

Building a glider

Materials

- Large fish tank with freshwater
- Coarse salt
- Spoon
- 2 60cc syringes
- PVC film
- Scissors
- Cutter
- Instant and water-resistant glue
- Yellow and black electrical tape
- Glass
- 30g weight

Introduction

This activity shows how to build a model glider and experiment with it, to understand how it moves in the water.

Glider are autonomous underwater vehicles used to gather data in the ocean.

Build the glider

Step 1 Build the body

1. Cut the plunger of the syringe to about 2.5cm.
2. Cut the base of the syringe to get the shape of the glider.
3. Glue the weight to the syringe plunger.

Step 2 Build the wings

1. Cut 4 PVC triangles, 10 to 11.5cm long and 3cm wide. Real gliders have 2 wings but this model needs 4 to be stable.
2. Glue the wings to the syringe at 90° angles.

Step 3 Decorate the glider

Use insulating tape to “paint” the glider in yellow and black, like a real one.

Step 4 Build a second glider

Repeat the first steps to build a second glider, this time without gluing a weight.

Experiment with the glider

1. Fill a water tank with freshwater, leaving about 10 cm at the top.
2. Fill half the glass with freshwater, add 3 or 4 tablespoons of coarse salt and stir until it dissolves.
3. Fill the weighted glider completely with the saltwater. Be careful of air bubbles; there must be only water in the syringe.
4. Fill the second glider with 5cc air and 5cc freshwater.
5. Put the gliders in the tank in a horizontal position, the weighted one near the top and the other near the bottom.

Discussion

1. What is happening?
2. What explains the difference between the two gliders?
3. How does it apply to real gliders?