

Working Watermelon

Objective

Students will use context clues and drawing conclusion skills to read the passages and answer questions. Students will estimate, measure and collect data using watermelons.

Key Words

watermelon, context clues, drawing conclusions, estimation, standard and nonstandard measurement, data, synonyms, length, circumference, weight, mass, perimeter, addition, subtraction, multiplication, place value, percent, fractions, graphs

Background

Watermelons' origins reach back to ancient times, when they were prized as a source of transportable water. Ancient Egyptian tombs are decorated with pictures of watermelon drawn more than 5,000 years ago. Historians say Dr. David Livingstone, world explorer and missionary, discovered the botanical origins of watermelon in the middle of South Africa's Kalahari Desert. Traders sold seeds along ancient Mediterranean trade routes, and cultivation spread throughout Africa.

By the 10th century, watermelon found its way to China, which is now the world's number one producer of watermelons. Watermelon probably arrived in the US with colonists and African slaves. Some historians theorize watermelon may have American origins as well, since early French explorers found native farmers growing watermelon in the Mississippi Valley.

Thomas Jefferson grew watermelon at Monticello. He and his peers used every part of the watermelon. Besides eating the refreshing flesh, early Americans toasted the seeds for snacks, pickled the rind and drank the juice. The first cookbook printed in the US included a recipe for pickled watermelon rind. The United States now ranks fourth in worldwide production of watermelon.

The rind of a watermelon looks tough but is actually quite fragile. For that reason watermelons are still picked by hand and passed hand-to-hand from the field to trucks, which take the melons to packing sheds. There they are sorted and hand-packed into trucks, crated into bins or placed in cartons for shipment to their destinations.

Watermelons are warm-season crops, requiring a four-month frost-free period and soil temperatures of 75 to 85 degrees F for optimal germination. Oklahoma's long growing season makes it an ideal place for growing watermelons.

Acreage for watermelon has been the second largest for a vegetable crop, after southern pea, in Oklahoma for many years. Production is concentrated in the central and south-central areas, but watermelon can be grown in most areas of the state. In 2014 the Oklahoma watermelon industry added about \$4 million to our state's economy. Of the states that grow watermelons in the US,

Oklahoma Academic Standards

GRADE 2

Speaking and Listening:
R.1,2,3,4. Fluency: 1,2.

Reading and Writing Process:
R.1,2,3. Vocabulary: R.1,3,5.

PE—2.1,11; 5.51,3; 6.1

Numbers & Operations:
1.1,3; 2.1,2,4,5,6; 3.1,2.

Geometry & Measurement:
2.1,2; Data: 1.1,2,4

GRADE 3

Speaking and Listening:
R.1,2,3,4. Fluency: 1,2.

Reading and Writing Process:
R.1,2,3. Vocabulary: R.1,3,5

Numbers & Operations:

1.1,4; 2.1,2,3,5,6,7,8; 3.2,3,4.

Geometry & Measurement:
1.1; 2.1,3,5,8. Data: 1

PE—1.5; 5.1,2; 6.2

GRADE 4

Speaking and Listening:
R.1,2,3,4. Fluency: 1,2.

Reading and Writing Process:
R.1,2,3,4. Vocabulary:

R.1,3,5.

Numbers & Operations:

1.1,2,5; 2.1,3,4,5;

Measurement: 2.5

PE—5.1,2; 6.3

Materials Needed

1 watermelon (seedless, oblong)

1 large cutting knife

lab coats or aprons

plastic plates or bowls

plastic forks or spoons

small plastic cups

disposable plastic table coverings

kitchen scales

bathroom scale

Oklahoma ranked 14 in 2014.

Although watermelons are sweet and usually eaten as dessert, they are classified as a vegetable rather than fruit. They are members of the cucurbit family, along with squash, cucumbers and pumpkins. Watermelon is 92 percent water, fat free, nutritionally low in calories and high in energy. A two-cup serving of watermelon contains excellent levels of vitamins A, B6 and C. It is also a source of potassium.

