

EDUCATOR'S GUIDE



AMERICAN FARM BUREAU
FOUNDATION FOR AGRICULTURE

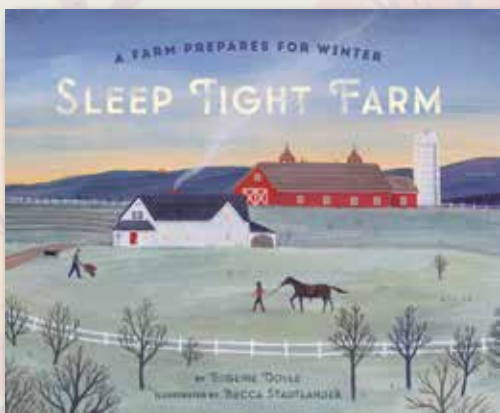
AccurateAg
Books ELEMENTARY

Welcome Educators!

This guide was developed for teachers and volunteers to help students learn about topics covered in *Sleep Tight Farm*. This engaging book introduces students to specialty crops and how families care for their farms, specifically in the winter.

Acknowledgements

A special thanks to Irene Sprick of Virginia for her expertise in the creation of the content and collaboration of this educator guide. We also want to thank the AFB Women's Leadership Committee for piloting these lessons.



Sleep Tight Farm by Eugenie Doyle is published by Chronicle Books, 2016. All rights reserved.
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OVERVIEW

Grade Levels K–2 Standards

Common Core Math:

- CCSS.MATH.CONTENT.1.NBT.C.4
- CCSS.MATH.CONTENT.2.NBT.A.2
- CCSS.MATH.CONTENT.2.MD.C.8

Next Generation Science Standards:

- K-ESS2-1 Earth's Systems
- 2-LS2 Ecosystems: Interactions, Energy and Dynamics

Common Core English Language Arts:

- Reading Standards for Informational Text K-2; Key Ideas and Details
 - CCSS.ELA-LITERACY.RI.1.1
 - CCSS.ELA-LITERACY.RI.1.2
 - CCSS.ELA-LITERACY.RI.1.3
 - CCSS.ELA-LITERACY.RI.2.3
- Writing Standard
 - CCSS.ELA-LITERACY.W.K.2
- Speaking and Listening Standards K-2; Comprehension and Collaboration
 - CCSS.ELA-Literacy.SL.K.1
 - CCSS.ELA-Literacy.SL.K.2
 - CCSS.ELA-Literacy.SL.K.3

Pillars of Ag Literacy

- EC 1: The relationship between agriculture and the environment
 - A. Describe how farmers use the land to grow crops.
 - B. List ways farmers care for the land.
- EC 2: The relationship between ag and food, fiber and energy
 - A. Identify food safety practices to demonstrate at home.
 - B. Identify the agricultural source for common food, fiber and energy products.

- EC 3: The relationship between agriculture and animals
 - A. Identify uses for animals involved in agricultural production.
 - B. Identify ways that farmers care for animals.
- EC 4: The relationship between agriculture and lifestyle
 - A. Recognize that agriculture provides our most basic necessities: food, fiber, energy and shelter.

Reading the Book

Before reading the book, show students the cover. Ask students what they think the book might be about. What do they see on the cover?

Explain that the story is about a family preparing their farm for winter. While you read the book have students pay attention to the ways the family works to care for their farm.

Read the book, and then cover all six lessons in future class sessions:

- **Lesson 1:** Shopping at the Farmers' Market
- **Lesson 2:** Winter Temperatures Are Not Always Cold!
- **Lesson 3:** Everything Comes from Something
- **Lesson 4:** Farmers Care for Their Land Just Like I Care for...
- **Lesson 5:** Safe Produce Activity
- **Lesson 6:** Fun with Frost



Lesson 1: Shopping at the Farmers' Market

Lesson Time Estimate

15–30 minutes

Objectives

Students will use play money to buy items at a farmers' market, using addition and subtraction skills.

Standards

CCSS.MATH.CONTENT.1.NBT.C.4

CCSS.MATH.CONTENT.2.NBT.A.2

CCSS.MATH.CONTENT.2.MD.C.8

Materials

- Copies of Lesson 1 / Worksheet 1 and Lesson 1 / Worksheet 2 for each student
- Scissors and glue
- Optional props for bonus activity (play money, samples of food items found at a farmers' market and a basket)

Directions

Discuss with students: Have you visited a farmers' market? Items are often fresh, coming straight from the local farms. Let's take a look at the products on the worksheet. Everything looks so good it can be hard to decide what to buy! Let's see what we can buy with our money.

Give each student a copy of the Lesson 1 / Worksheet 1 and Lesson 1 / Worksheet 2. Have them cut out the food items, and then complete the activity.

Bonus Activity

Children may create a farmers' market in the classroom. Put a price on each of the food samples and display the items. Give the students roles as farmers and customers. Customers will have play money to make purchases to put into the basket. Farmers will have money to give change as needed.





