

Lesson Plans for an Agricultural Safety Week in the Ag Education Classroom

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**UNIVERSITY OF
FLORIDA**

IFAS EXTENSION



About Florida AgSafe

Florida AgSafe is a program of the Florida Cooperative Extension Service that provides information and educational materials for agricultural safety and for disaster preparedness and recovery. Materials produced by Florida AgSafe are available on the Web at <www.flagsafe.ufl.edu> and at the Florida Cooperative Extension publication Web site <edis.ifas.ufl.edu>.

Our Goals

- To inform people about ways to be safe and secure, and thereby reduce the number of deaths, injuries and occupational diseases, particularly for agricultural workers and their families.
- To build a safety infrastructure for Florida through five activities: training of workers, training of students, publications, networks, and linkages.
- To encourage adoption of safe practices among employees and clientele. Every employee or client should be exposed to a safety tip or safety practice on a regular basis.
- To prepare the people of Florida to face disaster of any kind, to mitigate losses, both in life and property, and to promote rapid and effective recovery.

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Purpose

The purpose of this week of safety-related activities is to engage agricultural students in a week-long discussion of agricultural safety. The main focal points will be:

- Identifying hazards, both at school and at home
- Understanding the impact of agriculturally-related injuries, illnesses, and deaths

Day 1 — Identifying Hazards – at School and at Home

What is a hazard?

1. The American Society of Safety Engineers defines a hazard as:

“A condition or changing set of circumstances that presents a potential for injury, illness, or property damage. The potential or inherent characteristics of an activity, condition, or circumstance which can produce adverse and harmful consequences.”

2. A chance of being injured or harmed. For example, space travel is full of hazards.
3. A possible source of danger such as a fire hazard.

Why is it important that we are able to identify hazards when we are working around or visiting agricultural sites?

Take the next 10 minutes and look over your program’s land laboratory or other area to find hazards that might be present. Return to the classroom at the conclusion of ten minutes ready to share the observations with the class.

Ask the class what were some of the hazards they located – record these on the board.

Invite the class to respond to this quote:

“Safety is about being observant of the risks and taking action to avoid them. This is how we save lives that can be lost in just a fraction of a second.”

It's a two-part formula: 1) **be observant** of the risks, and 2) **take action** to avoid them. Safety is an active, positive activity when it is considered up front.

The discussion part, after returning to the classroom, should take 10-15 minutes. You will need to keep it moving. You can flex a little on the time, but that means borrowing time from one of the other parts of the lesson. When making the list of hazards, it isn't important to include every possible hazard. The idea is to get people thinking about the subject and to get them mentally warmed up. It is also about getting them to think in terms of looking at things they see every day in a new perspective. That is, to look at everyday things from the point of view of how they can cause harm. With a very active group you may have to interrupt their list making, but they are going to have an opportunity to take these ideas a step further in the next lesson.

Resource

- IMBY Farm and Home Hazard Hunt found at: <www.flagsafe.ufl.edu> (look under "Rhythm of the Seasons – IMBY").

There is also a PowerPoint presentation that could be used.

Homework Assignment

Assign the students a homework activity for identifying at least 15 hazards in or around their home. Bring a list of the hazards to class. Students may also provide what they think a possible solution or hazard correction strategy would be.

Examples of categories for the Hazard Hunt may include (but are not limited to):

- Electrical
- Fire
- Machinery
- Tractors
- Buildings and Structures
- Animal Handling Facilities
- Animals and Livestock
- Preparedness
- Housekeeping

Day 2 — Hazard Identification and Correction

On the second day of the Safety Week, you will have the opportunity to dive a little deeper into the Hazard Hunt as you identify two key elements of reducing the number and severity of hazards around the home. After this assignment is completed, it should be pointed out that students can follow these same procedures when they are working in the Land Laboratory or when they are visiting or working at an agricultural operation.

1. Have students take out the lists they brought from doing the homework assignment.
2. Have students list three things:
 - a. The hazard
 - b. Why it is a hazard
 - c. What needs to be done to eliminate or lower the risk caused by the hazard

Note to the students that when actually working on a hazard identification and correction strategy for the home or workplace, the checklist should also include a target date (so that it will get done) and a designated person in charge of seeing that the corrective measure is carried out.

Day 3 — Presentation of *Rhythm of the Seasons* Video

Note: The video can be viewed on the National Ag Safety Database (NASD) in its entirety at:

<<http://www.cdc.gov/nasd/videos/v001401-v001500/v001432.html>>. Video length: 25 minutes.

Audiences generally find the *Rhythm of the Seasons* video very moving, but not excessively sad or tragic (it is not graphic re: showing actual injuries). However, it would be wise to have some tissues available. Although the majority of the video concerns the first year of Marilyn Adam's recovery from her son Keith's death in a gravity flow grain wagon, the emphasis is on hope.

