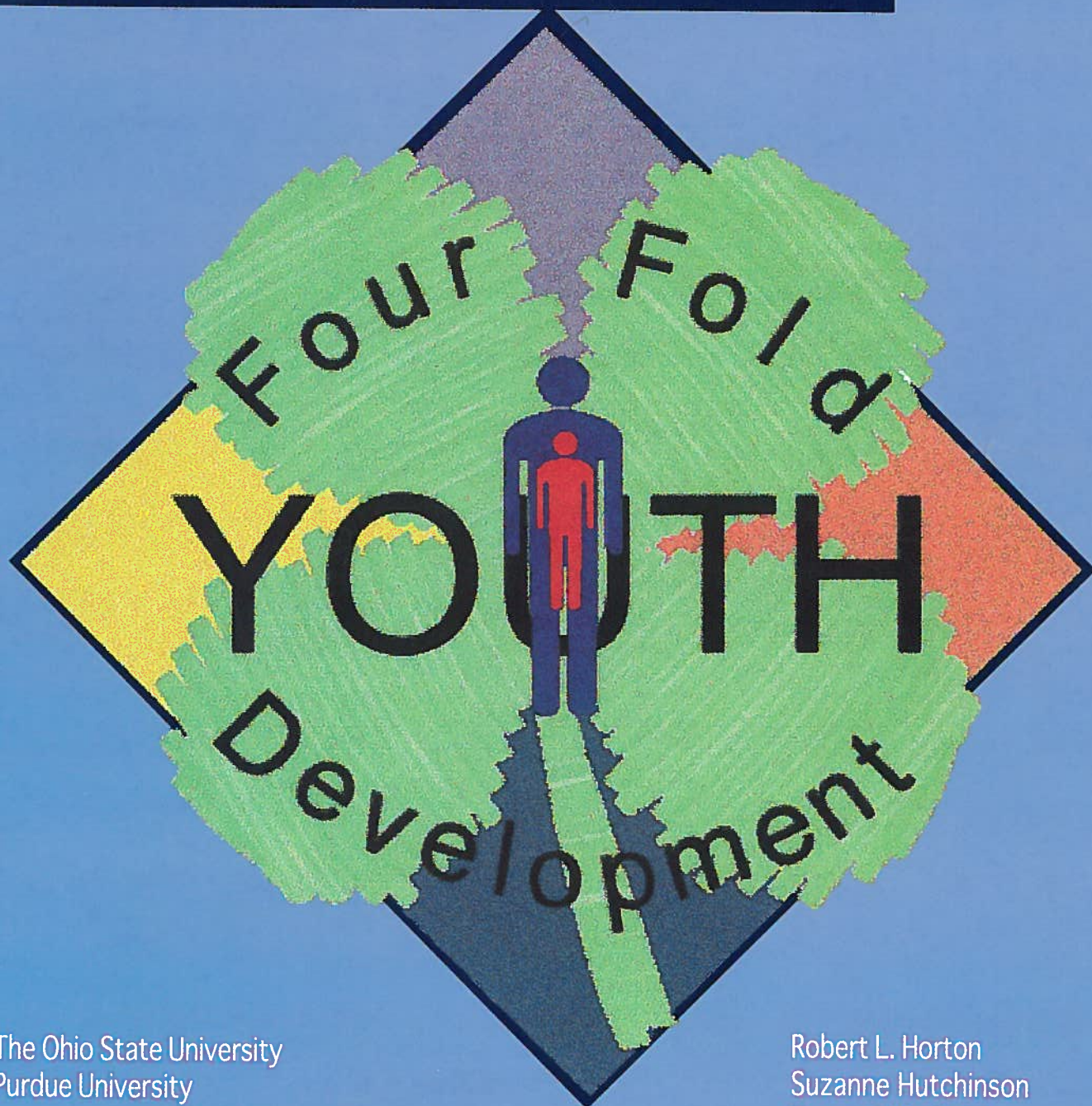


Developing

Experientially Based

4-H Curriculum Materials



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The Four Fold Youth Development Model was created in 1998 to characterize the types of personal development skills targeted through 4-H youth development. The model creates a common language among youth development professionals and provides the link between curriculum design and evaluation. What followed was the creation of a two-part series on the design and evaluation of experientially based 4-H curriculum materials.

The first publication in this series, *4-H 897, Developing Experientially Based 4-H Curriculum Materials*, focuses on the way in which teaching materials are created, especially the actual arrangement of the parts of the finished product. The second publication, *4-H 898, Evaluating 4-H Curriculum Through the Design Process*, focuses on the pilot testing and data collection phase of curriculum development. It contains both checklists for use by design teams and evaluation instruments to measure whether the curriculum achieved its stated outcomes. These publications were funded through a grant from the former National 4-H Network for Science and Technology (NNST).

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## **Experiential Education Defined:**

- based on the needs and interests of the learners
- utilizes non-formal instruction
- learning facilitator is present
- experiences organized in a way that move learners through four distinct phases; introduction, exploration generalization and application.

*The Authors*





The philosophy of designing experientially based curriculum materials brings into focus the way in which teaching materials are created, especially the actual arrangement of the parts of the finished product. These parts, sometimes called curriculum components include: (1) aims, goals, and objectives; (2) subject matter; (3) learning experiences; and (4) evaluation approaches. The uniqueness of these parts, the emphasis placed on them, and the manner in which they are organized comprise what we mean by curriculum design. Certainly, few people would disagree on the need to consider goals, content, learning experiences, methods, materials, and evaluation. However, how they approach these competencies and the value they place on each is influenced by their awareness and interpretation of the varying philosophies (e.g., behavioral systems philosophy, information processing philosophy) within the experiential learning domain.

## Considerations for Experiential Curriculum Design

When considering curriculum design, the experiential curriculum designer confronts the question: What general structure of the curriculum can I develop so that autonomy of the parts does not confuse the design as a whole? Curriculum design is concerned with the nature and arrangement of the four curriculum components. These components are rooted in the classic work of H. Giles (1942), an offshoot of “The Eight-Year Study.” The design’s four components suggest to the experiential curriculum designer three questions: What is to be done? What instructional strategies, resources, and activities will be employed? And what methods and instruments will be used to appraise the results of the curriculum? According to Giles, the four components interact with each other; decisions made about one component are dependent on decisions made about the others.

Not all experiential designs require equal emphasis of the four components. However, an experiential curriculum design does need to provide a consistent framework of values and priorities for dealing with the operational decisions necessary for delivering the curriculum. If a curriculum is designed adequately, it defines for the curriculum user the nature and scope of the content in the curriculum that is to receive particular attention.

Designing experientially based curricula involves various philosophies or theoretical issues as well as practical issues. A person’s philosophical stance (e.g., behaviorist vs. cognitive theorist) will have an impact on his or her interpretation and selection of objectives; influence the content he or she selects and how he or she will organize it; affect his or her decisions about how to teach or deliver the curriculum content; and guide his or her judgements about how to evaluate the success of the curriculum

developed. For example, experiential philosophers have long believed that curriculum should be derived from what we know about the learner: How he or she learns, and forms values (Williamson, 1995).

Behaviorists who embrace an experiential philosophy tend to put emphasis on the learner rather than on subject matter and knowledge. Subjects are only furnished to help learners solve problems of their own choosing while developing valuable life skills. Behavioral Systems Models are based on the work of such individuals as Skinner (1953), Bloom (1971), and Pfeiffer & Jones (1985). This family of models, often known as behavior modification models, focuses on the belief that learners are self-correcting communication systems that modify behavior in response to information about how successfully tasks are navigated (see Figure 1). For example, programs for reducing problems, learning to read and compute, developing social and athletic competencies and learning the complexities of intellectual, social and physical skills are characteristic within this family of models. Notable delivery models include mastery learning, contract grading, simulations, behavior modification, programmed instruction, achievement and advancement programs.

Embracing this type of philosophy sometimes puts people in a position of overlooking the vast body of research on how individuals process information. Information processing models are based on the work of cognitive theorists like Piaget (1952), Taba (1962), and Bruner (1967). These models emphasize the ages and stages of learners to make sense of the world by acquiring and organizing data, sensing problems, generating solutions to problems, and developing concepts and language for conveying them (see Figure 1). Some models provide the learner with information and concepts; some emphasize concept formation and hypothesis testing; and still others generate creative thinking. A few are designed to enhance general intellectual ability. In general, many information processing models are useful for studying science, the self, and society, and thus for achieving the personal and social goals of education. Notable delivery models include scientific inquiry, discovery learning, inquiry based learning, cooperative learning, competency based instruction, teaching to multiple intelligences, and demonstrations.

***Recently, however, experiential curriculum designers have conceded that we need to meld our curricular concerns relating to both the subject matter of the curriculum and the personal skills of the learner.***

During the 1960s and 1970s, experiential proponents of behavioral based designs took an adversarial position when contrasting their philosophy to more information based designs. They assumed an either-or posture, one either supports a design with the content as the core or a design with skills at the core. Recently, however, experiential curriculum designers have conceded that we need to meld our curricular concerns relating to both the subject matter of the curriculum and the personal skills of the learner. In Patricia Sen Brevik's book *Information Literacy*, she states "The whole intent is to get students more meaningfully involved with content so that more of the knowledge and skills stick." Her use of the word *meaningfully* suggests a learning environment where students are allowed to take responsibility for their own learning by applying skills that allow them to comprehend, appreciate and apply relevant content.



Figure 1. Contrasting Behavioral and Cognitive Theorists

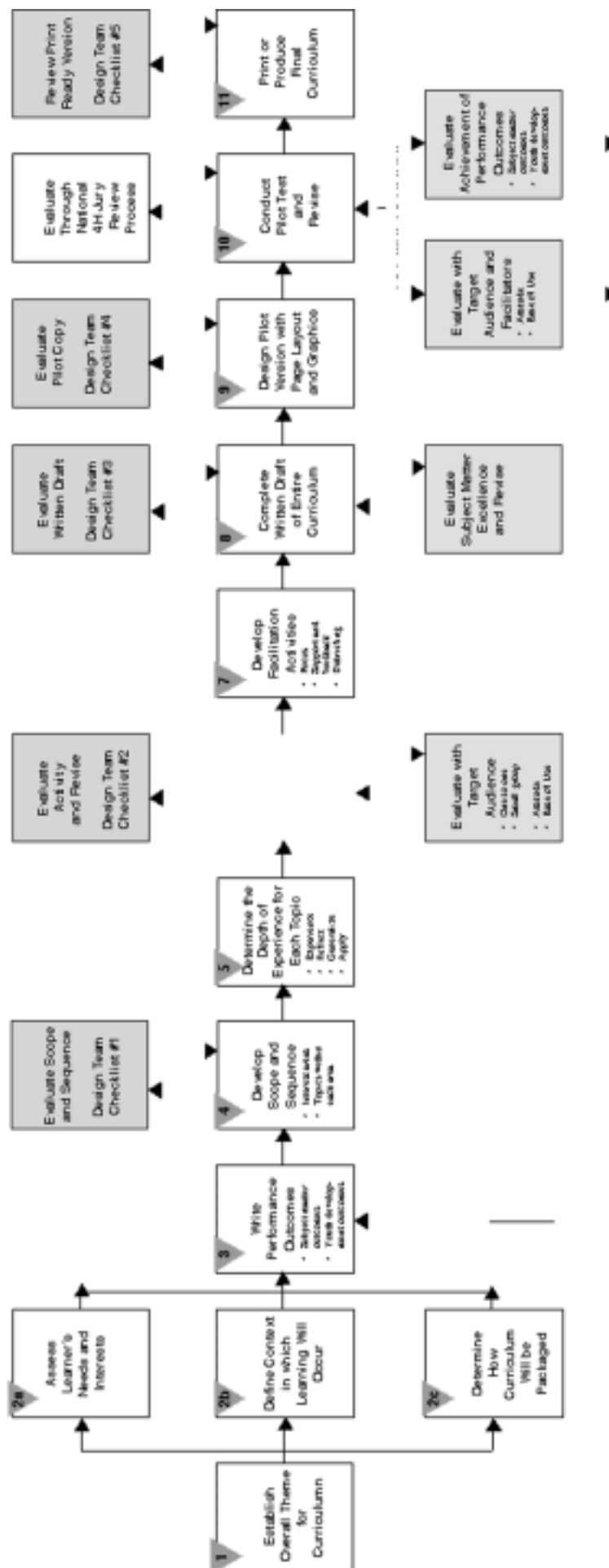
	Behaviorial Theorist	Cognitive Theorists
<b><i>Emphasis</i></b>	Emphasis on learner rather than subject matter and knowledge.	Emphasis on ages and stages of learners to make sense of the world by <ul style="list-style-type: none"><li>• acquiring and organizing data</li><li>• sensing problems</li><li>• generating solution to problems</li><li>• developing concepts and language for conveying them</li></ul>
<b><i>Theorists</i></b>	Skinner (1953) Bloom (1971) Pfeiffer & Jones (1985)	Piaget (1952) Taba (1962) Bruner (1967)

Presented in Figure 2 is a framework for designing experientially based curriculum materials based on both behaviorist and cognitive philosophies. It is designed for those individuals engaged in developing curriculum materials with an emphasis on both subject matter and youth development skills. For those individuals concerned with modifying the life skill behavior and content proficiency of youth are encouraged to review the work of Pat Hendricks, entitled Targeting Life Skills Model . . . Incorporating Developmentally Appropriate Learning Opportunities to Assess Impact of Life Skill Development, 1998. This behavior modification approach to non-formal education mixes life skill development with content learning through a cycle of experience, sharing, processing, generalization, and application.

Jed Williamson in his article “Designing Experiential Curricula” (1995) presents a “planning format” for designing experiential curricula. He notes that his format is valid for developing both group centered and individual centered curricula. The uniqueness of Williamson’s planning format is the way it links experiential factors with cognition. The following section is an expansion of Williamson’s basic four part model, and is based on the outline presented in Figure 2. This outline was constructed from the works of leading experiential theorists and curriculum developers.

# A Model for the Design and Evaluation of Experientially Based 4H Curriculum

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# A MODEL FOR CURRICULUM DESIGN



1

**Establish  
Overall Theme  
for  
Curriculum**

## PART I—FRAMING THE UNIT

### □ Step 1: Establish the Unit's Theme

The first step is establishing the unit's theme which begins by identifying the knowledge to be addressed and the way in which it will be characterized for the learner. In this step, the interests and needs of the learners are first identified. In an earlier work by Weinstein and Fantini, *Toward Humanistic Education: A Curriculum of Affect* (1980), they too view the learner as central to establishing the curriculum's theme. Their research suggests the use of a design team made up of subject matter and youth development experts to assist with this task. Representatives from the target audience would also be reasonable to include on the design team.

