



Welcome to Ag@School!

Class sets of this magazine, aimed primarily at 4th grade level, are FREE to subscribing Washington teachers. Instructions for subscribing are on Page 6.

This is the last of three issues for 2015-2016. **Your subscription for next year will NOT be automatically renewed.** We need to hear from you that you would like to continue receiving the subscription. We need to hear from you by mid-September. Thank you in advance for your help. The first issue next fall should arrive at schools around the end of September.

Produced by Washington Ag in the Classroom, Ag@School is designed to help teachers meet student educational goals as well as develop agricultural literacy.

This issue is designed to help students understand:

- the role of agriculture in the conservation of our natural resources, and its importance to the industry
- what the term sustainable agriculture means
- that good farmland is a very limited resource
- why controlling pests is necessary for agriculture, for humans, and for wildlife
- that Earth Day for agriculture is not just once a year, it's every day

Teacher Guide

- Reproducible activities in the teacher guide expand on concepts covered in the magazine: Page 4 includes vocabulary activities, and facts about sheep and wool production.
- The website www.waic.net will be updated with the Common Core and EALRs as they apply to this issue.

Vocabulary Words

Each issue will introduce several words that may be unfamiliar to students. These words will appear in bold type the first time they are used.

Words in this issue include: stewardship, sustainable agriculture, natural resources, conservation, humus, controlled burning, wildfires, sows, farrowing, noxious weeds, Integrated Pest Management, and watershed. Definitions can be found scattered throughout the magazine.

Ag@School Funding

Many businesses, organizations, public agencies and individuals contribute money and time to providing you this magazine at no cost. They are listed on Pages 5 and 6 along with a suggested activity for research and writing letters of thanks. We suggest using the activity as a small group project both for internet research practice and, of course, letter writing experience.

Cover – Protecting Agriculture's Tools

Background:

Cultural practices, machinery, and technology in agriculture have advanced in ways that has even amazed farmers. The basic tools of this business have not changed since farming began more than 10,000 years ago. Air, water, soil, and solar energy are essential for plant life, without which animals and humans could not exist.

Care of these tools is important, possibly more so for agriculture than for any other industry. Agriculture takes this job seriously. Stewardship has advanced as science and technology have progressed. Today's farming is a far cry from that practiced just a few decades ago.

Discussion starters:

1. Using the definition of stewardship, ("management and care of basic tools of a trade") discuss the four basic tools. Brainstorm which of these the farmer can control and why.
2. Discuss the importance of proper care of air, water, and soil and how urban and rural residents might have differing views on the best use of these resources (water for example, farming use vs recreational use).

Answers page 1:

solar energy; 2) soil; 3) water; 4) air

Page 2 – Think and Discuss

Discussion starters:

1. Why are farmers important environmentalists? It is the right thing to do and they know that they need to care for the land and livestock in order for it to be productive and prosperous in the future. Farmers are “caretakers” of the land. Their livelihood depends on keeping the soil, water, and air clean and healthy.
2. Talk about the true definition of sustainable agriculture. What would happen if people could not make a living? If all US farmers went out of business what would replace agriculture on the land? Where would people get their food?
3. What are Washington’s natural resources? Brainstorm a list of all the wonderful things that occupy our land, air and water. Don’t forget people! Why is it necessary to protect these treasures?

SHEEP

Talk about the benefits and drawbacks to animals grazing. For the most part farmers and animals can peacefully coexist. However, animals can cause significant damage to crops and animals in specific locations. (Deleterious wildlife would include deer, elk, geese, starlings, bears, and wolves—to name a few). In Washington State there is not adequate funding to compensate farmers and ranchers suffering losses from wildlife damages. Sheep mostly graze in very large flocks. Although they will eat some plants that cows will not, they also can be poisoned by some plants. Sheep need to be kept on a growth schedule so that they can be marketed in a timely fashion. Goats can be pushed to eat many more plants that are undesirable, but they will gain weight doing so. **Answers to Activity:** Herbicide, Food, Fiber, Grazing Sentence: Sheep are earth friendly.

SOIL

Soil erosion can become a source of water pollution. Farming machinery and tillage practices have greatly reduced erosion in the fields. The use of irrigation sprinklers rather than flooding the fields has lessened erosion in the fields.

Discussion Starter:

Discuss soil erosion and how it might be lessened.