The video is not suitable for children younger than middle school age as it concerns the thoughts and feelings of an adult.

It is recommended that the entire video be shown, including the epilogue and closing credits. The epilogue reinforces the messages of the video and

the extra time taken during the credits gives viewers time to absorb what they have just seen. This transitional time is important, especially for those who respond to the video more emotionally (or if someone has had a tragedy in their own immediate circle of family or friends).

Discussion of *Rhythm of the Seasons* Video

Time: 10 – 15 minutes

1. Can it be assumed that people are aware of the many hazards surrounding them? Explain your answer.
2. Explain the importance of education in injury prevention.
3. What unique characteristics of a rural environment contributed to this situation?
4. What factors influenced the situation most?
5. In what ways were others beside the parents and siblings affected by the situation?
6. What can we learn about the role of supervision in farm work and play?
7. At least 100 young people under the age of 19 die each year on U.S. farms and thousands are seriously injured. As a community, what can we do to prevent tragedies like this one?
8. Were you aware of this agricultural hazard? If yes, have you ever been in a similar situation? If no, why didn't you know about the hazard?

Day 4 — Interactive Narrative Story – Vicki's Visit

For the original version see: <<http://www.cdc.gov/nasd/docs/d000901-d001000/d000997/9.html>>.

Content

This exercise is a story about a six-year-old girl who visits the farm of her aunt and uncle. The story explores some of the safety hazards that may result in injuries to children on a farm. The information is taken from real-life incidents.

Objectives

This exercise can help farm family members and other people become more aware of:

- Why young children should be supervised at all times when they are in or near work areas on farms
- The hazards for children playing or working on farms
- The severe consequences that can result when a child is injured on a farm

Intended Audience

- Adults and children who live on farms, who have child visitors on their farms, and adults and children who don't live on, but who visit, farms
- 4-H youth, FFA, and vocational agriculture students
- Farm community groups who provide educational, financial, business, social, spiritual, and health services and advice to farmers and their family members

How to Use These Materials

- Review the exercise problem booklet, answer the questions, and look at the answer key.
- Use the material in any of these ways:
 - As an activity for a meeting or class. The "Vicki's Visit" exercise is a story with a plot, characters, and predicaments. Once they begin the story, people want to complete it. Therefore:
 1. Administer the exercise in one 20-minute session. Allow another 15 to 20 minutes for discussion. Ask people to work together in groups of 3 to 5. Give each person his or her own problem booklet and answer sheet.
 2. As each small group finishes, give them an answer key. Make sure everyone has a chance to compare his or her answers to those in the answer key. The key tells more about the story and the situation and also contains other factual information.
 3. Make sure everyone has a chance to discuss the Vicki's Visit story and the newspaper articles included at the end of the answer key.

- As an individual activity given to a person to complete when convenient.
- For school or community projects about tractor and farm safety. (Ask students or adults to do the exercise and then discuss it with other people, or to make a short presentation or display about children and farm safety. The drawing and the articles included in the booklet can be used for a display or presentation.)

Materials Needed

- "Vicki's Visit" problem booklet (Duplicate one copy for each participant.)
- "Vicki's Visit" answer sheet (Duplicate one copy for each participant.)
- Answer key for "Vicki's Visit" exercise (Duplicate one copy for each participant or for each small group.)

Vicki's Visit

An interactive story about a six-year-old girl who visits the farm of her aunt and uncle.

by Carol J. Lehtola, Laura A. Powell, and Henry P. Cole

Instructions

Get together with two or three of your friends. Then read the story and answer the questions that appear in the story.

After you have selected your answers to a question, discuss your choices with your friends, but please don't change your answers or mark more answers. Continue reading the story while answering and discussing the questions.

When you finish the story, ask the instructor for a copy of the answer key. Compare your answers to those in the key, but don't change your answers. Discuss the story and answers with your friends and the instructor.

The Characters

Vicki Anderson — Six-year-old Vicki lives with her family in the suburbs of a large metropolitan area. She has just completed kindergarten at the local elementary school. Her parents have arranged for Vicki to spend two weeks in July with her aunt, uncle and two cousins on their farm. Vicki has visited the farm with her parents before and is excited about returning.

Walt and Mary Jones — The Jones family owns and operates a 400-acre beef and grain farm. Both Walt and Mary work full-time on the farm. They have two children. Their son Kevin is ten, and their daughter Lindsey is eight. Kevin and Lindsey are excited about having their cousin come for a visit.

