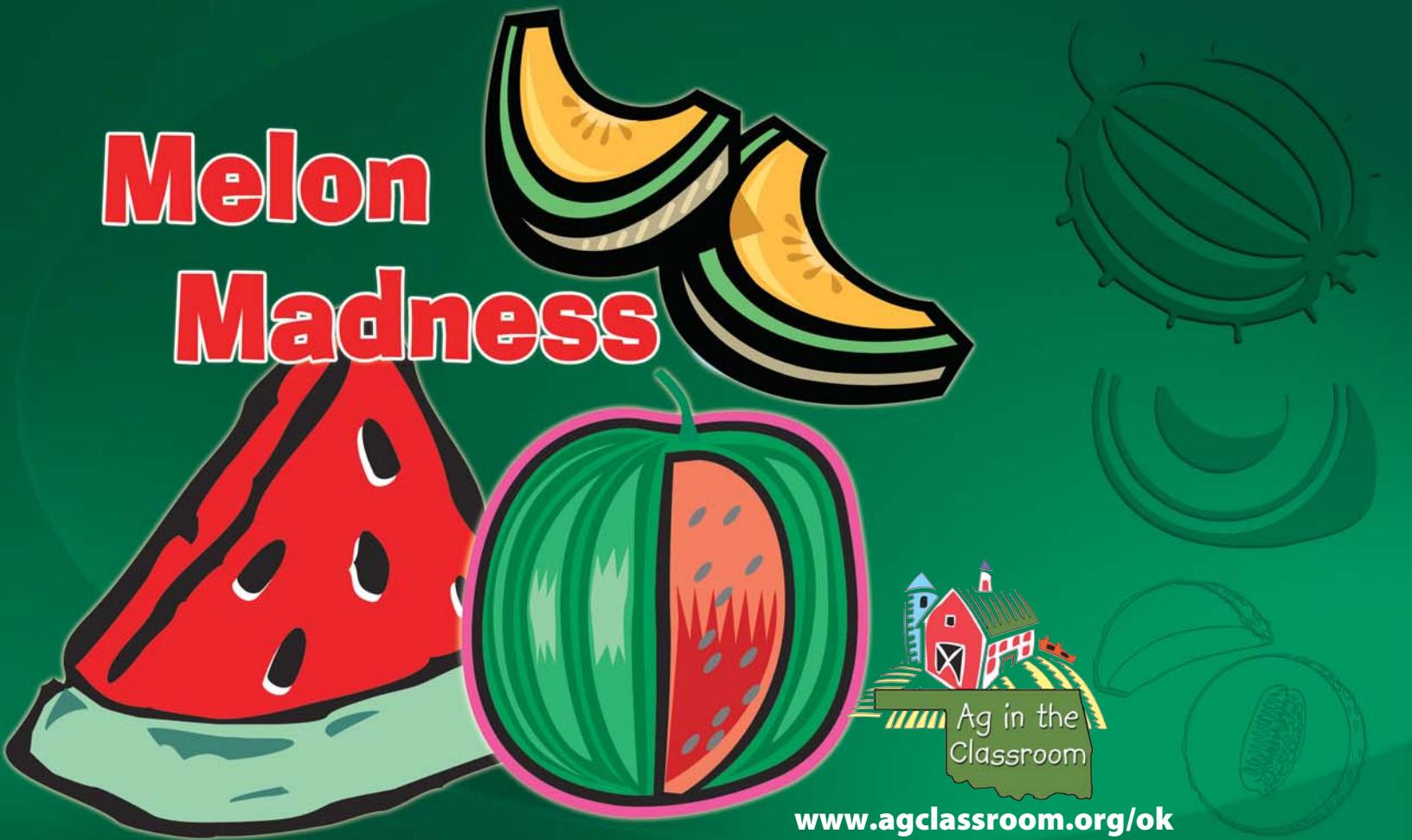


# Melon Madness



Ag in the  
Classroom

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## P.A.S.S

### Grades 1-5

Math Process-1,2,3;  
2.1,2,3; 3.2,3; 4.4; 5.1,2

### Grades 1-5

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

### Grade 1

Reading-4.1,3; 6.1a;  
8.1bd,2

Writing-1.4; 2.1,2,3,4,5

Math Content- 2.2a,4;  
3.3; 5.1,2

Physical Science-1.1,2

Life Science-2.1,2

Social Studies-  
1.1; 2.2; 4.2; 5.1

### Grade 2

Reading-3.1; 5.1ac; 7.1ae

Writing-2.1,2c,4,5

Math Content-2.3; 4.2ab;  
5.1,2

Life Science-2.1;3.1

Social Studies-1.1,3; 4.2;  
5.2

### Grade 3

Reading-2.1;4.1a; 5.1b;  
6.1c,2bc

Writing-2.1,2,5,6b

Math Content-4.2abc;  
5.1abc

Physical Science-1.1,3

Life Science-2.1,2

Earth Science-3.2

Social Studies-1.1; 4.3,4

Languages-1,4,5

### Grade 4-5

Science Process- 1.1,2; 2.2;  
3.1,3; 4.1,2,3,4; 5.1,2,3,4

### Grades 4-7

Languages-1.3,3

### Grade 4

Reading-1.1; 3.1b;  
5.1a,2cd

Writing-1.2,5; 2.1d,2,4b,6  
Math Content-4.4b; 5.1ab

Life Science-3.1,2

Social Studies-1.1; 2.1;  
3.2; 4.2

### Grade 5

Reading-1.1a; 3.1b,3d;  
5.1a,2abd

Writing-1.2,6; 2.1,2,5e,6a  
Math Content-3.1b; 4.4;  
5.1ad

Physical Science-1.1,2

Life Science-2.2

Earth Science-3.1

Social Studies-1.1; 7.1

### Grade 6-8

Math Process-1.1,3,6; 2.1;  
3.3; 4.1; 5.1,4

Science Process- 1.1,2;  
2.1,2; 3.1,3,4,5;

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

### Grade 6

Reading-1.1a;

3.1b; 5.1b,2ad

Writing-1.2;

2.1a,2c,3ab,4a,7

Math Content-4.3; 5.1

Physical Science-1.1

Life Science-3.2; 4.1

Earth Science-5.3

Social Studies-1.2,3; 2.3

### Grade 7

Reading-1.1; 3.1a;

5.1b,2acd

Writing-1.2;

2.21b,3ab,4b,8

Math Content-4.1b,2a;  
5.1

Physical Science-1.1

Life Science-2.2; 3.1; 4.2

Social Studies-1.1; 2.4;  
6.1

Languages-1.3-3

