TAKE THE APPLE TASTE TEST

Put your taste buds to the test by trying different types of apples to see how scientists have evolved this fabulous fruit over hundreds of years.
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About the Activity
Have you ever walked around the produce section of the grocery store? There are many different types of apples. Some are bright red, while others are yellow or green. Some may be tart, while others are sweet. Why are there different varieties of apples?

In this activity, you’ll taste different types of apples sold in your area and to identify what makes them different. You might even develop an opinion on which cultivar you favor based on taste and texture!

This activity is part of our 4-H At-Home Plant Science Series. See the rest of the activities here.

Supplies
These simple supplies are all you’ll need for this activity.

- 3 different apple varieties
- 3 plates
- Pencil
- Knife
- Cutting surface
- Printable apple observation sheet
- Printer
- Pen or pencil
- An internet-connected phone or computer

Grades: 6-8
Topic: Agriculture, Engineering, Plant Science, STEM
Time: 30 to 45 min
**Activity Steps**

1. **Purchase three different apple varieties from the grocery store. Wash the apples.**

   **DID YOU KNOW?**
   The apple is the **most-consumed fruit** in the United States (oranges are no. 2).

2. **With the help of an adult, slice each apple into sections. Put each apple onto its own plate.**

   **DID YOU KNOW?**
   There are more than 7,500 known apple types (cultivars, to scientists) in the world, and over 2,500 of those are grown in the United States! Washington and New York lead in apple production.

3. **Print out the apple observation worksheet, then observe and taste each one, recording your observations about each in the worksheet.**

   **DID YOU KNOW?**
   The only apples native to North America are crab apples, which were once called common apples. Apple cultivars that we eat today were brought as seeds from Europe.

4. **Now, compare the apples you selected and your observations about each of them, and think about which traits are similar and which are different.**

5. **Using public resources, such as the internet or local university extension services, see if you can find an apple cultivar that was selectively bred. Can you tell why it was developed? Consider, for example, a new apple variety called the Cosmic Crisp apple. The Cosmic Crisp is a new, non-browning apple developed by Washington State University. This apple is the result of the selective breeding of the Enterprise and Honeycrisp apples.**

   **DID YOU KNOW?**
   Have you ever cut an apple, left it on the counter, and noticed how it quickly turned brown? Why did that happen? Apple cells contain phenol and phenolase enzymes. When an apple is sliced and the cells come into contact with air, these enzymes are exposed to oxygen. The phenol is converted to melanin, and the melanin is what gives apples the brown color.
Test Your Knowledge

QUESTION 1
True or False: Apples are the most consumed fruit in the United States.
a. True
b. False

QUESTION 2
How many known apple cultivars exist throughout the world?
 a. 1,000
b. 2,500
c. 5,000
d. 7,500

QUESTION 3
Washington and _________ are the two states that produce the most apples in the United States.
a. California
b. Oregon
c. New York
d. Vermont

QUESTION 4
When apples turn brown, it is because enzymes inside the apple come in contact with _________.
a. Carbon
b. Hydrogen
c. Nitrogen
d. Oxygen

QUESTION 5
True or False: The apples we eat in the United States originated from Europe
a. True
b. False

Reflection Questions
Bonus questions to inspire wonder.

• What observational skills did you use to gather your information?
• What similarities and differences did you discover among the different apple varieties?
• Why might different apple cultivars be created?
Investigate & Explore

Take what you’ve learned to the next level to learn more and explore the possibilities.

Apple trees don’t grow “true-to-type,” meaning that if you planted apple seeds in your backyard, you would not get that exact variety of apples. Apples, pears, most peaches, some plums, apricots, and cherries are vegetatively propagated.

The only way to reproduce a specific desired apple variety is to graft a bud or cutting (called a scion) from a tree that previously yielded that variety onto a rootstock. A rootstock is a compatible plant that already has a healthy root system.

Brought to you by:

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### APPLE OBSERVATION Worksheet

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Apple #1 Name:</th>
<th>Apple #2 Name:</th>
<th>Apple #3 Name:</th>
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<tbody>
<tr>
<td>Fruit Color</td>
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<td>Flesh (skin) Color</td>
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<td>Shape</td>
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<td>Crispness</td>
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<td>How People Typically Use the Apple</td>
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