaves the cat more susceptible to serious infections. It is usually not fatal. Ulcers may be seen on the tongue and in the mouth.

_____ I. This disease of the eye is characterized by increased pressure within the eyeball and progressive loss of vision.

_____ J. There is no cure for this contagious, usually fatal disease. Signs may include a dramatically enlarged abdomen.

_____ K. This disease is an abnormal, uncontrolled growth of a group of body cells.

_____ L. Inoculation of an animal to produce an immunity from certain diseases.

_____ M. Parasites that live in the ear canal and cause irritation.

_____ N. To surgically remove the testicles of a male cat.

_____ O. This common respiratory infection is often fatal in kittens. Symptoms include sneezing, decreased appetite and fever, followed by a thick discharge from the eyes and nose.

Word List

1. abscess
2. cancer
3. dermatitis
4. ear mites
5. Feline Calcivirus (FCV)
6. Feline Infectious Peritonitis (FIP)
7. Feline Leukemia (FeLV)
8. Feline Panleukopenia (FPL)
9. Feline Pneumonitis-Chlamydia (FPN)
10. Feline Viral Rhinotracheitis (FVR)
11. glaucoma
12. neuter
13. rabies
14. spay
15. vaccination

Sources: Drs. Bach and Barnett, Waverly, Ohio, NCR Extension Publication 413-1993, Cat Connections

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Cat Health

The following terms relate to a cat’s health. Match the term with its correct definition. Write the number of the term in front of the correct definition.

Definitions

14. To surgically remove the ovaries of a cat so it will not be able to reproduce.

7. This virus decreases the ability of the immune system to respond to infection and may cause leukemia. It is passed from cat to cat by direct contact. It is not contagious to humans or other animals.

9. This is a common respiratory infection with symptoms of sneezing, decreased appetite, and fever. It may provide an opportunity for the development of more serious bacterial complications. Rarely fatal, it may recur when the cat is ill or stressed.

3. An inflammation of the skin.

8. Symptoms of this disease include loss of appetite, vomiting, and diarrhea. It is widespread and highly contagious. It is often fatal in both kittens and adult cats.

13. This is a fatal viral infection of the central nervous system that can affect all mammals, including humans. The virus is transmitted through the bite of an infected animal.

1. A localized collection of pus in the tissues of the body.

5. This respiratory infection often leaves the cat more susceptible to serious infections. It is usually not fatal. Ulcers may be seen on the tongue and in the mouth.

11. This disease of the eye is characterized by increased pressure within the eyeball and progressive loss of vision.

6. There is no cure for this contagious, usually fatal disease. Signs may include a dramatically enlarged abdomen.

2. This disease is an abnormal, uncontrolled growth of a group of body cells.

15. Inoculation of an animal to produce an immunity from certain diseases.

4. Parasites that live in the ear canal and cause irritation.

12. To surgically remove the testicles of a male cat.

10. This common respiratory infection is often fatal in kittens. Symptoms include sneezing, decreased appetite and fever, followed by a thick discharge from the eyes and nose.

Sources: Drs. Bach and Barnett, Waverly, Ohio, NCR Extension Publication 413-1993, Cat Connections
Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Parts of a Rabbit

The names of the different parts of a rabbit are listed below. Place the number of the correct part on the blank next to the line that points to that part of the rabbit. Point to the part on your body that most closely resembles the rabbit parts.

Word List

1. toes  5. hock  9. ear  13. dewlap  17. cheek  20. loin
3. forequarter  7. hindquarter  11. chest  15. rump  19. leg  22. belly
4. mouth  8. rib  12. tail  16. flank


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Small Animals and Veterinary Science

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Word List

1. toes          5. hock          9. ear          13. dewlap
2. hip           6. neck          10. foot         14. shoulder
3. forequarter   7. hindquarter   11. chest        15. rump
4. mouth         8. rib           12. tail         16. flank

Identification—Key

In this activity you will:

• become familiar with the external body parts of a rabbit.


Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Complete scrambled words to learn fifteen breeds of rabbits.

1. e r x
2. s o l p h i
3. c d h u t
4. m h f e i s a t n g i
5. b g e n i a r e a h
6. t i a s n
7. y e e r j s l o y o w
8. n l e h n t e d r a r w f d a
9. k e d c c r e h e i a n g t
10. r l f n c i a o i
11. n f e c h r p o l
12. e w n l e a z n d a
13. l a n h h i c i l
14. r o l d f i a t h e i w
15. i v r e s l r a m n e t
Small Animals and Veterinary Science
BREEDS OF RABBITS

Complete scrambled words to learn fifteen breeds of rabbits.

