

A Colour-Mixing Sensory Delight

September 28, 2024 / DIY / STEM Activities / Chemistry / Ages 3 - 5 / Colour Mixing Sensory Bottle



This experiment is perfect for preschool-age little scientists to explore. Watching beautiful colours mix, gradient, and layer before their eyes, shimmering in the sunlight, will stimulate children's visual perception abilities and curiosity about science. It's a fun way to learn about scientific and artistic concepts.

- Age: 3-5
- Time: Less than 30 minutes
- Mess Level: A bit messy

Materials Needed:

- Water
- Oil (corn oil or any vegetable oil will do)
- Cups (2)
- Glass bottle
- Food colouring
- Stirring stick



Step-by-Step Instructions:

1. Pour an appropriate amount of water into a cup and add food colouring. Mix well.



2. Pour an appropriate amount of corn oil into another cup.



3. Pour the water and oil into the glass bottle in sequence.



4. Tighten the bottle cap and shake vigorously up and down.



5. Let the bottle stand still, and you'll see the water and oil slowly separate into layers, with the oil floating on top of the water, forming a gradient before completely separating. It looks even better in sunlight!



The Science Behind It:

In addition to utilising the principle of density of different substances (denser substances sink, like water; less dense substances float, like oil), the experiment also involves the interaction between liquids: water is polar, while oil is non-polar, meaning their molecules interact differently. Polar and non-polar molecules repel each other, which is why water doesn't mix with oil.