The Visit

On the first day of Vicki's visit, Walt and Mary have some work to do in a field. They tell the children they will be gone for only an hour or so, and tell them to play close to the house. The cousins promise to be careful and to watch out for each other.

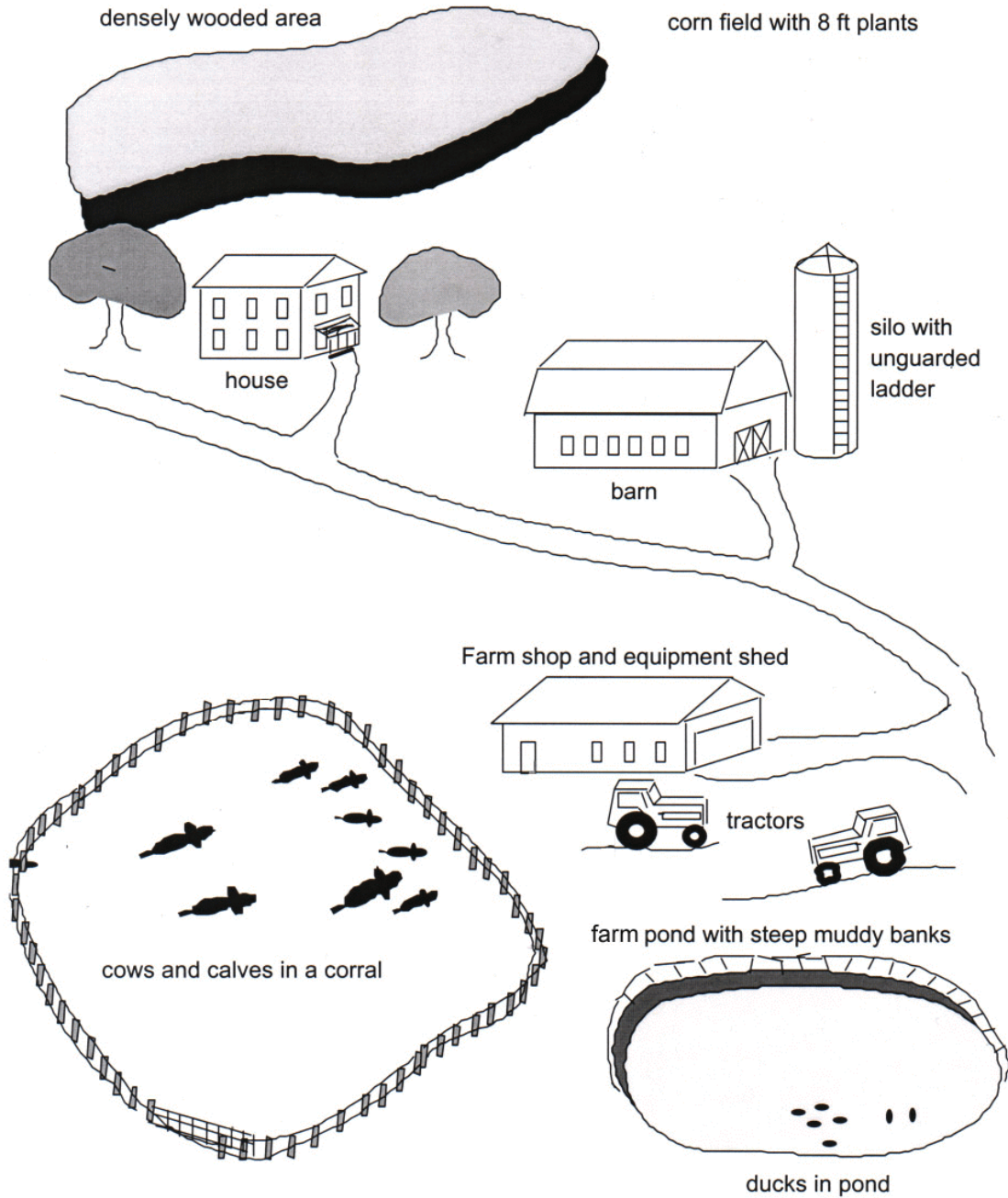
Vicki is so excited by all the unfamiliar things around her that she wanders away from her cousins. Kevin and Lindsey are busy playing and don't notice Vicki is missing.

Question Set A

Look at Figure 1 on the next page. Which of the following statements about Vicki's first day of her farm visit are true? (Mark each item T or F on the answer sheet.)

1. T F Kevin and Lindsey probably don't realize how many things can be dangerous for Vicki.
2. T F Vicki may think of the farmstead as an awesome playground.
3. T F Walt and Mary think that Kevin and Lindsey are able to take care of Vicki.
4. T F Walt and Mary don't care what happens to Vicki.
5. T F Vicki probably thinks the tractors and other farm machinery are great places to play.