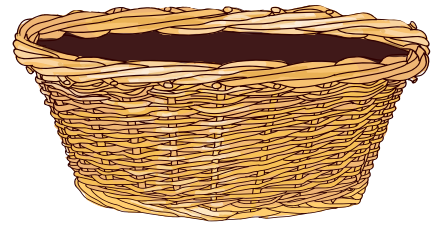
Lesson 1 / Worksheet 1:

Let's Shop at the Farmers' Market

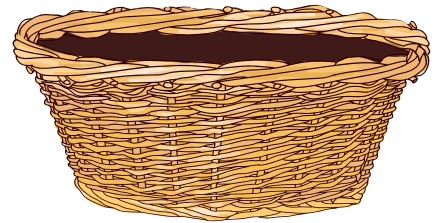
Directions

Answer the questions by writing the answer in the blank. Cut and paste the items needed onto the basket. All items will only be used once.

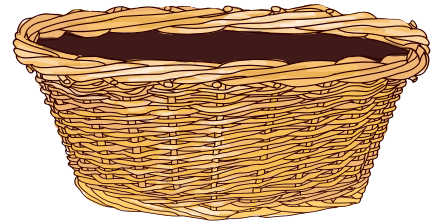
1. How much money does Clara need to buy a watermelon and raspberries? Put them in the basket.



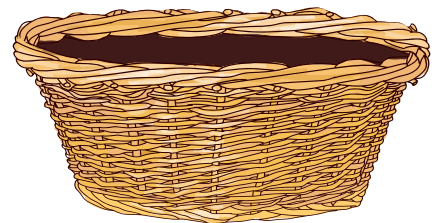
2. Julie has \$5 to spend at the market. What two items can she buy and put into the basket?



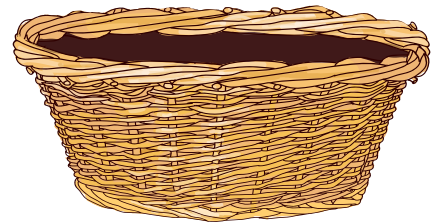
3. Dan wants to buy a pumpkin and a jar of honey. He has \$12. Does he have enough money?



4. Matt wants to put three things in his basket. What will he buy with \$12?



5. The market only has two things left now. What will Sherry buy with her last \$3?





Lesson 1 / Worksheet 2: Let's Shop at the Farmers' Market



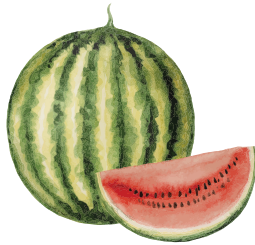
\$4 – honey



\$2 – raspberries



\$1 – onions



\$5 – watermelon



\$2 – eggs



\$6 – melons



\$4 – lettuce



\$2 – radishes



\$7 – pumpkin



\$3 – tomatoes



\$2 – broccoli



Lesson 2: Winter Temperatures Are Not Always Cold!

Lesson Time Estimate

10–15 minutes

Objectives

Students will read thermometers and learn climate differences in regions of the United States.

Standards

Next Generation Science Standards

- K-ESS2-1 Earth's Systems

Materials

- Outdoor thermometer
- Classroom map of the United States
- Copies of Lesson 2 / Worksheet 1 for each student
- Pictures showing winter in various regions

Directions

Discuss with students: In *Sleep Tight Farm*, the family is preparing the farm for winter when there will be snow and cold weather.

- How do you prepare for winter at your house?
- Does the temperature change from summer to winter?
- What is the hottest temperature in your area?
- What is the coldest temperature in your area?

Look at the United States map. Find your home state and notice which region it is in. Describe winter in your area. Find a state that may have different winter weather from where you live.

Not all regions have cold temperatures and snow in the winter. Use the pictures on page 6 to show students what winter might look like in other regions.





