Florida GRAPEFRUIT

Meet Your Farmer

Want to visit a Florida citrus grove? Go to **www.visitflorida.com** to find a grove near you!

For more resources visit these websites:

Florida Farm to School
FreshFromFlorida.com/FarmtoSchool

Florida Department of Citrus
FloridaCitrus.org

Dear Teacher,

Ahhh, the sweet nectar of Florida grapefruit. I'm Gregory, your tour guide through this month's Harvest of the Month. Grapefruit belongs to the citrus family, which is a particularly proud Florida family with a rich history. The first citrus trees were brought to Florida in the 1500s by Spanish explorers, and to this day, citrus products like grapefruit endure as a state treasure. An excellent source of vitamin C and helpful in absorbing iron, the grapefruit is as healthy as it is tasty.

Join me as we explore the glorious grapefruit, integrating standards-based lesson plans and interactive materials to peak your students' interest. Start peeling through the pages to find the really good stuff inside!

Classroom Recipe

Citrus Ade Juice *Yield: Makes 6 Servings*

- 1/2 cup sugar
- 2 cups water
- 1 cup Florida grapefruit juice, chilled
- 1 cup Florida orange juice, chilled
- 2 tablespoons lime juice (optional)

PREP: For syrup, combine sugar and 2 cups water in saucepan. Bring to a boil; reduce heat. Boil gently, uncovered, 1 minute to dissolve sugar. Cool 20 minutes. Cover and chill syrup. To serve, pour syrup into pitcher. Add citrus juices. Stir well. Serve over ice. If desired, garnish with Florida grapefruit wedges.

Credit: FloridaCitrus.org

Florida Department of Agriculture and Consumer Services
Adam H. Putnam, Commissioner

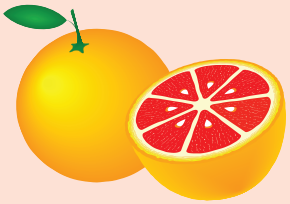
Harvest of the Month

Middle School

Class Chatter

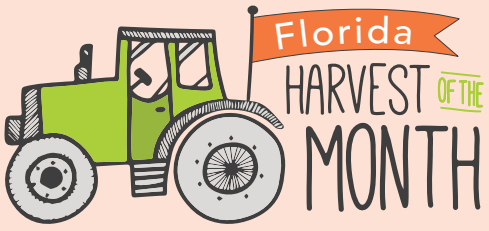
Did You Know?

- A grapefruit is a cross between a sweet orange and pomelo.
- A normal grapefruit tree produces, on average, 350 pounds of grapefruit in a season. Some older trees have been known to produce up to 1,500 pounds of fruit in one season.
- The first grapefruit grove was planted near Tampa, Florida in 1823.



Tasty Tips

- Florida grapefruit is in season from mid-September to early June. Look for the Fresh From Florida logo at your local grocery store, or visit a farmer's market in your area to purchase Florida grapefruits fresh from your local farmer!
- Grapefruit is picked ripe from the tree and is ready to eat right away. Choose grapefruits that are bright in color, a symmetrical shape and are firm yet springy to the touch.
- Grapefruit flavors pair well with honey, mint, orange, berries and rosemary.
- Grapefruit can be eaten raw, juiced, added to salads and desserts or sliced and grilled to use as a side dish to an entrée.



Nutrition Data

The Percent Daily Values are based on a 2,000 calorie diet and give you a framework for deciding if a food is high or low in a nutrient. The Quick Guide to percent DV is 5% or less is low, and 20% or more is high.

Example: Vitamin C: 105%

This means that one cup of grapefruit contributes all of the vitamin C you need to meet your daily recommended allowance.

Grapefruit provides a variety of nutrients that young children need to support their developing bodies.

Nutrition Facts

Serving Size (1 cup)

Amount Per Serving	
Calories 74	Calories from Fat 2
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 19g	**14%**
Dietary Fiber 3g	**10%**
Sugars 16g	
Protein 1g	
Vitamin A 12% •	Vitamin C 105%
Calcium 3% •	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.

Good for Your Body

Grapefruit is an excellent source of vitamin C and contains fiber and antioxidants. One cup of grapefruit provides more than 100 percent of the recommended dietary allowance for vitamin C.

