

# Cocoa Ice

Book by Diana Karter Appelbaum

Literature based unit study by Wende, Ami, and Penelope Carpenter

## **Geography: Santo Domingo and Maine**

Locate Santo Domingo on the map. It is an island in the Caribbean hosting the countries of Haiti and the Dominican Republic.

Review Columbus' discovery of this group of islands. Discuss the island's resources: sugar cane, coffee, copper, bauxite, and of course, cacao.

If desired, learn more about Haiti or the Dominican Republic.

Locate Maine on the map. Find a route the schooners may have taken to travel back and forth from Santo Domingo to Maine (or look at the example on the inside cover).

You may want to discuss the interdependence of people. Discuss both Santo Domingo and Maine, answering the following questions:

- What is used to make their houses?
- What basic materials do they need to survive?
- What kinds of food do they eat, and where do they obtain the food?
- How do they earn a living?
- How are the lives of the people influenced by the natural resources?

## **Character Quality/Social Studies: Industry**

The families we find in this story are hard workers! Another word for this is *industrious*. Ask your student to point out examples of their hard work (papa splits the ripe cacao pods, when there is no work in the garden—they go conching, paddling down the river, mama steams the conchs and picks out the meat for chowder, mama roasts the cacao beans, papa hollowed a canoe, papa trades his goods, etc. etc.! The people in Maine are just as industrious—mama bakes apple pies, the little girl practices her stitching, Papa and Uncle Jacob work for the ice company (and all that entails), etc.

In Proverbs 6:6, the Bible admonishes us to “Go to the ant...consider her ways and be wise.” Industry is an important character trait to have. You may want to do a

Bible study with your children (using the book of Proverbs) that will lead them to understand why hard work is important. How do they work hard throughout the day?

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### **Science: Rainforests**

A tropical rain forest is a forest that receives up to 32 feet of rain each year. They are located within a narrow region near the equator in Africa, South and Central America, and Asia. Discuss why they are important to our earth:

- they support over half of the world's plant and animal life
- about ¼ of the medicines we use come from plants of the tropical rainforests
- play an important role in the climate control of our planet by affecting the wind, rainfall, humidity, and temperature. Within the rain forest, water, oxygen, and carbon are recycled. This natural recycling helps to reduce flooding, soil erosion, and air pollution.

In most countries there is a noticeable difference in seasons. Close to the equator, however, there are no seasons. Here people have much of the same kind of weather day after day throughout the entire year. This is true of the rainforests. It is hot ("always summer"), and some rainforests get 200 days of rain per year! Compare a rain forest's annual rainfall with the amount of rain you received in your region last year.

### **Science: Cacao Beans to (Hot) Chocolate**

The book simply describes the process of turning the cacao plant into chocolate.

1. Plant a cacao tree in the shade
2. It grows pink flowers
3. Papa splits the pods open with his machete
4. We spread slippery beans and sticky sweet pulp on a carpet of banana leaves
5. They sit in the sun for a few hot days and begin to change color
6. We pick beans out of the smelly pulp
7. We spread the beans in the sun until they turn dark brown
8. We turn the beans every day until they are dry
9. Mama roasts them over a hot fire
10. She puts them in a mortar and they are crushed

11. We add water and sugar and cook it in a pot

### **Science: Tropical Fruit**

The first few pages of this story mention LOTS of tropical fruits: coconut, papaya, mango, orange, banana, and guava among others. Which ones is your student familiar with? You could take a trip to the grocery store to find as many as possible (of the above mentioned) and make a fruit salad. If you don't want to do that, you could just get a coconut and let your student taste coconut milk. Is your student familiar with any tropical fruits that weren't mentioned in the story? (Pineapple? Star fruit? Passion fruit? Kiwi?).

Fun idea: make a tropical fruit salad!

### **Science: Shells**

If you have some shells (or can get some), let your student examine them. If you are feeling really ambitious, you could let them go "diving"/searching (in a small pool or the tub) or digging (in sand) for some shells. Discuss with your student that shells are houses for living things like crabs.

Let your student sort the shells by shape, size, or color. Complete the shell observation page.

### **Science: Ice**

Your student may wonder how the ice stays frozen from Maine to the tropical aisle. It's because the ice is insulated by the walls of the boat as well as the other ice. If you want, do the following simple experiment. Try wrapping ice in different substances to see which one works as the best insulator. Some ideas: Styrofoam, newspaper, plastic bubble wrap, and tin foil. Which one melts the fastest? Which ice cube lasts the longest? What if you use larger pieces of ice? What if you put many ice cubes together?

If you want this experiment to be simplified, you can get a cooler (and pack it full of ice) and get a similar size container (without a lid) and pack it full of the same amount of ice. How long does it take each to melt? The cooler will take longer because it is insulated. Ice will probably keep in a cooler for many days (depending on the size of the cooler).

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## Language Arts: Vocabulary

**harvest** - to gather a crop

**pulp** - the soft part of certain fruits and vegetables

**machete** - a heavy knife used as a tool for cutting plants

**trading** - used for the purpose of exchanging one thing for another

**schooner** - a ship with two or more masts with sails in the front and back

**support** - to hold the weight of

**bargain** - to talk about a trade in order to get a better deal

## Language Arts: Process Writing (“How-to”)

After discussing the science of the cacao plant, ask your older student to explain (in writing) the process of planting, harvesting, and cooking a fruit or vegetable that you include in your garden. You can make it a simple assignment such as a list, or you can make it more complex by having her write paragraphs. If you can't think of anything, you could also choose to let her make a list (or paragraph) about the process of taking ice from Maine to the tropical islands as described in the story.

**Nursery Rhyme** (use for copywork, if desired)

### I Had a Little Nut Tree

I had a little nut tree, nothing would it bear,  
But a silver nutmeg and a golden pear;  
The King of Spain's daughter came to visit me,  
And all for the sake of my little nut tree.

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## Math: Trading and Bartering

Discuss the concept of trading and bartering.

When people do not have money, they will trade something of value they don't need for something of value that they do need or want. What was traded in this story?

You can barter with actual products or you can barter with labor. Encourage your child to try his hand at bartering for the next thing he desires.

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### **Art: Collage** (Paper Piece Picture)

Examine the use of collage in the pictures in the story. A good example is pgs. 3-4 (“We have every kind of tree around our house.”). Make a paper piece picture. Let your students cut out construction paper, wall paper (or paper they have painted on) and glue the pieces down into a collage type of picture. Sometimes, some of the “pieces” of the illustrations look torn. Point this out to your student as well and give him the opportunity to tear some of the pieces. You may want to let your student choose a page to replicate.

If your student enjoys making this type of illustration, go to the library and get some Eric Carle books. He paints on paper and then pieces together his illustrations. Your student may want to try to replicate some of Carle’s artwork, or just use his for extra inspiration. An Eric Carle book that would tie into the shell science mentioned above would be *A House for Hermit Crab*. Another illustrator who uses a similar art form is Ezra Jack Keats.

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### **Just for Fun:**

- \*Make some hot cocoa and or cocoa ice (chocolate ice cream!).
- \*Craft-- sew together a simple balsam pillow, or use other potpourri
- \*P.E.--have crab races. Learn how to do the limbo.

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