*Once the interests and needs of the learners are identified they are then characterized by an appropriate unit theme . . . implies the content being addressed through a particular skill set.*

*Weinstein &  
Fantini, 1980*

Once the interests and needs of the learners are identified they are then characterized by an appropriate unit theme. Their use of the term “theme” implies the content being addressed through a particular skill set. For example, if the theme selected is “The Science of Plants,” then one would expect to see a focus on processing information about plants with an emphasis on developing a particular set of science skills. Likewise, if the theme is “Learning About Plants,” (although the content may not change) the emphasis would shift to modifying a particular set of behavioral skills. An example of a typical skill set one might construct for a unit themed around science might include the following:

### Sample Science Skill Set

- Being Scientific
  - keeping records
  - comparing and measuring
  - observing
  - using scientific tools
  - evaluating
  - graphing
  - experimenting
  - questioning

When constructing a skill set, Weinstein and Fantini recommend a range of 5 to 8 skills. Additional examples of skill sets can be found in Appendix A.



**2a****Assess  
Learner's  
Needs and  
Interests****□ Step 2: Additional Considerations**

**2a. The Learners**—Steinaker and Bell (1979) view this phase as an opportunity to examine both the learner and the context in which the learning will take place. They are especially prescriptive in their approach to identifying the target audience, goal setting for the curriculum, and determining the scope of instruction. For example, the authors note that in individualized learning situations where the student works one-on-one with a learning facilitator on a particular project of interest, the average range of time should be from 2 to 6 weeks with the expectation of completing no more than 8 activities.

They recommend beginning this analysis by clearly identifying the target learners, their interests, needs, and characteristics. This can be done by interviewing a few learners, having them on your design team, talking with their teachers, trainers, or advisors. Questions to be asked include:

- ▶ What related background experiences do the learners already have?
- ▶ What skills and knowledge do the learners have in this area?
- ▶ What major misconceptions and prejudices are the learners likely to have?
- ▶ What is the attitude of the learners toward the content?
- ▶ What is the attitude of the learners toward experientially based curriculum materials?
- ▶ What media, language and learning strategies do your learners prefer?

**2b****Define Context  
in which  
Learning Will  
Occur**

**2b. The Context for Learning**—It is not enough if you know all about your learners. Steinaker and Bell insist that you clearly define the situation in which individuals are going to learn from your work. You begin your content analysis by specifying the situation, be it leader directed or individual directed learning. Then you identify the factors which are likely to influence the use or avoidance of your instructional unit. You do this by asking your design team such questions as:

- ▶ Who are the learning facilitators?
- ▶ What are their experiences, competencies and preferences?
- ▶ How is the instructional unit going to fit into the existing program?
- ▶ What are some possible barriers to adoption?
- ▶ What should one expect to observe from a learner after his or her involvement in your unit?
- ▶ What is the right number of experiences for a learner to complete over the course of the unit?

**2c****Determine  
How  
Curriculum  
Will be  
Packaged**

**2c. Packaging Considerations**—Thiagarajan (1980) suggests that careful attention must be given to the specification of packaging requirements. During this phase, one should consider such specifications as:

- **Cost restrictions.** What is the maximum budget for the development of the package? How much should each package cost? How much should the materials cost?
- **Time restrictions.** How much teacher/trainer time is available? How much learner time is available? How long can the entire unit last?
- **Media constraints.** What presentation media is best for the facilitation of learning to take place?
- **Role of learning facilitator.** What can one expect from the learning facilitator—parent versus teacher?
- **Implementation design.** How is the package going to be introduced into the existing program?
- **Language restrictions.** What level and style of language should you use? What words and content do you have to introduce before the experiential activity takes place?
- **Entry level.** How can you ensure a smooth integration of your learning experience and the learner's entry level?
- **Motivational factors.** How can you increase any existing interest and reduce resistance?

**3****Write  
Performance  
Outcomes**

- Subject matter outcomes
- Youth development outcomes

**□ Step 3: Write Performance Outcomes**

As was stated earlier, this model is a meld of both the behaviorist approach and the cognitive approach to designing curriculum. As you recall, the behaviorist approach places emphasis on the learner rather than the subject matter knowledge. On the other hand, the cognitive theorists place more emphasis on subject matter or content where the learners make sense of the world by acquiring and organizing data and developing concepts. This model focuses both on the subject matter of the curriculum and the personal skills of the learner. Therefore at this step, design teams need to determine both the subject matter outcomes (cognitive, affective and psychomotor) and youth development outcomes for the curriculum.

It is important to select youth development outcomes that are congruent with your curriculum's theme and its respective content for learning. Youth development outcomes may include life skills, workforce preparation skills, science process skills, or the internal assets defined by the Search Institute. All of these skill sets can be found in a resource by Susan Barkman entitled "The Four Fold Youth Development Model" (See Appendix A).

## PART II—THE CURRICULUM PLANNING PROCESS

The next phase takes a prescriptive approach to operationalizing experiential curriculum philosophy. Although Williamson provides a framework from which to begin, we were inclined to look at the work of other experience-centered experts in order to put forth the best prescription possible. In all, the work of 19 individuals was reviewed. From this review, a prescription for planning experientially based curriculum materials was constructed. The information in Appendix B is a summary of this review. It attempts to profile certain recurring themes among experience-centered curricularists and where agreement among these themes occur. The following is a discussion of this profile.

4

### Develop Scope and Sequence

- a. Interest areas
- b. Topics within each area

### □ Step 4: Develop Scope and Sequence

**4a. Organize unit into areas of interest**—Faced with organizing knowledge for the experience-centered designer, Williamson puts forth some “considerations for application” to add clarity to the process. Williamson believes every unit of study represents a body of knowledge to be addressed. Knowledge is simply a model we construct to give meaning and structure to regularities in experience. Williamson suggests that knowledge be organized into areas of interest. This type of orientation is an important step to provide connectivity to the flow of content across the curriculum. Here Williamson is very much in line with many main stream curricularists. But the difference is that the organization of the unit around areas of interest is based on the interests, needs and characteristics of the learner rather than simply on the demands of academic subjects. Once interest areas are determined, curriculum designers can then begin identifying the content to be addressed within each area of interest.

**4b. Identify content to be addressed within each area of interest**—Once knowledge is organized into areas of interest, experiential designers confront the key task of identifying the instructional content from which learning experiences will be developed. Instructional content is central to any area of interest and in many cases a prerequisite to addressing content in other areas. Weinstein and Fantini (1980) define instructional content as the pieces that comprise the whole of knowledge . . . the things one plans to teach . . . the guiding principles, notions or ideas used to characterize or generalize the knowledge within an area of interest. This includes the facts, laws, theories, generalizations, or skill sets as in the case of mathematics, science and technology. Or, it may consist of events, trends, categories, or philosophies as in the case of social science, history and liberal arts. Instructional content can come from traditional subject centered sources or from the learners themselves. “We construct content to give meaning and structure to regularities in experience. Content such as force in physics, motive in psychology, style in literature, episodes in history, patterns in nature, functions in science, all provide a means to the end of appreciation, comprehension, and application.” (Parker and Rubin, 1978)

*When addressing Step 4, design teams can find a sample checklist (#1) in Barkman’s publication (4-H 898) “Evaluating 4-H Curriculum through the Design Process: Pilot Testing and Collecting Data for the 4-H National Jury Review Process.”*



5

**Determine the Depth of Experience for the Content**

- Experience
- Reflect
- Generalize
- Apply

❑ **Step 5: Determine the depth of experience for content by mapping it along an experiential path.**

Williamson argues that content should be organized by going from the learner’s immediate environment to a more distant environment, that is, content should be organized so that the concrete is experienced before the abstract. This psychological factor is a key principle when basing content sequencing on Experiential Learning Theory, which combines subject matter with experience, perception, cognition, affect and behavior. In *Experiential Learning: Experience as the Source of Learning and Development* (1984), Kolb describes experiential learning as a holistic, integrative approach. Building on the writings of Dewey, Lewin and Piaget, Kolb postulates that instructional content is best organized along an experiential path, where learning takes place as a series of transactions among four adaptive modes (see Figure 3): concrete experience, reflective observation, abstract conceptualization and active experimentation.

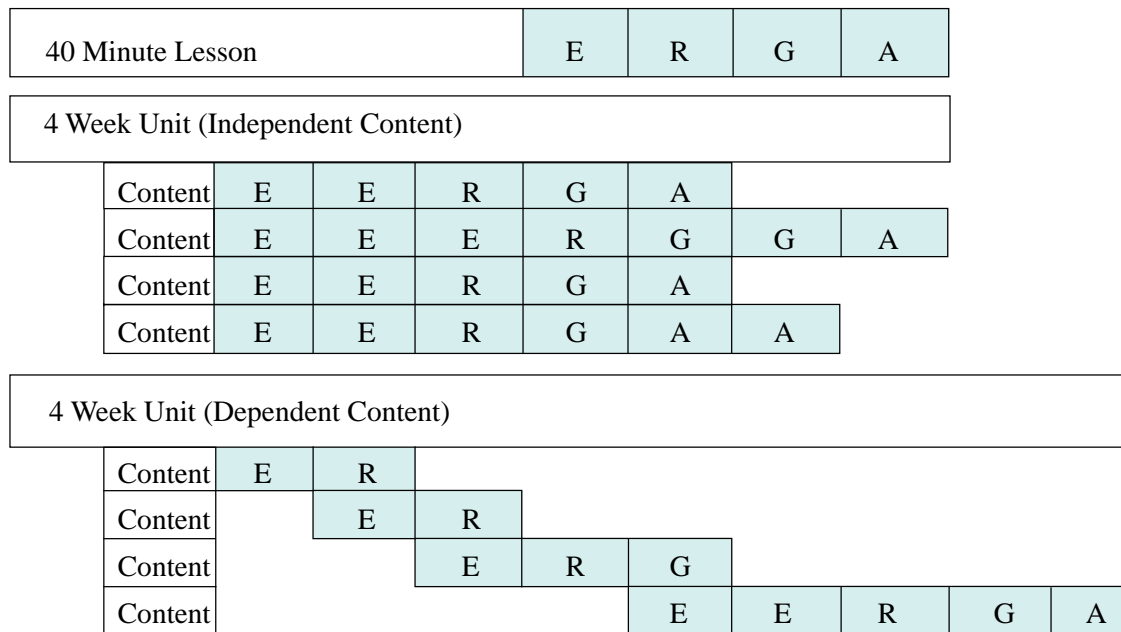
Figure 3. *Experiential Models of Kolb and Williamson*

Kolb	Concrete Experience	Reflective Observation	Abstract Conceptualization	Active Experimentation
Williamson	Experience	Reflection	Generalization	Application

In concrete experience, the learner is openly introduced to the content as a new experience. In reflective observation, the learner reflects and observes the content from many different perspectives. Learners create their own interpretation, in which observations are formed into generalizations, in the abstract conceptualization mode. This experience is then used to solve problems, create applications, and make decisions in the active experimentation mode.

Kolb (1984) reminds us that higher forms of cognition, creativity, and personal development often require a more dynamic interaction among the four modes. According to Williamson (1995), the framework for experiential learning (experience, reflection, generalization, application) is the same for a 40-minute lesson, a four-week unit, or an entire year’s work. For example, a 40-minute lesson might be organized in such a way that the content flows sequentially from one experiential mode to the next until all four modes have been equally addressed. A four-week unit might be organized into independent areas of interest, with content flowing back and forth between the first two experiential modes (experience and reflection) until all content within an area is addressed. Content could then be collectively generalized and applied in the two remaining experiential modes. A third scenario might be to flow content along an experiential path that crosses an entire unit. In this way, each of the unit’s interest areas would be connected along a single experiential path (See Figure 4).

Figure 4. Organizing Content Along Williamson's Experiential Path




E = Experience—Present the content to the learner(s).

R = Reflect—Explore the meaning of the content.

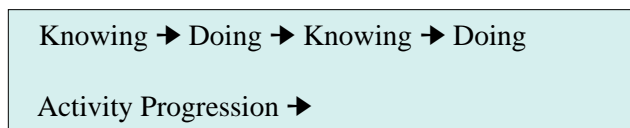
G = Generalize—Seek comprehension and appreciation of the content.

A = Apply—Apply content to real world situations.

 = Activity Block

Certainly, in organizing content into a productive sequence, we cannot totally disregard how individuals develop and learn. Nor can we forget that learners have individual and group interests and needs, and that these concerns must also be addressed. As expressed by Hutchings and Wutzdorff (1988), although the sequencing of content and activities in an experiential learning package is a static, linear one (see Figure 5), the application of the package is quite a different story. Learning facilitators are free to skip around and address content based on the immediate needs of the learners and their relative level of comfort with the activities.

Figure 5. Hutchings & Wutzdorff's Linear Model of Content Organization







### • Considerations When Determining Depth of Experience

When organizing content along an experiential path, it is important to consider not only the level of involvement with the content (Experience, Reflect, Generalize, Apply) but also the relative level of importance when compared to other content in the unit, and the learners' ability to respond at the various levels of experience. For example, observing a live presentation on how airfoils generate more lift than flat surfaces would be classified as an Experience component on Williamson's experiential model if the learners are led to engage some type of personal skill to bring meaning to the experience. It is now the decision of the curriculum designer to either move the learner to the next level(s) of experience or to keep the experience level low and move on to the next piece of content. The designer may also choose to create additional experiences along the path with instructions to the learning facilitator to use them as Digging Deeper or Going Beyond experiences (see page 46 for examples).

*When organizing content along an experiential path, it is important to consider not only the level of involvement with the content (Experience, Reflect, Generalize, Apply) also the relative level of importance when compared to other content in the unit, and the learners' ability to respond at the various levels of experience.*

*Gibbons, 1980*

When selecting the range of experience for the content within a particular interest area, Gibbons (1980) created a hierarchy of experiences for curriculum designers to follow (see Figure 6). According to Gibbons' hierarchy, as the degree of experience increases, the learner takes on more responsibility for learning. At an introductory level for a unit, simply experiencing the content may be quite appropriate. On the other hand, if a unit builds on previous knowledge gains and is designed for highly motivated and competent learners, then experience with the content should extend farther out along the experiential path until generalization and application are achieved. As you can see from Gibbons' hierarchy, as the level of experience with content increases, the greater the number and complexity of learning activities required.

Gibbons (1980) cautions curriculum designers to view his hierarchy in relative terms rather than absolutes. In the real world, learning does not take place at just one level of experience or in linear terms. Rather, it functions as a range of experiences that reflect the interests and expertise of the learners. The same is true for an instructional unit. If it is to be truly experiential, it should present a range of learning experiences that reflect the level at which content is addressed, the interests and abilities of the learners, and the environment in which the learning will take place.

Figure 6. Gibbons' Scale to Measure the Level of Experience in an Experience-Based Program

Level of Experience	Defining Elements (Learning Activities)										The Students' Activities
10 Social	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	Becomes exemplary as a community member
9 Personal Growth	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	Pursues excellence and maturity as a person
8 Mastery	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	Develops a high standard of quality in performance
7 Competence	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	Strives to become skillful in important activities
6 Challenge	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	Sets difficult, but desirable, tasks to accomplish
5 Conservative	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	Creates, builds, organizes, theorizes, or otherwise produces
4 Analytical	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	Studies the setting and experience systematically
3 Exploratory	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	Plays, experiments, explores: probes the setting
2 Spectator	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	Sees the real thing in its normal setting
1 Simulated	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	Sees movies, TV, slides

↑ The higher the level of experience. . . the more defining elements → necessary to fulfill the experience.