Figure 1: Diagram of the Jones' farmstead



Kevin and Lindsey begin to look for Vicki the moment they realize she is not with them. They run around calling her name. Vicki thinks they are playing a game and thinks it would be fun to hide from them. She climbs up in a tractor cab to hide.

Kevin climbs up the unguarded ladder on the silo because he thinks he will be able to see Vicki from high up on the ladder.

Lindsey runs to the pond because she thinks Vicki may have gone there to watch the ducks.

Question Set B

6. T F Look at Figure 1 again. There are many things that could hurt Vicki, Kevin, or Lindsey.
7. T F Vicki could fall off the tractor.
8. T F Even though the tractor is not running, Vicki could move the controls on the tractor and it could roll forward or backward and run over Lindsey.
9. T F Vicki could wander into the farm shop and be injured.
10. T F Vicki could go into the corral to pet a calf and be injured by a cow.
11. T F Kevin could slip and fall from the ladder on the silo.
12. T F Vicki could wander into the woods or the cornfield and get lost.
13. T F Vicki or Lindsey could drown in the farm pond.

Vicki sees a little calico kitten and jumps down from the tractor to catch it. The kitten runs into the shop and hides behind a spare rear tractor wheel that is leaning against the wall. Vicki squirms behind the tractor wheel to try to reach the kitten. Crash! Vicki screams. From the pond, Lindsey hears the crash and Vicki's screaming and runs to see what happened. Kevin hears the commotion and scrambles down the ladder. When her cousins reach Vicki she is crying, but unharmed aside from a few scrapes. The huge 1,100-lb. tractor tire and wheel fell over when Vicki tried to squeeze in

behind it. Luckily, it fell away from Vicki and the kitten.

Question Set C

Think about this story of a child visiting her cousins on the farm. What things could Walt and Mary have done to prevent the kids from getting into trouble and being hurt?

14. T F Provided adult supervision.
15. T F Prohibited other people's kids from coming to the farm.
16. T F Provided a safe, fenced-in play area on the farm.
17. T F Walked Vicki and their own two kids around the farmstead pointing out areas where they should be careful and areas where the children should not go.
18. T F Provided a mechanism to prevent access to the silo ladder.
19. T F Anchored the tractor tire and wheel and other large objects to the shop wall so they couldn't fall over.

A Farm Mother's Story

Think about what might have happened if Vicki had been seriously injured or killed. Then read the following statements by a woman who lost her 11-year-old son Keith after he fell into a gravity-flow grain wagon and was suffocated. Keith was unloading shelled corn during harvest.

Quotes from Marilyn Adams' book

I experienced a profound loss, one that no parent can bear to imagine. I had to bury a child. Like others who have lost someone—or something—I could not conceive of ever again living without the pain and the sorrow. I could not imagine being fulfilled, laughing or loving. I could not believe that healing would ever come, or that hope would ever again be mine.

"Only 10 percent of the marriages survive the loss of a child," the counselor told me. "Never lose sight of how important your family and marriage are. You need to stick together now. You need each other. You, Darrell, both your families. All of you have already lost too much. It takes work to keep everything together because grief and stress can play tricks with your mind."

Reprinted with permission from Marilyn Adams and Mary Kay Stanley, *Rhythm of the Seasons*, Marshalltown, IA: Sta-Kris, Inc., 1997, pp. v and 38. (© 1997 by Marilyn Adams.)

Question D

Think about Marilyn Adams' statements and the story about Vicki. Read the newspaper clippings on the next page. Then discuss these questions.

20. What are the costs and consequences to the farm family and to others when a child is seriously injured or killed on a farm?
21. How risky do you think it is for farm children to have the "run of the farmstead?"
22. How risky do you think it is for non-farm children to visit a farm and wander around alone?

23. What can be done to prevent injuries and fatalities to children, whether residents or visitors, on farms? Who is responsible for doing so? Why?
24. What can be done to discourage the idea that a farm is a picturesque, idealistic setting where children can wander about freely without risk?

[Please read the following newspaper clippings.]

These stories are real cases that occurred in 1999. In each case, a child was playing and climbing on a heavy object that was being stored in or near a building. The child's movement and weight caused the object to fall and in each case the child was crushed, just as Vicki might have been in the exercise you just completed. These cases are reported in the University of Florida, Cooperative Extension Service publication titled "Childproofing Your Home and Farmstead." More information about this issue and related topics may be obtained from Carol J. Lehtola at the EDIS Web site: <<http://edis.ifas.ufl.edu>>.

Additional Newspaper Clippings about Similar Events

Boy Crushed to Death

July 1999, Lake Wales, Florida

A 4-year-old boy was playing with the family dogs on a stack of telephone poles that were being used to build a fence. A telephone pole dislodged from the stack and pinned the child, killing him.