### Grade 8

Reading-1.1; 3.1a;

5.1a,2ab

Writing-1.2;

2.2abd,3ab,4b,8

Math Content-4.1.5.1

Physical Science-1.2

Life Science-3.1

Social Studies-1.1,5; 2.1

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 2006 Oklahoma produced 16,000 tons of watermelon, adding about \$3 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.

**Related lesson online: Fruit or Vegetable?**

# MELON HISTORY SCRAMBLE.....

- 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.

# MELON POPSICLES.....

Resources Needed: seedless melon, blender, ice cube trays, aluminum foil, toothpicks

1. Puree seedless melon (cut in chunks) in a blender
2. Pour the puree into ice trays.
3. Stick a toothpick through the center of each cube.
4. Freeze for three hours or until solid.
5. Serve as a refreshing treat.
6. Add lemon juice and mint to some of the puree, and let students do a taste test.

Find more melon recipes online in the “Food and Fun” section.

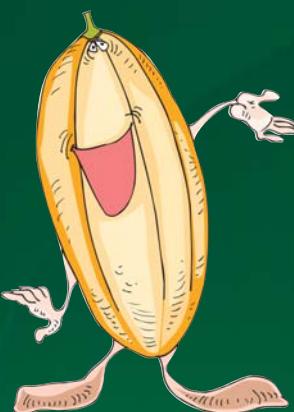


## **Melon Nutrition**

Watermelon and cantaloupe do 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. 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.





# HOW TO PICK A MELON .....



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 online: "How to Pick the Best" and "Working Watermelon"**

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

# MULTITUDES OF MELONS.....

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.

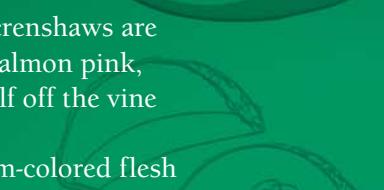
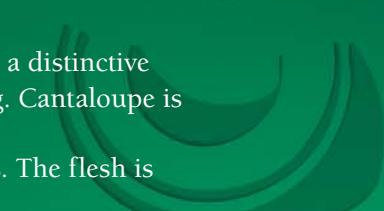
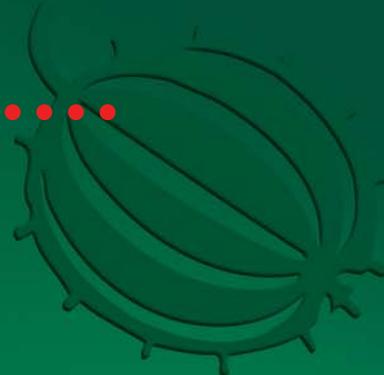
**cantaloupe** - Cantaloupe is also referred to as netted melon because it has a ribless rind with a distinctive netted skin. Inside there is a hollow cavity that contains seeds encased in a web of netting. Cantaloupe is also known as “rock melon” in several parts of the world.