## □ Step 6: Design Learning Activities

**Subject-centered Considerations for Learning**—Research suggests the next step is to construct a learning activity for each piece of content with consideration for its assigned location(s) along the experiential path. Gibbons (1980) defines a learning activity as the “things that make the experience happen including the nature of the activity selected (cognitive, psychomotor, affective), the particular skill to be applied, and the situation in which the activity is conducted.” The first consideration then is to identify learner outcomes in terms of the three domains of learning (the cognitive, the psychomotor and the affective) from which specific curriculum activities can be developed. Based on the content and its location along the path (experience, exploration, comprehension, application), identify what you want to take place in terms of knowledge to be gained, skills to be practiced, and perspectives to be taken. A well planned activity may address all three domains or just one.

**When addressing Step 6, design teams can find a sample checklist (#2) in Barkman’s publication (4-H 898)**

**“Evaluating 4-H Curriculum Through The Design Process: Pilot Testing and Collecting Data for the 4-H National Jury Review Process.”**

**Experience-centered considerations for learning**—The second consideration involves selecting a set of skills that are congruent with your unit’s theme and its respective content for learning. The basic skills of reading, writing and arithmetic can be included in this analysis, but learners must also acquire the other sets of skills such as life-skills, self-skills, science skills, social competency skills, workforce preparation skills and others. In Appendix A is a resource by Susan Barkman entitled, “The Four Fold Youth Development Model,” 1999. It offers a variety of life skill sets which can be incorporated into the curriculum design.

Williamson cautions that this step creates particular anxiety for the less than experienced curriculum designer. Care must be taken when selecting a skill set to complement the content being addressed at its assigned level and its congruence with the unit’s theme. For example, constructing a plant science unit with activities that fail to employ the use of any science process skills fails to satisfy the unit’s theme. As Williamson reminds us, its not just subject matter that characterizes a unit’s theme but the skill set that the learner employs to achieve the desired learning outcomes.

**Activities for Learning**—The third consideration is to construct an activity that introduces learners to a particular piece of content (through reading, demonstration, lecture, video, etc.) at its assigned location along the experiential path through the application of a particular skill. This perhaps is the most difficult phase in any curriculum development endeavor. Curricula containing activities that present content in new and innovative ways encourage quicker adoption than activities that employ similar methods.

Figure 7 illustrates the work of Svinicki and Dixon. Their research focused on identifying the types of content presentation methods that work best at each level of Kolb’s (1984) experiential model. Methods such as field experiences, inquiry laboratories, direct data collection and the reading of primary sources are all designed to give the learner firsthand, personal experience with the content. Discussion and journal keeping activities force learners to reflect on their experiences and the experiences of others. Model building exercises, research papers and lectures that present a model all are activities that foster abstract conceptualization. Simulations and projects force learners to apply the models to problem situations. Svinicki and Dixon emphasize two or more



of these methods used in combination will increase the learner's personal experience with the content. For example, a learner directed curriculum piece that relies on reading skills as the only tool to orient learners to the content, will be less effective than one that combines reading with CD technology, internet modules, or instructional videos. And it will be even far less effective than one that enlists a learning facilitator to orient learners to the content.

Figure 7. Kolb's Model with Svinicki and Dixon's Activity Components

Kolb	Experiential Education	Concrete Experience	Reflective Observation	Abstract Conceptualization	Active Experimentation
Svinicki and Dixon	Instructional Methodology/ Learning Activities	Laboratories Observations Primary Text Reading Simulations/Games Field Work Trigger Films Readings Problem Sets Examples	Logs Journals Discussion Brainstorming Thought Questions Rhetorical Questions	Lectures Papers Model Building Projects Analogies	Simulations Case Studies Laboratory Field Work Projects Homework

A well written learning activity can take many shapes. In one example (Thiagarajan, 1980), the content for learning was how the force of lift keeps airplanes aloft. The content was part of a larger interest area on the forces of flight and that was part of an introductory unit for third graders on the science of flight. The activity was written at the experience level of Williamson's model and was designed as a reading exercise. It began by requiring students to quietly read a few introductory paragraphs on the forces of flight. For many of them this was the first they had ever thought about how things fly, so the content was totally new to them. The author notes that up until now, minimal involvement was required on the part of the learning facilitator to help the learners focus on the newly introduced content. It was not until the reading assignment was completed that it became experiential. This happened by asking the learners to find a partner and list all the objects that fly. After 5 minutes the team was then asked to report their findings to the class. After all the teams had reported, the learning facilitator processed the relevant information and set the stage for the next phase of the activity.

The second phase involved conducting a simple experiment where observation, data collection, and communication skills were employed. This combination of skills was

designed to bring meaning to the content as well as provide a meaningful opportunity for the learners to share their results with others. Not only were these skills appropriate for content, they were also congruent with the theme of the unit (science).

Another example of an experientially based activity is found in a text by Steinaker and Bell (1979). In this example, the learners were in a high school driver education course. As part of the course each year, a highway patrol officer stopped by to talk about teenage drinking and driving. He told the class about the number of drunken driving citations issued to teen drivers in their county each year. He also told about the percentage of those teenage drivers who would one day return to the wheel drunk and either kill themselves or someone else. After his presentation, the learning facilitator engaged the class in a question and answer session with the patrol officer. Following this, the learning facilitator asked the group to call their local insurance agent and find out the number of teenage drunken driving accidents in their county for the year.

At this point the authors stop to analyze the activity. They describe the role of the learning facilitator as an expeditor of resources (he got the patrol officer to present) a processor of information (he encouraged questioning after the presentation) and an enabler of learning skills (had the class call their local insurance agent). By definition, this activity met Steinaker and Bell's definition of an experientially based activity, especially since it was programmed at the experience level of Williamson's model. However, after their analysis of the activity it appeared to lack any relevance for the learners. It basically left the learners with a feeling of "so what" after they made the phone call. This is not the result an experiential curriculum designer likes to hear especially when they say they are concerned with the interests, needs and concerns of the learners. The authors quickly realized their mistake and extended the activity further along the experiential path. This included comparing their answers with fellow classmates, charting the number of fatalities to date and projecting how many more to expect by years end, and launching a community awareness campaign to end teen drinking and driving.

***It is impossible to predict exactly which activities will work in particular learning situations. Even the best planned activities can fail due to lack of time, poor teaching facilities, inappropriate age level for the learner, etc.***

***Williamson, 1995***

A carefully planned design team is especially good at identifying areas to be explored, content to be addressed within an interest area, and materials needed. And with a little bit of coaching, most are competent enough to organize content along an experiential path. But perhaps the greatest challenge for all curriculum design teams is to create learning activities that achieve the desired learning outcomes, are easy to facilitate, and are fun and meaningful. This task is often delegated to one or two individuals with the willingness and time to write activities. In this way, other design team members can focus their attention on writing the necessary content sections of the manual or developing post-unit assessment components.

It is impossible to predict exactly which activities will work in particular learning situations. Even the best planned activities can fail due to lack of time, poor teaching facilities, inappropriate age level for the learner, etc. The best approach is to staff your design team with creative learner-centered educators with a love for teaching and a passion for the subject. Most times these individuals will suggest ways to address content that are modeled after their own beliefs or experience. Besides, careful testing always seems to validate those activities which work versus those which need additional attention.



Contained in Appendix C are the various characteristics of well planned experientially based learning activities. These characteristics were identified from the works of 19 experience-centered experts. Curriculum designers should refer to this list as they seek to validate the experiential nature of the activities contained in their own units. These characteristics are not listed in any particular order, nor should it be construed that each activity contain more than one characteristic to be considered experiential.

7

### Develop Facilitation Activities

- Focus
- Support and feedback
- Debriefing

## □ Step 7: Facilitating Activities From an Experiential Perspective

Maintaining the experiential integrity of the unit is the next major consideration in Williamson's model. Basically, Williamson (1995) asks "what can the teacher do to get students to learn the appropriate content and to gain the necessary skills for power over their own lives?" The procedures necessary are those that will address the learning styles of individuals and that will also have the greatest impact on their affective, cognitive and psychomotor dimensions. To truly define a curriculum as "experiential" there must be some evidence that "experiential processing" takes place. In this non-formal learning situation, teachers are cast as facilitators of learning rather than directors as characterized in all formal learning situations. Secondly, the mere fact that there is a learning facilitator present separates it from the definition of an informal learning situation.

According to Joplin (1995), experience alone is not experiential education. Rather, true experiential education is characterized by systematic interventions of the learning facilitator with the learner along an experiential path. Joplin identifies these overt interventions as follows.

**Focus**—Includes presenting the task and isolating the attention of the learner for concentration. It defines the subject of study and prepares the student for encountering the challenging action that is to follow. A good focusing stage is specific enough to orient the learner, but not so specific as to rule out unplanned learning.

**Support and feedback**—Exists throughout the learning experience and includes maintaining close proximity to the learner during the activity to facilitate questioning and clarify instructions. Adequate support enables the learner to continue to try. It includes demonstrating interest in the learner's situation and letting the learner know that help is available if needed. Adequate feedback will ensure that the learner has the necessary information to move ahead. It includes comments about how the learner works, the learner's manner of interactions, and the substance of the learner's work.

**Debriefing**—Here, the learning is recognized, articulated and assessed. It should complement the natural breaking points for sub-themes and sub-activities (Digging Deeper and Going Beyond) within the learning experience. It can also serve as a bridge between natural transition points in the curriculum, as in moving from one component to the next along the experiential path. This is also the learning facilitator's opportunity to ensure that the learner's previous actions do not go unquestioned, unrealized unintegrated or unorganized. This is the opportunity to ensure that the learner's conclusions are verified and mirrored against a greater body of perception.

*To truly define a curriculum as "experiential" there must be some evidence that "experiential processing" takes place.*

*Williamson, 1995*







**...materials developed for use by learning facilitators should “overtly” communicate the components like beacons strategically placed along the experiential path.**


**Joplin, 1995**

This intervention includes facilitating decisions about what needs to be done next or how things could have been done differently.

Figure 8 organizes Joplin’s experiential processing components around a central hurricane-like theme. It is designed as a template to be overlaid onto the learning activities that collectively make up a learning experience. It does not require that each defining element be facilitated using Joplin’s model to legitimize it as “experiential.” Rather, this model is intended to communicate an experiential action strategy for the overall collection of elements that comprise a learning experience. As Joplin explains, the approach to which the defining elements of a learning experience are facilitated using this model is up to the discretion of the curriculum designer. Most importantly, the process should complement the sequence of learning events rather than intrude as some repetitious prescription for learning. For example, a learning experience consisting of three sequential activities may be processed on an activity-by-activity basis. However, the facilitation process may also begin by focusing on the content followed by occasional support and feedback and concluded with a debriefing of the total experience.

Figure 8. Joplin’s Experiential Facilitation Process

Williamson	Williamson’s Experiential Components	Experience— present the content to the learner	Reflect— explore the meaning of the content	Generalize— seek comprehension and appreciation of the content	Apply— apply content to real world situations
Joplin	Topic at moderate level of experience	LA 	LA LA 	LA LA LA 	LA LA LA 

 — Focus, Support, Feedback, Debrief

 — Content Block

LA — Learning Activity

A second important point made by Joplin is that materials developed for use by learning facilitators should “overtly” communicate the components of her model, like beacons strategically placed along the experiential path that describe the type of intervention necessary. If anything, the “training” for such materials should focus on modeling the experiential behavior of the learning facilitators rather than simply on how to conduct a series of activities. The same could be said for learn-by-doing booklets prepared for use at home with a parent or adult facilitator. Here too, there must be clearly defined roles along the experiential path for the intervention of facilitators in the learning process.



***A learning facilitator needs to be “authentic” rather than simulated. For example, a computer simulating the role of a learning facilitator can imitate but never truly replace the high-touch aspect of human interaction. Thiagarajan, 1980***

When writing instructions for learning facilitators, Thiagarajan reminds us to be mindful of how we characterize the role of this individual. Sometimes the expectations for a facilitator in a particular learning situation may be beyond the abilities of most lay educators. Instead, he encourages curriculum designers to adopt a philosophy of modest expectation so that even the most inexperienced learning facilitator can celebrate his or her level of success. Thiagarajan also adds that a learning facilitator needs to be “authentic” rather than simulated. For example, a computer simulating the role of a learning facilitator can imitate but never truly replace, the high-touch aspect of human interaction.

Thiagarajan is not alone in his articulation of learning facilitator expectations. Others too share similar expectations when learning facilitators are properly trained and provided effective facilitation instructions. Contained in Appendix D is a compilation of measurable outcomes when proper training and effective facilitation instructions are applied. This compilation was gathered from the works of 17 different experience-centered educators. In a sense, it presents a profile for curriculum designers to use when casting the role of learning facilitators in their particular unit of instruction. It can also serve as a standard on which to evaluate whether or not the material and/or training properly prepare the individual for the role as learning facilitator.

**8**

**Complete  
Written Draft  
of Entire  
Curriculum**

**□ Step 8: Complete Written Draft of Entire Curriculum**

The next step in the process, is to compile a written draft of the entire curriculum in order to determine its effectiveness. The ultimate test of effectiveness of an experiential curriculum package is whether learners like it and learn from it. However, an experience which learners like very much, and from which they apparently learn a great deal, may teach totally inaccurate principles and undesirable attitudes. Hence, expert appraisal of a curriculum package acts as a complementary check to the learner performance data. The first step then is to validate the authenticity of the curriculum product with a panel of experts, typically a mix of subject matter and youth development experts. These experts compare the unit against a predetermined set of criteria in order to establish face validity. This validation process does not require that the panel be exclusively judgmental. It is not directly charged with determining how well the curriculum matches up to the criteria, only if it does or does not. However, panels are often encouraged to point out any specific weaknesses in the materials before pilot testing.

***When addressing Step 8, design teams should refer to Susan Barkman’s publication (4-H 898) “Evaluating 4-H Curriculum through the Design Process: Pilot Testing and Collecting Data for the 4-H National Jury Review Process,” 1999, for a checklist (#3) that can be used with experts panels.***

Review panels typically address the accurate and relevancy of the content, its appropriateness in relation to the learner, the organization of the content, and the appropriateness of the activities selected in relation to the content and the skills and the abilities of the learner. To guide them in their evaluation, Thiagarajan suggests using some type of instrument to guide them in their analysis of the written draft. The instrument, along with the written draft should be sent to outside reviewers including both subject matter and youth development experts.

This is perhaps the most time consuming aspect of the evaluation process, and yet the most underrated. Thiagarajan recommends that the expert panel interrogate every activity to determine if it achieves the desired experiential level, is easy to facilitate, and if it is fun and meaningful. Many activities feel good at the time they were written, but often pale in comparison to activities written by other team members.

