

CYS

TEK

WARE



Technology for Every Kid!

# Technology Program & Camp Guides for Army Middle School & Teen Programs



Supporting the Army Family Covenant



SOLDIERS • FAMILIES • ARMY CIVILIANS

ARMY STRONG.



### Table of Contents

<b>TEK</b>	<b>Renewable Energy</b>	<b>Guide 1</b>
------------	-------------------------	----------------

<b>TEK</b>	<b>Robotics</b>	<b>Guide 2</b>
------------	-----------------	----------------

<b>TEK</b>	<b>Space &amp; Astronomy</b>	<b>Guide 3</b>
------------	------------------------------	----------------

<b>TEK</b>	<b>Animation</b>	<b>Guide 4</b>
------------	------------------	----------------

<b>TEK</b>	<b>Re-Using Technology</b>	<b>Guide 5</b>
------------	----------------------------	----------------





# Acknowledgements

## Content Development:

### Renewable Energy -

**Steve Truby**, Region Technology Specialist, 4-H/Army Youth Development Project (Iowa State University) – Child, Youth & School Services, Installation Management Command West, Department of the Army

### Robotics -

**Ron Duer**, Region Technology Specialist, 4-H/Army Youth Development Project (Auburn University) – Child, Youth & School Services, Installation Management Command Korea, Department of the Army

### Space & Astronomy -

**Cindy Ray**, Region Technology Specialist, 4-H/Army Youth Development Project (Virginia Polytechnic Institute and State University) – Child, Youth & School Services, Installation Management Command Northeast, Department of the Army

### Animation -

**Deb Uhler**, Region Technology Specialist, 4-H/Army Youth Development Project (U.S. Army) – Child, Youth & School Services, Installation Management Command Southeast, Department of the Army

### Recycling Using Technology -

**Bob Greenberg** Region Technology Specialist, 4-H/Army Youth Development Project (Virginia Polytechnic Institute and State University) – Child, Youth & School Services, Installation Management Command Pacific, Department of the Army

## Content and Editorial Review:

**Mark Otto**, Technology Coordinator, 4-H/Army Youth Development Project (Auburn University) – Child, Youth & School Services, Family & MWR Command, Department of the Army

## Additional Content:

**Mary Jo Williams**, Character Education Specialist, 4-H/Army Youth Development Project (University of Missouri)



The *Army CYS Tech Program & Camp Guide* has been developed in support of Army Child, Youth & School Services School-Age Services and Middle School/Teen Programs. The material is based upon work supported by the 4-H/Army Youth Development Project, a partnership of the U.S. Army Child, Youth & School Services and National 4-H Headquarters, Cooperative State Research Education and Extension Service, U.S. Department of Agriculture.

Copyright 2008 USAFMWRC. All rights reserved.  
Photocopying or reproduction strictly prohibited except within  
the Department of Defense and National 4-H.





## How to use this Guide

The *Army CYS Tech Program and Camp* materials were developed in support of increasing youth participation in Army Child, Youth & School Services (CYS) Middle School and Teen programs.

Each Guide has at least six CORE activity plans developed around a specific topic or theme—to create a Technology Program. These six activity plans can be used either during the school year or incorporated into a longer camp program. Additional activity plans are included in each Guide to support a 15 hour camp program.

Youth Technology Lab (YTL) Program Leads and CYS Functional Technology Specialists should customize the activity and program plans to the needs of their particular location. Facilitators can and should be creative when developing other technology programs and may use one or more activity plan in other programs as necessary.

In addition, there is an Instructional Aid component to each Guide. These Aids may take the form of a PowerPoint presentation, video, pod cast or other material, but their use is the same no matter the form. They are to be used by the YTL Program Lead to facilitate the activities and program.

Each activity plan follows the 4-H Experiential Learning Model which is explained on page 7 of the Overview to the *Army CYS Tech Program and Camp* materials.

# Ages and Stages of Youth Development

It is important, when working with young people, to provide consistent and comprehensive opportunities for youth to develop their physical, social, emotional and cognitive abilities. It is key to provide age-appropriate experiences that promote positive youth development outcomes.

As a Facilitator please remember that children and youth develop at different rates in these four areas, but eventually progress through all of them into adulthood. Below are general characteristics for youth of various ages. It is okay if a child does not neatly fit into the categories below, as all individuals are different.

## Characteristics of 10 to 11 year olds

### Physical

- Spirited, with boundless energy.
- Girls will be maturing faster than boys; some may be entering puberty.
- Large and small muscle development, strength, balance, and coordination are increasing.

