# Sink or Float

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| **Strand** | Matter | |
| **Topic** | Objects that float and sink in water | |
| **Primary SOL** | K.5 | The student will investigate and understand that water flows and has properties that be observed and tested. Key concepts include<br>c) some materials float in water, while others sink. |
| **Related SOL** | K.1 | The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which<br>a) basic characteristics or properties of objects are identified by direct observation;<br>h) observations are recorded;<br>j) unusual or unexpected results in an activity are recognized. |

## Background Information

Water has identifying properties that can be observed and described. Some objects float in water, while others do not.

Whether an object floats or sinks in a liquid depends on the density of the object and the density of the liquid. Density is ratio of mass/volume. Many students assume that things sink because they are heavy or float because they are light. Help them correct this misconception by looking at items before they are placed in water. An example would be the comparison of a watermelon, which floats, and a cherry, which sinks. Although density is an abstract concept for students and is addressed in later years, it is important to correct misconceptions wherever possible.

## Materials

- Bowls
- Water
- Plastic zip bags, one per group and each containing a penny, spoon, marble, paperclip, rock, bead, screw, piece of Styrofoam, sponge, seed, rubber ball, cork, bit of paper, bit of plastic, and wooden toothpick
- Blue construction paper
- Book about sinking and floating

## Vocabulary

*water, float, sink, predict*

## Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

*Introduction*

1. Read a story about sinking and floating. Discuss the reasons that items sink and float.

*Procedure*

1. As a whole group, look at each object in the plastic bag and predict whether the object will sink or float. Classify objects as to whether the students think they will sink or float when placed in water, and record the predictions on chart paper.
2. Group students in two's or three's. Give each group a bowl of water in which to test each object in the plastic bag. Have them sort and classify the objects by those that sink and those that float.
3. Gather as a whole group to share and discuss the findings. As students look at each item, compare their findings with their class predictions that were recorded on the chart paper previously. Make sure students understand that it is fine if what they predicted initially is different from what they discovered when they actually tested the items. Explain to them the predictions and testing that they did is how a real scientist works.
4. Have students find two other objects in the schoolyard that they think will sink and two that they think will float. Again, have them predict, test, classify, and compare results with predictions.

## Assessment

- **Other**
  - Have students draw objects that sink and objects that float in the appropriate places on a blue piece of paper (sinking objects at the bottom and floating objects on the top).

## Extensions and Connections (for all students)

- Have each student bring in a "surprise" object from home. Let the class predict whether it will sink or float. Test and record the results.
- Have students predict whether 10 new objects will sink or float, and then test and classify each one.

## Strategies for Differentiation

- Draw a rectangle on a piece of paper. Draw a line in the middle to represent water. Glue pictures of objects that float above the line and ones that sink below the line.
- Create a picture graph of items that sink and float.