

Lesson: Science, Grades K-1
Topic: Scientific Inquiry



Will It Float?

Overview

What happens when we put an object into water? Students will make predictions, conduct an experiment, record the results, and explain the difference between objects that float or sink.

Learning Outcomes

National Standards

Science as Inquiry

- Abilities necessary to do scientific inquiry
- Understanding about scientific inquiry

Physical Science

- Properties of objects and materials

Ohio Outcomes

Physical Science

- Classify objects according to the materials they are made of and their physical properties.

Scientific Inquiry

- Ask “what happens when” questions.

Scientific Ways of Knowing

- Demonstrate good explanations based on evidence from investigations and observations.

Materials

- Large tub, opening should be large enough for students to gather around, fill 2/3 full with clean water (might be best to conduct experiment outside)
- Variety of objects, pretest to know ones that will float and others that will sink, (corks, coins, Styrofoam peanuts, pieces of wood, pencils, marbles, plastic film canisters, stones, potato, chunks of steel/heavy metal, scissors, baseball, bolts, hard boiled egg, apple, peanuts)
- Towels for drying hands
- Float and sink t-chart on the floor, use large chart paper or masking tape to make the chart
- Float and sink line chart for recording actual test results
- Picture of each object used to conduct the test
- Paper for individual student drawings

Technology

- Use the digital camera to take pictures of the objects as the predictions are made.
- Print the pictures to use when placing the tested items on the float/sink chart.
- Establish email buddies from another school to help with the experiment. Send them a list of suggested items, compiled by students, and they do the same. Test the items and send the results to them. Send student pictures of the results. Write a news report, as a class, to send with the pictures. Make a distance learning connection with the school to conduct the experiment at the same time.

Vocabulary

- Sink
- Float
- T-chart

Lesson

Orientation activity

1. Ask students who has taken swimming lessons? Continue to have students describe some of the things that they learned. During questions, guide students to talk about floating in the water and what they do. Create a definition for something that floats. Write it on the board with a picture of a child floating in the pool/water.
2. Ask students What if an object is different than a person? What would happen? Guide them through questions based upon their responses to describe things that sink. Create a definition for something that sinks. Write it on the board with a picture of an object at the bottom of a container.
3. Point to the pictures/ definition randomly and have children repeat the word “float” or “sink”.

Learning activity

1. Show the students the float/sink T chart on the floor. Ask: What happens when an object floats or sinks? Have the students tell you what it means to float (to remain on top of the water even after being pushed under the water) and to sink (to remain under the water, at the bottom, when pushed under) Hold up objects to be tested and ask: What if we put this object in the water? Explain these are guesses/predictions that they make. Based upon their predictions, place the item in the correct spot on the t chart.
2. After students have predicted what will happen with each item, say: Now we will test your predictions to what will happen when we put each object in the water. Hold up an item, have students name the item, review whether they predicted sink or float, and have 1 student push it under the water. Once the item has been tested, the student places a picture of that item on the float and sink chart and return the item to the original sink/float t-chart. Continue until all items have been tested. Part way through, review the tested items and ask the students to see if they can find a pattern in the items that sink and the items that float. Tell them to try to apply that pattern, if one is found, or to discover one in the remaining items as they are tested.

3. Once all items have been tested, look at the float and sink chart. Ask students to tell you something that is similar in the items that sank. Discuss what makes characteristics / properties of the items. Do the same for the items that floated except ask them to find characteristics/properties of the items that floated. Your questions will depend upon the responses the students give you. You might start them by looking at size, shape, or mass of the items, eventually moving toward what they are “made of”.
4. Students select one object that floated and one object that sank and draw a picture of each in the water. They label the picture with “Float” or “Sink”.

Follow-up and evaluation

Assessment tools and methods

- Make observational notes of individual student ability to follow directions, state the difference between float and sink, and make predictions and comparisons.
- Check understanding of float and sink through the pictures that the students draw and label.

Interdisciplinary connections

Math

Count the number of items that floated and the number of items that sank. Make comparison number sentences like “3 more items floated than sank”. Count the items by twos.

Physical Education

Hand eye coordination, fine motor control for drawing and writing.

Language Arts

Written and oral communication of experiences.