

Melon Madness

Objective

Students will learn about the melons we eat and participate in activities using melons, including creative writing, scientific experiments, math activities, visual art activities, and map reading activities.

Background

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 2007 Oklahoma produced 360,000 hundredweight of watermelon, adding about \$4 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.

Thomas Jefferson grew watermelon at Monticello. He and his peers used every part of the watermelon. Besides eating the refreshing flesh of the watermelon, 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 world-wide production of watermelon.

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 Exposition, weighed 117 pounds.

According to the USDA, watermelon is one of the traditional dishes enjoyed at most July 4th festivities—along with hamburgers, hot dogs, baked beans, corn on the cob, potato salad and potato chips.

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.

MORE MELON FACTS:

- Melons grown commercially are dependant upon honeybees for proper growth. On average, it takes about 10 to 15 bee visits for proper pollination.
- Watermelon is 92 percent water. Early explorers used them as canteens.
- Most watermelons weigh from 5-40 pounds, while some weigh as much as 100 pounds.

Create a Brochure: Melon Nutrition

- Watermelon and cantaloupe do not contain any fat or cholesterol.

Oklahoma C3 Standards

GRADE 1

Physical Science— 1.1,2

Life Science— 2.1,2

Social Studies PALS—
1.C.7; 2.A.3, C.7; 3.A.2

Social Studies Content—
1.5; 2.2; 3.2; 4.1,2,3

Visual Art— 3.2

COMMON CORE

Language Arts— 1.L.5,6;
1.RF.4; 1.RI.4,10; 1.W.3;
1.RL.2

Math Process—
MP.1,2,3,4,5,6,8

Math Content—
1.NBT.3,4,5,6;
1.OA.1,2,4,5,6; 1.G.1,2,3;
1.MD.1,2,4

GRADE 2

Science Process— 1.1,2;
2.2; 3.1,2,3; 4.1,3

Life Science— 2.1; 3.1

Social Studies PAL— 1.B.5;
2.A.3, C.7; 3.A.2,3

Social Studies Content—
1.5; 2.1; 3.4; 4.2, 4

Visual Arts— 3.2

COMMON CORE

Language Arts—
1.L.1,2,3,4,5,6;
1.RI.2,3,4,6,7; 1.W.2,3,7,8;
SL.6

Math Process—
MP.1,2,3,4,5,6,8

Math Content— 2.OA.1,3,4;
2.NBT.5; 2.MD.1,2,5,9,10

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Standards (Cont.)

GRADE 3

Science Process—1.1,2;

2.2; 3.1,2,3; 4.1,3

Physical Science—1.1,3

Life Science—2.1,2

Earth Science—3.2

Social Studies PALS—

1.B.5, C.7,8; 2.A.3, C.7;

3.A.2,3

Social Studies Content—

1.2,3,4; 2.1,3; 3.1abd; 4.1

Languages—1.4,5

Visual Arts—3.2

COMMON CORE

Language Arts—

3.RI.4,5,7; 3.L.3,4,5;

3.W.1,2,3,4,8,10

Math Process—

MP.1,2,3,4,5,6,8

Math Content—

3.MD.3,5,7,8; 3.NF.2,3

GRADE 4

Science Process—1.1,2;

2.2; 3.1,3; 4.1,2,3,4;

5.1,2,3,4

Life Science—3.1,2

Social Studies PALS—

1.B.5, C.7; 2.A.3; 3.A.2

Social Studies Content—

1.2bc

Languages—1.3.3

COMMON CORE

Language Arts—

4.RI.3,4,7,10; 4.L.4;

4.W.1,2,3,4,5,7,9

Math Process—

MP.1,2,3,4,5,6,8

Math Content—

4.NBT.2,4; 4.G.3;

4.MD.1,2,3,4,7;

4.NF.1,2,3,4,5,7

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- Watermelon is an excellent source of Vitamin C, a very good source of Vitamin A and a good source of potassium and B1.
- Cantaloupe is an excellent source of Vitamins A and C, a very good source of potassium and a good source of B6, folate and dietary fiber.

