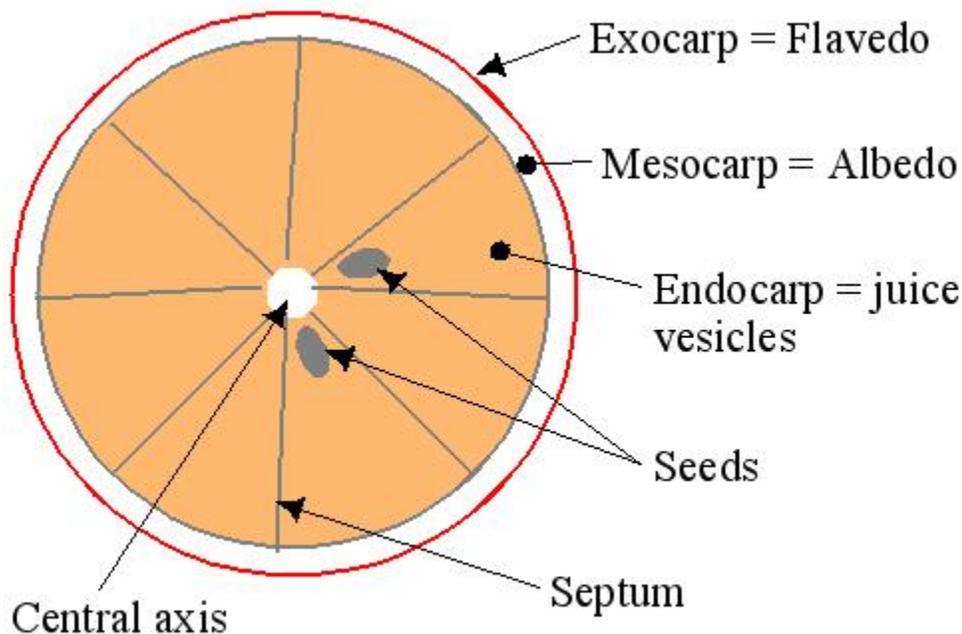




Post-Trip Lesson Plan Citrus

- I. Grade level: grades 3-5
- II. Objectives:
 - a. To understand the importance of the citrus crop in Florida.
 - b. To discover how citrus crops are grown in Florida.
 - c. To determine how shipment of citrus crops became important for the industry's survival.
- III. Standards:
 - a. Sunshine State Standards (2006):
 - 1) Social Science: Time, Continuity, and Change: Standard 1: uses a variety of methods and sources to understand history and knows the difference between primary and secondary sources.
 - 2) Social Science: Time, Continuity, and Change: Standard 6: Understands the history of Florida and its people.
- IV. Vocabulary:
 - a. Citrus: a tree or shrub that produces citrus crops, such as lemons and oranges.
 - b. Harvesting: the action of collection and gathering crops. This is usually done when plants have begun to ripen and are soon ready for consumption.
 - c. Shipment: Transferring goods from one area to another.
 - d. Freight: the goods or cargo that is being shipped in the shipment.
 - e. Flowers: Citrus trees create fragrant white flowers that pollinate before producing a citrus crop.
 - f. Pollination: The spreading of pollen to help germinate seeds and grow plants.
 - g. Exocarp: the outer most layer of the fruits wall.
 - h. Mesocarp: the middle layer of the fruits skin, usually a fleshy part.
 - i. Endocarp: the innermost layer of a fruits skin, in citrus this area is usually the part consumed
 - j. Seeds: a hard ovular shaped object, which is planted to grow new plants.
 - k. Septum: a dividing wall or thin membrane that divides the endocarp.
 - l. Central Axis: the core of a citrus fruit of which all of the other citrus parts surround.
 - m.





V. Quick Facts:

- a. Today Florida produces 83 % of the citrus crop in the United States; Texas is the next largest producer in the United States producing 10% of the crops.
- b. The first shipments of citrus out of Florida began in the 1700s.
- c. Florida used either a train or ships to transfer citrus crops to their destination.
- d. The first railroad built in Florida expanded the amount of citrus crops that could be shipped out of the state, as well as, provided a quicker method of shipping.

