

SNWA Goal 1 Objective 1.3, 1.5, 1.6

CCSD Curriculum Essentials Framework

Science

It is expected that students will:

- (4) 4.1 investigate and describe the variables that affect the survival of organisms within an ecosystem [NS 15.4.2]
- (4) 6.4 conduct fair tests to make observations [NS 21.4.1]

Math

It is expected students will:

- (4) 3.1 estimate and measure length (including perimeter), capacity, weight/mass, volume, and area using standard measuring devices (English and metric)

Purpose: This is an investigation into how we get water into our bodies, and about how plants may also contain water.

Time: 50 minutes

You will need:

- balance scales (one for each group of students)
- gram weights
- apple wedges (two for each child)
- paper plates or pieces of paper (can be labeled with student names to identify apple wedges)
- notebooks or paper
- graph paper or graph worksheet (included)

Introduction

1. Cut several apples into wedges and give one wedge to each student to eat.
2. Let the students eat. After the snack, ask the students, “Did we put water in our bodies when we ate the apple? How can we find out if the apple had water?”

Making Discoveries

3. Introduce students to the materials available for their investigation: apple wedges (caution students not to chew or suck on these apples), balance scales and gram weights. Ask the students, “How can we use these materials to find the answer to our question?”
4. Give students time to discuss this question in their groups and come up with a plan for an investigation.

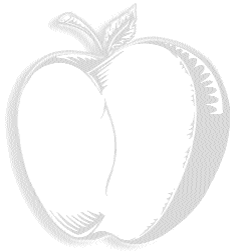
5. Each group should share their plan with the class. Discuss the plans and give the groups time to revise their plans. Either let each group proceed with its own plan, or ask the class to follow the procedure below.



Using the gram weights and a balance scale, each student should weigh his/her extra apple wedge. Students should record the weights on a line graph, and draw a picture of the wedge. Each student should predict what will happen to his/her apple's weight after it is left out for a day by making a light X in pencil on the graph. This mark can be erased when the correct data is entered. (See "Student Samples" section.)

Leave the apples out for several consecutive days. Once a day predict the weight, weigh, record and redraw the apple wedges. What differences do the students observe? Continue to weigh, record and draw the apple wedges every few days. Students should keep these records in their notebooks along with a written record of their thoughts about the investigation.

Closing



6. Discuss the results of the investigation with the students. What does the data recorded on their graphs suggest about the amount of water in the apple wedges? Why do the apples appear to lose water at a slower rate over time? Also discuss the appearance of the apple. Ask, "Would people weigh more or less without water in their bodies?"
7. Ask, "Pioneers traveling across the desert sometimes ran out of water. If there were no puddles or streams around, where could they find water to help them survive?" (They could find water stored in cacti. Warn students about dangerous cactus spines!)

Assessment Opportunity

Have students write about what they have learned, using data and descriptions from their notebooks.

Extension

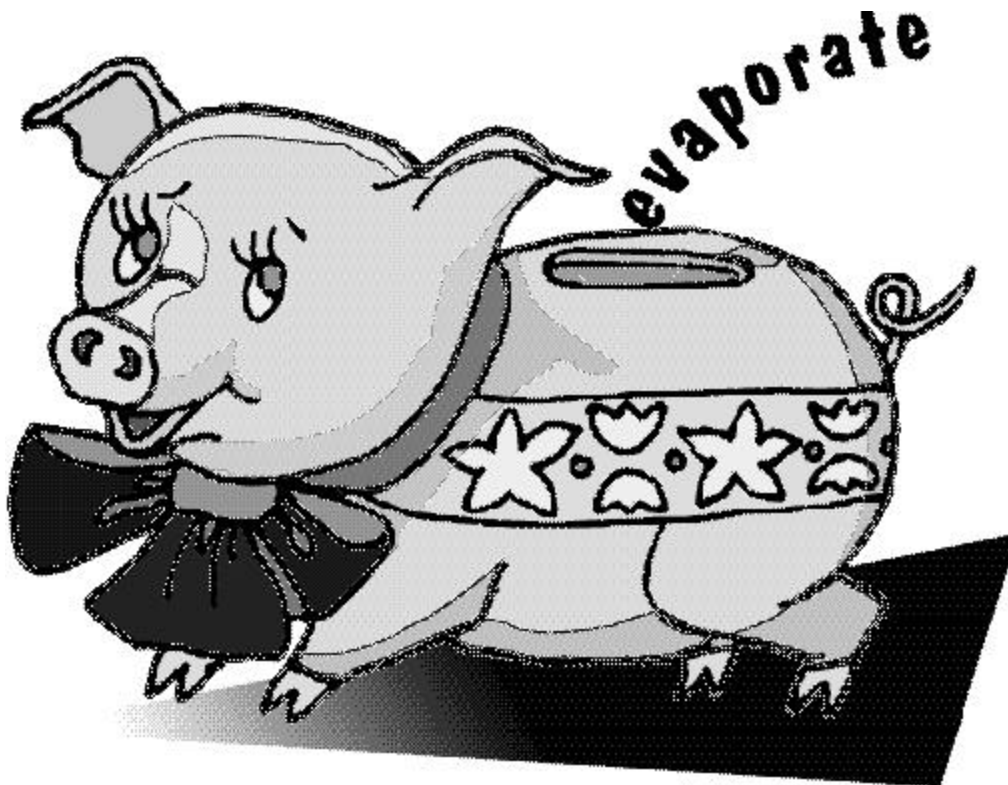
Try this investigation with other kinds of fruit. Compare the results.