Students sample a variety of melons to determine their favorites, then create brochures to promote them and write letters to the school food service staff to request the addition of their favorite melons on the school menu.

Melon History Scramble (Sequencing, Geography)

- During the Civil War the Confederate Army boiled down watermelons as a source of sugar and molasses.
- Horticulturalists believe watermelons originated in the Kalahari Desert of South Africa.
- The first record of watermelon harvest is found in Egyptian hieroglyphics on tomb walls dating back 5000 years.
- Columbus brought cantaloupe with him to the New World on his second voyage.
- Melons were grown almost exclusively in home gardens until the first half of the 20th century, when more disease- and wilt-resistant cultivars were developed by the USDA.
- Archaeological evidence suggests that the muskmelon originated in Persia about 4,000 years ago.
- Watermelons were documented in China in the 10th Century AD.
- Watermelons were introduced to Europe by the Moors and were found throughout Europe in the 13th Century AD.
- The Greeks appear to have known about muskmelon in the 3rd Century BC.
- The North American Indians were growing muskmelons in the 17th Century.
- A watermelon was once thrown at Roman Governor Demosthenes during a political debate. Placing the watermelon upon his head, he thanked the thrower for providing him with a helmet to wear as he fought Philip of Macedonia.
- Cantaloupe got its name from the Italian papal village of Cantalupa, where it originated in the 17th Century.

Students sequence the information above and place it on a timeline, then use a world map to trace the travels of watermelon around the world.

How to Pick a Melon (Physical Science: Sound)

Harvesting melons is labor-intensive. Conveyors and other harvesting aids can speed up the harvest process, but there are no mechanical harvesters that can decide which melons are ripe. That remains a human skill dependent upon experience and careful observation. To select your own ripe melons from the grocery or farmer's market, use the following hints:

- For most melons, the blossom end should be fragrant and give slightly to pressure.
- Muskmelons or cantaloupes should be tan or gold under their netting.
- Honeydews should be velvety and creamy yellow.
- Crenshaw melons should be golden yellow and green.
- Casabas are ready when the skin turns golden and the flesh white.
- Honeydews, casabas and watermelons should feel heavy for their size and sound hollow when tapped on the rind.
- Avoid melons with shriveled, punctured or cracked rinds.
- Watermelons should have a waxy look and a yellow patch on the belly
- Thumping an unripe melon will produce a metallic sound while the sound emanating from a ripe melon will be duller.

Related lessons: “How to Pick the Best,” “Working Watermelon,” “In Strawberry Fields”

Students test the sound produced by different sized melons by gently tapping with their fingers, pencils, rulers, and other classroom objects. Conduct a classroom orchestra with different sized melons, using a variety of rhythm sticks. Make melon percussion instruments using paper plates and dried

Gray-green rind and round shape	Gray-green rind and oblong shape	Green stripe rind and oblong shape	Green striped rind and round oblong shape	Green striped rind and round shape	Green rind and round shape
Mickylee	Charleston Gray	Allsweet Jubilee Royal Jubilee StarBrite Sangria Tendergold	Crimson Sweet Royal Sweet Fiesta Madera	Petite Sweet	Black Diamond Texas Giant Florida Giant Desert King

melon seeds: Fold plates in half, place 6-8 seeds inside, staple edges and attach streamers.

Melon Family Reunion (Writing)

There are over 1,200 varieties of watermelons. Some are round; some are long; some have red flesh; some have yellow flesh. Some have striped rinds; some are solid green. The watermelon varieties that grow well in Oklahoma are listed below.

Students will pretend the watermelon varieties are relatives at a family reunion.

- Write descriptive stories explaining the place of each variety/character in the family (grandma, aunt, uncle, etc.)
- How did they get their names?
- What has happened to them since the last family reunion?