Activity 1: Worksheet: Florida's Citrus Crop

VI. Materials:

- a. Worksheet: Florida's Citrus Crop
- b. Writing Utensil

VII. Procedures: Pass out the worksheet: Florida's Citrus Crop to the Class. Give students time to review the worksheet, and then separate the class into partners or groups. Give students time to prepare for their presentations, and then time to present their presentations. After the presentation the students are to complete the rest of the worksheet.

VIII. Assessments: This activity can be graded based on participation, interpretation of the provided material, and completion.

IX. Open-Ended Questions:

- a. Why is citrus important today?
- b. How often do you eat citrus today?
- c. How often do you think people ate citrus in 1898? (think about how people use to eat citrus once a year during the holiday season)
- d. How does reading primary source information (such as these excerpts) help give better insight to the subject you are studying?

Activity 2: Citrus

X. Materials:

- a. Worksheet: Citrus and Vocabulary
- b. Large Styrofoam balls (1 per student)
- c. Tissue Paper
- d. Construction paper
- e. Tooth picks
- f. Crayons, Markers, Pencil Crayons

XI. Procedures: Verbally generate a list of the various citrus crops with the class. Then review the list provided below. Hand out the worksheet: Citrus and Vocabulary to the class, and allow time for the students to complete the worksheet and the craft project.

XII. Types of Crops: lime, sour orange, pummelo, kaffir lime, lemon, wild orange, citron, calamondin, grapefruit, mandarin, sweet orange

XIII. Assessments: This activity can be based on the use of vocabulary words, following instructions, use of historical information, and creativity.

XIV. Open-Ended Questions:



- a. What types of Citrus do you eat?
- b. How would you define citrus today?
- c. What part of the fruit protects the fruit? (Exocarp)

Activity 3: Transportation of Citrus

XV. Materials:

- a. Citrus Fruits created in activity 2
- b. Two large boxes (as metal cartons)
- c. Two large Boxes (as boxes)

XVI. Procedures: Review the history of the transportation of Fruit in 1898 provided below. Have each student take notes on the various steps while you read the steps to the class. Then Separate the class into two groups. Have each group pick a brand name for their shipping group as well as an address. Have each group pack the fruit that they created in activity 2 into a large box following the procedures from 1898. (This activity can be done as a competition between the two groups).

XVII. History:

- a. Do not pick oranges when the weather is damp or the fruit is wet
- b. Do not pull fruit from the tree, cut the fruit down with clippers
- c. Place the fruit into metal cartons while gathering
- d. Next pack the fruit into boxes, lift each fruit individually never pour the fruit from the metal cartons into the boxes because the fruit will then spoil.
- e. Store the fruit in a dry area until they are taken to packing houses, where the fruit will be dried for two or three days
- f. Next the fruit can be packed tightly into boxes without the threat of spoiling due to the fruit being dried.
- g. While packing discard any damaged fruit. Place in boxes with varying layers.
- h. After being packed the fruit is wrapped. This is done with tissue paper
- i. The name and address of the grower and the brand of the fruit is printed on the box.
- j. The fruit is then taken to a train to be shipped as freight.

XVIII. Assessments: This is a collaborative project within the classroom and can be graded based on assessing your students understanding of the history and vocabulary of transporting citrus crops.

XIX. Open-Ended Questions:

- a. How long do you think it takes fruit to be packed and shipped today?
- b. How long do you think it took the fruit to be packed and shipped in 1898?
- c. Do you think using a train in 1898 would take longer than a truck today?
- d. Weather conditions could ruin the crop on a train because there is no climate control. For example, if a frost occurred many of the citrus crops would spoil. How has the use of a truck improved transportation for citrus crops?

XX. Sources:

- a. Rieger, Mark. *Citrus: Lemon, Lime, Orange, Tangerine, Grapefruit-Citrus Supp.* University of Georgia. Retrieved on September 18, 2008 from <http://www.uga.edu/fruit/citrus.html>
- b. Mann, A. S. "Gathering and Packing Oranges." *The Florida Agriculturist.* Dec. 17, 1890.