# The Magic of Mixing: A Color Scientist Adventure

## Materials Needed

- 3 clear glasses or jars filled with water
- Food coloring (Red, Blue, and Yellow only)
- An ice cube tray or several small white paper cups
- A spoon or popsicle stick for stirring
- White paper and a paintbrush
- Paper towels (for "Magic Walking Water" and cleanup)
- A "Scientist Cape" (an old oversized white shirt or apron)

## Learning Objectives

By the end of this lesson, Dvdmtm will be able to:

- Identify the three primary colors: Red, Yellow, and Blue.
- Predict what happens when two primary colors are mixed together.
- Create the secondary colors (Orange, Green, and Purple) through hands-on experimentation.

## 1. Introduction: The Color Mystery (The Hook)

**Talking Points:** "Hi Dvdmtm! Today, you aren't just a student—you are a **Color Scientist**! Did you know that almost every color you see in the whole world, from the green grass to an orange pumpkin, starts with just three 'Super Colors'? These are called **Primary Colors**. But I have a mystery: If we only have Red, Yellow, and Blue, where do all the other colors come from? Are you ready to use some magic science to find out?"

## 2. Body: The Color Lab

### Step 1: The "I Do" (Teacher Demonstration)

**The Primary Reveal:** Line up three jars of water. Put a few drops of red in one, yellow in another, and blue in the last.

**Talking Points:** "Look at these three! Red, Yellow, and Blue are the 'Boss Colors.' They don't need any other colors to make them. They are the starters! Watch what happens when I take a little bit of Red and a little bit of Yellow and put them in this empty cup. What do you think will happen? *(Wait for prediction)*. Look! They turned into Orange! We just made a brand new color!"

### Step 2: The "We Do" (Guided Practice)

**The Magic Mix-Up:** Help Dvdmtm use an eye-dropper or a spoon to move colors into the ice cube tray compartments.

- **Challenge 1:** "Can we make the color of a leaf? Which two colors should we mix to make **Green**?" (Guide Dvdmtm to mix Blue and Yellow).
- **Challenge 2:** "What about a grape? How do we make **Purple**?" (Guide Dvdmtm to mix Red and Blue).

### Step 3: The "You Do" (Independent Exploration)

**The Masterpiece:** Give Dvdmtm a piece of white paper and the colors they just created.

**Instructions:** "Now, Color Scientist Dvdmtm, it’s your turn! I want you to paint a 'Secret Color Rainbow.' You can only use Red, Yellow, and Blue paint on your brush. To get the other colors, you have to mix them right on your paper! Can you show me how you make a beautiful sunset or a colorful garden?"

## 3. Conclusion: The Scientist’s Report

**Recap:** Ask Dvdmtm to point to their favorite color they made today.

**Talking Points:** "You did it! You solved the mystery. We found out that Red, Yellow, and Blue are the 'Super Colors' that work together to make the whole rainbow. What was your favorite color to make? What happened when we mixed Blue and Yellow? You are an amazing Color Scientist!"

**Cleanup Fun:** Have Dvdmtm help pour the colored water into the sink (watching the colors swirl as they go down is part of the fun!).

## Success Criteria

Dvdmtm has met the goal if they can:

1. Name Red, Yellow, and Blue as the starting colors.
2. Successfully create at least one new color (Orange, Green, or Purple) by mixing.
3. Explain that mixing two colors creates a brand-new one.

## Assessment Methods

- **Formative (During):** Ask "What do you think will happen?" before each mix to check for predictive thinking.
- **Summative (After):** Look at the "Secret Color Rainbow" painting. If there are secondary colors present, Dvdmtm has applied the concept correctly.

## Adaptability & Differentiation

- **For More Challenge:** Introduce the concept of "Tints" by adding white paint or extra water to see how the colors get lighter (Pink, Light Blue).
- **For Extra Support:** Use the "Walking Water" experiment: Place three jars (Red, Yellow, Blue) with empty jars in between. Connect them with folded paper towels. Over a few hours, the colors "walk" over the bridge and mix themselves in the empty jars. This is great for visual learners who need to see the process slowly.

- **Kinesthetic Option:** Use playdough in primary colors. Have Dvdmtm knead a red ball and a yellow ball together until they turn orange. This is great for building hand strength!