### **ACTIVITY 1:** Make a Boat Float



### It's all about design!

Engineers who design boats need to explore the right materials and the right shape to make the boat float.

### TARGET AGE GROUP

5-8 years

TIME

60-90 minutes

### PREPARATION

Review the RTL Activities introduction for tips and suggestions before implementation.



### "Whatever Floats Your Boat" (6:15-8:55) The Cat in the Hat Knows A Lot About That!

Reflect on the ideas being explored by Cat in the Hat and his friends, Nick and Sally. Here are some places you might pause:

After Nick says, "Maybe only one color floats?" (~7:00), ask the kids:

- > Do you think that the color of the clay will affect its ability to float?
- Why do you think so?

After Nick says, "But, we tried all those colors already," (~8:27), ask the kids:

- Why do you think some of the clay is floating now?
- How is the clay different than it was before?

\*Recommend clip, full episode can be used

Let's investigate how the materials and the shape of your boat affect its ability to float.

### EXPLORE

Kids will explore the shape and materials of objects to determine the objects' ability to float.

### Materials:

- □ Water table or other container to hold water
- □ Paper
- □ Pencils or crayons
- □ The Cat In The Hat Knows a Lot About That! Sink or Float Table
- □ A variety of materials to design a boat, such as:
  - Bouncing putty
  - Aluminum foil
  - Pool noodles (cut into smaller pieces)
  - Deli containers or bowls
  - Craft sticks
  - Foil pie pans
  - Rocks
  - Wooden blocks
  - Tape

### INSTRUCTIONS

### **Explore the Materials:**

Lay out a variety of materials for kids to design their boat.

Have kids use their senses to explore and make observations about the property of each material.

In the video, Nick and Sally made a prediction that only one color of clay would float. Have children predict which materials and shapes will float. For younger children, spend more time and go more in depth. Provide fewer items to play with at a time to help them learn why objects float and sink. You might consider having them play the digital game before their hands-on exploration if you think they need a bit more background knowledge.

Use the Sink or Float chart from The Cat in the Hat Knows A Lot About That! activity "What Floats Your Boat" to record kids' predictions.

TIP

### Make & Test the Boat:

After exploring materials and making predictions, it's time to use their engineering skills to create their boat! Remind kids that engineers who design boats need to explore the right materials and the right shape to make the boat float.

As kids finish building their boats, it's time to test them! Have them place their boat in the water and see if it floats.

### AS KIDS INVESTIGATE, ASK:

- What do you observe about each boat's shape, size, and weight?
- What materials seem to sink?
- What materials seem to float?
- What shapes seem to sink?
- What shapes seem to float?

After kids have tested their creations, have them refer to the observations they made during the test.

### Improve the Design:

Have kids brainstorm possible ways to improve their design.

If you have time, use it to allow children to iterate on their work. Provide them an opportunity to build, test, redesign, test, redesign and then share their findings.



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### More ways to play:

If PreK children have difficulty creating a boat, encourage the use of different shapes and materials for their boats. Allow children to test their boats by placing them in water and recording the results by placing each boat on the "Sink" table or "Float" table.

Challenge kids to improve the design of their boats so they hold more weight such as pennies, counting bears, rocks, etc.

Test out a paper towel tube. Ask, "Do you think it will sink or float? Why do you think so? After testing, ask, "Can you make something float that sinks? Tell me how we can make this paper towel tube float?"

Provide a variety of materials for the children to investigate.

### ASK:

- Can you make something sink that floats?
- Show me something that floats.
- What would you do to make it sink? Why do you think that will make it sink?

### Allow time to investigate.

### READ

Bring the whole group together and read What Floats in a Moat? by Lynne Berry, pausing often to ask questions and connect back to the topic of sink and float.

### **BEFORE READING ASK:**

- By looking at the cover of the book what do you think the book is about?
- What is a moat?
- Do you think the boat will sink or float?
- Why or why not?

### AS YOU READ ASK:

Why is Archie taking time to doodle and draw, sketch and scrawl?