Questions that must be asked of each activity include: Is it interesting? Is it accurate? Is it a feasible activity to do? Is it appropriate for the age and interest level of the learner? Following this, Thiagarajan suggests collecting instruments and summarizing the results. This data and suggestions should then be used by the design team as a tool for discussion concerning what revisions are needed before pilot testing. In making revisions on the basis of expert feedback, remember that you cannot please all of the people all of the time. Different parts of the feedback may contradict each other. The design team has to use its own judgment in deciding which revisions are likely to significantly improve the effectiveness of the curriculum.

9

**Design Pilot Version with Page Layout and Graphics**

**□ Step 9: Design Pilot Version with Page Layout and Sample Graphics**

Once the design team has made the needed changes, they begin developing the draft version that will be used during the pilot test phase. Thiagarajan suggests having a professional editor review the manuscript for grammar, punctuation and spelling. He also recommends having the editor perform a reading-level check on the document. This is especially important when preparing a unit that will be used by a young reader. The more appropriate the reading level, the greater the chance the learning outcomes will be met. If the unit is designed for a wider range of reader, caution the learning facilitator of this fact somewhere to be sure to flow the text into its final format and include the necessary illustrations. Normally, all major changes to the final draft have been made prior to this point in the development process.

*When addressing Step 9, design teams should refer to Susan Barkman's publication (4-H 898) "Evaluating 4-H Curriculum through the Design Process: Pilot Testing and Collecting Data for the 4-H National Jury Review Process," 1999, for a checklist (#4) that can be used with experts panels.*



### Part III—VERIFICATION AND REVISION

10

#### Conduct Pilot Test and Revise

#### ❑ Step 10: Conduct Pilot Test and Revise

In the testing and revision step of curriculum development, Thiagarajan divides the process into the formative phase (for *improving* the effectiveness of the package) and the summative phase (for *proving* its effectiveness). In Step 8, we address only the formative phase of curriculum verification and revision. This is because the majority of 4-H curriculum materials may never need to prove effectiveness; only evidence that steps were used to improve the product. If deemed necessary by the review panel to *prove* the unit's effectiveness, then proceed to the pilot test phase of development.

Normally, all major changes to the final draft have been made prior to this point in the development process. It is more expensive and time consuming for production staff to make major text changes once a draft is designed and illustrated. Commit to this phase only if you are confident that the publication can withstand the test of piloting without major modifications.

11

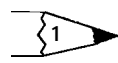
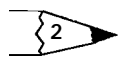

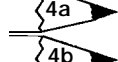
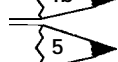

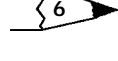
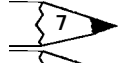

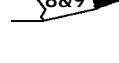
#### Print or Produce Final Curriculum

#### ❑ Step 11: Print or Produce Final Curriculum Pieces

Refer to Susan Barkman's publication (4-H 898) *Evaluating 4-H Curriculum through the Design Process: Pilot Testing and Collecting Data for the 4-H National Jury Review Process* for a checklist (#5) of points to remember.

This section summarizes the process of developing experientially based member and leader directed materials. Based on D.A. Kolb's (1984) definition of experiential education, this section provides an example of how a unit can be developed in accordance with the outline presented in Figure 2 on page 6.

## It includes:

-  Establishing the unit's theme with consideration for content and the related skill set;
-  Considering needs of learners and helpers;
-  Identifying skill set and content outcomes;
-  Organizing unit into areas of interest;
-  Identifying the content to be addressed within each interest area;
-  Determining the depth of experience for content by mapping it along the experiential path;
-  Constructing learning activities that address the content at its assigned location along the experiential path, with consideration for the desired content outcomes and the particular skill set being employed;
-  Creating overt ways for others to intervene in the learning process;
-  Incorporating the use of learner assessment techniques;
-  Utilizing techniques for improving the effectiveness of the unit.



Establish unit's theme. Focus on the content and the related skill set.




(See Page 7)

Title: Breads of the Harvest

✓ Theme: The Science of Bread Making Since the Pilgrims

Considering the  
Needs of Learners  
and Helpers

	(See Pages 8 and 9)
○	✓ Assessment of Learner's Needs and Interests
	• Little Background Knowledge
	• Low Skill Development
	• Beginning Language Skills
	✓ Context for Learning
○	• 3rd-4th Grade Classrooms
	• 50 Minutes Per Week for 5 Weeks
	• Leader Directed
	✓ Packaging
	• Low Cost Printing / Two Color
	• Spiral Bound
○	• Photo Ready Handouts
	• Full Use of Illustrations

Identify Skill Set  
and Content  
Outcomes



(See Page 9)

Title: Breads of the Harvest


Theme: The Science of Bread Making  
Since the Pilgrims

✓ Skill Set: Keeping Records, Comparing  
and Measuring, Observing, Using  
Scientific Tools, Evaluating, Graphing,  
Experimenting, Questioning

✓ Content Outcomes:

- Psychomotor . . .
- Cognitive . . .
- Affective . . .

Scope:  
Organize unit into  
interest areas

	<p>(See Page 10)</p>
<input checked="" type="radio"/>	<p>✓ Interest Area #1: The Breads the Pilgrims Ate</p>
	<p>✓ Interest Area #2:</p>
	<p>Colonial Quick Breads</p>
	<p>✓ Interest Area #3:</p>
<input checked="" type="radio"/>	<p>The Business of Baking Yeast Breads</p>
<input checked="" type="radio"/>	

Sequence:  
Identify the  
content to be  
addressed within  
each interest  
area



(See Page 10)



Interest Area #1:  
The Breads the Pilgrims Ate

✓Content 1—The Bread on the Mayflower  
was called hardtack.



✓Content 2—Since the Pilgrim's wheat flour  
crop failed, they planted corn instead.

✓Content 3—Since there were no gristmills,  
the pilgrims ground their corn by hand.



✓Content 4—The native peoples showed  
them how to make a type of bread with  
corn meal called Johnny Cakes.



Determine the depth of experience for the content by mapping it along an experiential path.

	(See Page 11)
<input type="radio"/>	Interest Area #1: The Breads the Pilgrims Ate
	Experiential Path ➔
	of Activities:
	Content 1 - (2 Activities)
	✓ Experience ➔ Reflect
	Content 2 - (2 Activities)
	✓ Experience ➔ Reflect
	Content 3 - (1 Activity)
	✓ Experience
	Content 4 - (3 Activities)
	✓ Experience ➔ Reflect ➔ Reflect

Construct learning activities that address the content at its assigned location along the experiential path. With consideration for:

- Content Outcomes
- Skill Set



(See Page 14)



Interest Area #1:

The Breads the Pilgrims Ate

Content 1—(2 Activities)

✓ Experience—Present content to the learner.




Activity #1 : Taste hardtack and list five words describing the experience.

✓ Reflect—Explore the meaning of the content.




Activity #2: Make a batch of hardtack and share it with friends. Discuss ways to change or modify the recipe afterwards.


As appropriate, create ways for others to intervene in the learning process.

	(See Page 17)
<input type="radio"/>	Interest Area #1
	The Breads the Pilgrims Ate
	Content 1—(2 Activities)
	✓ Support—Review what will take place and why it is important
<input type="radio"/>	✓ Focus—Be available to help with difficult words or read a passage together
	✓ Feedback—Review outcomes and answers for each activity
<input type="radio"/>	✓ Debrief—Review discussion questions following each activity

Identify and  
create learner  
assessment(s) for  
use by the project  
helper

	<p>(See Appendix E)</p>
<input type="radio"/>	<p>Title: Breads of the Harvest</p>
<input type="radio"/>	<p>Theme: The Science of Bread Making</p>
<input type="radio"/>	<p>Since the Pilgrims</p>
<input type="radio"/>	<p>Learner Assessment:</p>
<input checked="" type="radio"/>	<p>Portfolio of worksheets—</p>
<input type="radio"/>	<p>Documentation of science based</p>
<input type="radio"/>	<p>activities that were conducted.</p>
<input type="radio"/>	<p>Performance Task—Knowledge of</p>
<input checked="" type="radio"/>	<p>Pilgrims and skills of bread making</p>
<input type="radio"/>	<p>are demonstrated.</p>
<input type="radio"/>	
<input type="radio"/>	
<input type="radio"/>	
<input type="radio"/>	
<input type="radio"/>	
<input type="radio"/>	
<input type="radio"/>	
<input type="radio"/>	

Utilize Techniques  
for Improving the  
Effectiveness of  
the Unit

	(See Page 19)
○	✓ Assemble panel of experts
○	✓ Distribute review instrument and draft
	to panel. Get copy of instrument from
	4-H 898.
	✓ Find sample of user group(s) who will
	read it and possibly try it out. Give
	them the same instrument to complete.
○	✓ Review with the panel the comments
	from the user group(s) as well as their
	own.
	✓ Make changes and send to production
	staff for editing, layout and
	illustrations.
	✓ If deemed necessary to <b>prove</b> the
○	effectiveness of the unit, follow the
	steps outlined in 4-H 898

This section addresses the design components necessary for the organization of selected 4-H curriculum products. It is based on the works of 4-H Cooperative Curriculum System (CCS) designers and 4-H curriculum designers at The Ohio State University.

## MEMBER PROJECT BOOK

Includes a Member Project Guide for planning and conducting the project, a record section, a project narrative that sufficiently addresses the knowledge to be gained and skills to be learned, activities that reinforce the content to be learned and skills to be mastered, and project leadership ideas to help adults, parents and teens guide the learning of younger members. If guiding questions are used, answers are to be contained in the project book or in the project's resource handbook (if available). If contained in the project's resource handbook, use the guiding questions as an opportunity for members to expand their understanding of a particular subject area.

## Cover

### 1 COVER ART

Use photograph or art work that captures the active learning of the project.

### 2 PROJECT NUMBER

### 3 PROJECT NAME

Use a title which clearly addresses the project's theme (content and skill set). Also indicate that the publication is designed for members.

### 4 INFORMATION SPACE

Place for member's name, age, club, date they started project, and their year in the project.

### 5 LOGOS

Include 4-H and other cooperating organization logos.

### 6 PROJECT LEVEL

An indication of the knowledge and/or skill level of the project.





## Inside Front Cover

### 1 NOTES TO PROJECT HELPER

Describe what the project is about and if it is part of a series. Be sure to address some of the major project expectations and outcomes.

### 2 PROJECT FORMAT

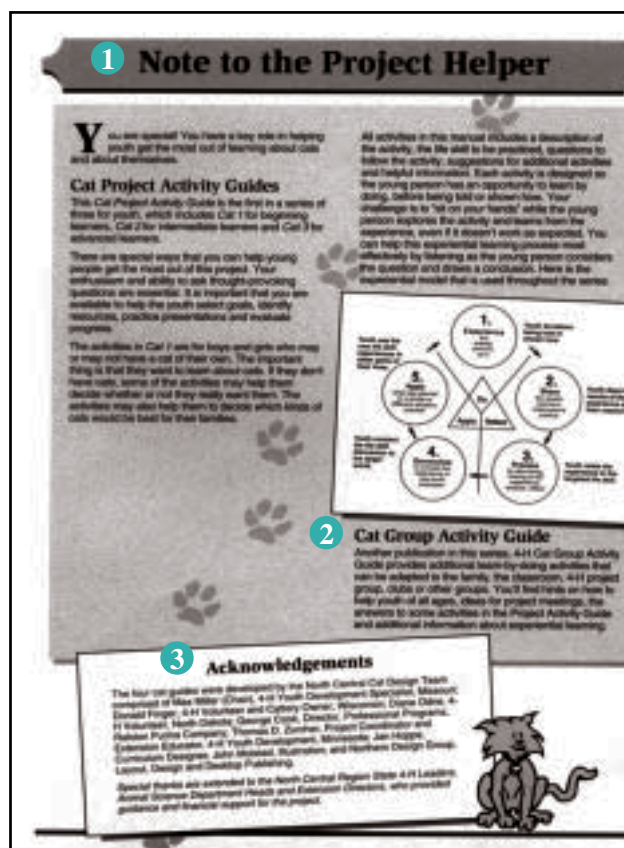
Discuss how activities are organized (experientially based) and the role of the project helper.

### 3 ACKNOWLEDGEMENTS

Recognize those involved in the creation of the project.

### COPYRIGHT

The inside front cover can also include copyright information to protect the publication from being exploited by for-profit companies (see page 42 for example).



## Page 1

### 4 TABLE OF CONTENTS

List chapter headings, interest areas, activity sections, glossary (if used) and resources.

### 5 ILLUSTRATIONS

Illustrations such as this are a good way to embellish an otherwise ordinary looking page.

What's Inside?	
Note to the Project Helper	Inside Cover
What's Inside?	1
Having Fun with the Cat Project	2
Cat 1 Planning Guide	3
Cat Achievement Program Level 1	4
<b>Chapter 1</b>	
<b>Learning to Learn</b>	6
A Look Back	6
Pin the Tail	8
Choices, Choices: All Those Breeds	10
<b>Chapter 2</b>	
<b>Being Responsible</b>	12
The Question of Litter	12
Lifting and Holding	14
Day in the Life of a Cat	16
Grooming a Cat	18
Making a Friend	20
<b>Chapter 3</b>	
<b>Communicating with Others</b>	22
Claws or No Claws?	22
To Neuter or Not to Neuter?	24
The Case of the Lost Cat	26
<b>Chapter 4</b>	
<b>Planning and Organizing</b>	28
The Bottom Line	28
Have Cat, Will Travel	30
Cat-Proofing the House	32
Cat Talk 1 (Glossary)	34
Cat Resources	36

# Member Project Guide

## Example 1

When establishing project guidelines, consider the average length of time spent on a project is 2-6 weeks, completing approximately 8 activities per project.

### 1 PROJECT GUIDELINES

Expectations for completing the project. Written at a level for members and parents to understand.

### 2 RECOGNITION

Summary of how members plan and complete project.

### 3 PROJECT HELP

States the specific duties of the project helper.

### 4 GOAL SETTING

Requires members to set goals for the project; both short term and long term.

### 5 PROJECT HIGHLIGHTS

Chance for members to report unique things that went on during the project.

### 6 LEARNING EXPERIENCES

These are organized events that members attend or participate in.

### Having Fun with the Cat Project

**A**re you ready to learn more about cats? Through the activities in this guide you will have many interesting and exciting challenges. You'll learn about cat parts, breeds, cost to raise a cat, how to care for a cat and much, much more. If you don't already have a cat some of the activities will help you decide what kind of cat might be best for your family.

Learning about cats isn't all you will be doing. You'll also be learning about yourself too. Many of the things you'll learn are skills you'll use all your life such as:

- Working with other people
- Making decisions
- Being responsible
- Planning and organizing
- Learning to learn

**1 Cat 1 Project Guidelines**

- Do a minimum of seven of the activities in Level 1 of the Cat Achievement Program each year.
- Complete Level 1 within three years.
- Practice and develop the life skills of relating to others, making decisions, learning to learn and communicating with others.
- Participate in a minimum of three of the learning experiences listed on the Planning Guide each year.
- Increase your cat knowledge and skills.

