



# Ohio 4-H Cloverbud Connections

For 4-H Cloverbud Volunteers working with grades K—2

## Teaching Science to Cloverbuds

In a first grade classroom, a student exclaimed, “Wow that’s magic!” I stated, “No, that’s Science”. We were exploring “Making Air Work” from the *Science and Technology* segment of the Ohio Cloverbud Program Manual – Series I.

Sometimes science is thought of as a “boring” or “hard” subject, but it is actually about discovery. Young children are natural scientists who are eager to ask questions and experiment with new ideas. The 4-H Cloverbud program appeals to this natural curiosity and can play an important role in increasing children’s exposure to and interest in science (<http://www.joe.org/joe/2004december/a5.php>). By offering a wide variety of “hands-on” activities and experiences, the program provides opportunities for exploration and active learning while encouraging children to investigate and think about the world around them.

As a 4-H Cloverbud volunteer, you have an excellent opportunity to help children gain a greater understanding of science concepts by utilizing the 4-H Cloverbud curricula and engaging youth in the “learning-by-doing” approach through the five steps of the experiential learning model (4-H 711 AG, 4-H Cloverbud Volunteer Guidebook).

- Experience – engage youth in an activity
- Share – the results of the experience and their reactions
- Process – by discussing, looking at the experience, reflecting
- Generalize – by connecting the experience to real-world examples
- Apply – what was learned to a similar or different situation

At the center of this learning process is the 4-H volunteer who helps the children focus on the tasks at hand, provides support and feedback, and debriefs the children on what was done well and where to go next. In this way, you can nurture and cultivate their interests in a topic while creating a positive learning environment that is caring, supportive, and fun (4-H 501 GPM, Teacher Guide Rockets Away).

For exciting, “user-friendly” learning resources to help youth in grades K-2 begin developing knowledge and understanding of scientific ideas, try activities found in the: Science and Technology, Environmental/Earth Science, and Plants and Animals sections of the Cloverbud Curricula. The “Science of Sound” Cloverbud Educational Activity Kit also features additional materials and may be checked out at your local OSU Extension office.



*Demetria Woods, Extension Educator,  
4-H Youth Development,  
OSU Extension, Miami County, Ohio,  
Top of Ohio EERA.*

Click it, Print it, Do it!





www.cloverbudconnections.osu.edu

Are you looking for an activity to do with your Cloverbuds at your next meeting to promote Bioenergy? Check out the resource provided in the Click it, Print it, Do it activity. Instructions are included for a story time activity on how different things we grow can be used to make energy.

**EMPOWERMENT THROUGH EDUCATION**

## Learning with Robots

My seven year old great-nephew recently wrote out a detailed birthday wish list. Among his requested, “video games, Hot Wels wall truck, UFO toy” and “TV in my room” was “robot.” Now, Sully and I are more than a few decades apart in age, but our childhood view of a robot is remarkably similar. I grew up with “The Jetsons” and what kid would not want a Rosie to do all her chores? Sully’s idealized robot is also a workhorse, not only capable of housework, but homework and even keeping a pesky little brother at bay!

On one hand, introducing children to robotics seems easy enough. The current generation of 6-9 year olds have grown up with Gameboys and LeapPads, not to mention their parent’s smart phones and iPads. Certainly the mechanics of robotics is just the next step in their technologic growth, but before they dive headlong into playing with the latest e-robot, consider how Cloverbuds can build their skills though robotic discovery.

Play is the work of children. Preschool teachers and early grade educators will tell you that children learn much through play. In 4-H of course, we prize “learning by doing.” The constructionist theory of education tips this idea on its side and favors “learning by making.” Put this all together and in play, children are constantly making, creating and ultimately, learning. So what does all this have to do with robotics?

We can give children a robot to play with and like any interactive toy, they will learn how to manipulate it and eventually learn its capabilities. But by guiding that discovery and making it a more gradual process you can make the experience much more meaningful and significant. Here is what some educational researchers suggest when it comes to introducing robotics to young children:

- ▲ Learn by designing meaningful projects to share in the community
- ▲ Use concrete objects to build and explore the world
- ▲ Use ideas that are personally significant
- ▲ Use self-reflection as part of the learning process

Source: *Teachers as Designers: Integrating Robotics in Early Childhood Education*, 2002



You can search the Internet to find many kid-friendly, easy-to-use robots and robotics kits for children, and by guiding the interaction and using these ideas, you can make a child’s robotic discovery an exciting and meaningful learning experience.

The Ohio 4-H Cloverbot Challenge provides a great opportunity to begin exploring technology with young children. The program uses the Junior FIRST LEGO League (JrFLL) to interest children in learning about science and technology. Older youth in the FIRST program use robotics technology to complete various challenges through cooperation and competition. The JrFLL program leads up to that level by having children build a LEGO model with a moving, mechanical part based upon an overall theme.

Teams of two-six children create their own project based upon an overall theme. They build a working model to demonstrate their project and a poster to help explain the process. The program culminates in the challenge event, where each group explains their project to a team of reviewers and all participants are recognized for their achievements.



*Sally McClaskey, Program Coordinator,  
State 4-H Office, Franklin County and  
OSU Extension, Licking County,  
Heart of Ohio EERA.*



## It's Cold Outside! Preparing Children for Winter

At this time of year, many children enjoy getting out winter clothes, trying on new boots, and adjusting to new schedules and activities. This is an excellent time to talk about how animals get ready for the winter in similar ways. Guiding children toward making healthy choices for cold weather can start with observations about the adaptations that animals make to help them weather the cold.