Lesson 2

Winter Across the US

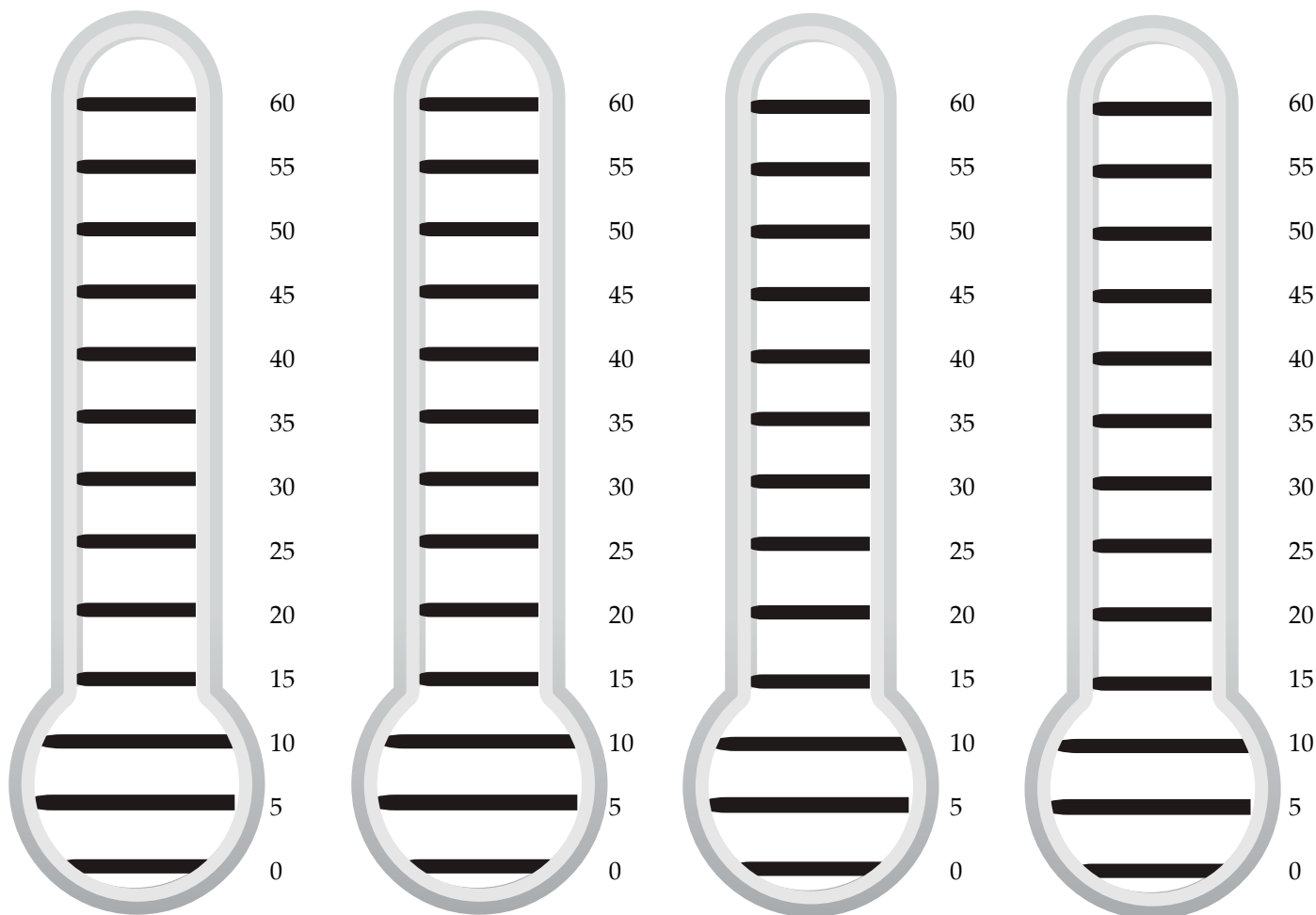




Lesson 2 / Worksheet 1: Winter Temperatures

Directions

Here are four thermometers and four states with their average winter temperatures. Color the thermometer to show the winter temperatures for each state.



Vermont
35° degrees
Fahrenheit

North Dakota
2° degrees
Fahrenheit

Florida
55° degrees
Fahrenheit

Illinois
43° degrees
Fahrenheit



Lesson 3: Everything Comes from Something

Lesson Time Estimate

10–15 minutes

Objectives

Students will learn to find the agricultural source for common food, fiber and energy products.

Standards

CCSS.ELA-LITERACY.RI.1.1

CCSS.ELA-LITERACY.RI.1.2

CCSS.ELA-LITERACY.RI.1.3

CCSS.ELA-LITERACY.RI.2.3

CCSS.ELA-LITERACY.W.K.2

Materials

- Copies of Lesson 3 / Worksheet 1 and Worksheet 2 for each student
- Optional: cardstock or construction paper, scissors, glue

Directions

Ask students: Have you heard the phrase: “everything comes from something?”

- Do you know where your clothes come from?
- Do you know where milk comes from? (Be prepared to discuss other milks that do not come from a cow: almond, coconut, soy, etc.)
- Where do we get something like strawberry preserves?

Discuss how the family in the story used all the products grown on their farm or sold them at the market.

However, some things were changed before they were sold. Can you think of some farm products that are changed before we use them? (Examples: cotton gives clothes, wool gives clothes, milk changes into cheese, peanuts become peanut butter, etc.)

The clothes we wear, the furniture we use and many of the foods we eat began as different products. These things did not begin at a store. Where did they begin? Farms and ranches help provide the foods we eat and most items we use daily.





Lesson 3 / Worksheet 1: Everything Comes from Something

Directions

Draw a line to match the farm source to the product you use.