Word Bank

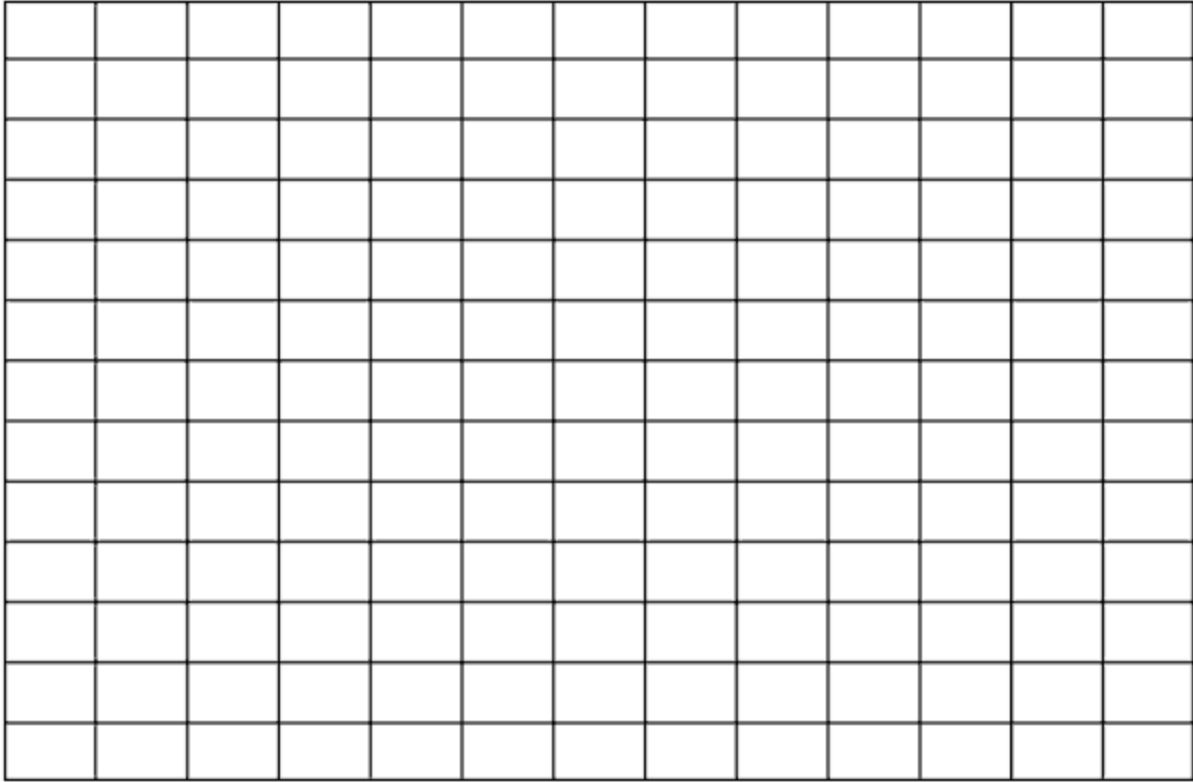
*The teacher should introduce or review the following vocabulary
with the students within the context of this lesson.*

evaporate: to convert or change into a vapor





Weight in Grams



Number of Days