Standards (Cont.)

GRADE 5

Science Process— 1.1,2; 2.2; 3.1,2,3; 4.1,3

Physical Science— 1.1,2

Life Science— 2.2

Earth Science— 3.1

Languages— 1.3.3

COMMON CORE

Language Arts—

5.RI.1,4,5,7,9; 5.RF.3;

5.L.4,6;

5.W.2,3,4,5,7,8,9,10; 5.SL.1

Math Process—

MP.1,2,3,4,5,6,8

Math Content— 5.NBT.7;

5.NF.4; 5.MD.1,2,3,4,5

GRADE 6

Science Process— 1.1,2;

2.1,2; 3.1,3,4,5; 4.1,2,3,4,5;

5.1,3,4

Physical Science— 1.1

Life Science— 3.2; 4.1

Earth Science— 5.3

Social Studies PALS—

1.B.5; 2.A.3, C.7; 3.A.2,3

Social Studies PALS—

1.C.7

Social Studies Content—

1.3,4

Languages— 1.3.3

COMMON CORE

Language Arts—

6.RI.4,7,10; 6.L.4,6;

6.W.1,2,3,4,7,8,9

Math Process—

MP.1,2,3,4,5,6,8

Math Content— 6.RP.2,3;

6.SP.1,2,3,4,5,6; 6.NS.1;

6.G.1,2,3,4

—Draw pictures of the watermelon relatives.

Multitudes of Melons (Reading: Comprehension, Research)

The terms “muskmelon” and “cantaloupe” are often used interchangeably, but this is not accurate. All cantaloupes are muskmelons, but not all muskmelons are cantaloupes. Muskmelons include a variety of melons, which run the gamut from cantaloupes to casabas. There are two basic categories: netted and smooth. The skin of a muskmelon can vary in color from creamy white to rich green, while the flesh may be white, green, golden, orange, or even almost salmon colored.

cantaloupe—Cantaloupe is also referred to as netted melon because it has a ribless rind with a distinctive netted skin. Inside there is a hollow cavity that contains seeds encased in a web of netting. Cantaloupe is also known as “rock melon” in several parts of the world.

casaba—The skin of a casaba is pale yellow, smooth, but wrinkled, with longitudinal furrows. The flesh is white and sweet. It gets its name from Kasaba, Turkey.

crenshaw— The crenshaw is a hybrid melon with very sweet, juicy orange flesh. When ripe, crenshaws are roughly ovoid, with a greenish-yellow, slightly ribbed skin. Inside, the melons are a rich salmon pink, with a large seeded area in the center. In many cases, a ripe crenshaw melon will pull itself off the vine with its own weight.

canary—Canary melons have bright yellow rinds and an oblong shape. Inside, the pale, cream-colored flesh is juicy, and the flavor is very mild. The taste is slightly more tangy than a honeydew melon.

Students draw pictures of the melons above, based on the descriptions provided. Then use internet search engines, seed catalogues or gardening books to test the accuracy of the drawings.

Watermelon, Watermelon (Visual Arts Expression)

1. Students create a watermelon book, based on the book, *Brown Bear, Brown Bear*.
2. Color the cover to look like the inside of a watermelon and write the words “Watermelon, Watermelon.”
3. On page 2, glue real garden soil to the page, and write “Brown dirt, brown dirt, what do you see? I see black seeds looking at me.”
4. Glue real watermelon seeds to page 3 and write “Black seeds, black seeds what do you see? I see blue water looking at me.”
5. On page 4, write “Blue water, blue water what do you see? I see a green vine looking at me.” Color the page blue.
6. Glue green yarn on page 5 and write, “Green vine, green vine what do you see? I see a yellow flower looking at me.”
7. On page 6 write, “Yellow flower, yellow flower, what do you see? I see a

Standards (Cont.)

