

## Make discovery bottles and lava lamps

Looking for ways to recycle your old plastic bottles at nursery? These two activities are a great way to use up old bottles and get stuck into some scientific discovery with your nursery children.

### Learning aims

- Be expressive, imaginative and creative
- Explore and experiment with a range of materials
- Discover that different materials can be combined to create different effects
- Use descriptive language
- Explore colour, pattern and shape
- Have fun!



### Resources

- Clear plastic bottles with lids
- Cooking oil
- Food colouring
- Water
- Biodegradable glitter
- Bicarbonate of soda
- Lemon juice
- Vinegar
- Soil
- Sand
- Soap bar
- Effervescent tablet
- Torch (optional).

### Discovery bottle ideas

1. Put the oil and the water in the bottle then add glitter or food colouring. The food colouring or glitter travels through the oil as a drop and then explodes as it reaches the water
2. Bicarbonate of soda reacts brilliantly to lemon juice and vinegar, try it with the children to see what happens
3. Encourage the children to half fill plastic bottles or containers with a variety of mixtures, shake and watch the results. Try oil and water, soil and water, sand and water, soap and water, and a control bottle with plain water. The children can note the changes, how long it takes, what it looks like. They will come up with their own ideas too!
4. Ask the children what kind of reactions the different bottles made and why and what else they would they like to try
5. Leave the bottles for a week to see the differences.

### Lava lamps

1. Fill the bottle  $\frac{3}{4}$  full with vegetable oil. Add water to the remainder of the bottle, almost to the top
2. Add 10 drops of food colouring to make the solution appear fairly dark
3. Break the effervescent tablet into eight pieces. Drop one of the tiny pieces into the oil and water mixture. The mixture will start to bubble
4. Wait until the bubbling stops and add another piece of the tablet. Continue until no more pieces of the tablet remain, and the bubbling has completely stopped
5. Screw the top back on the bottle. Tip the bottle back and forth and watch the wave of lava appear.

This homemade lava lamp works so well because the tiny droplets of liquid in the oil join together to make one big lava-like blob.