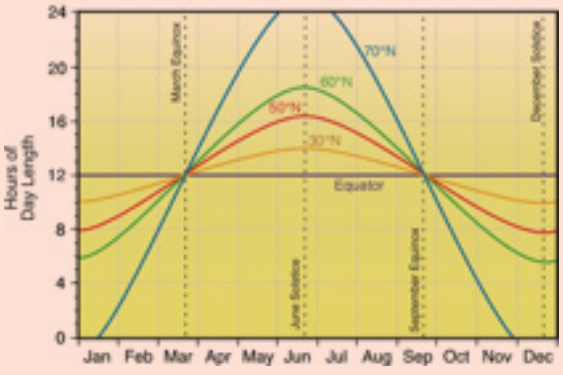
Vitamin C helps to repair and maintain healthy cartilage, bones, teeth and skin, and it helps to heal wounds.

"Orange" You Glad to Learn More About Florida Citrus

Grapefruits, lemons, limes, satsumas and tangerine oranges are all examples of citrus fruits that grow in Florida. Mature grapefruit trees, along with other citrus trees, flower in the spring then fruit set occurs. The fruit starts growing during the summer months and ripens in the fall and winter. Grapefruit season typically runs from September through June. Grapefruit trees thrive in temperate or tropical-like regions—in USDA plant hardiness zones nine and up. A hardiness zone tells farmers and gardeners whether or not a region has the ideal temperature to grow certain plants. The main grapefruit growing counties in Florida are: Indian River, St. Lucie, Polk, Hendry, Highlands, Osceola and Charlotte.

The Sunshine State

While Florida is referred to as The Sunshine State, more sunlight is recorded in portions of the southwestern United States. Despite that fact, Florida receives abundant sunlight during the winter months, which makes our state an ideal location to grow citrus, especially grapefruit. All varieties of citrus prefer full sunlight exposure, and the amount of fruit harvested from them correlates with the number of hours of sun the fruit trees receive each day.



Sunshine is an important factor in plant growth because the heat and light required by all growing plants is provided by solar radiation. Heat cannot entirely replace light in this process; however, light can, for the most part, replace heat. The quality and the quantity of sunlight transmitted to growing plants are both dependent upon atmospheric conditions and the season (time of year). Solar energy provides the light required for seed germination, leaf expansion, stem and shoot growth, flowering and fruiting. Solar energy also provides the thermal conditions necessary for the different functions of the plant.

Geographical location determines the amount of sunlight an area will receive over the course of the year. Areas closest to the equator do not see much variation in the length of daylight hours during all four seasons. The further away a location is from the equator, the less daylight hours it will have in the fall and winter. Between September and March, days are shorter than nights in the Northern Hemisphere; the opposite is true in the Southern Hemisphere.

WeatherSTEM

Solar radiation data provides information on how much of the sun's energy strikes a surface at a location on earth during a particular time period. The common term for solar radiation is sunlight. Meteorologists use an instrument called a radiometer to measure solar radiation in units of watts per meter squared (W/m^2). Using what you've just read about how sunlight influences plant growth, let's explore how feasible it would be to grow grapefruit trees at your school.

Using the WeatherSTEM station in your county, explore these weather variables. To find the closest WeatherSTEM station to you, use the link below, but replace "your-county-name" with the name of the county where your school is located:

https://your-county-name.weatherstem.com
(For example, if your school is located in Leon County, visit https://leon.weatherstem.com)

Select an available WeatherSTEM station in your county and write down the current values for:

TEMPERATURE		**˚F**
HUMIDITY		**%**
WIND SPEED		**mph**
SOLAR RADIATION		**W/m²**

Using the data mining tool on the website, go back and look at the solar radiation data since the beginning of the year (January 1). To do this:

1. Click on and select "Solar Radiation."
2. Scroll down to the bottom of the page, select the time period from the calendar.
3. Make sure that "Chart" is selected as the output format.
4. Set the interval to "Daily" and operation to "Maxima."

The graph displays the maximum solar radiation for each since January 1.

5. What are some of the things you first notice about the data on the graph?
6. Do you see any days that stand out as the lowest and highest values? Write those dates down.

Use the data tool, select one of the dates you just wrote down and look at the data using the interval set to Minute. Click on the graph and a pop-up should appear with a picture from the WeatherSTEM cloud camera and radar and satellite images.

7. What can you say about the weather on the day you selected?

Now compare data from a station outside of the state of Florida. Follow the same steps above to create a graph that will show the solar radiation from two different WeatherSTEM stations. Find a partner to discuss the graph, and answer the following questions:

8. Why would the values from the two locations be different?
9. How can the location and local weather impact the cloud camera observations?

Additional Resources
Explore these other WeatherSTEM lessons

weatherstem.com/resources