Bale Fork Tips

1999 Midwest USA

A 7-year-old girl died from being pinned beneath a round bale fork in the yard of her family's farm. The hay fork, which is used to move large round hay bales, mounts on a front-end loader. It was detached from the tractor and was sitting in grass next to the driveway with its spikes pointing forward. Apparently the girl was playing on the spikes, and her weight was enough to tip over the 300-pound fork, which was top heavy and unsupported.

Shipping Crate Falls, Kills Boy

1999 Midwest USA

A 6-year-old boy was killed while playing in a building at his home. His father had purchased a piece of equipment that was still in a wooden

shipping crate.

The boy's older brother had backed a pick-up truck into the building, slid the crate off the tailgate of the pick-up, and then leaned the crate on edge against the wall. The 400-pound crate had horizontal wooden slats similar to a pallet, and the boy was apparently climbing on the side of the crate, which caused it to fall on him.

Trailer Pins Girl

1999 Midwest USA

A 4-year-old girl was killed while playing on her family's farm. She was reported as missing around suppertime. After a two-hour search, she was found pinned under a utility trailer. The trailer had been leaning in an upright position against a building with its tongue extending six feet up the wall. The frame had horizontal sections that the child apparently climbed like a ladder. Her weight caused the trailer to fall over on top of her crushing her to death.

Child Injured in Tractor Accident

November 13, 1996, Oklahoma

A five-year-old child is in intensive care this morning after being run over by a tractor driven by her nine-year-old brother late yesterday afternoon. "She just darted out in front of the tractor," said the girl's grandmother. The girl's mother and other adults were in the house cooking dinner when the tractor's front tire rolled over the child's lower torso. The little girl was taken to Children's Hospital in Oklahoma City where she underwent several surgeries for internal injuries. The doctors said the child is recuperating but don't know how much longer she will remain in intensive care, or in the hospital.

Youth Dies in Farm Accident

June 26, 1995, Pennsylvania

A 17-year-old boy fell to his death yesterday morning as he was helping his relatives dismantle a silo at their farm.

According to the police, the youth fell 55 feet after he lost his balance while standing on a ladder in the silo chute. He was pronounced dead at the scene at 8 a.m. by the State Medical Examiner about 45 minutes after he fell.

Two-year-old Dies on Farm

October 19, 1995, Minnesota

A toddler was killed Monday when she was accidentally run over by a haybine operated by her father. The County Corner pronounced the little girl dead at the scene from massive head injuries.

According to the County Sheriff's Department, the girl was sitting on

the lawn watching her dad pull his tractor and haybine into the farmyard. When he backed the tractor up, unknown to her father, the child apparently ran behind the machine and was run over by the haybine.

A Farm Family's Close Call

May 15, 1997, Kentucky

Unnoticed by his parents, a 5-year-old Kentucky child climbed onto a tractor parked in the shade of a tree on a hill above a tobacco patch. His mom and dad and a younger brother and older sister were in the tobacco patch resetting a few plants by hand. The father saw his son on the tractor and yelled to him, "Get off the tractor and get back here." Twenty minutes later, after the boy had returned to the tobacco patch, the father spotted the tractor rolling backward down the hill toward him and his family. The father yelled to alert everyone. Fortunately the tractor turned and ran off to the side of the tobacco field and came to a stop in a gully. Apparently the boy had released the brake and shifted the tractor out of gear.

Boy, 1, Dies in Fall From Tractor

June 19, 1997, Kentucky

Two brothers, one age 5 years and the other age 1 year, climbed on a parked tractor. The engine was not running. One of the boys knocked the tractor out of gear. It rolled down a hill and struck a plow. The 1-year-old was thrown from the tractor, struck his head against the plows, and died. The boys' mother was injured when she tried to stop the run-away tractor.

End of the Exercise

Ask for a copy of the answer key. Read and discuss the answers and other information on the answer key. Compare your answers to the key.

Answer Sheet

As you read the problem booklet, mark your answers in the boxes below. Circle a T or F in front of each answer number.

Question Set A	Question Set B	Question Set C
1. T F	6. T F	14. T F
2. T F	7. T F	15. T F
3. T F	8. T F	16. T F
4. T F	9. T F	17. T F
5. T F	10. T F	18. T F
	11. T F	19. T F
	12. T F	
	13. T F	

Question Set D

20.

21.

22.

23.

24.

Answer Key

Instructions

Compare your answer sheet to the answers and ideas listed in this key.