Page 3

FIRE

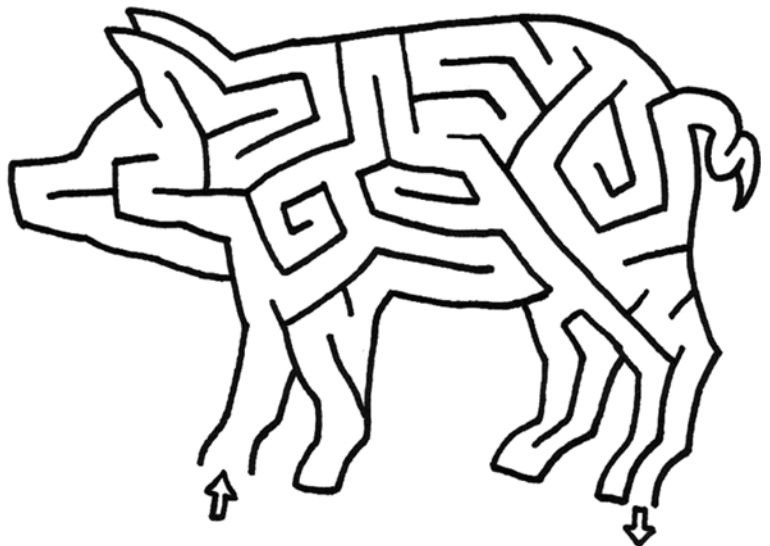
Fire can benefit the land or cause it great damage. Talk about the difference between when a fire is set intentionally and monitored and when it is set through carelessness and rages out of control.

Pages 4/5

PIGS

Pigs are raised all over the state of Washington. Seattle, Davenport, Ellensburg, Lone, and Golden Bar are a few of the places where pigs are raised and processed on a small scale. We only produce a fraction of the pork we consume. Washington state lacks commercial processing facilities for pigs. Pigs are raised for their meat which is pork and to be shown by 4H and FFA members at shows and fairs.

Here is a fun pig maze to reproduce for your students.

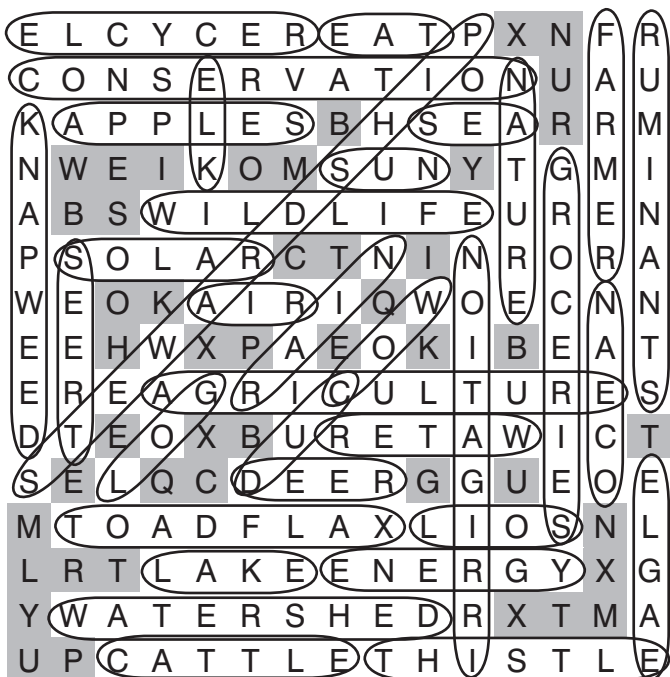


Page 6

Discussion starters:

1. Talk about what makes something a pest. What are the main pests that farmers contend with? How do they differ from pests that confront the students?
2. What could happen if we did nothing to control pests? Water supply? Hospitals? School kitchens?
3. Discuss reasons why a farmer would choose a pesticide or a ‘good bug’ for pest control. (Remember to consider costs, effectiveness, and the fact that good bugs take longer to work)
4. When would a flower be considered a weed? Why? Why are noxious weeds so hard to get rid of?

Word search solutions page 6



Page 7

Answers page 7:

Bee trivia: 1) 15 miles per hour; 2) 800 to 1500; 3) 40 to 50 times; 4) 2 tablespoons of fuel (honey).

Answers page 7:

What is the #1 pest in ag? – weeds; What is the most important insect to agriculture? – honeybee; Four ways that weed seeds can spread: wind, water, animals and humans.