**2 Cat Achievement Program**

While you are having fun doing the activities you'll also be completing Level 1 of the Cat Achievement Program shown on pages 4 and 5. There are three levels of this program — one in each of the cat project activity guides. This program will help you set goals, record your successes and be recognized for your good work.

**3 Your Project Helper**

On your team supporting you and making learning more fun is your project helper. This person may be a parent, project leader or advisor, a neighbor or an older friend who enjoys cats. The choice is yours. As you do the activities you'll discuss what you did and the questions in the Talking It Over part of each activity with your helper. Sometimes your helper will need to work with you to identify resources including people, organizations, events, magazines and books necessary to complete an activity. Once you have successfully completed each activity your helper will date and initial your achievement program. Write the name and phone number of your project helper here:

My Project Helper \_\_\_\_\_  
Phone # \_\_\_\_\_

Good luck with Cat 1 — Purr-fect Pals!

### Cat 1 Planning Guide

**4 My Cat Project Goals**

Name \_\_\_\_\_  
Breed \_\_\_\_\_  
My most important goals for the cat project:  
Year \_\_\_\_\_  
Year \_\_\_\_\_  
Year \_\_\_\_\_

**5 Cat Project Highlights**

Date and list exciting things you do and learn.

**Cat 1 Achievement Program Goals**

List the chapter numbers and letters of the activities you plan to complete each year (for example 1a, 3c, etc.).

Year	Activity

**6 Learning Experiences**

Check when you do any of the following. Plan to do at least three each year.

Year	Year	Year	Activity
			Give a demonstration
			Tour an animal shelter
			Attend a cat project meeting
			Attend a cat show
			Take pictures of a cat
			Exhibit at a fair
			Attend a cat clinic
			Participate in a cat skillathon
			Participate in cat showmanship
			Visit a pet store

## 1 DIRECTIONS

Specific expectations for the number of activities to be completed.

## 2 PROJECT ACTIVITIES

Checklist of activities to be completed by interest area. Place to choose and check off when completed.

## 3 OPTIONAL ACTIVITIES

Challenge members to go beyond minimum expectations for the project.

## 4 PROJECT HELPER

Place for project helper to verify that activity was completed including lines for initials and date.

## 5 ILLUSTRATIONS

Illustrations are appropriate to use in this section. Helps break up text and complements overall theme of book.

**Cat Achievement Program Level 1**

**1 Directions**

- Do at least seven activities each project year.
- Finish at least 20 of the required and optional activities within three years to pass this level.
- Have your project helper date and initial each activity when it's finished.

**Chapter 1 Learning to Learn**

**Required:** Complete at least two of the three activities (a-c) in this chapter.

Choose	Initial	Required Activities
		a. A Look Back Date: _____ Initial: _____
		b. Pin the Tail Date: _____ Initial: _____
		c. Choices, Choices: All Those Breeds Date: _____ Initial: _____

**Optional:** Choose any of the following activities.

Choose	Initial	Optional Activities
		d. Complete two of the activities listed in the "More Challenges" sections in any chapter. Page: _____ Page: _____ Date: _____ Initial: _____
		e. Write your own activity here. Date: _____ Initial: _____
		f. Describe to a friend how you make a decision when there are two or three choices. Date: _____ Initial: _____
		g. Create a cat trivia quiz of at least 20 questions for your group. Examples of questions could be: "What is Garfield's favorite food?" (lasagna), "What candy bar is named after a cat?" (Kit Kat), etc. Date: _____ Initial: _____

**Chapter 2 Being Responsible**

**Required:** Complete at least four of the five activities (a-e) in this chapter.

Choose	Initial	Required Activities
		a. The Question of Litter Date: _____ Initial: _____
		b. Lifting and Holding Date: _____ Initial: _____
		c. Day in the Life of a Cat Date: _____ Initial: _____
		d. Grooming a Cat Date: _____ Initial: _____
		e. Making a Friend Date: _____ Initial: _____

**Optional:** Choose any of the following activities.

Choose	Initial	Optional Activities
		f. Give a talk to your 4-H group, family or school class about the laws in your community that relate to cats. Date: _____ Initial: _____
		g. Write your own activity here. Date: _____ Initial: _____
		h. Work with a partner to make a scratching post for a cat. Date: _____ Initial: _____
		i. Get a collar (name tag and leash) for a cat and train it to lead. Date: _____ Initial: _____

**Chapter 3 Communicating with others**

**Required:** Complete at least two of the three activities (a-c) in this chapter.

Choose	Initial	Required Activities
		a. Claws or No Claws? Date: _____ Initial: _____
		b. To Neuter or Not to Neuter? Date: _____ Initial: _____
		c. The Case of the Lost Cat Date: _____ Initial: _____

**Optional:** Choose any of the following activities.

Choose	Initial	Optional Activities
		d. Tell your favorite cat story to a group of friends. (CJAGJ) Date: _____ Initial: _____
		e. Write your own activity here. Date: _____ Initial: _____
		f. Visit an animal shelter and interview one of the staff. (CJAGJ) Date: _____ Initial: _____
		g. Discuss with your family helper at least three cat diseases that can be vaccinated against and three that cannot. Date: _____ Initial: _____
		h. Describe ten ways a cat may show affection to its owner and ten ways an owner may show affection to the cat. Date: _____ Initial: _____
		i. Volunteer to work at a humane shelter at least four times. Date: _____ Initial: _____
		j. Complete two of the activities listed in the "More Challenges" sections of this chapter. Page: _____ Page: _____ Date: _____ Initial: _____

**Chapter 4 Planning and Organizing**

**Required:** Complete at least two of the three activities (a-c) in this chapter.

Choose	Initial	Required Activities
		a. The Bottom Line Date: _____ Initial: _____
		b. Have Cat, Will Travel Date: _____ Initial: _____
		c. Cat-Proofing the House Date: _____ Initial: _____

**Optional:** Choose any of the following activities.

Choose	Initial	Optional Activities
		d. Show your helper you know the meaning of each word in the "Cat Talk Glossary." Date: _____ Initial: _____
		e. Make a diagram of the life cycle of a tapeworm and explain it to your helper. Date: _____ Initial: _____
		f. Write your own activity here. Date: _____ Initial: _____
		g. With your cat group, visit a veterinarian's clinic and observe or participate in a demonstration of the specific procedures carried out on cats at the clinic. (CJAGJ) Date: _____ Initial: _____
		h. Start a health record book for a cat. Include an immunization schedule and how and when to feed the cat. Date: _____ Initial: _____
		i. Complete two of the activities listed in the "More Challenges" sections of this chapter. Page: _____ Page: _____ Date: _____ Initial: _____

**5**

Illustration Credit: Pough Group Activities



# Member Project Guide

## Example 2

(Sample pages are from Ohio State University's Science Fun with Electricity project.)

### 1 PROJECT BACKGROUND

**Target audience:** 9-11, 12-14, 15-19. Provides a scheme for directing vocabulary, literary style, and suggested activities for members at various learning levels.

**Project level:** beginning, intermediate, advanced. Selection of a project level is based on competencies of learner and expected outcomes.

**Time limit for completion:** could vary from one month to one year. Could even say that there is no time limit to complete project.

**Repeating project:** can it be repeated or only taken once.

**Further exploration:** what to do when project is completed and member desires to go beyond its scope. Suggest which project(s) to take next. Could even suggest for member to take a self-determined project.

**Remind member to check county project guidelines (if any) for additional information:** especially if member desires to exhibit project at fair or take part in county project judging.

### 2 PROJECT GUIDELINES

- Instruct members to complete planning section of project guide. Identify Interest Areas within project and number to be explored.
- Within each interest area determine number of activities to perform.
- Establish number of Learning Experiences to be performed.
- Establish number of Leadership/Citizenship/Community Service activities to perform.
- Suggest means by which member can evaluate project experiences: one page report, record book, personal interviews, etc.

### 3 PROJECT PLANNING

List interest areas and recommend that member record when interest area was started. Identify the type and number of activities that need to be completed within each Interest Area. This information can best be provided within the project at the end of each Interest Area.

## MEMBER PROJECT GUIDE

### 1 PROJECT BACKGROUND

The beginning level project is written for members who are in the fifth grade or older. Younger members may take this project under the supervision of an adult. Due to the technical nature of the project, members may focus on a few of the Activities per year. This will allow the individual to explore thoroughly each experiment and Digging Deeper Activity. It will also help reduce the costs associated with completing all the experiments and activities in one year.

This project is designed to introduce members with the scientific history concerning the discovery and application of electric energy through the 1800's. Members will conduct experiments similar to the ones performed by the scientists and inventors of that day.

As members move through the manual they will see that the experiments have been organized chronologically to their place in history. This allows the members, like earlier scientists, to build upon previous discoveries.

Members should also note the timeline which runs through the book. It provides a graphic representation of the historical development of electricity. Note that once the basics of electricity have been learned, inventions like light bulbs and telegraphs appear on the scene to apply this new knowledge. This is evident by the abundance of dates and events toward the end of the 19th century as compared to the beginning, in which things were happening so fast that only a fraction of the important events are listed.

Over a year's county project guidelines for additional requirements for taking this project, especially if you choose to participate in county project judging or prepare an exhibit for the fair. Members who complete this project are encouraged to move to the next level of 4-H electric energy project.

### PROJECT GUIDELINES 2

1. Complete the Planning Section of this guide (page 3).
2. Explore each of the Project Interest Areas.
3. Complete at least one of the experiments in each Interest Area selected. Digging Deeper Activities are optional.
4. Build a DC motor from scratch or from a kit. See page 30 for details.
5. Take part in at least one Digging Deeper Project Activity.
6. Become involved in at least two Citizenship/Leadership activities.

## 3

SCIENCE FUN WITH ELECTRICITY

### 3 PLANNING YOUR PROJECT

**Steps 1 and 2: PROJECT INTEREST AREAS AND ACTIVITIES**

Explore each of the Project Interest Areas listed. Plan to complete at least one of the experiments in each Interest Area. Digging Deeper Activities are optional. Note your plan to achieve what you did, what you complete.

Date Completed	Interest Areas and Activities
	<b>1. STATIC ELECTRICITY, page 8</b> Experiment 1 — Charge a Balloon Experiment 2 — Static Electricity Light
	<b>2. CURRENT ELECTRICITY, page 10</b> Experiment 3 — Simple Circuit Digging Deeper — Building a Simple Circuit with a Battery Digging Deeper — Building a Simple Circuit with a Battery
	<b>3. ELECTROMAGNETISM, page 12</b> Experiment 4 — Making a Simple Electromagnet Experiment 5 — Making a Simple Motor
	<b>4. ELECTROMAGNET, page 13</b> Experiment 6 — Making a Simple Electromagnet Digging Deeper — Building a Simple Electromagnet Digging Deeper — Building a Simple Electromagnet
	<b>5. ELECTRIC GENERATOR, page 17</b> Experiment 7 — Building a Simple Electric Generator Digging Deeper — Building a Simple Electric Generator
	<b>6. ELECTRIC MOTOR, page 18</b> Activity — Building a Simple Motor Experiment 8 — Building a Simple Motor
	<b>7. ELECTRIC LIGHT, page 20</b> Experiment 9 — Light a Simple Bulb with a Battery

## 4

SCIENCE FUN WITH ELECTRICITY



## 1 LEARNING EXPERIENCES/ORGANIZED ACTIVITIES

Provide examples and number of Learning Experiences that need to be completed.

**1**

**Step 3  
ORGANIZED PROJECT ACTIVITIES**

Select two or three organized project activities listed below, and plan and implement either the project or organized activity that best meets your group's needs. You may change either the activity, the date, or the number of activities. Organized activities may be added or changed at any time.

**Sample Organized Activities**

Classroom	Scout
County Building	Historical Site
Home	Project Meetings
Project Exhibit	Publicity
Field Trip	Radio Presentation
Adult Group	Scout Camp

**REPORT OF ORGANIZED ACTIVITIES**

Plan To Do	Date Completed	Interest Areas and Activities
Electronics	July 2007	What Did I Learn? What Did I Enjoy? What Did I Discover?

**5**

SCIENCE FUN WITH ELECTRICITY

## 2 LEADERSHIP/CITIZENSHIP/COMMUNITY SERVICE ACTIVITIES

Provide examples and number of Leadership/Citizenship/Community Service activities to perform.

**2**

**Step 4  
LEADERSHIP/CITIZENSHIP ACTIVITIES**

Select the activities you wish to perform and plan and implement them. You may change the date, the number of activities, or the number of activities. Leadership/Citizenship/Community Service activities may be added or changed at any time.

**Plan To Do**

**When I Finished**

**Leadership/Citizenship Activities**

1	_____	Help someone in need by doing a project or activity.
2	_____	Help someone in need by doing a project or activity.
3	_____	Help someone in need by doing a project or activity.
4	_____	Help someone in need by doing a project or activity.
5	_____	Help someone in need by doing a project or activity.
6	_____	Help someone in need by doing a project or activity.
7	_____	Help someone in need by doing a project or activity.
8	_____	Help someone in need by doing a project or activity.
9	_____	Help someone in need by doing a project or activity.
10	_____	Help someone in need by doing a project or activity.

**6**

SCIENCE FUN WITH ELECTRICITY

## 3 PROJECT REVIEW

Statement summarizing what member should do to complete project, the kind of project review suggested, and potential recognition for his/her accomplishments.

**3**

**PROJECT REVIEW**

Once you complete what you planned, arrange for a project review. This review is a talk with your parent, project advisor or interested adult. It may also be performed by a committee of members or a group of adults. The review is designed to help you evaluate what you learned as well as your growth as a 4-H member. Members evaluate their own level of participation, teamwork, project management, and project achievement awards. The review, plan and action plan.

In addition, you may want to take part in a community project judging. However, the local association determines "how well" you did on your project by comparing your "Project Guide" to the other projects. The review is designed to help you evaluate what you learned as well as your growth as a 4-H member. Members evaluate their own level of participation, teamwork, project management, and project achievement awards. The review, plan and action plan.

**Congratulations to...**

For completing the project and for the excellent work you did on it.

Reviewed by: \_\_\_\_\_

Project Advisor: \_\_\_\_\_

Project Guide: \_\_\_\_\_

**7**

SCIENCE FUN WITH ELECTRICITY

## Project Content and Activities

Narrative written in a style and language that is understandable for a younger reader. After reading each content section members then carry out recommended learning activity. Build in opportunity for parent or adult to intervene in the learning process. Approximately 28 pages in length.

### 1 CHAPTER OVERVIEW

Sets the stage for the learning to take place.

### 2 SKILL SET

Identifies the skill set being addressed.

### 3 BACKGROUND

A brief or lengthy narrative may be needed to familiarize member with relevant content. Depends on depth of project, skill of member, or nature of activities.

### 4 THE ACTIVITY OR ACTIVITIES

Hands-on in nature. Designed to engage member in the content and develop relevant skill set.