Question Set A

1. True Kevin and Lindsey may not realize how many things can be dangerous for Vicki or other children who visit their farm, and may not understand all of the dangers to themselves.
2. True The farm has many areas of interest to Vicki. There are many things to look at and play with that she does not have at home.
3. True Parents often overestimate their children's ability to recognize and understand the safety hazards in their home and farm surroundings.
4. False Walt and Mary love and care about Vicki. They left Vicki in the care of their two children because they didn't fully realize the danger in doing so. They had work to do and had no other child-care arrangements.
5. True Children are fascinated with brightly colored tractors and see them as interesting things to climb on and explore. They love to pull levers and knobs and there are many of these on tractors and other farm machinery.

Question Set B

6. True Animals, equipment, electric fences, buildings, machines, and the farm pond all pose hazards.
7. True It is very likely that Vicki could fall. Tractors have large, steep steps for large people. Handholds placed for adults are out of a child's reach. The operator's compartment is high off the ground. A fall can result in a serious injury or death, especially if the child's head strikes metal machinery.
8. True Even if the tractor is not running, Vicki could shift it out of gear or release the brake. Even a slight incline can cause a tractor to roll backward or forward. As they looked for Vicki, Lindsey or Kevin could be run over. Vicki could be run over as she climbs

down from the tractor.

9. True Many things in the shop could harm Vicki. These include electrical wires, chemicals, fuels, large equipment, shop tools, and falling objects or materials.
10. True Young children are often attracted to animals, especially young animals like calves. Cows are very protective of their calves. Cows with young calves will often charge and attempt to butt and trample dogs, cats, or small children who come near their calves. This is true even for cows that are normally gentle when around farm adults.
11. True A fall from an unguarded grain bin or silo ladder is always very dangerous. If he falls from even a few rungs up the ladder Kevin could be seriously hurt. Falls from greater heights almost always result in very serious injuries, permanent disabilities (paralysis or a brain injury), or death.
12. True Young children sometimes wander into woods and cornfields and become lost. In such cases, many children have died from exposure (hypothermia) when the temperature dropped during the night. Wind, rain, and temperatures in the 60°F range can kill a child within a few hours. Ditches, creeks, wells, cliffs, and highways are also hazards in such situations.
13. True Ducks, frogs, and fish in ponds tend to attract young children. Drownings often occur in farm ponds, even among older children and adults who can swim. The ponds are often murky, filled with plant growth, debris, and animal waste. The banks of farm ponds are often steep, slick, and muddy.

Question Set C

14. True Many places on the farmstead require close adult supervision if children are to be safe. See the newspaper clippings on page 8 of the problem booklet for some examples. Do you know of other similar cases?
15. False It is not practical or necessary to prohibit children from being on or visiting a farm. Safe places for children to play can be arranged on a farm. Children can learn much from living on or visiting farms. However, all farms have many dangerous areas where children should not be allowed to go without close adult

supervision. Many farm jobs are also too difficult and too dangerous for children.

16. True A properly placed fenced-in play area can be very safe because it not only keeps the children in, but also keeps farm machinery and animals out. The play area should be easily visible and quickly accessible from the farmhouse. Children who play in the area should be taught rules about staying in the area and asking for adult permission before going elsewhere on the farm.
17. True A walk-through tour of the farm can be very effective in teaching children about hazards and how to avoid them. This does not mean, however, that children are then prepared to play on the farmstead without supervision. Walk-through tours and talks with children about farm safety should be ongoing and frequent as the children grow and learn. If the teaching is done properly, as children mature, they will become more capable of responsible self-supervised farm work and play activities.
18. True A lockout mechanism, a ladder guard, or a removable bottom section of the ladder can prevent children or other persons who have no business climbing up a silo or grain bin from doing so.
19. True Injuries from falling objects and materials are a major hazard of farm work. Large objects that are leaned upright against a wall should always be anchored to the wall to prevent them from falling. A calcium chloride-filled tractor tire and wheel, like the one that fell near Vicki, can weigh from 900 to 1,200 pounds. If the wheel and tire had fallen on Vicki, or anyone else nearby, it could have crushed them to death.

Question Set D

20. The consequences often are severe, as can be seen from Marilyn Adams' statements and from the newspaper clippings.
21. Farms present many risks to children who are unsupervised. Figure 1 depicts some of these risks. What are some other dangers to children who work or play on farms, especially when they are unsupervised?
22. Very risky. What are some examples you have observed or heard about where a non-farm child had a close call or an injury while visiting or working on a farm?

23. Supervision, removing as many hazards as possible, and teaching children to recognize hazards and to stay away from hazardous areas, are all ways to reduce the risks of childhood injuries. The persons responsible for preventing farm injuries to children include the children's parents or caretakers, the persons who operate the farm, and any older children or adults who are present or working on the farm.
24. One way that people can understand the injury risks for children on farms is to learn from others. That is why Marilyn Adams wrote her book. It is the reason the newspaper clippings are included with this lesson. What lessons have you learned from others in your community about how to prevent injuries to children who live on, work on, or visit farms?