GRADE 7

Science Process—1.1,2;

2.1,2; 3.1,3,4,5;

4.1,2,3,4,5; 5.1,3,4

Physical Science—1.1

Life Science—2.2; 3.1; 4.2

Social Studies PALS—

1.C.7

Social Studies Content—

1.3 4; 2.1ade

Languages—1.3-3

COMMON CORE

Language Arts—

7.RI.4,8,9; 7.L.3,4;

7.W.1,3,7

Math Process—

MP.1,2,3,4,5,6,8

Math Content—7.NS.2;

7.RP.1,2,3; 7.G.1,4,7,5.6;

7.SP.3,4

GRADE 8

Science Process—1.1,2;

2.1,2; 3.1,3,4,5;

4.1,2,3,4,5; 5.1,3,4

Physical Science—1.2

Life Science—3.1

COMMON CORE

Language Arts—8.L.4,6;

8.W.2,6,8

Math Process—

MP.1,2,3,4,5,6,8

Math Content—8.EE.4;

8.G.9; 8.SP.1,4

watermelon looking at me.

8. On page 7 write, “Watermelon, watermelon what do you see? I see (student’s name) looking at me!”
9. Let students illustrate as desired.
10. Older students complete the books in Spanish and share them with a younger buddy class.

Watermelon art basket: Paint the back side of a paper plate red or pink. Paint the rim green. Let the paint dry. Draw seeds with a black marker. Fold the plate in half, and staple the edge, leaving an opening in the top. Punch a hole in each side of the plate and string a ribbon or yarn to form a basket.

Melon in My Shoe (Science Process: Investigate, Life Science)

1. Students will each bring one old shoe from home. The shoes can be any kind but must be enclosed. (No sandals.)
2. Students will use the “Scientific Method Format” found on the website to record information for the following activity:
 - Fill the shoe with soil, leaving room at the top.
 - Plant 3-4 melon seeds in each shoe.
 - Use a spray bottle to water the seeds.
 - Leave the shoes in a sunny location where they won’t be disturbed, either inside the classroom or outside.
3. Students will decide how often they will water their “shoes.”
4. Students will record when the seeds sprout, how many seeds sprout, the number of leaves, the length of the vine, and other information.
5. Continue the activity for 3-4 weeks. Students can then take their shoes home and replant the seeds in a larger pot or outside in a garden or bed.

Will it Float? (Science Process: Investigate, Physical Science)

Bring a large tub to class, along with a selection of melons in different shapes and sizes.

1. Fill the tub with water.
2. Students will predict which melons will float.
3. Students will record their predictions.
4. Ask students if weight is a predictor of an object’s ability to float or sink.
5. Weigh each melon.
6. Students will record the weight for each melon on a record sheet.
7. Students will rethink their predictions and change their record sheets if necessary.
8. Place each melon in the tub of water separately to test student hypotheses.
9. Students record the results.
10. What makes some things float and other things sink?
11. Would the results be different if the melons were cut in half?

Vocabulary

antioxidant—a substance that inhibits the destructive effects of oxidation, e.g. in the body or in foodstuffs or plastics

botanical—relating to the science of plants

cucurbit—any of various mostly climbing or trailing plants of the family Cucurbitaceae, which includes the squash, pumpkin, cucumber and melons

fiber—the course fibrous substances, largely composed of cellulose, that are found in grains, fruits, and vegetables, and aid digestion. This largely indigestible plant matter is considered to play a role in the prevention of many diseases of the digestive tract.

fruit—the ripened ovary of a seed plant. The fruit is usually eaten as the dessert part of the meal

horticulturalist—a scientist who studies and practices the art of growing fruits, vegetables, flowers, shrubs, and trees

hybrid—a plant produced from a cross between two plants with different genetic constituents. Hybrids from crosses between crop varieties are often stronger and produce better yields than the original stock.

melon—the round edible fruit of vines belonging to the gourd family, with a tough rind and sweet juicy flesh ranging in color from pale yellow to deep orange

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Vocabulary (Cont.)

