

Firework Illusion

Objectives

- ❖ Use wizardry skills to create fireworks in a jar!

Duration

- ❖ 45 min

Material	Quantity
Clear plastic cup	1
Disposable pie pan	1
Vegetable oil	4 Tablespoons
Red food coloring	4 drops
Blue food coloring	4 drops
Green food coloring	4 drops
Yellow food coloring	4 drops
Plastic fork	1

Procedure

1. Have your child fill their jar $\frac{3}{4}$ full with warm water
2. In the pie pan, have them mix 3-4 Tablespoons of oil and several drops of food coloring (approximately 4 drops of each).
3. Use the plastic fork to gently mix the oil and food coloring together.
4. Gently pour the oil mixture into the jar.
5. At first the food coloring will not burst. This is when the magician will say their magic words and move their hands around the jar. As they do this, the food coloring will slowly sink out of the oil and into the water. When this happens it will expand and begin to mix with the other colors.



6. Discuss what is happening in the jar. What do they think is happening? How does it work?

"Food coloring dissolves in water but not in oil. Because the oil is less dense than the water, it will float at the top. The colored droplets will begin to sink because they are heavier than the oil. Once they sink into the water, they will begin dissolving into the water (which looks like a tiny explosion)."

M&M Colour Separation

Objectives

- ❖ Create a Rainbow using M&M's soluble colours

Duration

- ❖ 30 min

Material	Quantity
Plate	1
M&M's	½ cup
Water	
Cup	

Procedure

1. Arrange the M&M's in a circle around the plate.
2. Gently add water to the plate. Do this slowly until the water touches all of the M&M's

3. As the colours begin to spread, ask your child what they think is happening

4. Once the colours have spread, ask your child if they see any mixing between the colours.

5. Explain that the hard shell of the M&M's is made with water soluble (able to be dissolved) colours. When the water touches the M&M's, the colours begin to dissolve off the M&M's and run into the water. Because of the shape of the plate, and the positioning of the M&M's, the colours have no where to go except to the middle of the plate



Extension:

Complete the experiment again putting the M&M's into different shapes. See how this changes the outcome.

Additional Resources

<https://www.giftofcuriosity.com/mm-science-rainbow-steam-for-kids/>