1. erx  
2. solphi  
3. cdhut  
4. mhfeils atngi  
5. lbgenia reah  
6. tiasn  
7. yeerjs loyow  
8. nlehntedra rwfda  
9. kedccrehe iangt  
10. rlfncianaoi  
11. nfechr pol  
12. ewn leaznda  
13. lanhhicicl  
14. roldfia theiw  
15. ivresl ramnet

- Rex
- Polish
- Dutch
- Flemish Giant
- Belgian Hare
- Satin
- Jersey Wooly
- Nederland Dwarf
- Checkered Giant
- Californian
- French Lop
- New Zealand
- Chinchilla
- Florida White
- Silver Marten

Word Scramble—Key
In this activity you will:
• become familiar with fifteen breeds of rabbits.

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
**Small Animals and Veterinary Science**

**Rabbit Vocabulary**

Fill in the blanks to complete the sentences using words from the list below. Combine the circled letters in each answer to spell a word that you should be familiar with when raising rabbits.

<table>
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<th>dewlap</th>
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<td>hutch</td>
<td>kit</td>
<td>malocclusion</td>
<td>senior</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Rabbits that fulfill the weight requirements of their breed and are six months of age and older in those breeds having two show classes or eight months of age and older in those breeds having three show classes would be shown in the [ ] __ __ __ __ __ class.

2. To put a permanent identification mark in a rabbit’s left ear would be to [ ] __ __ __ __ __ the rabbit. If the rabbit is registered with the American Rabbit Breeder’s Association, the A.R.B.A. number would go in the right ear.

3. The [ ] __ __ __ __ __ __ __ __ __ __ __ is the section of the rabbit’s body containing the loin, rump, hips, and hind legs.

4. This term refers to an inherited defect where the upper and lower jaws do not let the teeth meet correctly. Resulting in long, uneven teeth extending out of the rabbit’s mouth, [ ] __ __ __ __ __ __ __ __ __ __ __ keeps the rabbit from eating and chewing correctly.

5. When a doe gives birth she is said to [ ] __ __ __ __ __ __ __ __ __ __ __.

6. A tail that is curled or twisted permanently to one side, or is a corkscrew tail with one or more turns is called a [ ] __ __ __ __ __ __ __.

7. A rabbit with [ ] __ __ __ __ __ __ __ __ salivates excessively leaving the fur wet and unsightly around the mouth and lower jaw.

8. The folds of loose skin that hang from the throat of a doe is called a [ ] __ __ __ __ __ __ __ __ __ __ __.

9. A female rabbit is called [ ] __ __ __ __ __ __ __.

10. __ __ __ __ __ __ __ __ __ are long and in either jaw caused by improper alignment of the front teeth. These prevent normal eating action.

Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
11. The French word for rabbit is __ __ __ __ __. It is also a term for dyed rabbit fur.
12. A group of young rabbits raised by a doe is called a __ __ __ __ __ __ __.
13. The __ __ __ __ __ __ __ __ __ __ is the place where a group of hutches and rabbits are kept.
14. A young meat rabbit under five pounds is called a __ __ __ __ __ __ __.
15. About 28 days after the doe is bred, you should put a __ __ __ __ __ __ __ inside her hutch for the kits to be born in and live in for the first 18 to 21 days.
16. An inflamed, scabby condition in the lower inside of a rabbit’s ear is called __ __ __ __ __ __ __ __ __ __. This is caused by ear mites.
17. Before you get your rabbit you will need to build or buy a __ __ __ __ __ __ __ so your rabbit will have a place to live.
18. A baby rabbit that weighs less than 16 ounces is called a __ __ __ __ __ __ __.
19. The fur of Angora rabbits is called __ __ __ __ __ __ __ __ __ __.
20. Rabbits that are under six months of age and fulfill the weight requirements of the breed are shown in a __ __ __ __ __ __ __ __ __ __ class.

Now combine the circled letters to spell out the name of the book that lists the characteristics for each recognized breed of rabbits as approved by a registering organization. This book is called the __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ 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**Small Animals and Veterinary Science**

**Rabbit Vocabulary**

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1. Rabbits that fulfill the weight requirements of their breed and are six months of age and older in those breeds having two show classes or eight months of age and older in those breeds having three show classes would be shown in the ___ class.

2. To put a permanent identification mark in a rabbit’s left ear would be to __ the rabbit. If the rabbit is registered with the American Rabbit Breeder’s Association, the A.R.B.A. number would go in the right ear.

3. The ___ is the section of the rabbit’s body containing the loin, rump, hips, and hind legs.

4. This term refers to an inherited defect where the upper and lower jaws do not let the teeth meet correctly. Resulting in long, uneven teeth extending out of the rabbit’s mouth, __ keeps the rabbit from eating and chewing correctly.