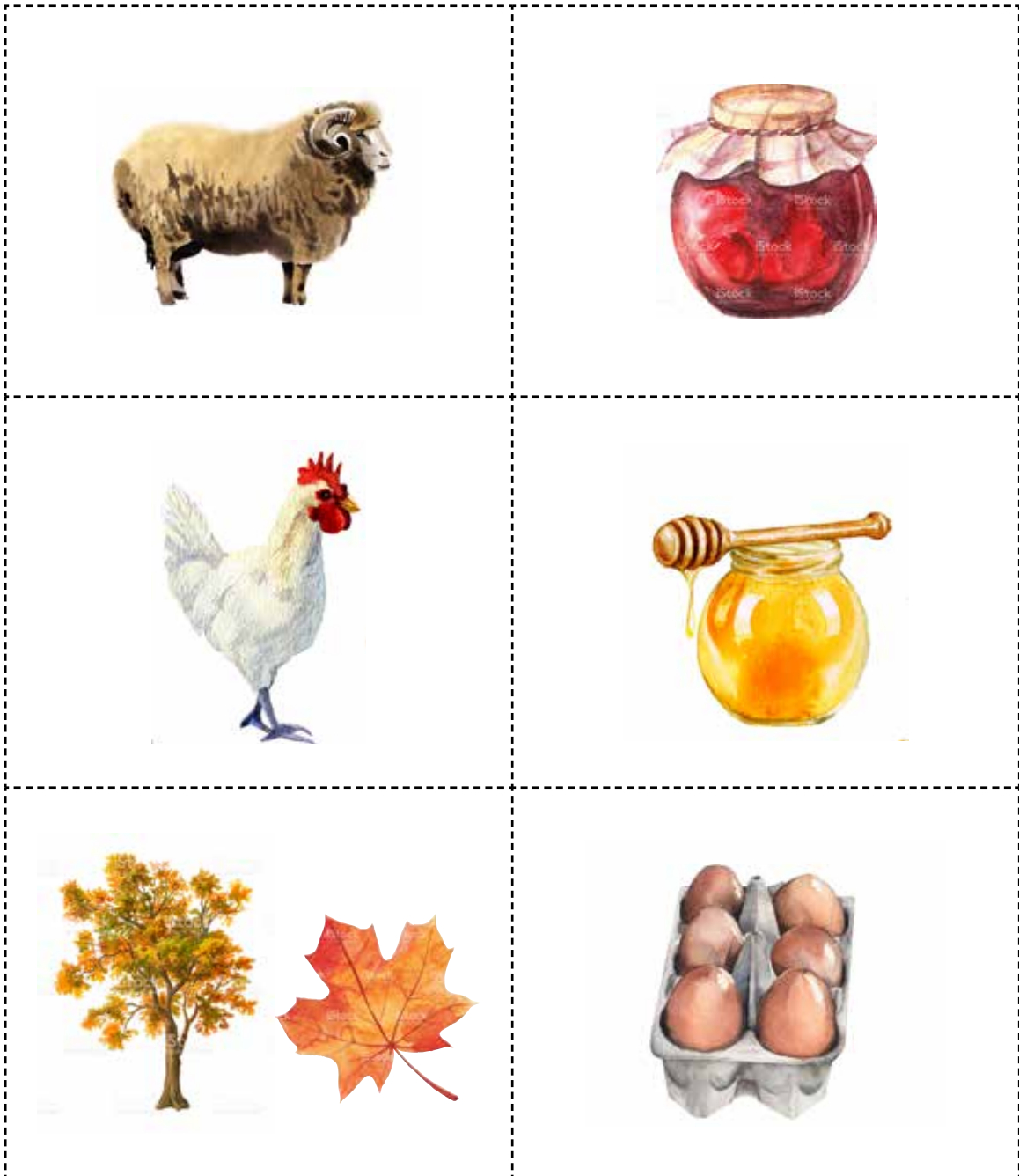




Lesson 3 / Worksheet 2: Matching Game

Directions

Copy this page onto card stock. Cut out the images into cards. Students will lay out the cards, picture side down, and play a memory game. Turn over two cards and try to find a match of a source with its corresponding product. For example, hen and egg match. Discuss how this is the source and the product. If they don't find a match with the two cards they choose, turn the cards face down again. Let another student select two cards and try for a match. Continue until all cards are matched.





Lesson 3 / Worksheet 2: Matching Game

(continued)





Lesson 4: Farmers Care for Their Land Just Like I Care for...

Lesson Time Estimate

15–30 minutes (if bonus activity is used in class)

Objectives

Students will compare how farmers take care of animals and land the same way students care for things at their homes. They will use writing skills to create complete sentences.

