

# Questacon at HOME

## Activity sheet – Floating and Sinking

# Experimenting with floating and sinking

Have you ever noticed a toy floating around in the bath or maybe something lurking at the bottom of your drink? Do you ever wonder why some things float on top of water and others sink to the bottom?

### You will need:

- A large/tall container or sink filled with water
- Items from around the house to put in the water, eg balls, blocks, cutlery, leaves (avoid glass, electronics and valuables)
- Things to make boats with – e.g. plastic containers, alfoil or playdough

### Exploring floating and sinking:

#### What to do:

- Fill a large/tall container with water
- Collect items from around the house to place into the water
- Feel each item
- Predict what will happen when it is placed in the water
- Place the item in the water and observe what happens. What would happen if you placed it in the water a different way?
- Sort the objects into those that sink and those that float.
- Why do you think some float and others don't? Use your senses to observe each object, what do you notice about the ones that sink? Are there any similarities between the items that float?

#### What's happening?

An object's density, how heavy it is for its size, effects whether it will float or sink. For example a golf ball is the same size as a ping pong ball but much denser, as such a golf ball sinks while a ping pong ball floats.



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## Sinking boats:

### What to do:

- Use a plastic food container or folded foil to make a boat, check that it floats in the water
- Put different toys in the boat one at a time (i.e. Lego blocks). What happens to the boat when you put more and more things in it? Why do you think this is happening?
- Experiment with how many things you can put into your boat before it sinks.
- Try boat containers of different shapes and sizes, do some boats hold more than others before sinking? Why? Could you change anything to help the boat float for longer?

### What's happening?

As each weight is added to the boat, greater downward force is applied, when this force exceeds that of the water pushing up the boat begins to sink. Changes to the shape and size of the container can affect how much weight the boat can hold.

### Discover more:

- Watch Questacon's early childhood Science Time *Inside the Body* episode on Questacon's YouTube channel.
- Explore sinking and floating next time you're in the bath
- Read Pamela Allen's *Who Sank the Boat?*