- ✦ For example, horses grow longer hair in the winter. Adult leaders might discuss that this long hair helps the horse stay warm. Since people's bodies don't grow long hair like horses, people have to protect themselves from the cold by adding extra layers of warm clothes. Help children learn about fabrics, clothing, and footwear to keep warm when temperatures fall.
- ✦ Hedgehogs and bears hibernate all winter long. Children might list some activities that can be done indoors during the winter, since time spent outdoors is more limited.
- ✦ Squirrels hide stores of food in their nests for the winter. This is a good time to talk about ways that people preserve food to last through the cold weather season by canning fruits and vegetables, making jams and jellies, pickling, freezing, and dehydrating. Also discuss cold-weather vegetables such as cabbage, kale, chard, and turnips.

Encourage children to think of other ways that animals get ready for winter and ways that their families prepare for the cold. Our goal is to keep the children thinking of healthy habits during the change in the season!

*Lauren Bates and Kristi Lekies,  
School of Environment and Natural Resources,  
The Ohio State University, Columbus, Ohio.*

## Cloverbuds to Dairy Foods . . . Making the Connection

Imagine a world without milk. You get up for breakfast and pour yourself a bowl of cereal. Try eating it without milk. Some make toast. How does it taste without butter? Without milk and food made from milk, breakfast can be ho-hum. The rest of your day would be pretty tasteless without milk, too. Forget about eggnog, strawberry yogurt, ice-cream cones and milk shakes, and say good-bye to puddings and pancakes. They are all made with milk.

Milk is special. It is the first food you eat. It is so good for you that you can live on nothing but milk for at least the first six months of your life. Some facts to consider about milk include the following:

- ▶ The first cow in America arrived in Jamestown colony in 1611.
- ▶ Around 9.2 million cows are being milked on 110,000 farms in the United States. More than 99% of all dairy farms are family owned and operated.
- ▶ Before milking machines were invented in 1894, farmers could only milk about 6 cows per hour. Today, farmers use machines to milk more than 100 cows per hour.
- ▶ Dairy cows provide 90% of the world's milk supply. The best cows give over 30 gallons of milk each day. That is 400 glasses of milk! U.S. cows give an average of 2,000 gallons of milk per year. That is over 30,000 glasses of milk!

For more ideas and activities to share with your Cloverbuds about milk and dairy foods, refer to 4-H project book #490, "Science Fun with Dairy Foods." <http://estore.osu-extension.org/productdetails.cfm?PC=2740>



*Bob Horton, PhD, OSU Extension Specialist,  
4-H Youth Development,  
The Ohio State University, Columbus, Ohio.*



## Campus Connections

Hello Ohio 4-H Cloverbud volunteers! It feels good to make another 4-H Cloverbud Connection with you!

One of our five life skills targeted for children in the 4-H Cloverbud program is physical mastery. What does that mean? Well, it includes the development of fine (drawing, cutting, pasting) and gross (running, jumping, walking) motor skills. It also simply means being physically active. Yes the weather outside is frightful and oh so cold, but we still can enhance physical mastery skills in Cloverbud children.



Fine motor skills can be stimulated with indoor activities usually involving hand movements. For large motor skills, if the weather is not too cold, get the coats and gloves on and go for a nature walk, build a snowman, or just run around. When the body gets moving, it warms up and before long it is not so cold outside. Oh the weather outside is frightful, and Cloverbuds are so delightful, and since we want to run and go, let it snow, let it snow, let it snow.



Thanks for your commitment to the Cloverbud program as we enhance the healthy development of children throughout the state of Ohio!

*Scott D. Scheer, Ph.D.*

*State Extension Specialist, Preadolescent Education,  
4-H Youth Development, The Ohio State University.*



## Old Fashioned Peanut Butter

Peanuts are full of protein and are made into many delicious foods. George Washington Carver, a famous scientist, found 300 different ways to use peanuts. Some of the things he made from peanuts include ink, lotions, dyes and coffee.

### **Ingredients:** Be cautious of peanut allergies

- 1 cup roasted peanuts
- 1 tablespoon oil
- 1/4 teaspoon salt (omit if salted peanuts are used)

### **Directions:**

1. Place ingredients in food processor with a metal blade. A blender can also be used.
2. BLEND or PROCESS for 3 to 5 minutes. (The ground peanuts will form a ball which will slowly disappear.)
3. Stop machine. Scrape sides of container with rubber spatula.
4. Start the machine. Process it until it looks like paste or is easy to spread.

To serve, spread the peanut butter on crackers, bread, celery, apple slices, etc. Store in a tightly-closed jar in the refrigerator. Oil may rise to the top upon standing. Just stir before serving.

Source: <http://www.aqclassroom.org/ny/resources/pdf/activities/2/peanuts.pdf>

(Permission to use granted by – New York Agriculture in the Classroom)

*Kristen Corry, Extension Educator,  
Family & Consumer Sciences,  
OSU Extension, Monroe /Noble Counties,  
Buckeye Hills EERA.*



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**Editors:** Bruce P. Zimmer, Extension Educator, 4-H Youth Development, Monroe County, 101 North Main Street, Room 17, Woodsfield, Ohio 43793, Phone - (740) 472-0810, E-mail – [zimmer.2@osu.edu](mailto:zimmer.2@osu.edu); Joyce A. Shriner, Extension Educator, 4-H Youth Development, Hocking County, 150 North Homer Avenue, Logan, Ohio, 43138-1730, Phone – (740)385-3222, E-mail – [shriner.3@osu.edu](mailto:shriner.3@osu.edu).

**Design & Production:** Jennie Shaw, Extension Support Staff , OSU Extension, Monroe County.

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Keith L. Smith, Associate Vice President for Agricultural Administration; Associate Dean, College of Food, Agricultural, and Environmental Sciences; Director, Ohio State University Extension; and Gist Chair in Extension Education and Leadership.

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