### **AFTER THE READING ASK:**

- Why do you think the first attempts at crossing the moat failed?
- What kind of a boat would you have built?
- What materials would you have used?

### **OTHER BOOK SUGGESTIONS:**

*Floating and Sinking* (First Facts, Our Physical World) by Ellen S. Niz

What Floats? What Sinks? A Look at Density by Jennifer Boothroyd

The Magic School Bus Ups and Downs: A Book About Floating and Sinking by Joanna Cole

Who Sank the Boat? by Pamela Allen

### PLAY

### **Play & Learn Science – Water Games: Sink or Float**

This game is available within the *Play* & *Learn Science* app that is available for free on your tablet or phones app store.

In this game children move objects into a swimming pool and observe whether they sink or float in the water. Children are prompted to make a floating object sink and to observe that sometimes small things sink and big things float.

### ASK:

- What objects seem to sink?
- Why do you think they're sinking?
- What objects seem to float?
- Why do you think they're floating?

### SHARE

Send the parent letter home with kids to encourage at-home conversations with families about this activity.

### Hello Families,

Today your child worked with others to "Make a Boat Float." Using their engineering skills, the kids investigated how changing the shape or material a boat is made of affects its ability to float. Along with Cat in the Hat, from the PBS KIDS program *The Cat in the Hat Knows a Lot About That!*, we discovered that building with the right material and shape can make all the difference.

To find out more about what your kid learned, you can ask:

- > What materials did you use to make your boat?
- What did you do to change your boat materials?
- > Tell me about the shape of your boat.
- What did you do to change your boat shape?
- Did your boat float?
- Why do you think your boat did/didn't float?
- What do you think would happen if an elephant sat in your boat or if it was windy?

We also had the opportunity to read together, *What Floats in a Moat* by Lynne Berry. Have your child retell the story to you.

Here are some related books to look for at the library:

- Floating and Sinking (First Facts, Our Physical World) by Ellen S. Niz
- What Floats? What Sinks? A Look at Density by Jennifer Boothroyd
- The Magic School Bus Ups and Downs: A Book About Floating and Sinking by Joanna Cole
- Who Sank the Boat? by Pamela Allen

Tune into your local PBS station and visit online pbskids.org for more opportunities to learn, watch and play together with your family. Watching videos and playing games together, with your child, encourages social interactions, bonding and learning.

You can also access PBS KIDS content free in PBS KIDS Video app and the PBS KIDS Games app.

### **Resources to Support Sink and Float Activities**

Get kids thinking and exploring like scientists using this collection of sink or float resources from Ready to Learn and PBS KIDS. Providing young children the opportunity to participate in simple, PBS KIDS-inspired investigations is a great way to support developing science inquiry skills and practices. They can ask questions, make predictions, collect data and draw conclusions, and experience science inquiry first-hand.

These resources can be used and adapted to meet the particular needs of your learning environment and the participating kids. Whether you are a program director, classroom teacher, after-school and summer provider, PBS station staff or any other adult working with young kids, these resources are for you!

Resources are grouped by activities, videos and games (online and mobile), and include a list of books related to the topic of sinking and floating. Resources can be used as-is, adapted, grouped to make a complete lesson, integrated into preexisting lessons or used as a jumping off point for your own lesson ideas.

### For more resources, visit: pbslearningmedia.org/collection/rtl-educator

### Videos

The Cat in the Hat Knows a Lot About That! "Whatever Floats Your Boat" 11:00 min, Grade Level: PreK-K

Join Sally, Nick and Cat in the Hat as they go to the Floating Island and learn about why certain objects float and others sink! After the boat they made for Fish sunk, Sally and Nick ride the Thinga-ma-jigger to the Floating Island in the Buoyant Sea to figure out how they can make a boat that will float. But when they step on the island, it takes them across the sea and away from the Thingama-jigger! Now in order to get home, they must build a boat out of the clay on Floating Island. They find out that while some clay sinks, others stay on top of the water because of their shape!



### The Cat in the Hat Knows A Lot About That! Do Try This at Home! Make a Boat 1:30 min., Grade Level: PreK-3

Will a toy car float? How about a tin pie plate? In this short video from The Cat in the Hat Knows a Lot About That!, Nick and Sally test some objects in their backyard wading pool, to see what will float and what won't.