Language Arts

1. Read and discuss background and vocabulary.
2. Hand out the “Context Clues” worksheet.
 - Students will read the information and answer the questions on the worksheet.
3. Hand out the “Drawing Conclusions” worksheet.
 - Discuss the information about drawing conclusions.
 - Students will read the passages and answer the questions on the worksheet.
4. Prepare Tomato and Watermelon Salad, using the recipe included with this lesson.
 - Prepare the tomatoes and onions ahead of time.
 - Students will cut up the watermelon, using plastic knives.
 - Students will assist in measuring the other ingredients and stirring.
 - Serve the salad in small paper cups.
 - Remind students that their taste buds grow and change just like the rest of the body while encouraging them to try this salad and other new dishes.
 - After tasting the salad, students will describe the flavors.
 - Write the words on the board.
 - Students will use a thesaurus to look up synonyms for the words they have listed and write the new words on the board.
 - To modify for younger students, give them the list of taste words first, then have them look up the words in the thesaurus, and write one synonym they would use.

Examples:

good – super, agreeable, exceptional

sweet - appealing, rich, flavorful

sour – tart, sharp

Math

1. As a class, students will estimate the weight of a watermelon (seeded, oblong) by comparing with the weight of other familiar objects.
 - Students develop strategies for measuring the length, circumference, weight, mass of the watermelon, using standard and non standard units of measure.
2. Divide students into groups of 4-5. Students will wash their hands thoroughly.
3. Provide lab coats or aprons. Cover tables with plastic covering.
4. Students will conduct various age-appropriate math operations using watermelon and seeds, as follows, and record their activities in math journals to share with the class.
 - Cut the watermelon into crosswise slices and provide each group with one or more slices.

- Students will develop strategies for estimating and then counting the number of seeds within each group.
- Students will use the seeds to develop addition and subtraction problems or multiplication and division problems within their groups. Student will write the problems and share them with the class.
- Provide cups. Students will designate cups for ones, tens and hundreds and count seeds into cups to develop the concept of place value.
- Cut slices into pieces to demonstrate fractions and common percents.
- Discuss perimeter. Students develop strategies for measuring the perimeters of their melon slices
- Students design appropriate graphs and graph the number of seeds for each group.

Physical Education

1. The average weight of a watermelon is 20 pounds. Medicine balls weigh between 8-10 pounds. Students will toss a medicine ball in a circle to simulate workers tossing watermelons during watermelon harvest.

Extra Reading

- Galindo, Mary Sue, and Pauline Rodriguez Howard, *Icy Watermelon/Sandia Fria, Arte Pinata*, 2008.
- Koller, Jackie French, and John Manders, *Peter Spit a Seed at Sue*, Viking Juvenile, 2008.
- Lottridge, Celia, *One Watermelon Seed*, Fitzhenry & Whiteside, 2012.
- Moser, Lisa, and Stacey Schuett, *Watermelon Wishes*, Clarion, 2006.
- Murray, Julie, *Watermelon (Life Cycles)*, Buddy, 2007.
- Stone, Lynn, *Fruit (Plant Parts)*, Rourke, 2007.
- Tofts, Hannah, *One Cool Watermelon, Zero to Ten*, 2008.

Vocabulary

- fragile**—easily broken, damaged, or destroyed
- germinate**—to begin to grow; sprout
- irrigate**—apply water to soil for the purpose of increasing plant production
- nutrition**—the science or study that deals with food and nourishment, especially in humans
- pollinate**—to convey or transfer pollen from an anther to a stigma of a plant or flower in the process of fertilization
- rind**—a tough outer covering such as bark, the skin of some fruits, or the coating on cheese or bacon
- transplant**—to transfer from one place to another; to uproot and replant a growing plant
- vegetable**—a plant cultivated for an edible part, such as the root of the beet, the leaf of spinach, or the flower buds of broccoli or cauliflower

Name _____

Context Clues

Melons are warm season crops that thrive in Oklahoma's long growing season. All kinds of melons grow in Oklahoma, but our watermelon crop is the most profitable. In 2010 Oklahoma produced 550,000 hundredweight of watermelon, adding about \$6 million to our state's economy.