Standards

CCSS.ELA-LITERACY.RI.1.1

CCSS.ELA-LITERACY.RI.1.2

CCSS.ELA-LITERACY.RI.1.3

CCSS.ELA-LITERACY.RI.2.3

CCSS.ELA-LITERACY.W.K.2

Materials

- Scissors
- Glue or tape
- Copies of Lesson 4 / Worksheet 1, Worksheet 2 and Worksheet 3 for each student

Directions

Discuss the ways *Sleep Tight Farm* shows how farmers care for their farms as they prepare the animals, land and equipment for winter. Review some of the preparations the farm family made.

Ask students how they (and their family) care for something. Examples may include: caring for brothers and sisters, pets, toys, houseplants, yard work, and so on. Do any of these activities change as the seasons change? (For example: cut grass in summer, shovel snow in winter, rake leaves in fall, clean closets in spring.)

Read the following statements and let students write how they take care of their own things in a similar fashion. (There is a bonus activity for students who may not write independently.)





Lesson 4 / Worksheet 1: Farmers Care for Their Land Just Like I Care for...

Directions

Read the statement about how farmers care for their land, and then write how you care about something.

1. Farmers care for their strawberries when covering them with straw. I care for my

_____ when I _____

2. Farmers care for livestock by feeding them hay. I care for my _____

when I _____

3. Farmers care for hens by keeping them warm in winter. I care for my _____

when I _____

4. Farmers care for their equipment by putting machinery in the barn for winter. I care

for my _____ when I _____



Lesson 4 / Bonus Activity

This game may be used as a take home activity or for small group discussion.

Directions

1. Make copies of the Bonus Activity worksheets 2 (pictures) and 3 (blank cube).
2. Cut out the pictures and glue them onto the cube outline before cutting the cube. Students may draw their own pictures of six things they care for at home.
3. With adult help as needed, glue or tape the edges to make a cube.
4. To play, gently roll the cube and discuss how one would care for that item. For example: Dishes: you wash them, dry them, put them away in a cabinet.