**Everyday Learning** Sink or Float? 1:33 min. Grade Level: PreK-1

Show students how easy it is to experiment while introducing them to the concept of buoyancy, in this fun video demonstration. Students are asked whether they think an item will sink or float. The item is then dropped into a fish tank, and the results are charted.

### **PEEP and the Big Wide World** Making Things Float 1:27 min. Grade Level: PreK

In this video segment from *PEEP and the Big Wide World*, real kids explore what types of objects float in water and how to keep sinking objects from staying afloat.

### *Sesame Street* Tubes Sink or Float 1:16 min. Grade Level: PreK-1

Let's make a hypothesis! Will the tube sink or float? Abby and Elmo experiment to find out. This resource teaches STEM skills.

### Sesame Street Murray Experiment: Boat 2:40 min Grade Level: PreK

What helps a boat to float? Let's experiment with Murray to find out! This resource teaches engineering skills.



### Activities

### The Cat in the Hat Knows a Lot About That! What Floats Your Boat? Grade Level: PreK-3

During a trip to the Buoyant Sea, Sally and Nick test what sinks and floats. In this activity, have kids predict what will sink or float, test out their predictions in water and then record their observations on the printable Sink or Float Table. Available in both English and Spanish.

### *Fetch!* Science Activities: Float My Boat Grade Level: 1-6

Even large ships weighing hundreds of thousands of tons stay afloat. But how? In this activity, kids investigate floating by building tin foil boats and loading them with pennies until they sink. Through testing, kids will discover an important pattern: The boat's size and shape make a difference in how much of a load it can carry. Time to roll up the shirtsleeves and dive in!



### Sesame Street Little Discoverers: Big Fun with Science, Math, and More Sink or Float

### Grade Level: PreK-1

Use this resource to help discover exciting new ways to build on kids' natural fascination with STEM concepts. In this topic, children will investigate which objects sink or float in water.

### **PBS KIDS for Parents** Nature Sink or Float Grade Level: PreK-4

Science is everywhere, but especially in nature! This easy science activity can be done in your backyard or even at the beach. (Just remember that if you are doing this in open water, be aware that items might be swept away). Only use items that belong in the ocean if you are going to try this at the beach. This sink or float activity is a classic, and for good reason: It's simple to set up and it's a wonderful way to start children thinking like scientists.



Play & Learn Science App Water Games: Sink or Float Grade Level: PreK-K

In this game, children move objects into a swimming pool and observe whether they sink or float in the water. Children are prompted to make a floating object sink and to observe that sometimes small things sink and big things float.



What Floats in a Moat? by Lynne Berry

Floating and Sinking (First Facts, Our Physical World) by Ellen S. Niz

What Floats? What Sinks? A Look at Density by Jennifer Boothroyd

The Magic School Bus Ups and Downs: A Book About Floating and Sinking by Joanna Cole

Who Sank the Boat? by Pamela Allen



### What Floats Your Boat?



### Predict and discover what sinks or floats!

During a trip to the Buoyant Sea, Sally and Nick test what sinks or floats. They learn that materials and shapes matter. What do you think will float? Test out your predictions using items from around the house and the printable Table.



### More Ways to Play

- 1. Can you change something that sinks into something that floats? Or something that floats into something that sinks? How did you do it?
- 2. At first, Sally and Nick think certain colors float. What do you think? Find ten, similar-colored items and predict whether they will sink or float. Now test and record your results with the Sink or Float Table. Does color matter? If not, what does?
- 3. After testing and placing your items on the Sink or Float Table, explain to a friend or family member why you think some items float and others sink.





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Find related games in the FREE The Cat in the Hat Builds That app.

**Download it now!** 



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**Round 2: Build more boats.** (10 minutes) Now that kids understand that displacing water is related to how much a boat can carry, have them refine and retest their designs by completing step 5 on their activity sheet. Tell kids to keep their champion boat—the one that carried the most pennies—and to record how many pennies it held.