5. When a doe gives birth she is said to ___.

6. A tail that is curled or twisted permanently to one side, or is a corkscrew tail with one or more turns is called a ___.

7. A rabbit with ___ salivates excessively leaving the fur wet and unsightly around the mouth and lower jaw.

8. The folds of loose skin that hang from the throat of a doe is called a ___.

9. A female rabbit is called a ___.

10. ___ are long and in either jaw caused by improper alignment of the front teeth. These prevent normal eating action.

**Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team**
11. The French word for rabbit is **lapin**. It is also a term for dyed rabbit fur.

12. A group of young rabbits raised by a doe is called a **litter**.

13. The **rabbitry** is the place where a group of hutches and rabbits are kept.

14. A young meat rabbit under five pounds is called a **fryer**.

15. About 28 days after the doe is bred, you should put a **nest box** inside her hutch for the kits to be born in and live in for the first 18 to 21 days.

16. An inflamed, scabby condition in the lower inside of a rabbit’s ear is called **ear canker**. This is caused by ear mites.

17. Before you get your rabbit you will need to build or buy a **hutch** so your rabbit will have a place to live.

18. A baby rabbit that weighs less than 16 ounces is called a **kit**.

19. The fur of Angora rabbits is called **wool**.

20. Rabbits that are under six months of age and fulfill the weight requirements of the breed are shown in a **junior** class.

Now combine the circled letters to spell out the name of the book that lists the characteristics for each recognized breed of rabbits as approved by a registering organization. This book is called the **Standard of Perfection**.
Small Animals and Veterinary Science

BREEDS OF CAVIES

Fill in the blank with the correct breed that most closely fits the description provided.

| Abyssinian | Satin | Teddy |
| American   | Silkie | White Crested |
| Peruvian   |       |           |

1. I have a hair coat that is unusual. It is short and kinky. The texture of my hair coat may be either plush or soft, and harsh or rough. I am a __________ cavy.

2. I am the most common guinea pig. I have short silky hair and come in many colors. I have broad shoulders, a Roman nose, and a high full crown. I am an __________ cavy.

3. I am a long-haired guinea pig. My hair grows straight back to my rear with no middle part. When looking at me from above, my shape looks like a tear drop. I am a __________ cavy.

4. I have a short smooth hair coat and a single white rosette on top of my head just in front of my ears. I am a very calm guinea pig. I am a ____________________ guinea pig.

5. I have short harsh fur arranged in rosettes and ridges. I am usually the smallest and rangiest of the cavies. My nose is longer than other breeds of guinea pigs and I have a “moustache.” I am an ________________ cavy.

6. I am the newest recognized breed of guinea pig by the ARBA. I have a special type of hair. The hair shaft is smaller and has a glass-like hair shell that reflects light. I am very shiny. I am a __________ cavy.

7. My hair can grow to lengths of 12 to 14 inches or more. I look like a mop and it is hard to tell which end is my head. My owner needs to spend a lot of time grooming me. I am a __________ cavy.


Developed by: Lucinda Miller, Extension Agent, 4-H Youth Development, Pike County and Team Leader, Ohio 4-H Small Animal Leadership Team
Small Animals and Veterinary Science

Breeds of Cavies

Fill in the blank with the correct breed that most closely fits the description provided.

| Abyssinian | Satin | Teddy |
| American   | Silkie| White Crested |
| Peruvian   |      |         |

1. I have a hair coat that is unusual. It is short and kinky. The texture of my hair coat may be either plush or soft, and harsh or rough. I am a Teddy cavy.

2. I am the most common guinea pig. I have short silky hair and come in many colors. I have broad shoulders, a Roman nose, and a high full crown. I am an American cavy.

3. I am a long-haired guinea pig. My hair grows straight back to my rear with no middle part. When looking at me from above, my shape looks like a tear drop. I am a Silkie cavy.

4. I have a short smooth hair coat and a single white rosette on top of my head just in front of my ears. I am a very calm guinea pig. I am a White Crested cavy.

5. I have short harsh fur arranged in rosettes and ridges. I am usually the smallest and rangiest of the cavies. My nose is longer than other breeds of guinea pigs and I have a “moustache.” I am an Abyssinian cavy.

6. I am the newest recognized breed of guinea pig by the ARBA. I have a special type of hair. The hair shaft is smaller and has a glass-like hair shell that reflects light. I am very shiny. I am a Satin cavy.

7. My hair can grow to lengths of 12 to 14 inches or more. I look like a mop and it is hard to tell which end is my head. My owner needs to spend a lot of time grooming me. I am a Peruvian cavy.

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