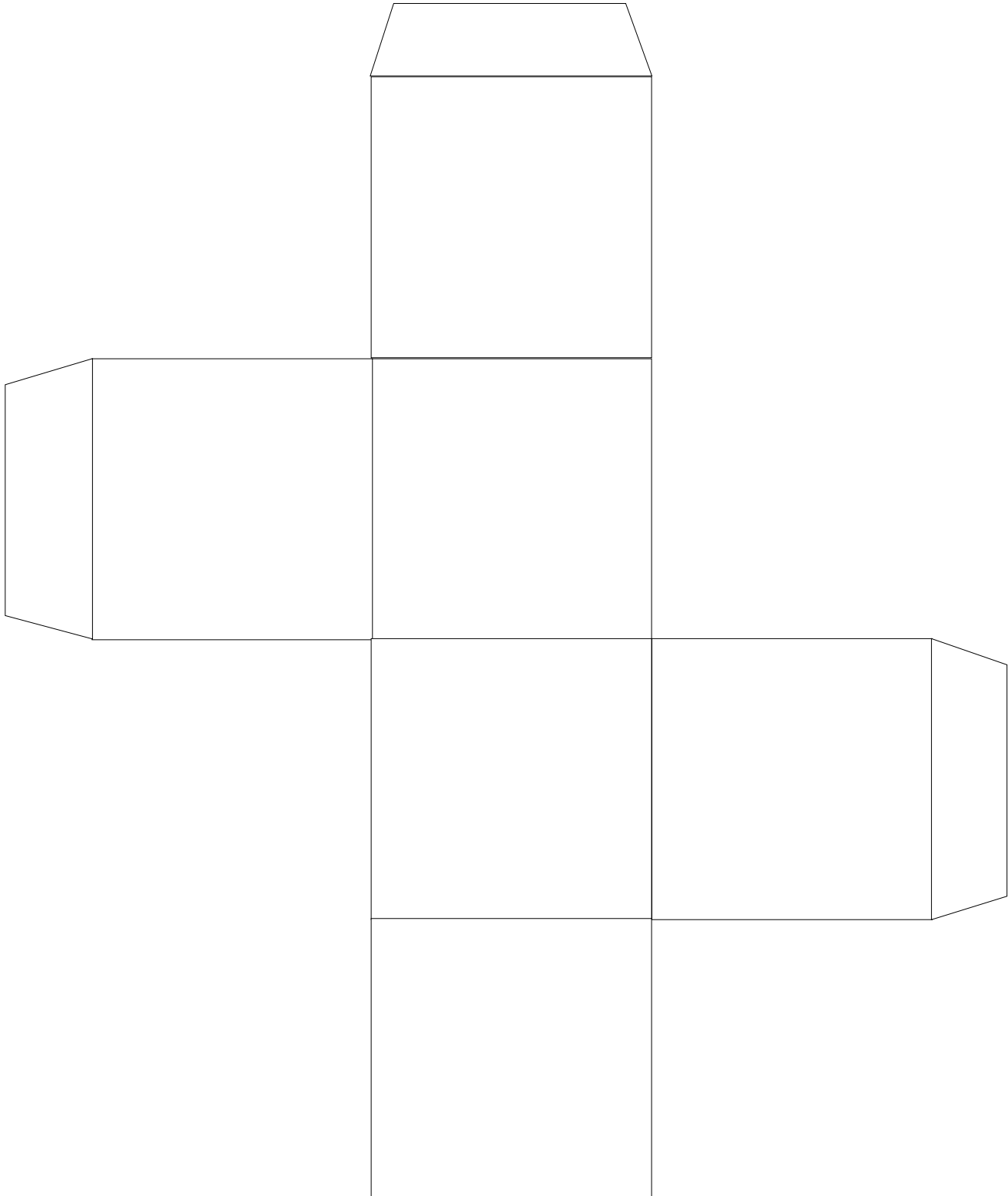
Lesson 4 / Worksheet 2

Cut out the items below and glue them on the squares of the cube.





Lesson 4 / Worksheet 3





Lesson 5: Safe Produce Activity

Lesson Time Estimate

30 minutes

Objective

When given prompting statements, students will recall the three practices for safely handling fruits and vegetables.

Standards

Common Core State Standards for English Language Arts

- Reading Standards for Informational Text K-5; Key Ideas and Details
- Reading Standards for Informational Text K-5; Key Ideas and Details
- Speaking and Listening Standards K-5; Comprehension and Collaboration

Materials

- Coloring pens, pencils or crayons
- Copies of Lesson 5 / Worksheet 1 for each student

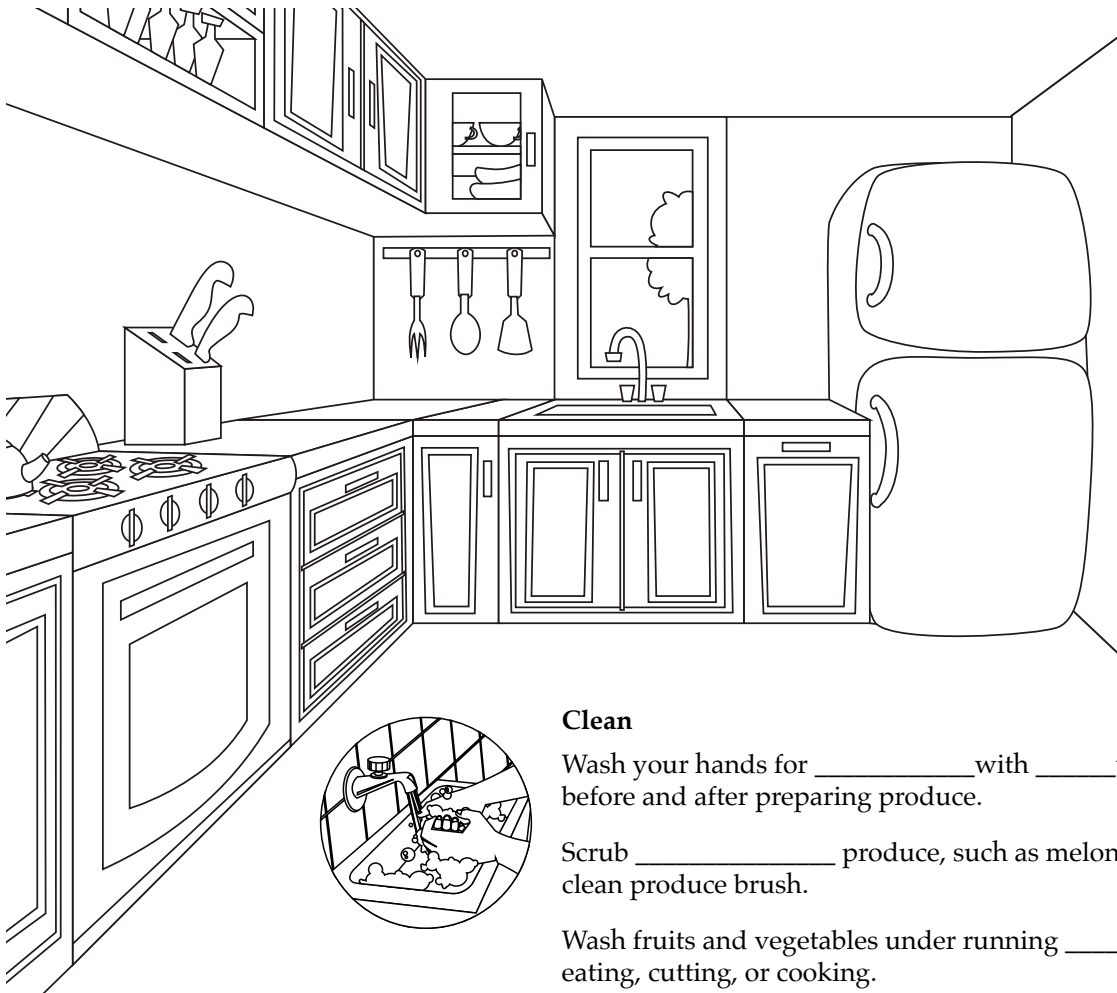
Directions

- Introduce the need to practice food safety (explain food-borne illness).
- Read the following food safety guidelines outlined by the FDA¹ and have students listen for key information. For older students, you may wish to offer text for students to read.