**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.

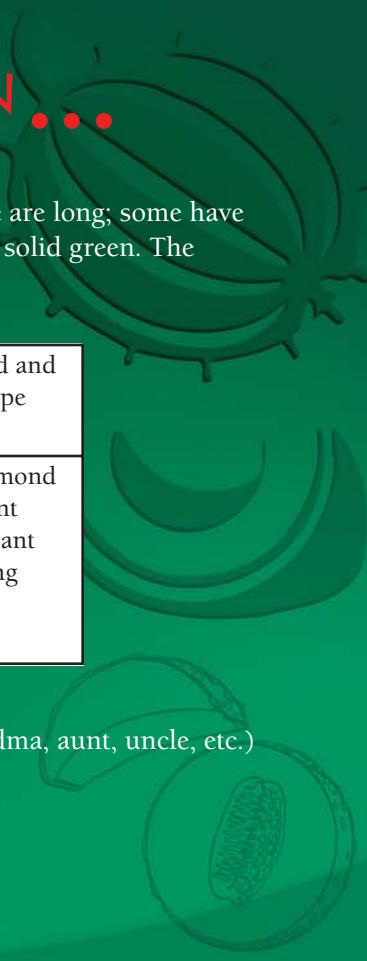
**canary** - Canary melons have bright yellow rinds and an oblong shape. Inside, the pale, cream-colored flesh is juicy, and the flavor is very mild. The taste is slightly more tangy than a honeydew melon.

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.





# MELON FAMILY REUNION...



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.

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

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?
- Draw pictures of the watermelon relatives.

**Related lesson online: "Melon Meiosis"**

**[www.agclassroom.org/ok](http://www.agclassroom.org/ok)**

# WATERMELON, WATERMELON.....

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 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.

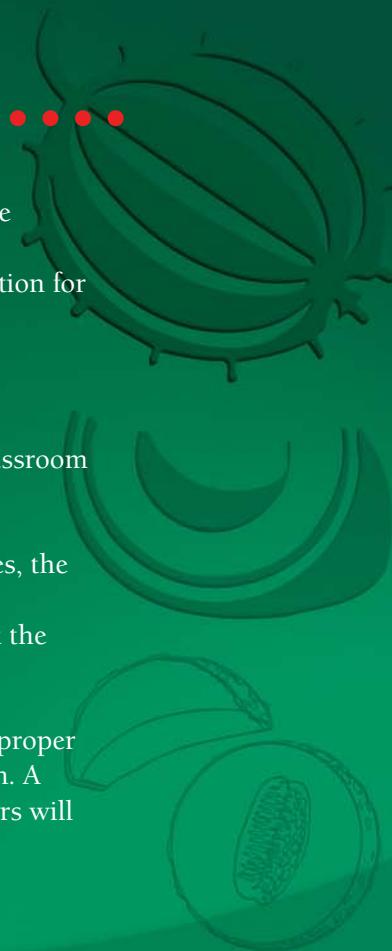
Find more melon crafts in the “Crafts” section of the “Food and Fun” link on the Web site.

# IF THE MELON FITS.....

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.



Melon Fact: Melons grown commercially are dependant upon honeybees for proper growth. On average, it takes about 10 to 15 bee visits for proper pollination. A misshapen melon is an indicator of poor pollination. Many times, farmers will place bee hives near their fields to aid in better pollination.



# WILL IT FLOAT?.....

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

## New Kids in Class

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 Fact: Watermelon is 92 percent water. Early explorers used them as canteens.



# MELON MATH.....

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 weigh the edible portion for each variety.
  - Students will compare the ratio of fruit to rind for each melon variety.
  - Students will find the average 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?

Melon Fact: Most watermelons weigh from 5-40 pounds, while some weigh as much as 100 pounds.

