



## Post-Trip Lesson Plan Sugar Cane

- I. Grade level: grades 3-5
- II. Objectives:
  - a. To understand the process of creating Sugar Cane.
  - b. To learn how to farm and tend the Sugar Cane Crop.
  - c. To discover different machines used to process Sugar Cane, and how these various mills differ across the United States.
  - d. To examine the purpose of Creating Sugar Cane, and how the sugar and syrup created from the cane was used by those in 1898.
- III. Standards:
  - a. Sunshine State Standards(2006):
    - 1) Social Studies: Time, Continuity, and Change: Standard 6: The student understands the history of Florida and its people.
    - 2) Social Studies: Economics: Standard 1: The student understands how scarcity requires individuals and institutions to make choices about how to use resources.
- IV. Vocabulary:
  - a. Cane Grinding: This is a party (sometimes called a syrup making party), where people gather to make syrup. This provided a much needed social event with music and fun, lots of good food to eat, and a source of extra help to make the work go faster.
  - b. Syrup Making: another name for Cane Grinding.
  - c. Lever: Used to turn the gears which stir the Sugar Cane Syrup. This is found on steam powered Sugar Cane Mills.
  - d. Sweep: A sweep is a long pole that is hooked up to a mule. The mule then turns the gears on the Sugar Cane Mill, similar to a lever.
  - e. Gears: Aids in spinning and stirring the Sugar Cane Syrup.
  - f. Kettle (Shafts): Where the Sugar Cane Juice is stored and cooked.
  - g. Base: provides support for the Sugar Cane Mill.
  - h. Commercial Sugar Cane Mill: a Sugar Cane Mill that has been created by a factory, marketed, and sold by a store or catalogue.
  - i. Ratooning: the re-growing of the sugar cane roots into a cane.

### Activity1: Sugar Cane Crop

- V. Materials:
  - a. One copy of the Worksheet: Sugar Cane Crop
  - b. Construction paper
  - c. Markers
  - d. scissors



- VI. Procedures: Pass around to the class the Worksheet: Sugar Cane Crop while explaining information about the crop (below). Then allow the class to create their own sugar cane field.
- VII. Information:
- Sugar Cane is a crop that grows in warm, tropical climates. The plant should be planted in early spring so that the soil is moist.
  - The farmer needs to remove the leaves from the plant that block the sunlight from the ground (which blocks the ripening process of the plant).
  - The longer the Sugar Cane remains in the ground the higher the sweeter the syrup.
  - Harvesting begins in mid-late November in Florida. The top of the plant is first removed leaving the cane and the root. Cut the cane as long as possible without destroying the roots. If done properly the roots will continue to grow as a crop next year (this is called rationing).
- VIII. Sugar Cane Field:
- Pretending that it is spring allow your students to “plant” their own crop: each student can cut a piece of construction paper in half and roll each half into a cylinder and glue (tape) together. Then attach the two cylinders together by gluing one cylinder inside the other. Now that you have a large cylinder cut 2in. slits in the bottom of the cylinder and fold the slits outward (these are the roots of the plant). This should allow the cylinders to stand (weights cans also be used). Now take another piece of construction paper cut out leaf patterns and attach them to the top of the large cylinder. Once this is completed all of the students can line their sugar cane crops up and create a sugar cane field.
  - Harvesting: Now pretend that it is mid-late November and it is time to harvest the crop. Give the students scissors and allow them to cut their leaves off the plant. And then cut the large cylinder near the base right before slits (roots). Once finished explain that the cane of the crop is the only part used to create the sugar cane syrup and that the roots are reused to create a crop of the next year.
- IX. Assessment: This is a group activity and can be graded based on participation.
- X. Open-Ended Questions:
- Where is sugar cane grown?
  - How long does it take to grow Sugar cane?
  - Would you want to be a Sugar Cane farmer? Why?

### Activity 2: Worksheet: Sugar Cane Mills

- XI. Materials:
- Worksheet: Sugar Cane Mills
  - Writing Utensil
  - Crayons and Markers (optional)
- XII. Procedures: Hand out the worksheet: Sugar Cane Mills to your class. Give them time to answer the questions provided. Then discuss the answers together as a class.
- XIII. Assessment: Students can be graded based on completion of the worksheet.
- XIV. Open-Ended Questions:
- Where do we get sugar today?



