



## *Time to* **Sink or Float** *understanding gravity*

### **The experience:**

Liquids vary in density. The shape of an object can determine if the object sinks or floats. Objects filled with air float.

This activity demonstrates how an object's density relates to its ability to sink or float in water.



### **Materials:**

You will need a bucket, bin, sink, bathtub - some type of large container filled with water for the sink-or-float experiments.

- Rubber Duck
- Lego
- Toy car
- Action figure/Barbie
- Penny
- Plastic spoon
- Metal spoon
- Plastic cup
- Pen/pencil
- Rubber band
- Paper clip
- Twig from a tree
- Empty aluminum can
- Aluminum nail
- Empty water bottle
- Empty glass jar

### **Directions:**

1. Ask yourself, what do items that sink have in common; what do items that float have in common?
2. Before you experiment, make an educated guess about what will happen.
3. Place one item at a time into the tub of water to find out whether the item sinks or floats.
4. Review the results:
  - a. How many did you get right?
  - b. Did some items sink that you thought would float? Why do you think so?
  - c. Do you think the shape of the object affected whether it sank or floated?
  - d. What do all of the objects that floated have in common?
  - e. What do all of the objects that sank have in common?
  - f. Does the size/material of an object affect its buoyancy (ability to float)? How?
  - g. Do you think your results would differ if you had used a liquid other than water? For example, apple juice? How could you test that?

Try something a little different by mixing corn syrup, oil and water together in a jar. You will find the corn syrup sinks to the bottom because it is dense.