- **5 Share effective deSignS.** (15 minutes) Gather as a group. Have each kid show the group his or her champion boat. Compare boats that held similar numbers of pennies. How are they alike and different? (*Kids may just describe the boats' features. Remind them about the role of displacement. Boats holding similar numbers of pennies should displace similar amounts of water.*)
- **6 Award PointS.** (5 minutes) Time to rack up some points. Gather as a group. Review the activity's key ideas by asking everyone the following questions. Each question is worth 50 points. Whenever you hear an acceptable answer, award 50 points to the entire group.
- What are some things that happen when you add more pennies to your boat? (Answers include making the boat weigh more and having it sink lower into the water. Also, tinfoil boats often bend when they're heavily loaded and tip when they're unevenly loaded.)
- Why do boats float? (*Water pushes on the bottom and sides of a boat, holding it up.*)
- What kinds of features help boats hold a lot of pennies? (Answers may include a large size, sturdy construction, and stable shape.)

- What would a tinfoil boat that pushes aside a lot of water look like? (*It would have medium-sized bottoms and medium-sized sides. This combination displaces more water than a boat with a large bottom and small sides or one with tall sides and a small bottom.*)
- Doing science and engineering involves making predictions, testing them (which includes doing something, making observations, and drawing conclusions), and sharing your results. Give an example of how we did these steps today. (Answers will vary.)

# ACTIVITY TIPS

- Place towels underneath the water container to minimize mess.
- Remind kids to place pennies gently onto their boats. Dropping them can sink a boat that might otherwise hold a larger load.



# Float MV Boat



Even large ships weighing hundreds of thousands of tons stay afloat. But how? In this activity, kids investigate Aoating by building tinfoil boats and loading them with pennies until they sink. Through testing, kids will discover an important pattern—a boat's size and shape make a difference in how much of a load it can carry. Time to roll up the shirtsleeves and dive in!

# Lead the activity

**Introduce Ruff's Challenge.** (5 minutes) Explain that today's challenge is to learn more about why things float by making tinfoil boats that can carry a load of pennies. **2 Round I: Build boatS.** (10 minutes) Hand out the activity sheets and have kids do steps 1–4. The exploration in round 1 helps kids figure out the basics of boat building and of loading pennies. It also prepares them for a discussion of boat design and capacity. Tell kids to keep each boat they make and to record on a sticky note or piece of paper the number of pennies each boat held. After round 1, they will display each of the boats they made.

3 Discuss what happened. (15 minutes) Bring the group together. Have kids but their boats and

the group together. Have kids put their boats and tally papers in a sequence. Go from the least pennies held to the most, like a number line. Ask:  What features do boats that hold a lot of pennies have in common? (Size—big boats hold more pennies; strength—sturdy boats don't crumple under a load; and stability—wide boats don't roll over as easily as narrow boats.)

Tell kids that when a boat floats, it pushes aside (i.e., displaces) water to make room for itself. But, the water around the boat pushes back. And the more water a boat displaces, the more force there will be pushing back on the boat. This force supports the boat. Boats that displace a lot of water can generally carry a heavier load than boats that displace only a little water. See if the boats made in round 1 confirm this idea.  Now that you've seen what kinds of boats hold a lot of pennies, list some ways to make a boat that carries a heavy load. (Help kids see the connection between how much water a boat displaces and how much it can carry.)

# **Materials**

- Activity sheet for each kid
  6-10 six-inch squares of tinfoil
  - per kid
- Pennies (100 per kid)
  1 dishpan or bucket half-filled
  - with water per two kids
    - Towels
      - Rulers
- Sticky notes or pieces of scrap paper

### National Science Education StandardS

Grades K-4 Physical Science: Properties of objects and materials

Science and Technology: Abilities of technological design **Grades 5–8** 

Science and Technology: Abilities of technological design

# Float NV Boat

see how many pennies you can load without sinking your boat. Let's dive in! Today, your challenge is to build tinfoil boats and test different designs to

# what to Do

# C cet what you heed.

6-inch squares of tinfoil • Pennies
Ruler • Container half-filled with water

# **2 Round 1: Build boats.** Make a boat by bending the tinfoil. Draw your design in the data table.

**B** Make **PredictionS.** On the data table, enter your prediction for how many pennies your boat can hold before it sinks.