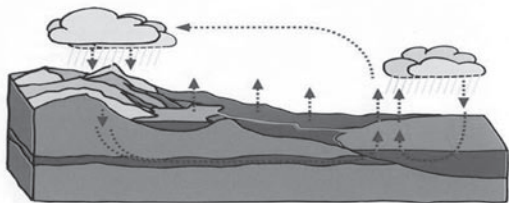
Three good bugs – ladybugs, lacewings, praying mantises

Page 8 - Every day is Earth Day!

Discussion starter:

Discuss why every day is Earth Day to a farmer. Why must he take care of natural resources? **Activity:**

Make a quick watershed model by crumpling newspaper and draping a piece of plastic over the 'hills'. Spray on water and have students trace the movement downhill. Discuss what watershed you live in and where your runoff eventually ends up.



Answers to Earth Day Puzzle

Across: 1) weeds; 4) erosion; 7) litter; 8) habitat; 9) topsoil

Down: 1) water; 2) conservation; 3) wildlife; 5) stewardship; 6) recycling.

Learn More About Agriculture

Websites: To learn more about the topics covered in this issue visit the following:

www.nwcb.wa.gov/click on 'Education' to find curriculum and activities about noxious weeds.

www.epa.gov/OGWDW/kids/cycle.htmEPA's water site for kids. Games, puzzles and online activities by grade level.

www.awwa.org/Advocacy/learn/American Water Works Assn. Click on youth education.

www.waic.orgTeacher resources and student pages; links to other state Ag in the Classroom programs.



Publication and Credits

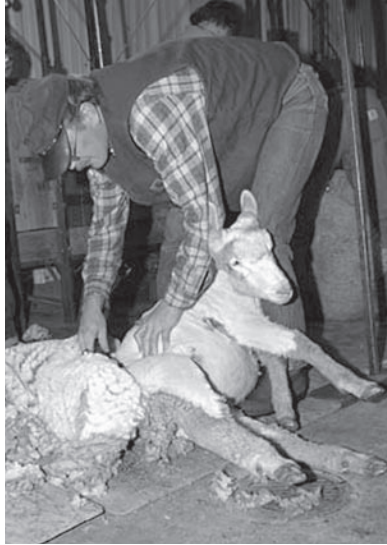
Ag@School is a publication of Washington Agriculture in the Classroom, a non-profit entity created in 1981 to encourage and help teachers increase agricultural literacy in their students. Teachers may reproduce any pages for use.

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Edited by AhShalla Harris.

SHEEP GET HAIRCUTS TOO!

Wool is the protective coat (fleece) from sheep or other animals and is an important animal fiber. Wool is a very renewable resource because sheep get haircuts every year. This is called shearing and it is done after the weather warms up in the late spring. The wool will grow again during the summer and fall and will be long enough to keep the animal warm through the winter.



Sheep are raised in flocks. A female sheep is a ewe, a male sheep is a ram, and young sheep are called lambs.

After shearing, a fleece is graded to determine the quality or value. The grading depends on both the length of and the thickness of the fibers. Finer wool makes softer fabric. The wool is then cleaned and untangled. This is called carding. It is then spun into yarn and woven into fabric. Wool is great for many products such as: sweaters, jackets, scarves, suits, carpets, and blankets.

After reading about wool, draw a line from the words to their definitions.

fleece	A female sheep
carding	A young sheep
ram	A sheep haircut
ewe	Untangling wool fiber
lamb	A sheep's coat
shearing	A male sheep

Tell What You Learned

1. Looking at the cover of this magazine, tell what the basic tools for agriculture are and explain why they are necessary for growing plants.
2. How would you describe the role of agriculture in managing or taking care of natural resources?
3. Persuade the reader that the goal of agriculture should be to grow more food on less land. Give reasons to back up your argument.

Where does your Ag@School magazine come from? Who pays for it?

Lots of people cooperate to distribute this magazine across the state. Washington Ag in the Classroom is the lead organization, but we do not do it alone. All of the following people, businesses, and organizations contribute support. Look through the list. Do you recognize anyone?

Pick some of the sponsors to research. Have your students write one or more of them a thank you letter.

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Washington State Cattle Women
Washington State Dairy Women
Washington State Seed Potato Commission
Washington State Sheep Producers
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