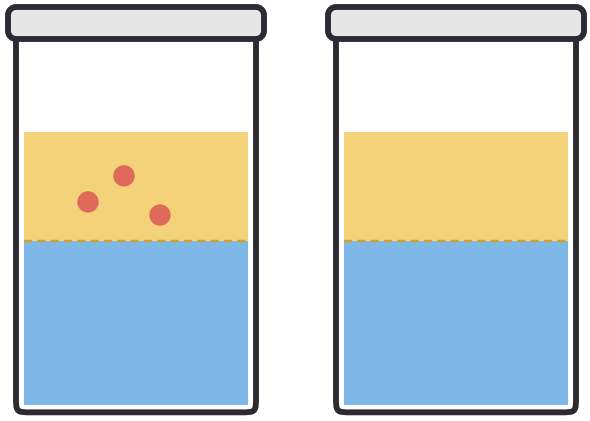
Oil and Water Experiment

Easy kitchen science for ages 3 to 6, with a grown-up

What you need

- A clear jar with a lid
- Water
- Cooking oil (any kind)
- Food coloring
- Dish soap (for page 4)
- Salt (for page 3)
- A towel for spills



Color drops sit in the oil

Oil floats on top

Steps

1. Fill the jar halfway with water. Add 2 or 3 drops of food coloring and stir. Watch the water change color.
2. Predict: what will happen when you pour in the oil? Will it mix? Circle your guess on page 2.
3. Pour in oil until the jar is about three-quarters full. Where does the oil go?
4. Draw what you see, then put the lid on tight and shake, shake, shake!
5. Set the jar down and watch for one minute. What happens to the bubbles of oil?
6. Draw it again. Did the oil and water mix, or did they separate?

Grown-up notes

- A grown-up handles the glass jar and pours the oil. A plastic jar is safer for little hands.
- Nothing in this experiment is for drinking. Wipe oil spills right away: floors get slippery.
- We use salt for the lava lamp, not fizzing tablets: some contain medicine (aspirin).

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My Oil and Water Sheet

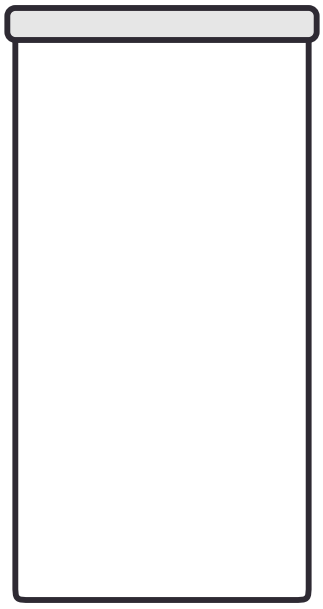
Predict, try, see

Scientist: _____ **Date:** _____

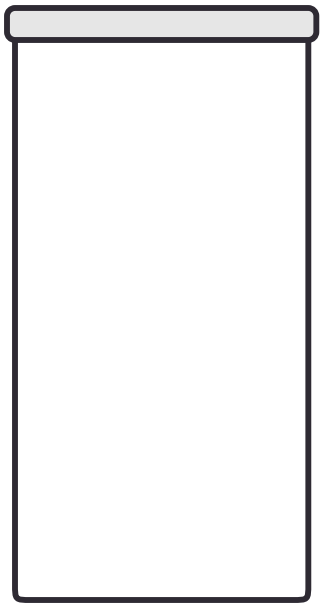
1. Predict: when I pour oil into the water, it will...

- ☐ mix together
- ☐ stay apart
- ☐ I'm not sure

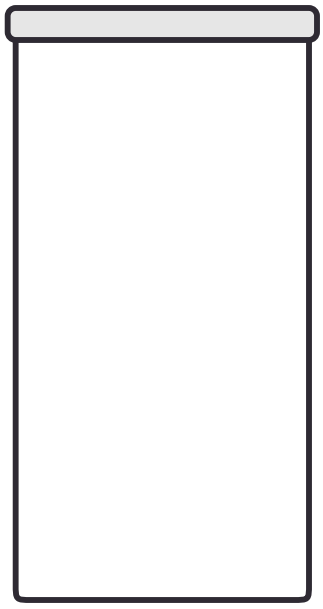
2. Before shaking



3. Right after shaking



4. One minute later



5. What happened?

- ☐ The oil floated on top of the water
- ☐ When I shook it, the oil broke into little bubbles
- ☐ After a minute, the oil and water separated again
- ☐ The color stayed in the water, not the oil

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Salt Lava Lamp

No fizzing tablets needed: just salt

Scientist: _____ **Date:** _____

Try it

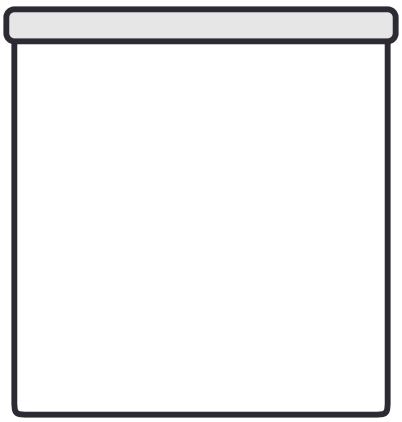
1. Use your oil and water jar from page 1 (no shaking this time).
2. Sprinkle about a teaspoon of salt on top of the oil.
3. Watch closely! The salt sinks and pulls blobs of oil down with it.
4. At the bottom, the salt dissolves and lets go, and the oil floats back up.
5. Add more salt to keep your lava lamp going.

Predict: when I add salt, the oil will...

☐ go down ☐ go up ☐ do nothing

How many blobs went down? _____ How many came back up? _____

Draw your lava lamp



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The Soap Test

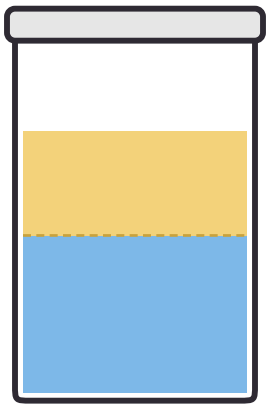
Can soap make oil and water mix?

Scientist: _____ **Date:** _____

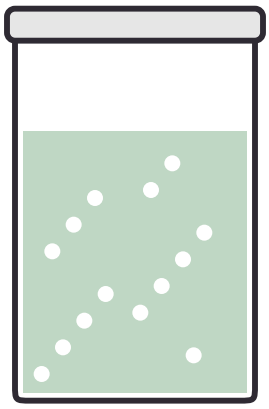
Try it

1. Shake your oil and water jar. Watch them separate again.
2. Add a squirt of dish soap. Put the lid on tight and shake.
3. Look! Does the oil still float on top, or is the jar cloudy all the way through?

Without soap



With soap



Why? (read it together)

- Oil is lighter than water for its size, so it floats on top.
- Water likes to stick to water, and oil likes to stick to oil, so they stay apart even when you shake them.
- Food coloring mixes with water but not with oil. That's why the color drops wait in the oil, then fall into the water.
- Soap is a helper: one end of each soap piece holds on to water and the other end holds on to oil. That lets tiny oil drops spread through the water. It's also how soap washes greasy hands!

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