

Where Does Your Candy Come From?

OVERVIEW: Pair your holiday 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. You can even plant some sugar beets in the classroom.



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 its agricultural source.

GRADES: K-5: As a class, grades K and 1 can track the source of chocolate to cacao beans in the rain forest. Grades 2 and 3 can work in small groups to investigate the source of one or more ingredients in a piece of candy. Grades 4 and 5 in small groups can divide the ingredients in a piece of candy, and each student can research the source of one ingredient. 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 *New Jersey Agriculture in the Classroom* powerpoint presentation *Where Does Your Candy Come From?*, available to download under Teaching Resources, Social Studies Lessons, at newjersey.agclassroom.org.

For grades 3-5: *Candy Investigation Worksheet* copy for each student

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

Optional: sugar beet seeds, soil, container with drainage holes

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 to be sampled and researched:

Hershey's chocolate bar

chocolate
sugar
soybeans

Jellybeans

sugar
corn syrup
pectin (apple)

Reese's peanut butter cups

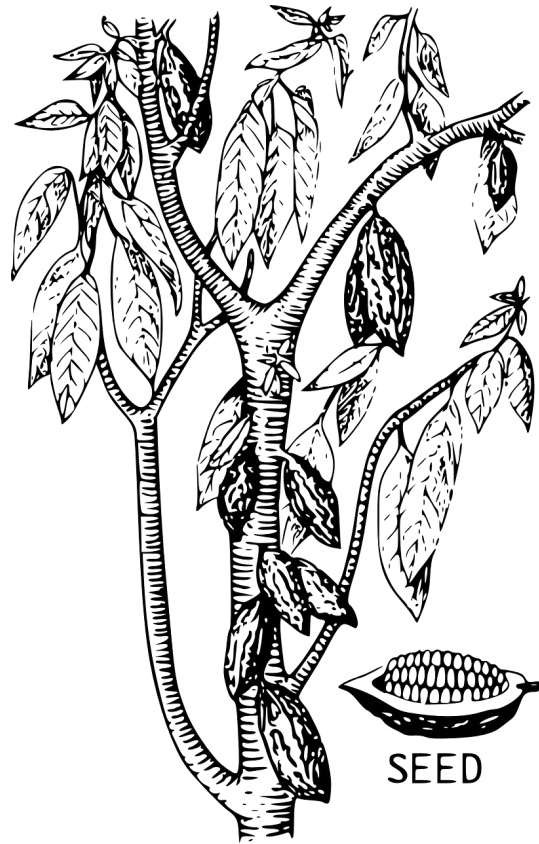
sugar
cocoa butter
peanuts

Conversation hearts

sugar
corn starch
corn syrup

Junior mints

sugar
chocolate
peppermint oil – use mint leaves



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.

Other Optional Resources:

Raw cacao beans

Books related to candy research:

Chocolate, A Sweet History, by Sandra Markle
How Monkeys Make Chocolate, by Adrian Forsyth
The Story of Chocolate, by C.J. Polin

Online videos related to candy research:

How Sugar is Made: www.sucrose.com
How Chocolate is Made: www.kids-cooking-activities.com/how-is-chocolate-made
Sugar Beets: How to Make Everything, Thanksgiving Dinner :
<https://www.youtube.com/watch?v=ZVxPkv0r7JY>

Illinois Agriculture in the Classroom *Where Candy Comes From Resource Guide*,
<http://www.aginthe classroom.org/TeacherResource>

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.

Kindergarten and first grade: Show the powerpoint presentation *Where Does Your Candy Come From?* 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, such as sugar, milk, chocolate, cocoa butter, and write them on the board.

Optional: 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: Show the powerpoint presentation *Where Does Your Candy Come From?* 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. Tell students they will research what the ingredient is made of and where it comes from. 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.

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.

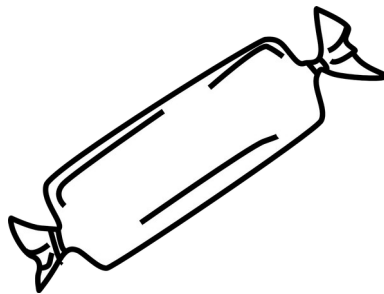
Provide samples of the candy ingredients for students to view and sample. For example, those researching a chocolate bar could see and sample cocoa powder, sugar, and edamame (soy) beans. Have each student bring one ingredient from home for this activity, or ask your homeroom parents to arrange the activity.

New Jersey Learning Standards

Science: K: LS1.C 1: LS1.A 2:LS2.A 3:LS1.B 4:LS1.A 5:LS2.A

Social Studies: K-2:6.1.2.Geo.HE.4, 6.1.2.EconEM.1,2; 6.1.2.EconNE.1
6.1.2.EconGE.1, 2
3-5: 6.1.5.GeoHE.2, 6.1.5.EconEM.1, 2; 6.1.5.EconGE.2, 3

English Language Arts: 3:W.3.2.A-D, W.3.4,8 4:W.4.2.A-E, W.4.4,8
5: W.5.2.A-E; W.5.4,8



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.)

Some other things I learned about my candy ingredient are:

1. _____

2. _____

3. _____