ovoid—describes a fruit or similar plant part that is shaped like an egg

pectin—a gelling agent: a mixture of polysaccharides found in plant cell walls

potassium—a silver-white soft light low-melting monovalent metallic element of the alkali metal group that occurs abundantly in nature especially combined in minerals

vegetable—a leafy plant (as the cabbage, bean, or potato), usually without woody tissue, grown for an edible part that is usually eaten as part of a meal

Paul's Valley's Watermelon Seed Spittin' World Championship

Pauls Valley celebrates each 4th of July with a watermelon seed-spitting contest. Held in conjunction with the city's 4th of July fireworks show, this contest has been a Pauls Valley tradition for over 50 years. Since 1957, when the contest began, the Watermelon Seed Spittin' World Championship has been featured in the Guinness Book of Records and Ripley's Believe It or Not. Each year participants attempt to break the record of Jack Dietz of Chicago, who launched a seed 66 feet 11 inches in 1989.

12. Find other objects in the classroom to test student hypotheses.

New Kids in Class (Visual Arts: Expression; Writing, Oral Expression)

Students use whole melons to create a classroom of personalities. Students draw faces, add hair, hats, glasses, etc., give names to the melons, introduce the melons to the class with short bios and write stories, poems, or skits about the melon personalities.

Melon Math (Data Analysis, Measurement)

Bring an assortment of melons to class in different shapes, colors and sizes to conduct the following activities.

1. Students will create charts or graphs to organize the melons by color, shape, skin texture, type of seeds, number of seeds, taste, color of edible pulp. etc.
 - Compare and discuss the charts/graphs in small groups or as a class.
2. Conduct a class or grade level survey to determine favorite melon types.
3. Students will estimate the weight, circumference, surface area and volume of each variety of melon.
 - Students will measure weight, circumference, surface area and volume of each variety of melon.
 - Students will record measurements for each variety of melon.
 - Students will compare measurements.
 - Discuss: Is there a correlation between weight and size? Why or why not?
 - Students will separate the edible portion of each melon variety from its non-edible portion.
 - Students will weight the edible portion for each variety.
 - Students will compare the ratio of fruit to rind for each melon variety.
 - Students will find the mean weight of all the melons.
4. Students will estimate and record number of seeds in each variety.
5. Students will weigh seeds and compare with total weight of melon. What percentage of the melon is seed?
6. Share the story of Paul's Valley's Watermelon Seed Spittin' World Championship, at left. Have your own seed spitting contest.
 - Measure to see how far each student can spit seeds. How does students' spitting distance compare with the world record?

Extra Reading

Galindo, Mary Sue, and Pauline Rodriguez Howard, *Icy Watermelon/Sandia Fria*, Arte Publico, 2001.

James, Ray, *Plant Cycle (Nature's Cycles)*, Rourke, 2007.

Stone, Lynn, *Fruit (Plant Parts)*, Rourke, 2007.

Name _____

Melon Madness

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 2007 Oklahoma produced 360,000 hundredweight of watermelon, adding about \$4 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.

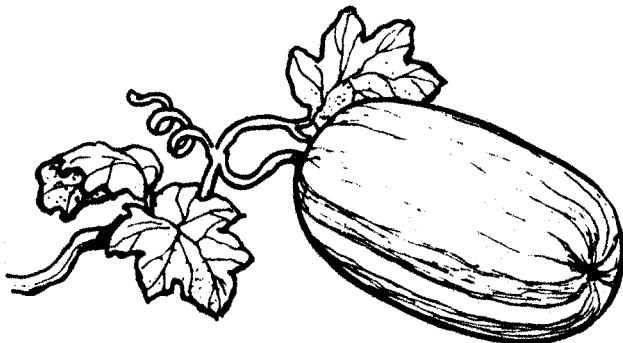
Oklahomans began growing watermelon before statehood. At the St. Louis World’s Fair in 1904, Oklahoma exhibited three watermelons with a combined weight of 334 pounds. One the largest of the Exposition, weighed 117 pounds.