## Watermelon

### Nutrition Facts

Serving size: 2 cups watermelon, diced (280g)

#### Amount Per Serving

Calories	80	Calories from Fat	0
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% Daily Value\*

Total Fat	0g	0%
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Saturated Fat 0g 0%

Cholesterol	0mg	0%
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Sodium	10mg	0%
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Potassium	230mg	7%
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Total Carbohydrate	27g	9%
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Dietary Fiber 2g 8%

Sugars 25g

Protein	1g	
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Vitamin A	20%	Vitamin C	25%
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Calcium	2%	Iron	4%
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• Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

Calories:	2,000	2,500
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Total Fat	Less than	65g	80g
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Sat. Fat Less than 20g 25g

Cholesterol	Less than	300mg	300mg
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Sodium	Less than	2,400mg	2,400mg
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Total Carbohydrate	300g	375g
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Dietary Fiber 25g 30g

Calories per gram:  
Fat 9 • Carbohydrate 4 • Protein 4

Source: Produce Marketing Association

# HARVEST IT FOR ITS LYCOPENE...

Lycopene is an antioxidant that gives tomatoes, watermelon and pink grapefruit their red color. Antioxidants such as lycopene help neutralize “free radicals” that cause DNA damage in cells – damage that may play a role in the onset of cancer. Watermelon is the lycopene leader.

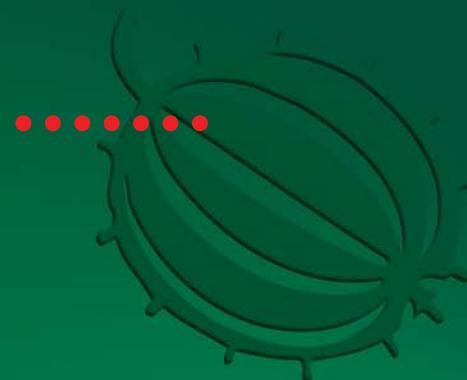
Researchers at Oklahoma State University Food and Agricultural Products Center are testing ways to harvest lycopene from melons that are left in the field because of their odd shapes or appearances and wouldn't otherwise be used.

### Fabulous Fruit Slush

- 1 cup ripe cantaloupe, cubed (rind and seeds removed)
- 1 cup honeydew melon, cubed (rind and seeds removed)
- 2 cups seedless watermelon, cubed (rind removed)
- 2 cups ripe strawberries, hulled and sliced
- 1/4 cup fresh orange juice
- 2 tablespoons sugar
- 1 cup crushed ice

In a blender, add ingredients and mix. Pour into cups and enjoy!

# HONEYDEW AND CANTALOUPE FACTS



- Vitamin A is important for optimal eye health, can help prevent night-blindness, and boosts immunity by enhancing the infection-fighting actions of white blood cells called lymphocytes. Which melon is highest in Vitamin A?

- Vitamin B6 is used by the body to manufacture brain chemicals (neurotransmitters), such as serotonin, melatonin and dopamine, which preliminary research shows may help the body cope with anxiety and panic.

- Vitamin C can help to bolster the immune system's defenses against infections and viruses and can protect a body from harmful free radicals that can accelerate aging and conditions such as cataracts. Which melon is highest in Vitamin C?

- When making your comparisons, make sure the serving sizes are the same.

## Honeydew Melons

### Nutrition Facts

Serving Size: 177g

#### Amount Per Serving

Calories	64	Calories from Fat	0
Total Fat	0	1%	
Saturated Fat	0g	0%	
Trans Fat			
Cholesterol	0mg	0%	
Sodium	32mg	1%	
Total Carbohydrate	16g	5%	
Dietary Fiber	1g	6%	
Sugars	14g		
Protein	1g		
Vitamin A	2%	Vitamin C	53%
Calcium	1%	Iron	2%

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Source: PMA's Labeling Facts

Honeydew melons are low in Sodium, and very low in Saturated Fat and Cholesterol. Honeydews are a good source of Vitamin B6, Folate and Potassium, and a very good source of Vitamin C.



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## Cantaloupe

### Nutrition Facts

Serving Size: 177g

#### Amount Per Serving

Calories	60	Calories from Fat	3
Total Fat	0	1%	
Saturated Fat	0g	0%	
Trans Fat			
Cholesterol	0mg	0%	
Sodium	28mg	1%	
Total Carbohydrate	14g	5%	
Dietary Fiber	2g	6%	
Sugars	14g		
Protein	1g		
Vitamin A	120%	Vitamin C	108%
Calcium	2%	Iron	2%

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Source: PMA's Labeling Facts

Cantaloupes are low in Saturated Fat and Sodium, and very low in Cholesterol. They are also a good source of Dietary Fiber, Niacin, Vitamin B6 and Folate, and a very good source of Vitamin A, Vitamin C and Potassium.

