

You will need:

- Bubble solution (dishwashing liquid, water, golden syrup)
- Bubble wand*
- Teaspoon
- Paper plate
- Tablespoon
- Cup

The Beaker Creatures traveled from far away in special space pods just to play with you! Now, you can re-create this vessel as a frozen bubble—and don't forget to seal your creature inside before freezing!

Use a bubble wand from an existing set or make your own by forming the end of a pipe cleaner into a circle about the size of a ten pence coin.

Beaker Creatures®

Let's Experiment!

1. Create a bubble solution in the cup:
 - Fill the cup about halfway full of water.
 - Add two tablespoons of dishwashing liquid and one tablespoon of corn syrup; stir well.
2. Dip the bubble wand into the cup, remove it, and place it on the paper plate.
3. Lift the wand from the plate, leaving behind a bubble. Set the plate in the freezer for the next 30 minutes.
4. Now, look closely at the bubble. Is the surface of the bubble frosty, like an ice cube or an igloo?
5. Remove the plate slowly. What happens to the bubble?
6. The change from freezing to room temperature makes this icy space pod dissolve. Your creatures will need to find a different vehicle to get home!



You will need:

- 60cm long stick
- 12 Beaker Creatures® and/or small stones
- Chalk

We recommend starting this experiment in the morning, around 7 am. This way, you can complete the sundial in a single day, marking the sun's position in the sky every hour, until dusk (sunset).

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What to do:

1. With the help of an adult, find an outdoor place that gets direct sunlight all day long.
2. Press one end of the stick into the grass or dirt (or push the stick into a ball of clay or into a bucket of gravel to keep it upright).
3. The stick will cast a shadow across the ground, identifying the sun's location. Place a Beaker Creature at the edge of the shadow.
4. Monitor the time on a watch or clock. Return punctually each hour to place another stone at the shadow's new position. Note that the shadow moves—yes!—in a clockwise direction.
5. Continue marking time with the Beaker Creature until the sun has set. You should now have a complete sundial that looks like a clock face!



You will need:

- Beaker Creatures®
- 2 Cups
- Food colouring (blue and yellow)
- Water
- Plate or small tray
- Large shallow bowl
- Spoon

Key Science Concept: Water freezes at 0 degrees Celsius, changing from a liquid to a solid (ice).

Some Beaker Creatures live in arctic (ice cold) conditions while others like it hot. See which climate your creatures prefer! Drop them into the colored liquids and freeze each one inside a different-colour ice block!

Beaker Creatures®

What to do:

1. Fill both cups halfway with water. Add 5 drops of blue food colouring to one, and 5 drops of yellow to the other. Mix both colours with a spoon (wash spoon in between).
2. Place the cups on a plate or small tray, and leave in the freezer overnight.
3. What happened? The coloured water in the cups frozen into ice blocks!
4. Remove the cups from the freezer.
5. Leave the cups out as the ice melts. When the ice is loose enough to pour out, empty both cups into a bowl.
6. Do you see a new colour when the two ice blocks melt together? What is it? Can you mix other primary colours to create new secondary colours? Try it!