- Clean
 - Wash your hands for 20 seconds with warm water and soap before and after preparing produce.
 - Scrub firm produce, such as melons and cucumbers, with a clean produce brush.
 - Wash fruits and vegetables under running water just before eating, cutting or cooking.
- Separate
 - Keep fruits and vegetables separate from meats, seafood and poultry.
- Chill
 - Store perishable fruits in the refrigerator at a temperature of 40° F or below.
 - Refrigerate all produce that is purchased pre-cut or pre-peeled.
- Have students fill in the infographic with key terms.
- Direct students to put the infographic on their fridge so that they can use it for reference in the future.



Lesson 5/Worksheet 1: Safe Produce Activity

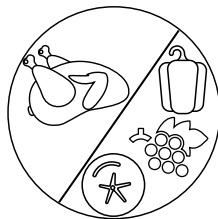


Clean

Wash your hands for _____ with _____ water and _____ before and after preparing produce.

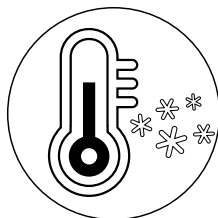
Scrub _____ produce, such as melons and cucumbers with a clean produce brush.

Wash fruits and vegetables under running _____ just before eating, cutting, or cooking.



Separate

Keep fruits and vegetables separate from _____, _____ and _____.



Chill

Store fruits and vegetables at _____ degrees °F for _____.

Refrigerate all produce that is purchased _____ or _____.



Lesson 6: Fun with Frost

Lesson Time Estimate

30 minutes

Objectives

- Students will learn what causes frost.
- Students will learn why and how farmers protect plants during winter.
- Students will practice a frost-prevention method.

Standards

Next Generation Science Standards

- 2-LS2 Ecosystems: Interactions, Energy and Dynamics

Materials

- Frost-prevention images
- Potted plants/seedlings (1 per student or group) or access to plants outside
- Shredded newspaper
- Straw mulch
- Cloth
- Other frost-prevention materials as needed
- Optional: Access to refrigerator/freezer

Directions

Ask students to brainstorm how it feels when they get cold.

- List items on the board. Listen for descriptors such as: it is hard to move, shivering, pain.
- Let students know that shivering is our body's way of warming us up. Ask students to brainstorm what else they do to keep warm. Listen for examples such as: putting on a sweater, turning on the heat, having a warm beverage, getting under a blanket.

Transition the discussion to the role farmers play with plants.

- Just like humans, when plants get cold, they have trouble functioning. Plants can't shiver or put on a warm coat, so farmers work hard to

keep them protected in the winter. The purpose of this activity is to investigate strategies for preventing frost damage on plants.

- In *Sleep Tight Farm*, the family shakes straw over berry plants and places cloth over their baby greens to keep them from freezing. While many farmers are not harvesting in the winter, they are busy doing things to care for plants and the land. Ask students to identify the efforts farmers make in *Sleep Tight Farm* to prepare their crops for winter.

Introduce the importance of winter plant maintenance.

- What causes frost?
- Plants and soil absorb and store heat from the sun during the day and then as the temperature drops in the evening, they begin to lose the heat that they've stored. On overcast evenings, the cloud cover acts as a blanket, trapping in heat from the ground and preventing frost from forming on the plants. However, on clear nights, the heat escapes from the ground and into the atmosphere, where cold air collects near the plants instead. Similarly, moisture in the air condenses into dew, which then freezes when the temperature reaches 32° F. The internal temperature of the plants can get too cold and damage the plant beyond repair.³
- Farmers protect their plants from frost to:
 - Retain soil quality (moisture, structure and nutrients)
 - Prevent plants from freezing and dying
- Images are provided of the following frost-protection methods, as identified by the Food and Agriculture Organization of the United Nations⁴. You may wish to display using a projector.
 - Heaters: provide extra heat to replace heat that is lost
 - Wind machines: blow air horizontally to mix warmer air (higher) with colder air (near surface)
 - Sprinklers: keep the plant tissue from freezing
 - Helicopters: move warmer air (higher) down closer to the surface
 - Surface irrigation: water is applied to a field and heat from the water is released into the air



Have students test a frost prevention method.