### Social

- Enjoy group activities and cooperation. Feel loyal to group or club.
- Prefer to be with members of the same sex.
- Admire and imitate older boys and girls.
- Need guidance from adults to stay on task and to perform at their best.

### Intellectual

- Interests often change rapidly and do best when work presented in small pieces.
- Vary greatly in academic abilities, interests, and reasoning skills.
- Easily motivated and eager to try new things.

### Emotional

- Comparisons with other youth are difficult and erode self-confidence.
- Prefer recognition and praise for doing good work.
- Have intense sexual feelings and a keen interest in their own bodies.
- Interested in sports and active games.

# Ages and Stages of Youth Development

## Characteristics of 12 to 14 Year Olds

### Physical

- Exhibit a wide range of sexual maturity and growth patterns between genders and within gender groups
- Exhibit rapid changes in physical appearance
- Growth of hands, feet, nose, and ears may be faster than arms, legs, and face, causing concern for appearance and clumsiness

### Social

- Are interested in activities involving the opposite sex; are learning to live with the opposite sex.
- Look more to peers than parents; seek peer recognition.
- Seek acceptance and trust.
- Tend to regard sex in a depersonalized way.
- Search for adult role models; may belong to fan clubs.
- Tend to reject ready-made solutions from adults in favor of their own.
- Question authority and family values.

### Emotional

- Compare themselves to others
- Are concerned about physical development and emerging sexuality
- See themselves as always on center stage
- Are working on forming a sense of continuity between inner and outer self.
- Body changes can set up situations of great embarrassment
- Are concerned about social graces, grooming, and being liked by friends.
- Abandon view of parents as all powerful
- Strive for independence, yet want and need parents' help
- Need information for making decisions
- Seek privacy from parents/adults
- Want to be part of something important

### Intellectual

- Find justice and equality to be important issues.
- Think abstractly and hypothetically
- Are developing skills in using logic; can understand cause and effect.
- Can solve problems that have more than one variable.

# Ages and Stages of Youth Development

## Characteristics of 15 to 18 Year Olds

### Physical

- Are concerned about body image
- Exhibit smaller range in size and maturity among peers
- Tend to have realistic view of limits to which body can be tested

### Social

- Tend to romanticize sexuality, but are moving toward a more realistic understanding
- Search for intimacy
- Test sexual attractiveness
- Make commitments
- Can commit to follow through with service
- See adults as fallible
- Desire respect
- Are apt to reject goals set by others
- Renegotiate relationships
- Want adult leadership roles

### Emotional

- Desire respect
- Are beginning to accept and enjoy their own uniqueness, but still seek status and approval of peer group
- Look for confidence of others in their decisions
- Develop their own set of values and beliefs
- Take on multiple roles
- Are gaining autonomy
- Are introspective
- Can see self from viewpoint of others
- Take fewer risks
- Can initiate and carry out their own tasks without supervision of others
- Search for career possibilities
- Desire a role in determining what happens in their world

### Intellectual

- Are mastering abstract thinking; can imagine impact of present behavior on the future
- Enjoy demonstrating acquired knowledge
- Can consider many perspectives on a given issue
- Develop theories to explain how things happen
- Create new possibilities from information
- Lose patience with meaningless activity

# Ages and Stages of Youth Development

## Life Skills

Life Skills are competencies that help people function well in their environments. One of the goals of good youth programming is to help youth develop life skills they can use in their everyday lives that will help them successfully transition into adulthood. Some examples of typical life skills learned through good youth programming include:

- Decision making
- Wise use of resources
- Communication
- Accepting differences
- Leadership
- Developing useful/marketable skills
- Making healthy lifestyle choices
- Self responsibility

These are just a few examples of life skills learned by participation in good youth programs. There are many other important skills that youth develop. These skills cannot be learned in a single experience. Mastery only comes after trying, making mistakes and trying again. Life skills are learned in sequential steps and are related to the age and development of the learner. Good youth programming teaches life skills through hands-on activities using the Experiential Learning Model. The sequential steps of the Experiential Learning Model help youth identify what they have learned and apply it to other situations.

