

# Where Does Your Candy Come From?

*A lesson from the New Jersey Agricultural Society's  
Learning Through Gardening program*

**OVERVIEW:** Pair your Valentine celebrations with some real learning by having your students investigate what their candy is made of and where it comes from. Your students no doubt will be surprised to learn that although their chocolate bar looks nothing like the green plant on the windowsill, almost all its ingredients come from plants! Encourage your students to trace the source of sugar to sugar beets in the Midwest and sugar cane in Louisiana, and chocolate to cacao beans in the rain forest. Then plant some sugar beets in your classroom. They can be transplanted right into your garden in the spring.

**OBJECTIVE:** The student will be able to:

- Describe how most of the ingredients in candy come from plants
- Track one or more ingredients in a piece of candy back to the agricultural source
- Observe and describe the life cycle of a sugar beet



**GRADES:** *This lesson can be modified for grades K-5.*

Kindergarteners and first graders as a class can track the source of chocolate to cacao beans in the rain forest. Second and third graders can work in small groups to investigate the source of one or more ingredients in a piece of candy. Fourth and fifth graders in small groups can divide the ingredients in a piece of candy and each research the source of one. All students will enjoy sampling the candy at the end of the lesson!

**CAUTION:** This lesson involves the handling – and eating – of various candy products. Carefully check your students' food allergies and do not use a candy that contains a product (such as peanuts) to which a student may be allergic.

## **MATERIALS:**

The Learning Through Gardening power point presentation "*Where Does Your Candy Come From?*"

Samples of the candy you will investigate for the source of its ingredients.

*If you are working with kindergarteners or first graders, you might want to limit your investigation to cocoa or cocoa and sugar. For higher grades, you should pick the number of ingredients to investigate based on the age and capabilities of the students. Here is an example of candies and their ingredients that can be researched:*

## MATERIALS continued:

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### Hershey's chocolate bar

chocolate  
sugar  
soybeans

### Jellybeans

sugar  
corn syrup  
pectin (apple)

### Reese's peanut butter cups

sugar  
cocoa butter  
peanuts

### Conversation hearts

sugar  
corn starch  
corn syrup

### Junior mints

sugar  
chocolate  
peppermint oil (mint)



Older students may choose to bring in a sample of the candy they want to research and select ingredients to investigate by reading the label.

Read-aloud books related to candy research:

Chocolate, A Sweet History by Sandra Markle

From Cacao Bean to Chocolate by Ali Mitgutsch

How Monkeys Make Chocolate by Adrian Forsyth

The Story of Chocolate by C.J. Polin

The Official M&Ms History of Chocolate by Red, Yellow, Green, and Blue

Check out: [www.sucrose.com](http://www.sucrose.com) "How Sugar is Made"

[www.kids-cooking-activities.com/how-is-chocolate-made](http://www.kids-cooking-activities.com/how-is-chocolate-made)

## PROCEDURE:

Hold up a chocolate bar and ask students if they know what it is made of? Ask if they know where those ingredients come from? Tell them that you are going to become candy researchers who will learn the ingredients of your favorite candy and where they come

from. Show and discuss the Learning Through Gardening power point presentation “Where Does My Candy Come From?”

Kindergarten and first grade: Explain the meaning of the word 'ingredient.' Show the students where to find the list of ingredients on the candy wrapper. Read some ingredients the students will recognize – sugar, milk, chocolate, cocoa butter – and write them on the board.

Ask students if they know where chocolate comes from. Read one of the books on chocolate production or show a video on YouTube of the process of making chocolate. Show the students some raw cacao beans and ask, do they look like chocolate?

Second through fifth grade: Make sure the students understand the meaning of the word 'ingredient.' Show students where to find the list of ingredients on the candy wrapper.

Divide the students into small groups, each with a different type of candy. You can either ask each group to choose one or more ingredients (depending on the students' age and capabilities) or assign ingredients to the groups. For older students, you may want to choose candy that includes ingredients not covered in the power point such a corn starch, pectin, or cinnamon. Tell students they will research where the ingredients come from and how they are grown. Students can use reference books from the library or the Internet for their research. Students use the Candy Investigation Worksheet to record the information they find.

Once the students have completed their research, have the small groups report their findings to the whole class. Discuss the results and ask if the students were surprised by any of them.

Students eat the candy.

## HOW TO GROW SUGAR BEETS IN THE CLASSROOM

Top off your discussion of the sources of candy ingredients by planting some sugar beets in your classroom. Like all beets, sugar beets are a cool-season vegetable that can be transplanted outside in New Jersey in mid-April and harvested in June. You will want to give your sugar beets a head start by planting them indoors around mid-February to early March because sugar beets are larger than other beets and take longer to grow.

Sugar beet seeds are inexpensive and easy to find on Amazon or other Internet sources.

In the classroom, plant sugar beet seeds in 4-6 inch pots filled with potting soil. Plant two or three seeds per pot, about 1 to 1.5 inches deep. When the plants are two inches high, thin the pots to one plant by removing the stem and leaves of the smallest plants. Don't pull out the plants to thin them as it may disturb the roots of the remaining plant.

In mid-April when you plant your other cool-season vegetables, gently remove the sugar beet plants from pots and transplant them into your school garden. The plants now should

be spaced about 8 inches apart, in rows about 12 inches apart, so the beets underground have plenty of room to grow. The beets should pop up above the ground when they are ready to harvest. You can check to see if your beets are ready to harvest by pulling one with large leaves to see how big they are.

Students can record their observations of the sugar beet life cycle indoors and outdoors in their science journals.

### EVALUATION:

Completed Candy Investigation Worksheet.

Report to class on research findings.

Science journal recording of the observations of the sugar beet life cycle.

### EXTENSIONS:

Make your own sugar from sugar beets on a stove top. Follow the instructions in this YouTube video: "Sugar Beets: How to Make Everything: Thanksgiving Dinner"

<https://youtu.be/ZVxPkv0r7JY>.

Older students can use the information on their Candy Investigation Worksheets to write a brief report on their research.

Provide samples of the candy ingredients for students to view and sample. For example, those researching a chocolate bar could see and sample cocoa powder, sugar, and edamame (soy) beans or soybean oil. Have each student bring one ingredient from home for this activity, or ask your homeroom parents to arrange the activity.



Name \_\_\_\_\_

## Candy Investigation Worksheet

The candy I researched is \_\_\_\_\_

The ingredient I researched is \_\_\_\_\_

My ingredient is made from \_\_\_\_\_

which can be found in \_\_\_\_\_  
(what parts of the world.)

What I learned about how this ingredient is grown and prepared:

1. \_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_

3. \_\_\_\_\_  
\_\_\_\_\_

4. \_\_\_\_\_  
\_\_\_\_\_