### 5 ADULT INTERACTION

Build in moments where member interacts with a project helper.

### 6 PROCESSING PHASE

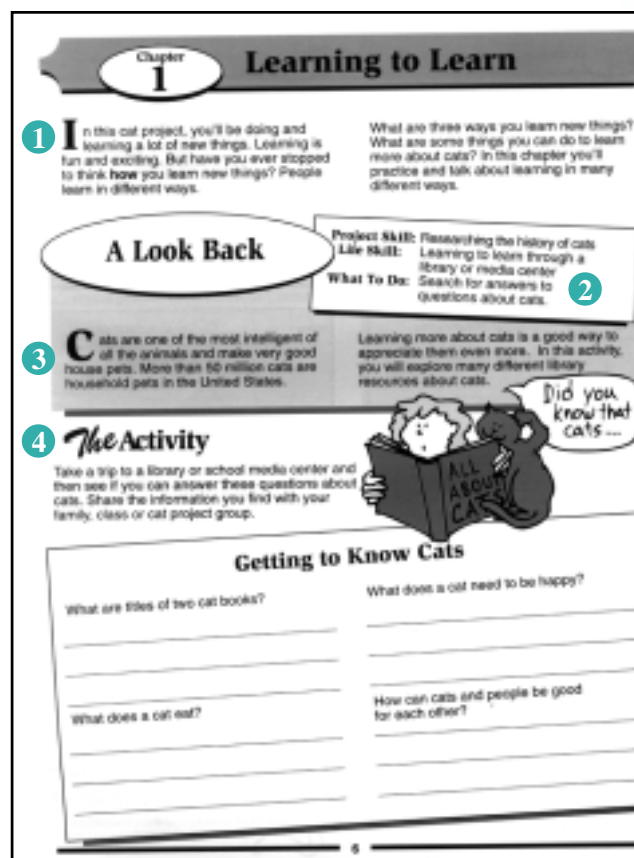
Following an activity, member takes the opportunity to process the activity with a project helper.

### 7 MORE CHALLENGES

Designed to bring closure or extended challenges for the learner. Also prepares learner for what may follow in next interest area.

### 8 BITS OF KNOWLEDGE

An efficient way of capturing or highlighting specific knowledge.



**Chapter 1 Learning to Learn**

**1** In this cat project, you'll be doing and learning a lot of new things. Learning is fun and exciting. But have you ever stopped to think how you learn new things? People learn in different ways.

What are three ways you learn new things? What are some things you can do to learn more about cats? In this chapter you'll practice and talk about learning in many different ways.

**A Look Back**

**2** **Project Skill:** Researching the history of cats  
**Life Skill:** Learning to learn through a library or media center  
**What To Do:** Search for answers to questions about cats.

**3** **C**ats are one of the most intelligent of all the animals and make very good house pets. More than 60 million cats are household pets in the United States.

Learning more about cats is a good way to appreciate them even more. In this activity, you will explore many different library resources about cats.

**4 The Activity**

Take a trip to a library or school media center and then see if you can answer these questions about cats. Share the information you find with your family, class or cat project group.

**Getting to Know Cats**

What are titles of two cat books? \_\_\_\_\_

What does a cat eat? \_\_\_\_\_

What does a cat need to be happy? \_\_\_\_\_

How can cats and people be good for each other? \_\_\_\_\_

*Did you know that cats...*



**Talking it Over**

**5 Share with your helper**

- How did you find resources on cats?
- What resources did you find?
- Which questions were harder to answer than others? Why?

**6 Tell what's important**

Why is it good to know the history of cats — or the history of people?

**6 Explore what you learned**

How does more information about cats help you decide if you want a cat as a pet?

**More Challenges**

**7** 1. Talk with several cat owners. What special joys do cats bring to their lives? What problems might a cat cause its owner? \_\_\_\_\_

2. Start collecting cat information. A notebook is a handy scrapbook. Include pictures of cats and their owners, interesting information, stories about cats and more. How might your scrapbook come in handy when you are deciding whether or not a cat is the right pet for you? \_\_\_\_\_

**8 Cat Fact!**

Australia has twice as many cats per human as any other country in the world. It has almost nine compared to the United States, with between two and three cats per human.



# Additional Pages and Considerations

## 1 GLOSSARY

Provides definitions and possible pronunciations of content related words.

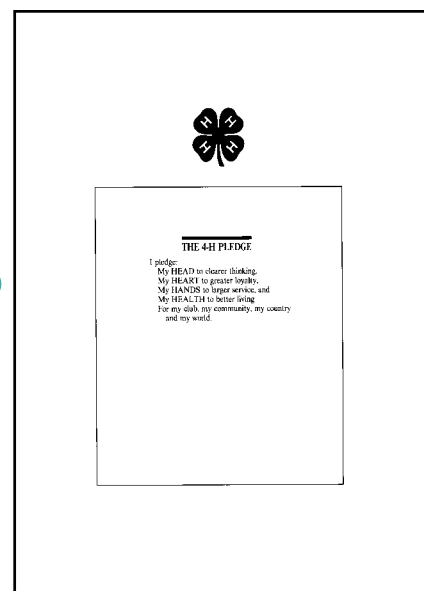
## 2 RESOURCES

List of resources to support learning taking place. Limit addresses, phone numbers and website addresses as they quickly go out of date.



## 3 BACK COVER

Includes 4-H clover and pledge.



## GRAPHICAL AND TEXT CONSIDERATIONS

- Standard Size—Usually 8½ X 11 inches and in units of four-page multiples (4 pages, 8 pages, 12 pages, etc.). Will vary with type of paper used, content and intended use.
- Type—Type size selected for ease of reading by intended audience. Color of paper and ink chosen for readability, attractiveness, appropriateness, cost and availability.
- Illustration—Pictures to reinforce subject matter, give directions and add to attractiveness of publication. (Author may make suggestions).
- Copy—Written at appropriate reading level for intended audience. Follow difficult words with definitions and pronunciations when they are first introduced in the publication.

# GROUP PROJECT LEADER'S MANUAL

Project materials designed for use when teaching subject matter in a group setting. These materials are in a lesson plan format and designed for use by lay and professional educators. Not intended for use by members as an individual project book.

## Cover

### 1 PROJECT NUMBER

The term GPM designates that this is a Group Project Manual.

### 2 PROJECT NAME

Use a title which addresses the project's theme. Use of a subtitle may be used to further express the theme.

### 3 COVER ART

Use photograph or artwork to capture the active learning of the project.

### 4 LOGOS

Include 4-H and other cooperating organization logos.

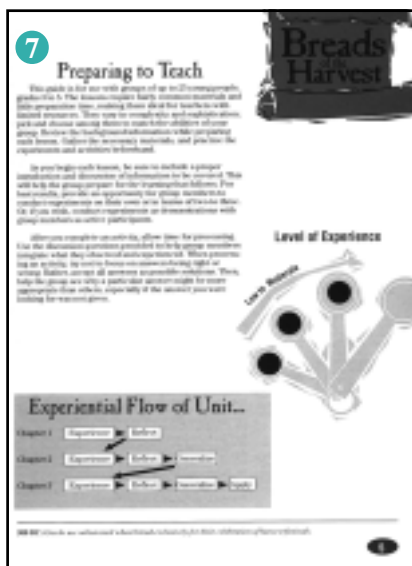
### 5 PUBLICITY

Publicize partnership, website support, or other unique features of the project.

## INSTRUCTOR INFORMATION

**6 About the Unit**—Provide overview of the unit for the teacher. Familiarize with content being addressed in the unit and the scope and sequence of information contained.

**7 Preparing to Teach**—Provide guidelines for teaching the unit especially number of weeks required, intended age range, approximate size of group, time frame per lesson, how to facilitate activities, the experiential flow of the unit, the level of experience addressed, and what to expect as results.



## Inside Front Cover

### 1 TABLE OF CONTENTS


List chapter headings and other major sections of the publication.

### 2 COPYRIGHT

Include to protect publication from being exploited by for-profit companies.

### 3 EEO STATEMENT AND INDICIA

Use standard statement prepared by extension administration.



**Breads of the Harvest**  
Exploring the Science, Nutrition, and History of Bread Making Since the Pilgrims

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2. Hearty, Tasty Colonial Bread	page 15
3. The Business of Baking	page 21
Copies, Handouts & Recipes	page 37
Worksheets & Culcuts	page 48
Answer Keys	page 74
Picture Story	page 85
Equipment & Supplies	page 112

### 4 ACKNOWLEDGMENTS

Provide listing of individuals and organizations responsible for developing publications.



**Breads of the Harvest**

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The purchase of this curriculum materials by a group to reproduce worksheets and activities for classroom use only. Reproduction of these materials for an entire school or district requires prior written consent from Ohio State University Extension.

# Project Content and Activities

Design of Materials—written in a lesson plan format designed for lay educators.

Content of Materials—narrative written in a style and language that is understandable for the teacher. After reading and reviewing each content section with the group, the teacher then assists students in carrying out the prescribed learning activity. Design a lesson that can be completed in a 45-90 minute session with opportunities for Digging Deeper and Going Beyond. Each learning activity should be accompanied by a title, materials list, and purpose statement. Build in opportunity for teacher to intervene in the learning process. Approximately 28 pages in length.

## 1 CHAPTER HEAD

Each chapter constitutes a lesson containing a series of activities.

## 2 SKILL SET

Particular skill set being developed within the chapter

## 3 BACKGROUND

Provide enough information to familiarize instructor with information being addressed.

## 4 TALK ABOUT THE TOPIC

Provide prescriptive approach to introducing topic to learner.



## 1 PROJECT ACTIVITY

Worded to tell instructor where to start, what to say and the steps to follow. Includes a purpose statement.

## 2 SUPPLIES

Materials needed to conduct the activity including examples of worksheets contained in the book. Worksheets are designed to support student learning.

### Breads of the Harvest

On board the Mayflower, the Pilgrims ate an occasional helping of dried peas, molly cheese, or dried meat. However, their mainstays were water and hardtack. Because there for baking bread were strictly forbidden aboard wooden ships, the Pilgrims were forced to eat these "sea biscuits" throughout their journey at sea. This was a particular hardship because people of that day consumed large quantities of homemade bread, sometimes as much as a pound per person per day. To meet the Pilgrims' need for bread, the ship had been loaded with hundreds of biscuits—on cruet, in fact, that the biscuits were stacked in huge piles throughout the ship. Eventually the biscuits became so hard the Pilgrims had to soak them before eating.

#### 1 Begin With This Activity: Sea Food

Purpose: to explore the first hardships experienced by the Pilgrims and the role bread played in their survival



**Supplies**

- Ingredients to make hardtack
- Mayflower worksheets
- Living Mayflower Ship Worksheet

**Remarks**

Explain how this activity will help the group learn about the type of bread that sustained the Pilgrims on their voyage, the amount available, and the place where it was stored on the ship.

**Recipe**

**Hardtack:**  
3 cups bread flour  
2 teaspoon salt  
1 cup water

Preheat oven to 425°F in a 8-quart bowl, mix 3 cups of flour with the salt. Add 1 cup of water and stir until mixture becomes stiff. Knead the dough in the bowl by hand, adding more flour if too sticky to handle. Place the dough on a floured surface and roll to about 1/2" thick. Then, place the dough onto a greased 17" x 17" cookie sheet. Shape the dough so that it completely covers the sheet. Pick the entire surface of the dough with a fork. This helps the hardtack rise evenly as steam escapes from the dough. Lightly salt, then place in the oven for 30 minutes or until light brown. When done, cut hardtack into 7" x 7" squares with scissors before it cools. Let cool on cookie sheet or cookie rack.

**Follow these Steps**

1. Distribute copies of the Mayflower worksheet provided in the back of this book. Have the group complete the activities on the worksheets, including the Ship's Survival exercise. Here, students have the chance to find the places on board where the biscuits have been stored, calculate the number of biscuits

page 45

page 46

pages 50 & 51

1000 Celebration of Harvest (photo, Pilgrims Home, becomes commonplace in England).

## 3 DISCUSSION QUESTIONS

Guiding questions follow each activity and help learners focus on what took place and what follows.

## 4 PROJECT ACTIVITY

Worded to tell instructor what to do next.

### Breads of the Harvest

needed on the voyage, and determine how large a pile they would make. They also have the chance to discover where the Pilgrims might have slept and how they spent their time during the journey by completing the Living Mayflower Ship Worksheet.

3. As an option, prepare the hardtack recipe provided on page 5. You may wish to have a supply of water on hand to soak the hardtack down. Most likely, none of the group will want to eat the daily ration of 1/2.

#### 3 Discussion Questions

- Q: Do you think it was a lot of work to feed over 100 people each day?
- Q: Would there be an advantage to keeping the menu simple and repetitive?
- Q: In what ways is the trip the Pilgrims took similar to a long trip to eat?
- Q: Why does it seem that we always eat differently when traveling?
- Q: Do you think the ship's captain was honest with the Pilgrims when they asked, "Are we there yet?"


#### 4 Follow With This Activity: Now That We're Here . . . What's for Dinner?

Purpose: to show how thankful the Pilgrims were to survive their first nine months in a new land

**Remarks**

The group may think that the Pilgrims' first order of business when they arrived was to have a good home-cooked meal. However, it would be six long months before they ate anything similar to what they ate back home. Even longer when it came to having the breads they enjoyed at meals. Explain to them that the Pilgrims had to rely on the provisions they had brought with them or whatever they could gather. To make matters worse, because the soil of the region was so poor, the grain crops they planted failed. If not for the help of a Native American named Squanto, they would surely have died. Squanto taught them to hunt, trap, fish, and plant corn. In fact, the crops were so successful, the Pilgrims celebrated their bountiful harvest as a time of Thanksgiving.

In preparation for the Thanksgiving feast, the Pilgrims made bread with ground corn called Johnnycake. They didn't like it as much as wheat bread, but were happy to have it. The 18th century's first bakery since is reported.





## 1 FORMAT

Large column format works best for flowing large blocks of text. Narrow column is reserved for illustrations and secondary information.

## 2 ILLUSTRATION

To embellish text or serve as a reference to a particular section of text.

**Breads Harvest**

Now grains like corn and wheat need to be thoroughly ground and cooked for proper digestion. Remember that our bodies are not designed to break down the cell walls of plants as efficiently as are herbivores' bodies. We must chop, grind or crush the plant materials we eat for proper digestion. Otherwise, the lives of these animals simply pass through our bodies unutilized.

Back in England, the Pilgrims would have taken their grain to a gristmill to be made into flour. However, the first gristmill would've arrived in the Colonies for another 17 years. In the meantime, the Indians taught the Pilgrims a technique for grinding, using a stone, a mortar made of a pounding implement attached to a post. The mortar was dropped down into a hollowed log with a hole in it. The top of the log was automatically pulled the heavy mortar back up.

Imagine to the group that they are about to see how much work it took to grind grain by hand, especially in preparation for the Thanksgiving feast. This task, by the way, was delegated to the children of the settlement. Since any children that by the time these children reached adulthood gristmills had finally reached the Colonies?

