Sink or Float: Garden Edition!

Estimated Time: 30 minutes

SUMMARY
There are amazing varieties of food in your garden or pantry. In this activity, students design an experiment, test variables, and come up with conclusions on what sinks and what floats.

WHAT YOU'LL LEARN

- Experimental design
- Factors that affect an object's density

Materials Used	Resources Used
● A variety of vegetables and fruits (tomatoes, cucumbers, grapes, green beans, ears of corn, peaches, apples, etc.) ● 1 can diet soda ● 1 can regular soda ● access to a freezer ● Paper ● Pencil ● Ruler ● Chart (below)	● https://www.playdoughtoplato.com/clay-boat-science/

WHAT TO DO

1. Create a chart similar to the one below. In the sample boxes, list your fruits, veggies, and other pantry items you will be testing.
2. Fill a kitchen sink, dish pan, or pool with water.
3. Set out your test subjects. Look at each one and note their weight, size, and shape. Create a hypothesis - a guess based on your ideas about your test subjects. Will it float, sink slowly, or sink immediately?
4. Try and make sure your test is performed the exact same way for each subject. Use your ruler and measure 6 inches above the surface of the water. Hold the object gently and then drop the test subject into the water.
5. Record your observations on your chart. What do you notice about the objects that sink? Are they the same approximate weight, shape, or size?
6. Design an experiment with hypothesis, procedures and data collection and try with the Coke and Diet Coke cans. Are you surprised by your results?

TIPS

1. It is important to keep the experiment the same for each trial. This is called "controlling variables." Variables are things that can affect the outcome of your experiment but are not part of your hypothesis. What are some variables you will need to control for this experiment?

2. Mass and density are related. If we said that mass is the number of marbles in a jar, density is how tightly the marbles are packed into that jar. Looking at your test subjects, which ones felt heavier? Did they sink or float?
3. For added density fun, try the clay boat activity in the resources box. How does the boat shape affect the density (or does it?)

Sample Chart:

Sample	**Sinks Immediately**	**Sinks Slowly**	**Floats**
Tomato		**x**	
Cucumber			**x**