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**TeSt the deSign.** Float your boat. Add pennies one at a time. Keep going until the boat sinks. Count how many pennies your boat held. But don't count the last one—it sank the boat! Enter this number in the data table. Repeat steps 2–4, making a total of three boats.

# 5 Round 2: Build more boats.

Make new designs, using what you learned about the height and thickness of the sides, the size of the bottom, and how to position the pennies. Record your designs, predictions, and test results in the data table.

Number of pennies actually carried	-4)		5)		
Predict how many pennies this design can carru urithorit sinking	nd 1: Initial Designs (Steps 2		ind 2: Revised Designs (Step		
Draw Your Design (label side height & bottom length & width)	Roui		Rou		



# chew on This!

When a boat floats, it settles into the water, pushing the water aside to make room for itself. But it's a two-way pushing matchthe water pushes back on the bottom and sides of the boat. This force, called buoyancy, holds the boat up. The more water a boat pushes aside, the more force there will be pushing back on the boat and supporting it. This is why a boat's size and shape make such a difference in how much of a load it can carry without sinking.



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So, sailor, ready to "sink" your teeth into a few more challenges? Try these:

- \* Can a really big tinfoil boat carry a lot of pennies? Build several boats using 12-inch squares of tinfoil. How many pennies does it take to sink these boats?
- \* Does the kind of water you float a boat in make a difference? Test to discover if your boat holds more pennies when it floats in fresh water or in salt water. To make salt water, dissolve two cups of salt in a gallon of warm tap water.
- \* Make an object that doesn't float or sink—it "flinks!" Get the Flinker challenge from the ZOOM Web site at pbskids.org/zoom/ activities.





ETCHI is produced by WGBH Boston. Major funding for FETCHI is provided by the National Science Foundation and public television viewers. Additional funding is zrovided by the Athrur Vining Bavis Foundations. Corporate funding is provided by Arby's and Greendogo. This FETCHI materialis based upon work supported by the stronded by the Athrur Vining Bavis Foundations. Corporate funding is provided by Arby's and Greendogo. This FETCHI materialis based upon work supported by the stronded by the second provided by Arby's and conclusions or recommendations expressed in this material subsorted by the subnof(s) and do not necessarily reflect the views of the National Science Foundation. All tights reserved. FETCHI, the characters, and related indicia are trademarks of the WGBH Educational Foundation. All third party trademarks are the property of their respective owners. Used with permission.

Oh no! I was filling the tub and fell asleep! Now my entire doghouse is under three feet of water! If I could just get a raft to pile all my precious belongings onto, then they won't get soggy. Wait, that's it! You can help me design a boat that will carry as much stuff as possible. Then, I'll build it and load on the Fetch 3000, my bark-o-lounger, and my collection of squeaky toys. But hurry, my chair's getting ruined!



SESAME STREET

Little Discoverers: BIG FUN with science, math, and more!

### 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

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### 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.

**Educator Guide** 

### 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.





# 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

- a vater 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.

bes that 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.



SESAME STREET

Little Discoverers: BIG FUN with science, math, and more!

## 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:

- a vater table or clear basin or bucket of water.
- I 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?"

**Educator Guide** 

- 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.
- 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?



### What Sinks? What Floats?

Have children draw the objects that sink or float.



Major support provided by CA Technologies. Generous support provided by the S. D. Bechtel, Jr. Foundation and the Heising-Simons Foundation.

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## Sink or Float

Sesame Street Little Discoverers: Big Fun with Science, Math, and More is a resource to help you and your child explore STEM.

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 problemsolving 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.

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



### Little Discoverers: BIG FUN with science, math, and more!

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?
- 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?"

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

Major support provided by CA Technologies. Generous support provided by the S. D. Bechtel, Jr. Foundation and the Heising-Simons Foundation.



**Family Newsletter** 



### 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.



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