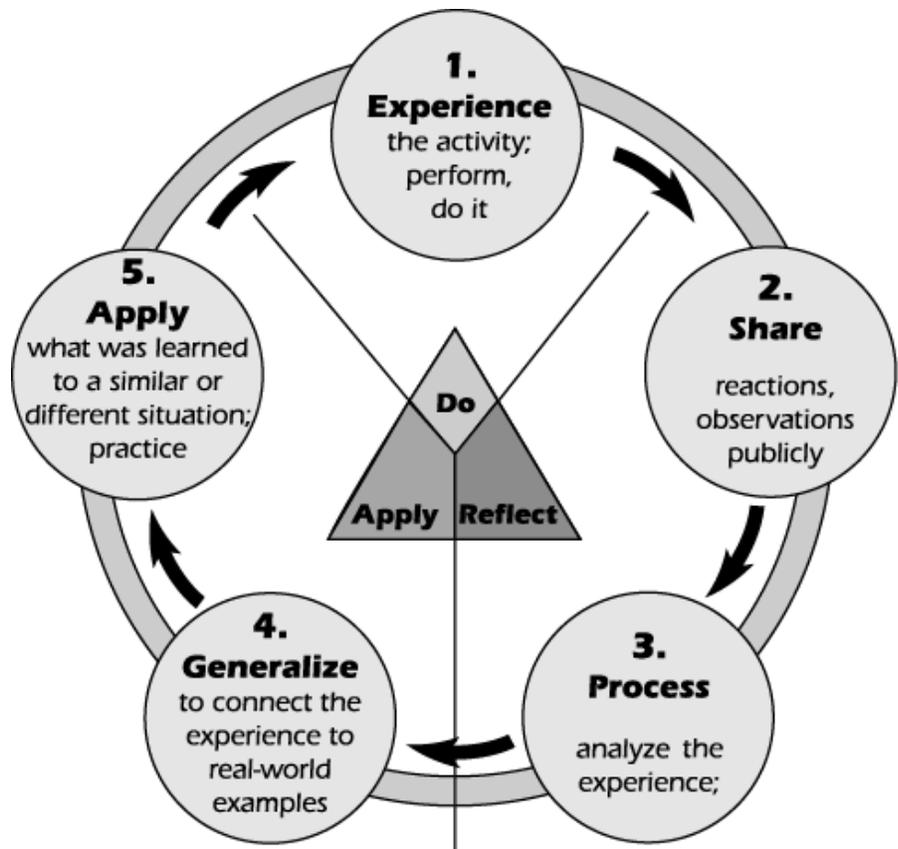
# Experiential Learning Model

The instructional format in the Army CYS Tech Program/Camp Guide is based on the Experiential Learning Model used by 4-H. This model involves a five-part process that incorporates doing something, reflecting upon it and applying what was learned.

As you can see, the model begins with a planned experience that is designed to provide an opportunity to learn a specific skill. It will probably be something new for the learner and should push individuals beyond previous experiences.

The sharing process begins with asking questions designed to get individuals to share reactions and observations and to discuss feelings generated by the experience. We ask these types of questions to help participants reflect on what they have done. These are generally questions associated with senses (seeing, feeling, hearing, tasting, etc.) and levels of difficulty.

The next step in the model is to identify the process or how the experience was actually carried out. How were specific problems or issues addressed? In this step, you encourage the group to look for recurring themes. Questions that encourage discussion about process usually involve how participants actually did the activity and if there were any problems that arose. If so, how were these problems dealt with?



# Experiential Learning Model

Step four is when we can begin to generalize from the experience. This is when the learner begins to apply what was learned to what he/she already knew. This step helps participants determine how the experience was important for them. Listing key terms that capture the learning can be a helpful exercise in this step. Questions that encourage discussion about generalizing include: What was learned from the experience? How does this new information relate to other things participants have learned?

In the last step, the Experiential Learning Model addresses the “now what” application of the experience and explores how the information learned can be applied to other situations. Questions to use that encourage application include: How can learners use what they learned? How does what they learned apply to other parts of their lives?

Debriefing is what moves an activity to a learning experience. The primary purpose of processing the experience is to allow participants the opportunity to integrate their learning and come to closure with the activity. As we mentioned earlier, 4-H uses the Experiential Learning Model to teach life skills. Remember to plan activities that use this approach and start with targeted goals. These goals are the life skills that you wish to teach.

The *4-H Experiential Model* is an effective way to teach youth by processing the learning that occurs. No activity should end without the youth discussing what they learned, how it is relevant to their lives, and how it might apply to some future situation they are likely to find themselves in.

Each activity in the Army CYS Tech Program/Camp Guide is formatted to follow the do, reflect, and apply process of the Experiential Learning Model.

For more information on the experiential learning model, please refer to the 4-H 101 curriculum, found on the 4-H Military Partnership website, or visit <http://www.experientiallearning.ucdavis.edu/default.shtml>.