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.

Fill in the blanks with answers from the reading above.

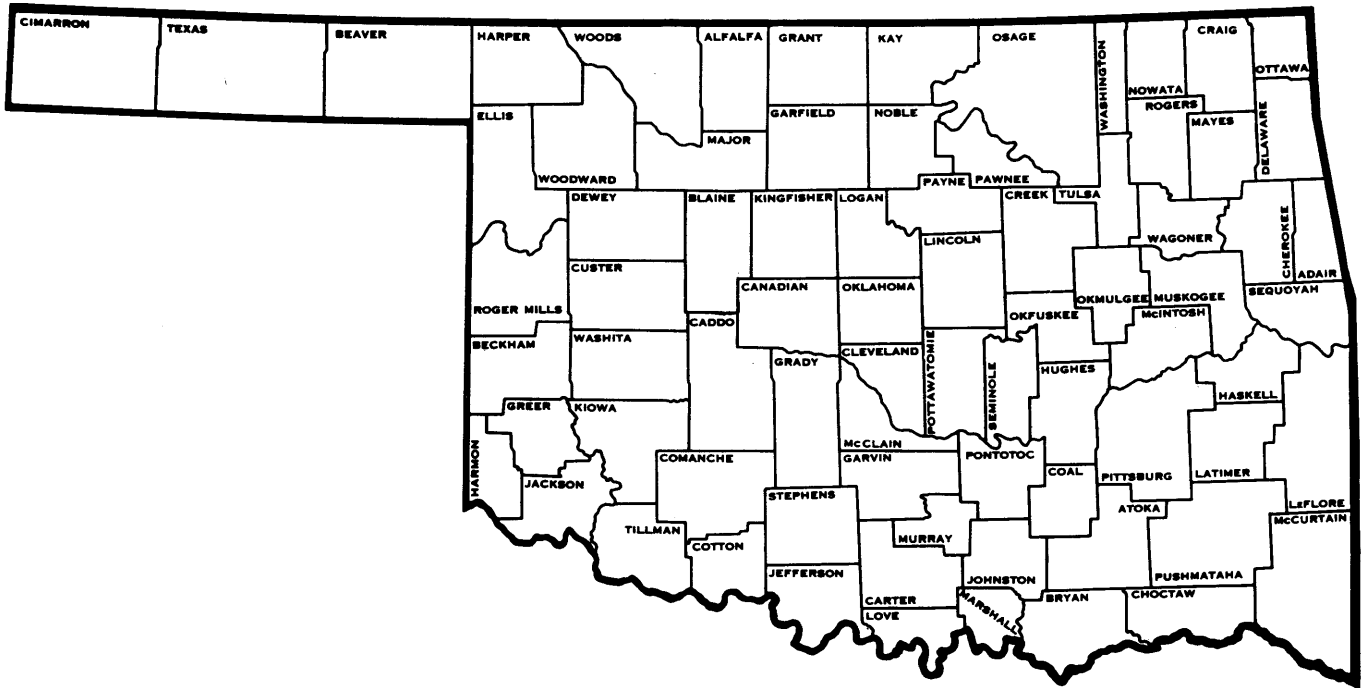
All kinds of _____ grow in Oklahoma, but watermelon is the most profitable. In 2007 Oklahoma produced 360,000 _____ of watermelon.

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



Name _____

Where Do They Grow?



Watermelon ranked number 15 of all Oklahoma ag commodities in 2007. Highest producing counties were Caddo, Jefferson, Love, LeFlore, and Okfuskee.

1. Students locate and color in the counties listed above.
2. Which watermelon-producing county is closest to your school?
3. Contact the county Extension office in each of the counties or use resources available in your classroom, the library, or the internet to determine the soil types in each county.
 - Are the soil types the same/different?
 - How do they compare to the soil type in your county?