Using a Scientific Method to Explore Apples

You will need:

- apples
- a method to slice apples
- plates or bowls
- pencils
- worksheets to record data

Ideas to Consider

- Have students each bring an apple or a type of apple to share. Make sure they know what type of apple they have.
- Set up tasting centers with one type of apple at each station to make the sampling process go smoothly.
- Remember, a quick dip in lemon or orange juice may save apples from oxidizing but will alter their flavor. This could affect the experiment's results. Instead, consider taking this opportunity to teach students about oxidation.

Make an observation.

- Have students observe the apples they will be testing. Point out properties/characteristics of the apples, such as weight, color, and size.

Ask a question.

- Ask students to wonder about one of the properties.
- You may ask questions like, "*Which apple do you think is the sweetest,*" "*Which apple do you think is the crispest,*" or "*What texture do you think this apple will have*?"
- Be sure to ask students why they answered the way they did. This will help them form their hypotheses.

Construct a hypothesis.

- Students should construct a hypothesis that can be supported using facts.
- The hypothesis should be a statement, such as, "*I think the Fuji apple will be the sweetest,*" "*I think large apples will be tarter than medium or small apples,*" or "*I think the green apples will float, but the red apples will sink.*"
- Develop a scale or a way to measure test results.

Test your hypothesis by experimenting.

- Students should use the **How are my apples different? column** to record their testing categories, such as the type of apple, the size, or the color.
- In the **Scale or Data Collected column**, students should record their experiments results.
  - For subjective properties, such as taste or crispness, have students use a scale of one to ten.
  - For other properties, such as weight, have students record the data they collect.
- The **Other Observations column** should be used to collect data not directly related to the hypothesis, such as color, texture, smell, crispness, juiciness, taste, or personal preferences. This information can be used to formulate other questions, or complete other activities.

Draw a conclusion. Does the conclusion support your hypothesis?

- Have students compare the experiments' results with their hypothesis and analyze if the information supports their ideas. Explain that the goal is not to have the hypothesis be "correct," but to discover something through experimenting.

Report your findings.

- Have students discuss their findings with the class or complete a written response.

Ask another question.

- Consider using the "other observations" column to encourage curiosity and have the students ask further questions.