



DANCING LAVA TUBES

5 - 12 yrs | 10 min | Stage 1- 3



Mission

Why do blobs rise and fall through liquid?

? Wonder & Predict

I PREDICT THAT.....

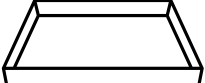
- ☐ The coloured blobs will rise to the top and stay there.
- ☐ The coloured blobs will sink to the bottom.
- ☐ The coloured blobs will move up and down.
- ☐ Something else:

There are no wrong predictions.

WHY DO YOU THINK THAT?



What you will need

-  • thin cup or glass
-  • water
-  • vegetable oil
-  • food colouring
-  • Alka-Seltzer or similar
-  • tray to catch spills



Investigate

Follow the steps carefully while observing.

- 1 Add the water**
Fill your glass to about $\frac{1}{3}$ full of water.
- 2 Add the colour**
Add a few drops of food colouring and gently stir
- 3 Oil is thicker than water. Do you think the oil will:**
☐ Sink ☐ Float ☐ Mix with water
- 4 Pour the oil**
Slowly pour vegetable oil into the glass until it is almost full. Watch how the liquids interact.
- 5 Drop in the tablet**
Break the tablet into quarters. Drop 1 piece into the glass and observe.
- 6 Watch the lava action**
How are the bubbles moving?



Observe & Record

What did you notice?

- ☐ Blobs rose
- ☐ Blobs sank
- ☐ Blobs bounced
- ☐ Bubbles formed
- ☐ Bubbles popped

What did you observe?

Write or draw what happened to the blobs.





What happened?

Fill in the sentences using words from the box.

oil water bubbles carbon dioxide rise sink less dense more dense

When the tablet dissolves, it makes _____. The bubbles stick to the coloured water droplets. The droplets with bubbles attached are _____ dense than the liquid, so they _____ to the top.

At the top, the bubbles pop, and the droplets become _____ dense, so they back down.

This keeps happening over and over.



The science behind it

Oil and water don't mix because water molecules are polar - they have tiny electrical charges - while oil molecules are not. Oil is also less dense, so it floats on top.

When the effervescent tablet hits the water, a chemical reaction occurs and produces carbon dioxide gas.

Bubbles of gas stick to the coloured water droplets and lift them up through the oil.

When the bubbles pop at the top, the droplets get heavy again and sink.

The blobs rise and fall over and over until the tablet has completely reacted and the bubbles stop forming.

Real lava lamps use heat to change density and movement instead of a chemical reaction.



Take it further - Think like a scientist

Choose **ONE** challenge to investigate. Plan an idea, test it, and record what happened.



Investigation Challenge 2. Change the tablet size

What happens if you use larger vs smaller pieces of tablet?

My prediction:

What happened?



Want More Investigations?



Great Investigations Start With Real-World Questions

Every mission inside The Crazy Scientist LAB™ begins with a real question designed to spark curiosity, launch investigation and build scientific understanding.

- Why does this slime recipe work with some shampoos but fail with others?
- Could a spider really grow as big as a car?
- How does a jet engine create enough thrust to lift a plane?
- Could a castle wall stop a cannonball?