

Families:

Pilot Light Family Meal Lessons are designed to easily bring food education into your home. We recommend using the Family Resources in the following way:

1. Watch the Family Meal video for the lesson as a family.
2. Make the recipe as a family.
3. In the Common Core Connections section, children can learn through and about food while strengthening Common Core English Language Arts or Math skills.
4. Family Discussion questions and Extension Activities are provided to allow learners of all ages opportunities to participate in the learning experience!



Pilot Light Family Meal Lesson

Banana Muffins

+ Grades 6-8 - Common Core English Language Arts - Informational Text - Key Ideas and Details

Suggested Recipe Age Range: 10 and up with adult supervision

Recipe by Chef Kayla White:

Banana Muffins

Ingredients:

- 2/3 Cup Chopped Dates
- 6 Very Ripe Bananas
- 1/2 Cup + 2 Tablespoons Unsalted, Melted Butter
- 2 Large Eggs
- 2 Cups Gluten Free Flour
- 2 1/4 Teaspoons Baking Powder
- 1 1/4 Teaspoons Baking Soda
- 1/2 Teaspoon Salt



Directions:

1. Preheat the oven to 400 degrees fahrenheit, and spray a 12 count muffin pan.
2. Put bananas in a glass bowl and cover. Microwave for 4-6 minutes until soft.
3. Using a strainer, let the liquid from the bananas drain into a small pot, you should have about 1 cup.
4. Reduce the liquid to about half and set aside.
5. Boil enough water to cover the dates and let them soak for about 25 minutes or until soft.
6. In a food processor or using a fork, mash the bananas.

7. Mix in the eggs, melted butter, banana liquid, and dates until everything is fully incorporated.
8. Whisk all dry ingredients together and fold into the wet ingredients.
9. Divide batter between all 12 muffins.
10. Bake until slightly golden and springs back when lightly touched - about 18 minutes.

Notes: The beauty of this recipe is that you can add or substitute as you like. Cinnamon would be a nice addition instead of cardamom or star anise. The dates could be substituted for chocolate chips of any kind, dried fruit, or swirl some nutella in there. Dates were used to keep the muffins sugar free but you can use anything. All-purpose flour can be used instead of gluten free flour if gluten isn't an issue. Be creative and enjoy!

Common Core Connections:

Grades 6-8th

Common Core English Language Arts - Reading - Informational Text

Key Ideas and Details (Standards 1 and 2)

RI 6-8.1: Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

RI 6-8.2: Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.

What does this mean?

In this lesson, students will:

- read an article on fruit and vegetables and their journey from farm to lab to table
- identify the central idea of the text and summarize the article
- find evidence in the text that supports what the text says and inferences that can be made

What does this look like?

Materials needed:

- Article (below)
- Pencil
- Paper

Directions:

Read the article below and answer the comprehension questions that follow.

The following article, "From Farm to Lab to Table, a Tale of Tomatoes and a Top Banana," is from Newsela.com: <https://newsela.com/read/fruits-genetics/id/17887/>

This article is originally by *Washington Post* and was adapted by Newsela Staff for middle - high school students.

From Farm to Lab to Table, a Tale of Tomatoes and a Top Banana

When we're kids, we learn that carrots are orange, bananas are yellow, and eggplants are big and purple. Fruits and vegetables did not always look the same, though. If you went back in time, even a few hundred years, you might not even recognize some of them.

Humans have been changing the shape and color of fruits and vegetables since farming began about 12,000 years ago. For ages, farmers have been collecting seeds from the best fruits and vegetables for the next planting. They would replant the seeds of the plums or the carrots that had the best taste and the most pleasing feel.

Only The Best Genes Survive

Carefully choosing the seeds of only the best fruits and vegetables to replant changed the plants' genetics. Over time, the more colorful and tasty genes were passed on, and the bitter genes gradually disappeared. This is called selective breeding. Anyone who has tried a wild plum can tell you that wild fruits are often more sour and have thick, bitter skins.

The fruits and vegetables in grocery stores have been selectively bred over generations. Compared with their wild ancestors, they are huge, sweet and easy to eat.

Each plant has its own story. The eggplant, for example, got its English name because the original plant looked like a small white egg. Selective breeding turned it into a large fleshy purple vegetable. The shape and color changed as people chose to replant the larger eggplants with less bitter taste.

