



Sink or Float

KEY VOCABULARY

analyzing: considering information gathered during an experiment

float: to stay above the surface of the water

investigating: gathering information by observing or testing

material: what something is made of

observing: using our senses to gather information

reflecting: considering observations about the experiment

reporting: telling others about the experiment

sink: to go below the surface of the water

WELCOME, EDUCATOR!

You and the children you work with are about to embark on an engaging multimedia experience exploring concepts in Science, Technology, Engineering, and Math (STEM). **Sesame Street Little Discoverers: Big Fun with Science, Math, and More** is a resource to help you discover exciting new ways to build on children's natural fascination with STEM concepts.

In this topic, children will investigate which objects sink or float in water.

HELP CHILDREN TALK ABOUT SINKING AND FLOATING:

- » Some objects sink and others float.
- » An object that sinks goes below the surface of the water.
- » An object that floats stays above the surface of the water.
- » Weight is one factor in sinking and floating, but it is not the cause. Some children may think an object sinks or floats because an object is heavy or light. But not all heavy objects sink, and not all light objects float. For example, large ships are very heavy but they float. Also, a pound of feathers will float and a pound of bricks will sink.
- » Young children may not be ready to understand why objects sink and why they float, but they can make hypotheses and observe what happens to objects that are placed in the water.



For more fun ideas, videos, and games, check out sesamestreet.org/STEM on your computer or mobile device.



SINK OR FLOAT

Boats that Sink and Float

GOAL

Investigate ways to sculpt clay into boats that float.

QUESTION

How can changing the shape of clay affect whether it sinks or floats?

TIME

20–30 minutes

MATERIALS

- » 1 water table, basin, or bucket filled with water
- » 1 ball of oil-based sculpting clay per child (make sure you're not using water-based clay)
- » View and Do Chart (one per child)
- » crayons

LET'S WATCH: "MURRAY EXPERIMENT: BOATS"

In the video, Murray and his friends try to make boats that float. They use aluminum foil to make boats of different shapes and then add large, round, metal washers to see how many washers each boat can hold and still float. Murray and his friends find out that a boat's shape affects its ability to float.

LET'S TALK ABOUT IT

After you watch the video together, ask some questions to prompt a discussion.

- » "What did Murray and his friends try to do with the aluminum foil?"
- » "How were the sinking and floating boats different?"
- » "If you could design a boat that floats, what would it look like?"

LET'S DO AN ACTIVITY:

1. Give each child a ball of sculpting clay, and ask them to roll the clay into balls.
2. Have children make a hypothesis about whether they think the clay ball will sink or float, then place the balls in the water.
3. Discuss what happens: "Did the balls sink or float?"
4. Say, "I wonder what we could do with the clay to make it float?" Ask for ideas.
5. Say, "Let's try to make different kinds of boats with our clay. We'll see if we can create some boat shapes that float."
6. During the investigation, ask questions:
 - » "What do you observe about the boat's shape, size, and weight?"
 - » "What shapes seem to sink?"
 - » "What shapes seem to float?"
7. Have children record results on the View and Do Chart.

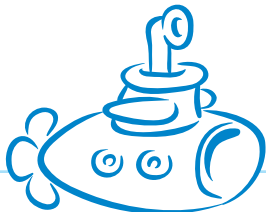




SINK OR FLOAT

Boats that Sink and Float

Have each child draw one boat design that sinks, and one that floats. Check to see that children correctly position their boats on top or below the surface of the water in their drawings.

 Sink	Float
	



SINK OR FLOAT

What Sinks? What Floats?

GOAL

Observe that some objects sink and some float.

QUESTION

What do you notice about objects that sink and objects that float?

TIME

15–30 minutes

MATERIALS

For each small group of children:

- » 1 water table or clear basin or bucket of water.
- » 1 bag of 6 to 12 different small objects that can get wet (suggested items that sink: rock, metal spoon, clay ball, rubber band, blocks, baseball; suggested items that float: pencil, leaf, popsicle stick, aluminum foil, plastic math counters, paper index card, plastic bottle)
- » 2 large containers, one labeled “SINK” and one labeled “FLOAT”
- » Activity Chart (one per child)
- » crayons