Day 5 — Class 'Experts' on Injury Prevention

There are seven topic groups listed below (eight if the second machinery section is divided into two groups). Students can be broken up into small groups for covering individual topic areas. Each group is to be given the information on the following causes of agriculturally related injuries. Each group will then read, study and discuss their prior learning in order to become 'experts' in their area of injury prevention. Each group will then teach the rest of the class how to prevent injuries in that specific topic area.

Students can find information about their topic area on the World Wide Web at the National Ag Safety Database at: <www.cdc.gov/nasd>.

Group 1: Machinery Hazards & Injuries

Pinch Points — When two pieces of machinery move together with at least one piece moving in a circle. Clothing, hands, fingers, or other body parts can be caught in a rotating part and severed. (Note: this can be demonstrated by placing a dowel in a hot dog to simulate a finger – and show what happens when it gets entangled in a bicycle chain).

Wrap Points — Rotating shafts are the most common source of wrap point injuries, although any exposed machine part that rotates can be a wrap point. A cuff, sleeve, pant leg or just a thread can catch on a rotating part and result in serious injury. Entanglement with a wrap point can pull a person into the machine, or clothing may become so tightly wrapped that the person is crushed or suffocated. In other cases, one may be thrown off balance and fall into other machine parts.

Shear and Cutting Points — Shear points are created when the edges of two objects are moved closely enough together to cut a soft material, as in the case of a pair of shears or an auger. Cutting points are created when a single object moves forcefully or rapidly enough to cut, as in the case of a sickle blade. These can cut skin and sever limbs.

Thrown-objects — Machines such as mowers can throw out stones or other debris while in operation. These thrown-objects can injure people in the vicinity. It is important, for example, when mowing the lawn to not have children in the area.

Crush Points — Garage doors, raised equipment that can fall and livestock are just a few examples of things that can lead to crushing types of injuries. These can lead to serious injury or death.

- Preventing Machinery Hazards Tailgate Training:
<<http://www.cdc.gov/nasd/docs/d001701-d001800/d001716/d001716.html>>
- Machine Hazards (with pictures):
<<http://www.cdc.gov/nasd/docs/d001601-d001700/d001604/d001604.html>> and
<<http://www.cdc.gov/nasd/docs/d000801-d000900/d000829/d000829.html>>

Group 2 — Safety Around Machinery & Tractors

- During a visit to a farm, never allow anyone to wander from the tour group or away from you. Don't allow children to play in areas where machinery is in use or being stored.
- Children (whether visitors or residents) should not play with or ride on equipment, even with adult supervision.
- Even if the equipment has an extra seat, it is designed for temporary use by an adult, not as a rider seat for children.
- Riders should not be allowed in the back of pick-up trucks.
- Equipment should be parked and locked with keys removed when not in use.
- Before starting equipment, operators should know where others are

located in the area. Remember children could be easily hidden by large wheels or blind spots. When operating equipment it is difficult to hear or see others in the area.

- Keep hand tools, especially those with sharp or hot parts, out of reach of children or unauthorized persons.
- Keep equipment in good repair and keep the safety features up to date. Tractors should have lights, seat belts (only in ROPS equipped tractors), Roll-over protective structures (ROPS), an SMV sign and a PTO master shield. Equipment shields and guards need to be kept in place and remember to put them back on when having to remove them for repair or maintenance. Read and follow the instructions in the equipment operator's manuals. Conduct routine inspections of equipment so you'll be aware of potential safety hazards that could lead to injury.
- Vehicles such as motorized dirt bikes, mopeds, and all-terrain vehicles (ATV's) are often used as transportation on farms. They can cause death and serious injuries (often head and spinal injuries), mostly among teens who use them recklessly and do not wear helmets. Children under the age of 16 should not operate these vehicles.
- Teach older children (youth) how to turn off machinery. They may save someone's life in an emergency.

Group 3 — Animals

Visiting the animals on a farm is a great opportunity to teach children to be respectful of farm life. Teach children not to run, scream, speak loudly, or otherwise startle an animal. Because a mother protecting her young can become defensive, teach children to not go near baby animals.

Helmets are an important safety feature when riding or working with horses. Another safety concern on a farm is that animals may transmit infections and illnesses, called zoonoses, to humans. To prevent disease transmission, have children (or anyone) wash their hands with warm water and soap after being in contact with animals. Avoid kissing or sharing food with the animals.