The carrot was also transformed by farmers. Wild carrots grow in a variety of colors from yellow to purple to white. Dutch folklore says that the orange carrot was selectively bred in the

Netherlands during the 1600s to honor William of Orange. He led the cause for Dutch independence.

From Mendel To GMOs

In the mid-1860s, Gregor Mendel experimented with breeding pea plants. He showed how genetic traits like color, size and taste in the pea plants were passed on through selective breeding. Those experiments paved the way for the modern understanding of genetics.

Today, a new kind of selective breeding has become controversial. In 1994, the first genetically modified tomato, called the "Flavr Savr," hit grocery stores. Scientists at Calgene, Inc. in Davis, California, had inserted a gene in the Flavr Savr that stopped the tomatoes from ripening too quickly. It was a scientific success, but many people did not want to buy the new tomato. The public viewed genetic engineering as suspicious, even though humans have been changing plants for thousands of years.

Genetically modified foods (GMOs) have become more common since the 1990s. Today, corn is the most widely grown crop in the United States. About 90 percent of corn grown is genetically modified.

Respected scientific bodies such as the American Medical Association have found no scientific reason to not eat GMOs. However, a 2015 survey found that more than half of consumers who were polled (57 percent) consider GMOs potentially dangerous.

Bananas Face Big Trouble

Part of this fear has to do with the fact that it can be risky to rely on a single variety of a crop. The practice of growing one and only one kind of crop with the same genes is called monoculture. Crops grown in this way have trouble fighting off disease.

The banana is an example. The yellow Cavendish banana sold in grocery stores was named after the Englishman William Cavendish. He was the sixth duke of Devonshire. The duke's gardeners were the first to grow the Cavendish banana in greenhouses at Chatsworth House in Derbyshire, England, in the 1830s. The banana was then shipped to Samoa and the Canary Islands and farmed on a large scale soon after.

Although fruits, including wild bananas, have seeds, the Cavendish banana lacks them. These bananas are clones. Each banana plant is genetically the same because it is cut from the roots of a single mother plant and then replanted. This results in the exact same fruit produced generation after generation.

Unfortunately, this also means that each generation is the same, so the plant can't adapt to protect itself from diseases and pests.

The Cavendish banana became popular in the 1950s because it was resistant to Panama Disease. The Panama Disease was a fungus that destroyed the previous popular variety, which was named Gros Michel (or "Big Mike"). The Cavendish did not become the most popular banana variety because of its taste, which is apparently plain compared with the Gros Michel.

With its thicker skin, the Cavendish was easier to ship because it didn't bruise as much as other varieties. Today, the Cavendish variety represents 99 percent of bananas, but its reign as king banana may come to an end. Years of monoculture have made the Cavendish banana unable to fight a new strain of Panama Disease. Once the Panama Disease fungus reaches crops in Latin America, the Cavendish banana could disappear in a hundred years.

Comprehension Questions:

1. Write a paragraph in your own words that summarizes the central ideas in the article.
2. Identify two sentences from the text that support the central ideas of the text. Write them below:
3. Make an inference about why you think grocery stores carry fruits and vegetables that have been selectively bred.

Evidence from the text:	+	Your schema (what you already know):	=	Your inference:

4. Make an inference about why people may think that genetically modified foods are dangerous:

Evidence from the text:	+	Your schema (what you already know):	=	Your inference:

Family Discussion Questions:

Families/children could discuss or write about:

- What is your favorite type of muffins or dessert? What are some memories you have of eating that dessert with your family?
- What are some other things you can make out of fruit that has ripened a lot? Think of ways to help prevent food from going bad or going to waste!
- If you could describe these muffins in 3 words, what would they be?
- Where are bananas primarily grown? In what climate do they prosper? What parts of the world are they most prevalent?

Extension Activities:

Here are some suggestions for additional activities that relate to this recipe:

- Use special cake cutters to cut your banana muffins into different shapes and serve.
- Get creative with toppings, drizzles, and ingredients to jazz up your banana muffins! *(Examples include: ice cream, caramel drizzle, cream cheese topping, sprinkles, powdered sugar, etc)*
- Using your phone, take pictures and videos of the process to share with family and friends!

This original Family Lesson was written by Pilot Light Food Education Fellow, Ratib Al-Ali, and Pilot Light staff.