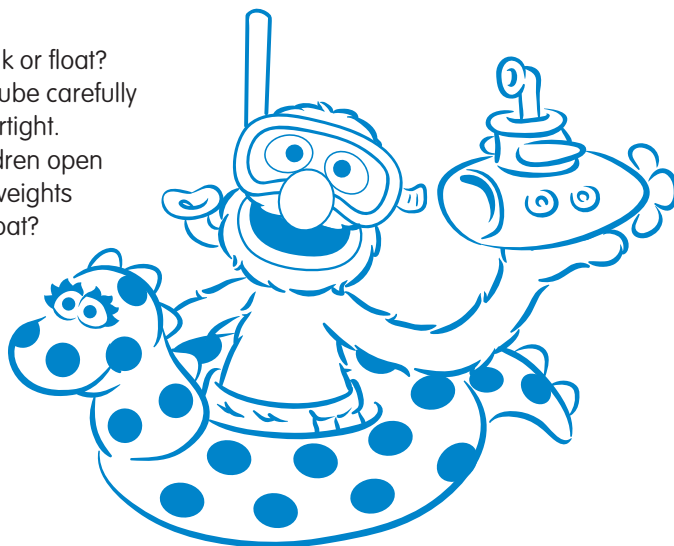
In this activity, children will explore what sinks and what floats by testing different objects.

STEPS

1. Ask children, “Which items do you think will sink?” “Which do you think will float?”
2. Have children test the objects by putting them in the water one at a time.
3. After an item is tested, have a child put the object into the “SINK” container or “FLOAT” container.
4. After all the materials are tested, count how many objects sink and how many float. Then, have children record the information with pictures onto the chart.
5. Ask, “What did the sinking objects have in common?” “What did the floating objects have in common?” Guide the children to discuss the shape and material of each object.
6. If there is time, help children find other objects to test. Before they put an object in the water, have them make a hypothesis about whether they think it will sink or float based on what they just observed.

TUBE EXPLORATION

Test a paper towel tube. Will it sink or float? Now wrap another paper towel tube carefully in aluminum foil so that it is watertight. Will it float? What happens if children open the foil-covered tube and place weights inside and rewrap it? Will it still float?





SINK OR FLOAT

What Sinks? What Floats?

Have children draw the objects that sink or float.

 Sink	Float
	



Sink or Float

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Remember, it's okay to not know the answers to all of her questions. Model a sense of curiosity by saying something like, "That's a great question! I don't know the answer but let's find out together."

HELLO, FAMILIES!

Your child is full of curiosity. She is always observing, questioning, testing her thinking, and collecting information. These are important critical-thinking and problem-solving skills that help set her up for success in Science, Technology, Engineering, and Math (STEM).

HELP YOUR CHILD TALK ABOUT SINKING AND FLOATING

- » Something that sinks goes below the top of the water.
- » Something that floats stays on top of the water.
- » All objects are made of different materials.

TRY THIS AT HOME

Pick and choose the activities that work best for you and your child.

Let's Talk. Use the words sink, float, and materials as many times as you can this week! Say things like, "I wonder if the soap will float in the tub." "What material is this toy made of?"

Explore in the Tub. During bath time, provide plastic containers and cups, combs, blocks, metal spoons, and sponges for your child to explore which objects sink or float. Guess which shapes and materials will sink or float before you drop them into the water. Try dropping a cup that's empty, and then fill it with water to see what happens.

In the Kitchen. Give your child a bowl to help you wash fruits like an apples, oranges, lemons, or limes. Ask your child to make a hypothesis: Which ones will sink and which ones will float? Investigate by placing them in the water.



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SINK OR FLOAT

Make It Sink!

TUBE EXPLORATION

Use paper towel tubes to explore sinking and floating. Have your child investigate whether a tube will sink or float in water. What happens if he wraps the tube tightly in aluminum foil and then places it in the water? What happens if he unwraps the tube and places it back in the water?

WATCH "ROCCO'S BOAT"

In the video, Elmo and Zoe design a boat to help Rocco, Zoe's pet rock, float. They test different materials and designs, and eventually solve the problem by combining materials that float to build a boat for Rocco.

ACTIVITY

Try different ways to get a plastic cup to sink.

MATERIALS

- » sink, tub, or bucket of water
- » large plastic cup
- » different items to fill the cup (rocks, cotton balls, water, soap, washcloths)
- » Activity Chart
- » crayons

STEPS

1. Place the cup in water and observe that it floats. Feel what it's like to push down on it.
2. Have your child make a hypothesis about which objects will help make the cup sink. Have fun exploring ways to sink the cup! Do any materials make the cup go under the surface of the water part-way? What about all the way?
3. Then, report and record your findings. Ask, "How did we make a floating cup sink?" "What new things did we find out from our test?"



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SINK OR FLOAT

Make It Sink!

Have your child draw what she puts inside the cup. Then have her draw a line above, below, or across the cup to show where the top of the water was.

