

Y5/6 – Lesson Plan 1

How does a lava lamp work?

Aim: To understand how lava lamps work through conducting an experiment using scientific equipment.	Key Words: • lava • quarter • layers • polar molecule • positive and negative	Preparation: • water • vegetable oil • clear plastic bottle / jar • food colouring • effervescent tablets
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Prior Learning: children will have discovered how liquids of different densities do not mix.

WC / PT	<u>Warm-up:</u> Show children a lava lamp in action. What is lava? What do we already know about lava and magma and why did this information lead to bright lamps being named 'lava' lamps?	0-5 mins
WC / PT	<u>Main Teach:</u> Look at a number of volcanic eruptions. What do we notice about the eruptions? What science can we see in an erupting volcano? How do lava lamps work? Look at a lava lamp in action and explain to the children the mechanisms at work. Liquid is heated, becomes less dense, and rises to the surface.	10-15 mins
I / S	<u>Activity:</u> • Fill the bottle or jar a quarter full of water. Top up, almost to the top with the vegetable oil. • They should separate into two layers, water at the bottom and oil sitting on top. • Add about 6-8 drops of food colouring once the oil and water separate. • The colour will mix with the water at the bottom. • Pop in half an effervescent tablet and watch the bubbles form. Add more effervescent tablets bit by bit to keep the bubbles rising and falling.	30-40 mins
I	<u>Extension Challenge:</u> Children can experiment with adding different liquids into the mixture to see how the reaction changes.	0-15 mins
WC	<u>Plenary:</u> How does a lava lamp work? How can the scientific mechanism behind a lava lamp be used in the real world to save lives?	5 mins

WC – Whole Class

PT – Partner Talk

I – Independent

S - Support

Challenge A	Make a safety container for a fresh egg to be dropped from 2 metres high in without breaking.
Challenge B	Make a structure which you can fit completely inside and are then hidden from the outside world.