



Credit: Getty Images

# Wave in a bottle

This activity recreates wave activity in a bottle. Peek into this model while you tip it back and forth (and act as a source of energy) to see first hand how waves are formed and break up. You control this tiny ocean and can create a calm, sunny day or whip up a storm at sea!

## You will need

- Glass bottle (ideally a flat-sided bottle, but any clear bottle will do)
- The bottle's own cap
- Vegetable oil
- Water
- Food colouring

## Steps

1

Half fill the bottle with water. Add a few drops of food colouring (stop when you like the colour). Fill the remaining space in the bottle with vegetable oil and replace the cap tightly.

2

Turn the bottle on its side and let it settle for a few minutes. The water should sink to the bottom and you will be able to see clearly the line between the coloured water and the oil.

3

Now begin to tip the bottle back and forth. Experiment to see what kind of waves you can make. If the oil starts to get bubbly, let the bottle rest for a few minutes.

4

Add a small floating object (such as a toy ship) to the bottle and see how it is thrown about by the waves.

## Analysis/ discussion

**Look at the information on harnessing energy from the waves and the movement of the tides in the 'Key points' section of this resource to find out how we can use the ocean – a source of renewable energy – to make electricity.**