- Does it freeze outside? Try this experiment with your students!
- Have students work independently or in small groups to select a frost-prevention method, using the materials you have available. Encourage students to draw inspiration from the images in this guide or the images in the book.
- Instruct students to protect their plants using their selected method, and then expose the plant to freezing temperatures for a period of time.
- Compare results and retest if desired.
- Do you want to conduct this experiment when/where it does not freeze?
- Repeat the steps above.
- Place plants in a large freezer for progressive increments of time (i.e., 5 minutes, 10 minutes, 15 minutes), checking for frost at each point.
- Summarize findings in individual or group reports. Compare reports and discuss any differences in findings.





Lesson 6 / Frost Protection Methods



Heaters



Wind machines



Sprinklers



Lesson 6 / Frost Protection Methods



Helicopter



Surface irrigation

Photo by Jeff Vanuga, USDA Natural Resources Conservation Service



Bibliography

Here are a few recommended books about farmers' markets and agriculture through the year:

- Hunt, Dawson J, *Farmers Market Measurements*, 78-4296-6846-0
- Parks, Carmen, *Farmers Market*, 0-15-204881-2
- Rylant, Cynthia, *This Year's Garden*, 0-689-71122-0

(Endnotes)

¹ Food and Drug Administration. (2016, April 4). *Produce: Selecting and Serving It Safely*. Retrieved from <http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm114299>

² Fight Bac! (n.d.). *Fight Bac! Like a Produce Pro*. Retrieved from http://www.fightbac.org/wpcontent/uploads/2015/08/ConsumerFact_Sheet.pdf

³ Cornell Cooperative Extension, Chemung County. (n.d.). *Understanding Frost*. Retrieved from <http://www.gardening.cornell.edu/weather/frost.pdf>

⁴ Food and Agriculture Organization. (n.d.). *Recommended Methods of Frost Protection*. Retrieved from <http://www.fao.org/docrep/008/y7223e/y7223e08.htm>

For more fun,
check out



My American Farm has games, downloadable lessons and family fun activities to explore.
www.myamericanfarm.org

My American Farm Games



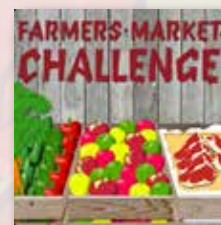
Fact or Fairy Tale

Science



Memory Match

English Language Arts



Farmer's Market Challenge

Math

Other My American Farm Activities Found Under "Family Fun"

CAR TRIP AG BINGO

ON THIS ACTIVITY YOU WILL LEARN ABOUT FARMING AND THE PRODUCTS OF FARMING FROM THE ROAD!

SUPPLIES YOU'LL NEED

- 1 die
- 1 paper cup
- 100 pennies

GETTING READY

Draw an outline of the car on the bottom left-hand page. Write each farm animal, crop or product of the farm on the other pages. Use the same animal, crop or product on the same page. Use the same animal, crop or product on the same page. Use the same animal, crop or product on the same page.

DIRECTIONS

1. Roll the die and move your car to the number on the die.

2. Roll the die again and move your car to the number on the die.

3. Roll the die again and move your car to the number on the die.

4. Roll the die again and move your car to the number on the die.

5. Roll the die again and move your car to the number on the die.

6. Roll the die again and move your car to the number on the die.

7. Roll the die again and move your car to the number on the die.

8. Roll the die again and move your car to the number on the die.

9. Roll the die again and move your car to the number on the die.

10. Roll the die again and move your car to the number on the die.

BINGO

CORN FIELD	WHEAT	CATTLE	RIVER WATER	TRUCK
PLUMS	LAKE OR POND	TRUCK	WHEAT	TRUCK
SHEEP	WHEAT	★	WHEAT	WHEAT
PIGS	WHEAT	WHEAT	WHEAT	WHEAT
WHEAT	WHEAT	WHEAT	WHEAT	WHEAT

HOW TO PLAY

1. Roll the die and move your car to the number on the die.

2. Roll the die again and move your car to the number on the die.

3. Roll the die again and move your car to the number on the die.

4. Roll the die again and move your car to the number on the die.

5. Roll the die again and move your car to the number on the die.

6. Roll the die again and move your car to the number on the die.

7. Roll the die again and move your car to the number on the die.

8. Roll the die again and move your car to the number on the die.

9. Roll the die again and move your car to the number on the die.

10. Roll the die again and move your car to the number on the die.

APPLE CIDER

Helped from: www.bonnieapplecider.com

INGREDIENTS

- 8-10 apples
- 1/2 - 1 cup sugar
- 8 cinnamon sticks
- 4 sticks of allspice

DIRECTIONS

With the help of an adult, carefully cut each apple into four pieces. Remove the core and seeds. Put apples in a large stock pot and add enough water to cover the apples. Add sugar, cinnamon sticks and allspice to a cheesecloth bag. Place this in the water. Put uncovered on high for one hour. After one hour, turn down the heat and simmer for two hours. Use a large spoon or potato masher to mash up the apples. Let the cider cool and then pour into a pitcher, take a break! Keep your apple cider fresh for the next time you want to make it.

Read the directions for your car at www.bonnieapplecider.com

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