# MELON VOCABULARY.....

**antioxidant** - a substance that inhibits the destructive effects of oxidation or reactions promoted by oxygen, peroxides or free radicals in the body or in foodstuffs

**botanical** - relating to the science of plants

**cucurbit** - mostly climbing or trailing plants of the family Cucurbitaceae, which includes the squash, pumpkin, cucumber and melons

**fiber** - the coarse 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

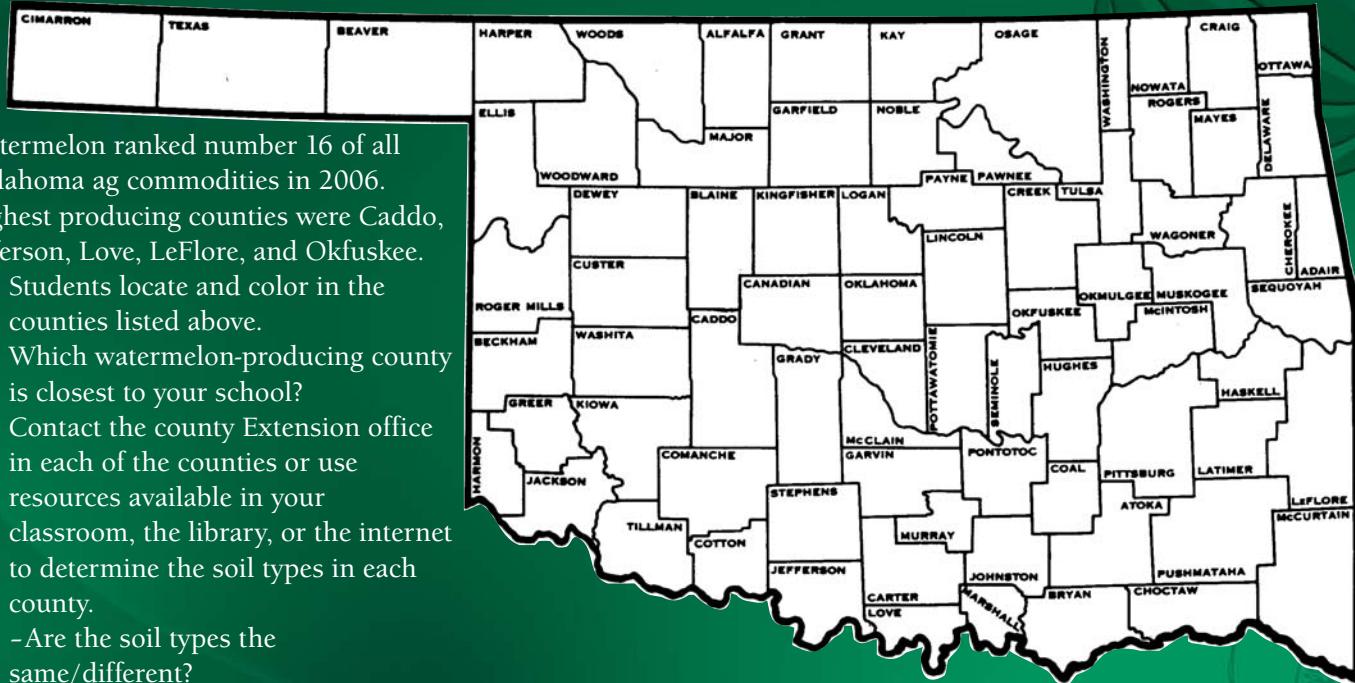
**ovoid** - describes a fruit or similar plant part that is shaped like an egg

**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

# WHERE DO THEY GROW? .....



Watermelon ranked number 16 of all Oklahoma ag commodities in 2006.

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?

**Oklahoma Ag in the Classroom is a joint project of the Oklahoma Department of Agriculture, Food & Forestry; the Oklahoma State Department of Education and the Oklahoma Cooperative Extension Service.**



**For more information about**

**Oklahoma Ag in the Classroom, contact:**

**Jamey Allen, 405.522.6768, [jamey.allen@oda.state.ok.us](mailto:jamey.allen@oda.state.ok.us)**

**Mary Ann Kelsey, 405.522.5513,**

**[maryann.kelsey@oda.state.ok.us](mailto:maryann.kelsey@oda.state.ok.us)**

**Dana Bessinger, 405.522.2105, [dana.bessinger@oda.state.ok.us](mailto:dana.bessinger@oda.state.ok.us)**

**For more information about the**

**Oklahoma Farm to School Program, contact:**

**Chris Kirby, Oklahoma Department of Agriculture,  
Food & Forestry; 2800 N. Lincoln Blvd.;  
Oklahoma City, OK 73105**

**405.522.2106, [chris.kirby@oda.state.ok.us](mailto:chris.kirby@oda.state.ok.us).**

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**[www.okfarmtoschool.com](http://www.okfarmtoschool.com)**