

# Fireworks in a Jar



This simple activity explores *the science of liquid densities* in a truly mesmerizing way. My kids were in awe by the results of this easy experiment and wanted to make fireworks again & again!

## How to Make Fireworks in a Jar

### Materials

- An empty jar
- 4 tbsp of cooking oil
- Food coloring
- Water
- A bowl
- Paper Towels
- A spoon

## Method

1. Begin by filling an empty jar 3/4 of the way with water. Set this to the side.



2. In a bowl combine **3 tablespoons of cooking oil** along with several drops of food coloring.
3. You will want to add **3-5 drops** of food coloring for each color that you are using.



4. Use a spoon to ***stir the food coloring*** into the oil. ***It will not mix***, but stirring will help to break the food coloring into smaller droplets.
5. Now, pour the container of oil into the jar of water.



6. After a moment or two ***the oil will settle at the top*** of the jar, but the food coloring ***will begin to shoot down*** and mix into the water, ***creating a "fireworks" effect!***



7. The food colors will continue to shoot down **like fireworks** until all of the droplets have fallen from the oil.



## The Science Behind the Fun

- The basis of this *experiment* is that food coloring will mix with water but not oil.
- This is because traditional food coloring is water based.
- **But why won't oil & water mix?**
- This is due to their **varying liquid densities**.
- In short, the oil is less dense, causing it to float on top of the water. The food coloring is more dense than the oil, so it falls through and mixes into the water.