Most of the watermelon produced in Oklahoma goes out of state. According to a study by the Kerr Center for Sustainable Agriculture, Oklahoma exports 392.8 percent more watermelon than is consumed in the state.

Oklahomans began growing watermelon before statehood. At the St. Louis World's Fair in 1904, Oklahoma exhibited three watermelons with a combined weight of 334 pounds. One, the largest of the fair, weighed 117 pounds.

In 2006 the Oklahoma Legislature declared watermelon Oklahoma's state vegetable. Most people think of watermelon as a fruit and eat it as a dessert, but watermelon is listed in US Department of Agriculture statistics as a vegetable.

Watermelon does not contain any fat or cholesterol. Watermelon is an excellent source of Vitamin C, a very good source of Vitamin A and a good source of potassium and B1. Watermelon also provides the body with fiber.

Context Clues

Fill in the blanks with answers from the reading above.



All kinds of _____ grow in Oklahoma, but watermelon is the most profitable. In 2010 Oklahoma produced 550,000 _____ of watermelon.

Most of the watermelon produced in Oklahoma goes _____. Oklahomans began growing _____ before statehood. One of the largest watermelons exhibited at the St. Louis World's Fair weighed _____ pounds.

Watermelon does not contain any _____ or cholesterol. List 2 vitamins it provides: _____

Oklahoma Ag in the Classroom is a program of the Oklahoma Cooperative Extension Service, the Oklahoma Department of Agriculture, Food and Forestry and the Oklahoma State Department of Education.

Name _____

Drawing Conclusions

When readers draw conclusions, they use details from their reading and from what they know to come to a better understanding about characters or events.

What you read + What you know = Draw a conclusion.

If the question says, “from this passage,” you should base your answer on what you read, not other information you know. For example, watermelons do have seeds but that information is not mentioned in Passage # 3, below. Answer the following questions, based on what you read.

1. An agricultural researcher developed the first sweet melon that could be stacked. It was shaped like an oval, called oblong. About a century ago, watermelons were round. They were hard to stack and rolled around during the rough ride from farm to market. Today most watermelons are oblong. From this passage you can tell that
 - a. Today watermelons are oblong because they look better.
 - b. Today watermelons are oblong because they stack better.
 - c. Most watermelons today are round.
2. Watermelon does not contain any fat or cholesterol. It is an excellent source of Vitamins A, B6 and C. It also contains fiber, potassium and lycopene. From this passage you can tell that
 - a. Watermelon tastes good.
 - b. Watermelon is a healthy food.
 - c. Watermelon is red and green.
3. Watermelon crossed the Atlantic Ocean and made its way to North America with African slaves. Watermelon first appeared in the English dictionary in 1615. From this passage, you can conclude that
 - a. Watermelons have been around for a long time.
 - b. Watermelons have seeds.
 - c. Watermelons are a new food.

Tomato and Watermelon Salad

5 cups (3/4-inch) seeded watermelon cubes
1 1/2 pounds ripe tomatoes, cut into 3/4-inch cubes
3 teaspoons sugar
1/2 teaspoon salt
1 small red onion, quartered and thinly sliced
1/2 cup red wine vinegar or balsamic vinegar
1/4 cup extra virgin olive oil
Romaine lettuce leaves (optional)
Cracked black pepper to taste
Mint leaves as garnish (optional)

1. Combine watermelon and tomatoes in a large bowl; sprinkle with sugar and salt, tossing to coat.
2. Let stand 15 minutes.
3. Stir in onion, vinegar, and oil.
4. Cover and chill 2 hours.
5. Serve chilled with lettuce leaves, if desired.
6. Sprinkle with cracked black pepper to taste.

