



- STEM ACTIVITY -

# FIREWORKS IN OIL AND WATER

Key Concepts: Solutions miscibility, density, diffusion

## Introduction

Summertime often brings beautiful fireworks displays. Whereas you normally look up into the sky to see fireworks, in this activity we will take the bursts of color underwater—with chemistry.

Although it is not exactly the same as real fireworks, you will be amazed by the color explosions you will see. Curious about what that looks like? See for yourself in this activity!

## Materials *(check the boxes if you have all)*

- Warm water
- 2-3 tbsp oil (olive, vegetable or canola)
- Food coloring (one color or many)
- Clear jar or bottle (any size)
- Plastic cup
- Fork or spoon
- Tissue for clean up



## Instructions

- Fill the jar almost to the top with room-temperature water.
- Pour 2 tablespoons of oil into the plastic cup.
- Add 2 drops of food coloring to the plastic cup with the oil.
- Stir the oil into the food coloring using a fork or spoon. Stop once you break the food coloring into smaller drops.
- Pour the oil and coloring mixture into the jar.
- Now watch! The food coloring will slowly sink in the jar, with each droplet expanding outwards as it falls. Looks like fireworks! Right?

## Fun FACT!

Water and oil are immiscible, meaning they don't mix. Food coloring is a water-based liquid, so it doesn't mix with the oil.



## Write Your Observations