**Follow These Steps**

1. Distribute copies of the Daily Grind worksheet. Have the group complete the worksheet as you conduct this activity.
2. Place 100 hand-dried corn in a clear plastic storage bag. Have the group sit in a circle and explain that each child will get 10 corn to fill the bag of corn kernels. Have each group member about 10 kernels per bag. Keep track of the amount of time it takes for everyone in the group to have a bag containing the grain. For groups of 10 or less, repeat the process.
3. Once done, measure how much cornmeal the group made. Divide this figure into the amount of flour needed for the recipe you discussed earlier with the group. Based on this amount, determine how much more time the group would need to spend grinding corn to make enough of the recipe to feed 140 people.
4. Be sure to pass the cornmeal around for the group to see and taste. Explain that the cornmeal is not much different from that of the cornmeal the Pilgrims used.

**Discussion Questions**

Q: What do you think of the quality of the cornmeal made in the group?  
 Q: Do you think the Pilgrims did a better job? (Probably, since they eventually died in our city.)

1490s: Pilgrims and their English neighbors, Massachusetts. The Pilgrims are about to the first of a feast known as day's first feast.

## 3 SIGNIFICANT HEADINGS

Overt ways to cue the interaction of the instructor.

**Breads Harvest**

widely popular Johnnycakes was likely to appear at any meal. Johnnycakes are a variation of an Indian recipe, and some people believe their name is a corruption of "Johnny cakes." Others think the original name was "Johnny cakes," because they were so often eaten along in company. In the South, they were called "Johnny cakes" because they were baked on flat iron plates with long handles. The most primitive form was called "Johnny cakes" because they were formed by hand, then laid in the ashes of a hot fire.

**Follow These Steps**

1. Prepare a batch of Johnnycakes for the group to taste. As you distribute samples for the group, explain how this was the type of bread eaten at the first Thanksgiving.

**Recipe**

- 1 cup cornmeal
- 1 teaspoon salt
- 1 cup boiling water
- 1 tablespoon maple syrup
- 1 cup milk (optional; corn didn't taste in Pilgrims' corn)

Mix the cornmeal and salt. Add the boiling water stirring until smooth. Add the milk and maple syrup, and stir until smooth. Mix the mixture forms a thick paste. Pour the paste to fill 1/2 cup dough into balls (a little smaller than a golf ball) then flatten into 1/2 inch. Make about 10 patties. Place the patties on a griddle (17" x 17" wooden board, and heat for 20-25 minutes, or until golden brown and firm. Cool on a cookie rack.

**Discussion Questions**

Q: What describes type of bread? (You about the food eaten at the first Thanksgiving?)  
 Q: Do you think it was a lot of work making Johnnycakes?  
 To prepare corn, for example, the Pilgrims first had to dry, shell, and grind it. It would be 10 years before the first gristmill arrived on the scene (1703, in Wiscasset, Massachusetts), so the Pilgrims had to grind their grain by hand. For the next activity to help the group understand the time it took for the corn to become meal.

**Continue With This Activity: The Daily Grind**

**Purpose:** To demonstrate the amount of time it took to turn corn into meal by hand in preparation for the Thanksgiving feast.

**Remarks**

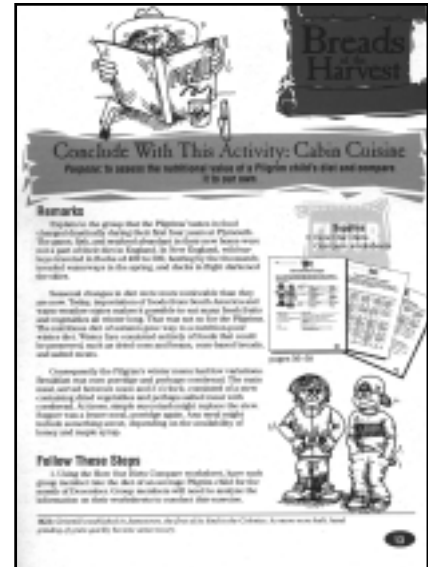
To enhance the experience of the group, assign them to an exercise of turning corn into meal. Begin by measuring

1490s: The settlement's daily corn meal was in England. When later, people came to realize that cornmeal was made from corn, they began to make it.



1

Designed to bring closure or provide extended challenges for the learners. Also prepares learners for the lesson that follows.



# Additional Pages and Considerations

## 1 MASTER COPIES

Provide photo-ready handouts, factsheets, worksheets, etc.

Name \_\_\_\_\_

### 1 Eating Like a Pilgrim Worksheet

Q. Do you think it took a long time for a Pilgrim family to eat a meal? \_\_\_\_\_

Q. What day of the week featured a "special" dinner? \_\_\_\_\_

Q. Pilgrims ate "family style." Does that mean they served themselves? \_\_\_\_\_

Q. What was always in a bowl in the middle of the table? \_\_\_\_\_

Q. Did the Pilgrims have to share plates? \_\_\_\_\_

Q. The Pilgrims shared a cup called a \_\_\_\_\_

Q. What kind of napkin did the Pilgrims use? \_\_\_\_\_

Based on the story, draw in the picture:

1. A tool for eating    2. Something to eat from    3. A place for dirty dishes

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## 2 SUPPLIES

Summarize the specific materials needed to carry out all of the activities in the book.

### 2 EQUIPMENT AND SUPPLIES

The following is a complete list of equipment and supplies necessary to conduct the Breads of the Harvest unit with a group size of 20. The Breads of the Harvest nutrition education kit (411-400-1) is available from Ohio State University Extension Media Distribution. To order, call (614) 292-0807 or e-mail [pubinfo@osu.edu](mailto:pubinfo@osu.edu).

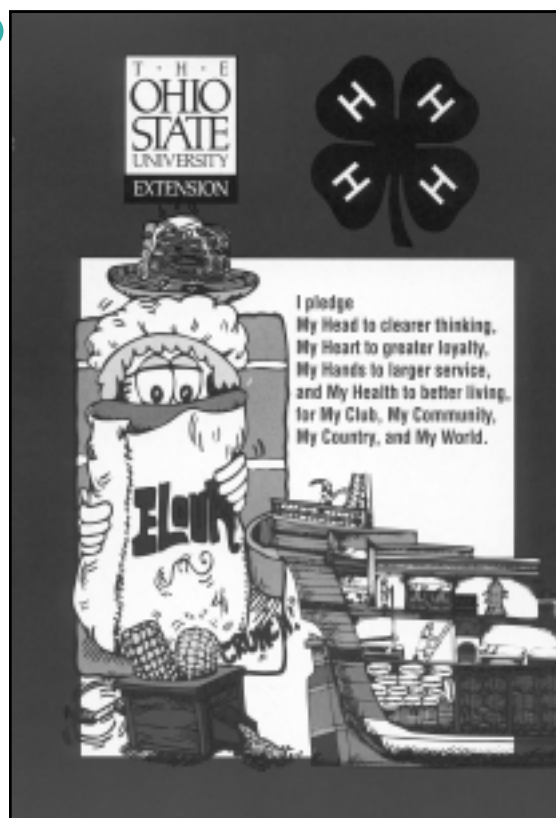
<b>Ingredients</b> <ul style="list-style-type: none"> <li>2 cups bread flour</li> <li>1 teaspoon salt</li> <li>measuring spoons</li> <li>dry measuring cup</li> <li>1 quart bowl</li> <li>rolling pin</li> <li>1 1/2 inch sheet</li> </ul>	<b>Bread Slicing Equipment</b> <ul style="list-style-type: none"> <li>40 20-cm clear plastic cups</li> <li>12 1/2-cm sticks</li> <li>20 measuring baking spoons</li> <li>20 measuring baking spoons</li> <li>20 measuring spoons of butter</li> <li>measuring spoons</li> <li>permanent marker</li> </ul>	<b>General Classroom</b> <ul style="list-style-type: none"> <li>Shaker enough depth for 10 individual samples (small bowl of bread)</li> <li>12 pounds of yeast</li> <li>12 pounds of yeast</li> <li>2 1/2 cups sugar</li> <li>1/2 cup salt</li> <li>2 1/2 cups vegetable oil</li> <li>2 cups corn flour</li> <li>400 grams dry (black) bread</li> <li>20 10-cm aluminum foil pans</li> <li>1 thermometer (disposable stick)</li> <li>dry measuring cups 1/2, 1/4, 1/8 cup</li> <li>1 liquid measuring cup</li> <li>measuring spoons 1 teaspoon, 1 drop</li> <li>10-cm stick (broom handle) for scraping dough from bag &amp; rolling floor</li> <li>paper towels</li> <li>antibacterial hand soap for cleaning hands and work surfaces</li> <li>4 roll-up mats for rolling out dough (burlap)</li> <li>1 permanent marker (for putting names on pans and marking bags)</li> <li>roll of clear tape for taping nutrition facts to bags</li> <li>bottom sheet paper to cover work surface (burlap)</li> </ul>
<b>Bread Slicing</b> <ul style="list-style-type: none"> <li>100 pounds of bread rolls to slice</li> <li>plastic bag</li> <li>1/2 cup dry measuring container</li> <li>bowl</li> </ul>	<b>Stove Equipment</b> <ul style="list-style-type: none"> <li>14 measuring bulk dry yeast</li> <li>14 measuring sugar</li> <li>14 flour 10-cm plastic cups</li> <li>12 1/2-cm sticks</li> <li>1 thermometer (disposable stick)</li> <li>1 cup baking soda</li> <li>Blue tissue paper (for CO<sub>2</sub> detection)</li> <li>12 plastic food liners</li> <li>one 8" balloon</li> <li>measuring spoons</li> <li>1 loaf of Wonder bread</li> <li>meat fork of uncooked grapes</li> <li>10 on plastic roll-out bottle</li> </ul>	
<b>Ingredients</b> <ul style="list-style-type: none"> <li>1 cup bread flour</li> <li>1/2 teaspoon salt</li> <li>1 egg</li> <li>1 cup milk</li> <li>measuring spoons</li> <li>dry measuring cup</li> <li>paper towels</li> <li>plastic wrap</li> <li>plastic refrigerator</li> <li>14 plastic sandwich plates</li> <li>plastic fry pan</li> <li>spatula</li> <li>optional butter warmer</li> <li>1 quart glass cooking jar with lid</li> <li>1/2 pint honey cream</li> <li>1/2 teaspoon of salt</li> </ul>	<b>What's New</b> <ul style="list-style-type: none"> <li>1 1/2 cup dry flour</li> <li>12 1/2-cm sticks</li> </ul>	

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## 1 BACK COVER

Include 4-H Clover and 4-H Pledge.

1



### GRAPHICAL AND TEXT CONSIDERATIONS

- ▶ **Standard Size**—Usually 8½ X 11 inches and in units of four-page multiples (4 pages, 8 pages, 12 pages, etc.). Will vary with type of paper used, content and intended use.
- ▶ **Type**—Type size selected for ease of reading by intended audience. Color of paper and ink chosen for readability, attractiveness, appropriateness, cost and availability.
- ▶ **Illustration**—Pictures to reinforce subject matter, give directions and add to attractiveness of publication. (Author may make suggestions).
- ▶ **Copy**—Written at appropriate reading level for intended audience. Follow difficult words with definitions and pronunciations when they are first introduced in the publication.



## Four Fold Youth Development Model

The Four Fold Youth Development Model encompasses 47 skills that can be combined into sets of skills to develop youth as confident, capable, caring and responsible citizens. It combines four existing models into one comprehensive model focusing on all four aspects of the individual: head, heart, hands and health. The four models included are the SCANS Workforce Preparation Model; the Science Process Skill Model by the National 4-H Network for Science and Technology; Iowa State University's Targeting Life Skill Model, and the Search Institute's Internal Assets Model. Additional information concerning this model can be found at the following web site: <http://www.four-h.purdue.edu/fourfold>.

Four Fold Youth Development Model	NNST Science Process Skills Model	Workforce Preparation Skills (SCANS) Model	Targeting Life Skills Model	Search Institute Internal Assets Model
UTILIZING SCIENTIFIC METHODS	STRUCTURING <ul style="list-style-type: none"> <li>• Predicting</li> <li>• Hypothesizing</li> <li>• Evaluating</li> <li>• Defining Operation</li> <li>• Making Assumptions</li> </ul> INVESTIGATION <ul style="list-style-type: none"> <li>• Ordering</li> <li>• Controlling Variables</li> </ul>			
PROCESSING INFORMATION		INFORMATION: ACQUIRES AND USES INFORMATION <ul style="list-style-type: none"> <li>• Acquires and Evaluates Information</li> <li>• Interprets and Communicates Information</li> <li>• Uses Computers to Process Information</li> </ul>	MARKETABLE SKILLS	
UNDERSTANDING	FOCUSING <ul style="list-style-type: none"> <li>• Categorizing</li> </ul>	SYSTEMS: UNDERSTANDS COMPLEX INTER-RELATIONSHIPS <ul style="list-style-type: none"> <li>• Understands Systems</li> <li>• Monitors and Corrects Performance</li> <li>• Improves or Designs Systems</li> </ul>		
MANAGING RESOURCES		RESOURCES: IDENTIFIES, ORGANIZES, PLANS AND ALLOCATES RESOURCES <ul style="list-style-type: none"> <li>• Time Management</li> <li>• Money Management</li> <li>• Materials and Facilities Acquisition and Management</li> <li>• Human Resources Management</li> </ul>	WISE USE OF RESOURCES	





# HANDS

Four Fold Youth Development Model	NNST Science Process Skills Model	Workforce Preparation Skills (SCANS) Model	Targeting Life Skills Model	Search Institute Internal Assets Model
MASTERING/STRUCTURING TECHNOLOGY	TECHNOLOGY: WORKS <ul style="list-style-type: none"> <li>Using Scientific Tools</li> </ul> RECORDING • <ul style="list-style-type: none"> <li>Making Models</li> </ul>	MARKETABLE SKILLS WITH A VARIETY OF TECHNOLOGIES <ul style="list-style-type: none"> <li>Selects Technology</li> <li>Applies Technology to Task</li> <li>Maintains and Troubleshoots Equipment</li> </ul>		
LEARNING THROUGH COMMUNITY SERVICE	INTERPERSONAL: WORKS WITH OTHERS		COMMUNITY SERVICE	
VOLUNTEERING			SERVICE LEARNING	
BEING A RESPONSIBLE CITIZEN			VOLUNTEERING	
WORKING IN A TEAM		INTERPERSONAL: WORKS WITH OTHERS <ul style="list-style-type: none"> <li>Participates as a Member of a Team</li> </ul>	RESPONSIBLE CITIZENSHIP	
EXERCISING LEADERSHIP		LEADERSHIP <ul style="list-style-type: none"> <li>Exercises Leadership</li> </ul>	TEAMWORK	
COMPLETING A PROJECT/TASK	RECORDING <ul style="list-style-type: none"> <li>Making Models</li> </ul>		CONTRIBUTING TO GROUP EFFORT	
MOTIVATING YOURSELF			SELF MOTIVATION	