Resources

- CDC's Morbidity and Mortality Weekly Report (MMWR) dated March

25, 2005 contains a **Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2005**. This report can be downloaded (PDF format) at:

<<http://www.cdc.gov/mmwr/PDF/rr/rr5404.pdf>>.

- The video *Livestock Safety for Kids* can be viewed in its entirety at: <<http://www.cdc.gov/nasd/videos/v001401-v001500/v001434.html>>.

Note: The video, *Visiting A Farm: Be Safe and Sound Says Safety Hound* will be posted on NASD in the near future (after May 2005). This is a good video for teaching kids not familiar with a farm about visiting a farm (good for Ag in the Classroom programs).

- Interactive Narrative Story *Heather on Horseback* is about a girl who does not use a helmet and is injured in a riding mishap. It is available at: <<http://www.cdc.gov/nasd/docs/d000901-d001000/d000997/9.html>> (scroll down the list of simulations).

Group 4 — Grain Storage and Silos

Grain, which is usually stored in a bin or silo, is often an underestimated danger. People can become trapped and suffocate under the shifting surface of stored grain or in flowing grain that is being removed from a bin or silo. To prevent injuries from grain entrapment, teach children and others to never enter a grain storage facility. Do not allow children to ride in grain wagons. Additionally, teach children if they think that someone is trapped in a bin, silo, or wagon to call an adult or dial 911 or the local emergency number immediately. Do not enter the bin.

Children and teens may be enticed by ladders on silos or haylofts. In general, all ladders, including portable ladders around grain wagons and bins, should be kept out of reach of children (as well as any unauthorized persons). Ladders can be fitted with special barriers made to prevent children and others from climbing on the ladders. Children should also be taught that haylofts are not play areas. A fall from a loft can cause serious and deadly injury.

- Grain Bin Hazards Tailgate Training: <<http://www.cdc.gov/nasd/docs/d001601-d001700/d001694/d001694.html>>

Group 5 — Electricity, Pesticides, and Chemicals

Locks and childproof containers are necessary when storing pesticides and chemicals. Because poisons can be ingested, inhaled, get into the eyes, or be absorbed through the skin, children should never be allowed near these items. Do not keep poisonous materials in unmarked containers – as they may be mistaken for unarmful products.

Electrical boxes should be kept locked and there should be no water sources nearby in order to prevent curious children from being electrocuted.

- Overhead Electrical Hazards:
<<http://www.cdc.gov/nasd/docs/d001701-d001800/d001723/d001723.pdf>>
- Reading Pesticide Labels Tailgate Training:
<<http://www.cdc.gov/nasd/docs/d001701-d001800/d001729/d001729.pdf>>

Group 6 — Water Safety and Manure Storage

When children explore or play near any body of water, there's always the risk of drowning. Ponds, feeding troughs, or other containers of water may pose a hazard to a child. Fencing of ponds, manure pits and lagoons, and troughs may help to prevent drownings.

Manure pits are also a special danger on farms. Many farms that produce dairy, beef, and pork products have complicated systems to handle animal waste. When animal manure decomposes, it gives off gases such as hydrogen sulfide, carbon dioxide, and methane – which can be extremely dangerous to adults as well as children. These gases may be colorless and odorless but extremely toxic.

Resources

- Farm Pond Safety Tailgate Training:
<<http://www.cdc.gov/nasd/docs/d001701-d001800/d001730/d001730.pdf>>
- Manure Storage Poses Invisible Risks:
<<http://www.cdc.gov/nasd/docs/d001001-d001100/d001069/d001069.html>>

Group 7 — Noise

Anyone working or living on a farm is at risk for hearing loss. Noisy machinery, lawn mowers, and power tools can cause tinnitus, or ringing in the ears. Prolonged exposure can lead to permanent hearing loss. The best way to avoid hearing loss is wear hearing protection such as earmuffs and/or earplugs when working around noisy equipment or animals (e.g., hogs at feeding time). The use of listening to headphones or portable stereos should be discouraged while one is working. This could lead to not being able to hear others cries of warning or help.

Resources

- The video *Sound Advice for Farming* can be viewed in its entirety at: <<http://www.cdc.gov/nasd/videos/v000001-v000100/v000001.html>>

Summary and Wrap-up

Summarize the week's activities and reaffirm why it is important to focus on agricultural safety. Remind students that safety is a part of their ongoing activities and should become a 'natural' part of their life. It is not a separate subject to just be considered once a year, but needs to be incorporated into all of their learning. Throughout the remainder of their ag science program, they should be able to begin identifying hazards and safety solutions for the specific topic areas covered. For each topic, have them identify what the safety problems for that area may be.

Students may want to put together an action plan for making safety corrections at their farm or home (see IMBY Action Plan).