- b. Where did sugar come from in 1898?

Activity 3: Sugar and Sweets

- XV. Materials:
- One large sheet of paper
  - Markers
- XVI. Procedures: On a large sheet of paper make a list with the class of all the sweets that are popular to eat today. Then discuss some of the ingredients used to create these sweets (mainly sugar). Once finished explain the history provided below.
- XVII. History: Floridians living in Florida in 1898 did not have the money nor means to purchase sugar. Therefore, many of them grew their own sugar cane then they could process the sugar cane to create sugar and syrup. They grew this plant and made the sugar and syrup so that they would be able to make sweets which were not so plentiful in 1898. However, not all families produced this crop or had a mill to create the sugar and syrup. These families would be able to purchase another farmers excess sugar and syrup at the local general store, or possibly use a neighbor's mill if available.
- XVIII. Assessment: This is a group activity and can be graded based on participation.
- XIX. Open-Ended Questions:
- What do we use Sugar for today?
  - What do we use syrup for today?
  - How often do we eat sweets today?
  - How often do you think those in 1898 ate sweets?
  - Do you think sweet in 1898 were more of a special treat then they are today?
- XX. Sources:
- Florida for Tourists, Invalids, and Settlers  
By George M. Barbour  
D. Appleton and Co., NY 1884  
Florida Heritage Collection website
- Sugar-cane and Syrup Making  
By A. P. Spencer  
1913  
Florida Environments Online website

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### Sources:

"Sugar-cane." [Clipart ETC](http://etc.usf.edu/clipart/1700/1737/sugar-cane_1.htm). Retrieved on August 28, 2008 from [http://etc.usf.edu/clipart/1700/1737/sugar-cane\\_1.htm](http://etc.usf.edu/clipart/1700/1737/sugar-cane_1.htm)

Cy Cooper, Torrey Kolesar, Bryon Mahaffay, Helena Mousa, Lucas Rogers, Sean Sandiford. "Biofuels." Retrieved on August 28, 2008 from <http://hood.eas.asu.edu/che211/wiki/index.php?title=Biofuels&printable=yes>.

"What is an Herb?" Retrieved on August 28, 2008 from <http://www.fsu.edu/~speccoll/Herbalexhibit/whatherb.html>.

"The Pros and Cons of Biofuel: Sugar-cane Ethanol." [CnnMoney.com](http://money.cnn.com/galleries/2008/fortune/0804/gallery.green_biofuels.fortune/3.html). Retrieved on August 28, 2008 from [http://money.cnn.com/galleries/2008/fortune/0804/gallery.green\\_biofuels.fortune/3.html](http://money.cnn.com/galleries/2008/fortune/0804/gallery.green_biofuels.fortune/3.html).



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Post-Trip Lesson Plan Sugar Cane Mills

Instructions: Look at the Commercial Sugar Cane Mill in the picture below then compare this mill to the one you used at Cracker Country. Fill in the blanks on Cracker Country's Mill with the vocabulary listed on the commercial Sugar Cane Mill. Then answer the questions below.

Commercial Sugar Cane Mill:

**Lever:** Used to turn the Gears which stir the Sugar Cane Syrup

**Gears:** Aids in spinning and stirring the Sugar Cane Syrup

**Base:** Provides support for the Sugar Cane Mill



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Cracker Country Sugar Cane Mill:



Sweep: A sweep is a long pole that is hooked up to a mule. The mule then turns the gears on the Sugar Cane Mill, similar to a lever.

Questions:

1. How are these two Mills similar?

\_\_\_\_\_  
\_\_\_\_\_

2. How are both of these Mills Different?

\_\_\_\_\_  
\_\_\_\_\_

3. Which mill do you think is faster and easier to use?

\_\_\_\_\_  
\_\_\_\_\_

4. Why do you think Sugar Cane producers in Florida used Sugar Cane Mills such as the one found at Cracker Country, rather than the commercial Sugar Cane Mill?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

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5. The Price of the smallest Commercial Mill (shown above) is around \$44.00. Do you think this price is expensive or cheap in 1898?

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6. Draw a picture of your classmates and yourself making Sugar Cane:

Sources: 1880 General Catalogue of Cane Mills and Evaporators. St. Louis, Mo: Manny & Co., Manufacturers, July 15, 1880.