# HEART

Four Fold Youth Development Model	NNST Science Process Skills Model	Workforce Preparation Skills (SCANS) Model	Targeting Life Skills Model	Search Institute Internal Assets Model
COMMUNICATING	COMMUNICATION <ul style="list-style-type: none"> <li>• Applying</li> <li>• Communicating to Others</li> </ul>	BASIC SKILLS <ul style="list-style-type: none"> <li>• Reading</li> <li>• Writing</li> <li>• Listening</li> <li>• Speaking</li> </ul>	COMMUNICATION	
INTERACTING SOCIALLY		INTERPERSONAL: WORKS WITH OTHERS <ul style="list-style-type: none"> <li>• Participates as Member of a Team</li> <li>• Teaches Others New Skills</li> <li>• Serves Clients/Customers</li> <li>• Exercises Leadership</li> <li>• Negotiates</li> </ul>	SOCIAL SKILLS COOPERATING SHARING  CONFLICT RESOLUTION	SOCIAL COMPETENCE <ul style="list-style-type: none"> <li>• Interpersonal Competence</li> </ul>
COOPERATING				
SHARING				
RESOLVING CONFLICTS				
VALUING SOCIAL JUSTICE				
VALUING DIVERSITY		<ul style="list-style-type: none"> <li>• Works with Diversity</li> </ul>	ACCEPTING DIFFERENCES	SOCIAL COMPETENCE <ul style="list-style-type: none"> <li>• Cultural Competence</li> </ul>
BUILDING RELATIONSHIPS		PERSONAL QUALITIES <ul style="list-style-type: none"> <li>• Sociability</li> </ul>	NURTURING RELATIONSHIPS	
CARING FOR OTHERS			CONCERN FOR OTHERS	POSITIVE VALUES <ul style="list-style-type: none"> <li>• Caring</li> </ul>
BEING EMPATHETIC			EMPATHY	

# HEALTH

Four Fold Youth Development Model	NNST Science Process Skills Model	Workforce Preparation Skills (SCANS) Model	Targeting Life Skills Model	Search Institute Internal Assets Model
BEING RESPONSIBLE		PERSONAL QUALITIES <ul style="list-style-type: none"><li>• Responsibility</li><li>• Self Esteem</li></ul>	SELF RESPONSIBILITY SELF ESTEEM	POSITIVE VALUES <ul style="list-style-type: none"><li>• Responsibility</li></ul> POSITIVE IDENTITY <ul style="list-style-type: none"><li>• Self Esteem</li></ul>
DEVELOPING SELF ESTEEM		• Self Management	MANAGING FEELINGS	
MANAGING YOURSELF		• Integrity/Honesty	SELF DISCIPLINE CHARACTER•	POSITIVE VALUES Integrity <ul style="list-style-type: none"><li>• Honesty</li></ul>
PRACTICING INTEGRITY AND CHARACTER	SCIENCE ETHICS			POSITIVE IDENTITY <ul style="list-style-type: none"><li>• Personal Power</li><li>• Sense of Purpose</li><li>• Positive View of Personal Future</li></ul>
DEVELOPING A SENSE OF PURPOSE				SOCIAL COMPETENCIES <ul style="list-style-type: none"><li>• Resistance Skills</li></ul>
DEVELOPING A POSITIVE VIEW OF FUTURE				
UTILIZING RESISTANCE SKILLS				
BEING RESILIENT				
MANAGING STRESS			RESILIENCY	
MAKING HEALTHY LIFESTYLE CHOICES			STRESS MANAGEMENT	
PREVENTING PERSONAL INJURY			HEALTHY LIFESTYLE CHOICES	POSITIVE VALUES <ul style="list-style-type: none"><li>• Restraint</li></ul>
EXPRESSING EMOTIONS POSITIVELY			PERSONAL SAFETY	
PREVENTING DISEASE			DISEASE PREVENTION	

# Appendix B



Profile of Curriculum Planning Recommendations By Experience Centered Experts	Establish Unit Theme, Knowledge & Skill Set	Organize By Areas of Interest	Identify Content to Be Addressed	Depth and Sequence of Experience Considered	Construct Activities That Address Learning at Different Levels	Apply Self Skills to Facilitate Learning	Facilitate Learning Process
Druian-Owens Owen	✓	✓	✓	✓	✓	✓	
Luckman						✓	✓
Joplin	✓				✓		✓
Williamson		✓	✓	✓	✓		✓
Chapman							
Proudman		✓			✓	✓	✓
Herbert						✓	✓
Hutchings & Wutzdorff	✓			✓			✓
Warren					✓	✓	✓
Jernstedt			✓		✓		✓
Knapp		✓				✓	✓
Reynolds					✓		✓
Quinsland & Van Ginkel				✓			✓
King	✓						✓
Heidin & Conrad			✓		✓	✓	✓
Gibbons & Hopkins				✓	✓	✓	
Prochazka			✓				✓
Carver							✓
Steinaker & Bell	✓				✓		

Page 1 Characteristics Experiential Activities	Student Ownership For Outcomes	Problem Solving	Results Personal	Failure	Examine & Explore Own Values	Learn From Consequences, Mistakes & Successes	Engaged Intellectually, Emotionally, Socially, Soulfully & Physically	Stressful or Jeopardy- like Situation	Start With Learner's Experience	Relationship To The Topic	Everything is Connected to Everything Else
Druian-Owens Owen	✓										
Luckman	✓	✓	✓	✓	✓	✓	✓				
Joplin				✓	✓		✓	✓	✓	✓	✓
Williamson		✓				✓	✓	✓			
Chapman										✓	
Proudman				✓	✓	✓	✓			✓	✓
Herbert				✓		✓	✓				
Hutchings & Wutzdorff							✓		✓		
Warren		✓									
Jernstedt	✓	✓					✓	✓	✓		
Knapp								✓	✓		
Reynolds		✓									
Quinsland & Van Ginkel							✓				
King	✓		✓	✓							
Heidin & Conrad		✓					✓				✓
Gibbons & Hopkins	✓	✓						✓			
Prochazka			✓								
Carver		✓					✓		✓		
Steinaker & Bell			✓						✓		

# Appendix C



Page 2 Characteristics of Experiential Activities	Process & Product	Reflect Learner Needs	Challenges Learner Physically & Emotionally	Contains Element of Risk	Planning & Decision Making	Assume Responsibility for Actions	Activities Perceived as Important and Real	Involves More Than One Sense
Druian-Owens Owen		✓	✓	✓	✓	✓	✓	
Luckman				✓	✓	✓	✓	
Joplin	✓		✓			✓	✓	
Williamson		✓	✓			✓	✓	
Chapman							✓	
Proudman	✓	✓	✓		✓	✓	✓	
Herbert	✓			✓	✓	✓	✓	✓
Hutchings & Wutzdorff						✓		
Warren			✓	✓	✓	✓		
Jernstedt			✓					
Knapp		✓			✓			
Reynolds			✓					
Quinsland & Van Ginkel								
King				✓		✓		✓
Heidin & Conrad			✓	✓	✓		✓	
Gibbons & Hopkins	✓				✓	✓		✓
Prochazka								
Carver							✓	✓
Steinaker & Bell			✓					✓



Observable Outcomes From Effective Training and Well Placed Facilitator Instructions	Help Plan / Carry Out	Role Model	Assess Info.	Posing Problems	Setting Boundaries	Safety	Process Subject Matter	Give Instructions	Help Students Make Connections	Teacher as Coach	Students Immersed	Support
Druian-Owens Owen	✓	✓	✓									
Luckman				✓	✓	✓						✓
Joplin	✓											
Williamson	✓			✓			✓					
Chapman					✓			✓	✓			
Proudman						✓	✓	✓		✓	✓	
Herbert						✓	✓			✓		✓
Warren	✓		✓		✓	✓			✓	✓	✓	
Jernstedt		✓										
Knapp												✓
Reynolds								✓				
Quinsland & Van Ginkel	✓											
King						✓						
Heidin & Conrad												✓
Prochazka										✓		
Carver		✓				✓				✓		
Steineker & Bell						✓				✓		



## Definitions of Learner Assessment Types

Behaviorial psychologists, who dominated American academic life for decades, refused to discuss such issues as intention, feelings, and mental models. Why children learned, how they felt about learning, or what might be going on inside their heads was considered beyond the reach of empirical study. Evaluators and researchers were urged to concentrate on the relationship between teachers' actions (stimulus) and students' responses. Today most educators no longer hold that limited view of the human experience; the fact remains, however, that what is directly accessible to us in developing any assessment system is "behavior." We don't know what children learn, how they feel, or why they act as they do, but, as Hein (1990) says, we can make valid inferences based on our assessment of what we see children do, what they tell us, and what the products of their activity reveal to us.

Developing a meaningful post-unit assessment begins with a clear understanding of the contrast between this type of assessment and the type that goes on during the debriefing phase of the experiential facilitation process. During debriefing, assessment focuses more on process than product. It is the opportunity to assure that the actions previously taken do not drift along unquestioned, unrealized, unintegrated or unorganized. It is also the opportunity to ensure that the learner's conclusions are verified and mirrored against a greater body of perception. On the other hand, post-unit assessment concerns itself with the product of the total experience as it relates to the thought and work processes behind it. It is the opportunity to help learners reflect on what they learned, determine strategies for what could be done differently next time, establish goals to extend the learning, and celebrate what they accomplished. Post-unit assessment also can be used to help learning facilitators assess their impact on the learners and consider how to improve the quality of their intervention next time.

The term assessment comes from the Latin *sedere*, meaning to sit beside. The etymology suggests that a much closer relationship should exist between the learner and the learning facilitator throughout the assessment phase of the unit (debriefing and post-unit) meaning that a variety of innovative post-unit assessment methods be included to satisfy differences in teaching and learning styles among learners and learning facilitators. This requires a clear understanding of what the particular unit is about, which activities are central to it, and what the learners are expected to accomplish.

According to Hein, these sources of post-unit assessment can easily be contrived to strengthen the learner's total experience with the unit. The role of the learning facilitator is to view the postassessment phase of the unit as an opportunity to create a sense of closure, as well as to guide learners toward a consideration of next steps. Curriculum designers should overtly communicate the role of learning facilitators in this final phase of the teaching/learning process. The curriculum should include specific recommendations for the type of post-unit assessment and the role of the learning facilitator.

This is especially important in member-directed manuals where the learning takes place at home with a parent or other learning facilitator. Thiagarajan (1980) recommends that planning guides be incorporated into the beginning of each publication. In this way, the learner and the learning facilitator know the expectations for the unit, how to carry it out, where the learning facilitator needs to intervene, and which type of post-unit assessment will take place.

## Performance Tasks (skillathons, demonstrations, illustrated talks)

Performance tasks in science are activities in which learners can demonstrate their knowledge and higher order thinking skills by manipulating equipment and materials and recording their observations and conclusions. They provide learners with the opportunity to demonstrate their understanding of important scientific processes and concepts by actually demonstrating their knowledge and abilities to others. Manipulating materials is characteristically part of the assessment. Performance tasks can be completed individually or by groups.

## Portfolios and Record Books

Portfolios and record books may be broadly defined as a collection of representative work including some evidence that the learner has documented his or her level of involvement in the unit. These devices have long been used by 4-H members taking livestock projects and include production, logistical, and financial information about the member's project. A growing trend has been to use portfolios and record books to create a cumulative record of learners' growth in other 4-H project endeavors. These devices should evidence significant tasks, worthy of time and commitment.

Portfolio and record book assessment allows learning facilitators to track learners' progress toward high standards by collecting evidence of learners' abilities to identify variables, construct hypotheses, tabulate and graph data, write conclusions, and so on.

## Rating Sheets

Rating sheets facilitate the assessment of a learner's performance against a predetermined set of standards for the unit. Typically, an independent facilitator conducts the assessment in the presence of the learner. Often, the learner is asked to perform certain tasks or respond to certain questions as part of the assessment process. The goal of this type of assessment is to determine how well the goals for the unit were accomplished.

## Appendix F

### Photo-Ready Worksheets

## Part I—Framing the Unit

1.

Establish unit's theme. Focus on the content and the related skill set.







Considering the  
Needs of Learners  
and Helpers









Identify Skill Set  
and Content  
Outcomes




	
	
	
	

Scope:  
Organize unit into  
interest areas


	
	
	
	

4b.

Sequence:  
Identify the  
content to be  
addressed within  
each interest  
area





Determine the depth of experience for the content by mapping it along an experiential path.

	
○	
○	
○	

6.

Construct learning activities that address the content at its assigned location along the experiential path. With consideration for:





- Content Outcomes
- Skill Set

## Part II—The Curriculum Planning Process

7.





As appropriate,  
create ways for  
others to intervene  
in the learning  
process.







\*

Identify and  
create learner  
assessment(s) for  
use by the project  
helper

Utilize Techniques  
for Improving the  
Effectiveness of  
the Unit



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# Four-Fold Youth Development Model

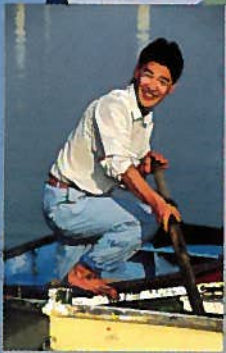
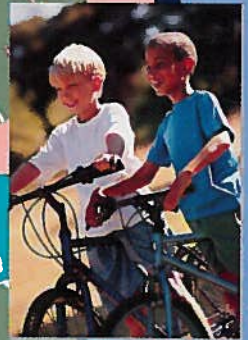
## HEAD

Utilizing Scientific Methods  
Processing Information  
Understanding Systems  
Managing Resources  
Practicing Creativity  
Making Decisions  
Solving Problems  
Visualizing Information  
Learning to Learn  
Reasoning  
Thinking Critically  
Keeping Records  
Planning and Organizing  
Achieving Goals  
Navigating in Your Environment  
Working with Numbers



## HEART

Communicating  
Interacting Socially  
Cooperating  
Sharing  
Resolving Conflicts  
Valuing Social Justice  
Valuing Diversity  
Building Relationships  
Caring for Others  
Being Empathetic



Mastering Technology  
Learning Through Community Service  
Volunteering  
Being a Responsible Citizen  
Working in a Team  
Exercising Leadership  
Completing a Project/Task  
Motivating Yourself



Being Responsible  
Developing Self Esteem  
Managing Yourself  
Practicing Integrity and Character  
Developing a Sense of Purpose  
Developing a Positive View of Future  
Utilizing Resistance Skills  
Being Resilient  
Managing Stress  
Making Healthy Lifestyle Choices  
Preventing Personal Injury  
Expressing Emotions Positively  
Preventing Disease

## HANDS

## HEALTH

[www.four-h.purdue.edu/fourfold](http://www.four-h.purdue.edu/fourfold)



Developed in Cooperation with:

- National Experiential Learning Design Team
- 4-H Cooperative Curriculum System
- CYFAR Youth Outcomes Work Group
- CYFAR Network for Science and Technology

