

# **STEM Challenge:**

## **Colors and Rainbows**

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that can be combined in different amounts

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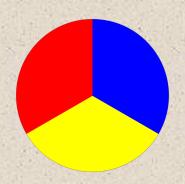
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A rainbow is caused by sunlight and atmospheric conditions. Light enters a water droplet, slowing down and bending as it goes from air to denser water. The light reflects off the inside of the droplet, separating into its component wavelengths--or colors. When light exits the by sunlight always appear in the section of sky

This time we have two challenges for you to try at home:

**Mixing Colors** 

How to Catch a Rainbow.

Both are easy ways to play with light and color in the comfort of your home.



Let us know how you did at eplyouthservice@gmail.com!

# **Mixing Your Own Colors**

#### What you need:

Water
3 large cups
Food coloring
Straws, eye dropper, or pipette
6 small cups, a Styrofoam egg carton, or something similar

#### What to do:

- 1. Fill each of the 3 large cups with water. Use food coloring to tint one red, one blue, and one yellow.
- 2. Use a straw, eye dropper, or pipette to transfer from the larger cups into the smaller cups for mixing.

#### **Try these experiments:**

- What happens if you add a couple of drops of blue to a couple of drops of yellow?
- \* Try adding more blue. What happens? Repeat with other sets of two colors, such as yellow and red or red and blue.
- What happens if you mix a primary color (red, yellow, blue) with a secondary color (purple, green, orange)?

Take it further and make a chart to show which colors make new colors when mixed!

### **How to Catch a Rainbow**

#### What you need:

Water
Clear glass jar or cup
Sunny day or light source, such as a
flashlight
White paper

#### What to do:

- 1. Fill the cup up with water.
- 2. Find a sunny spot outside.
- 3. Find the "perfect" spot, so that the sun shines through the water onto the paper to make a rainbow.

#### Try these experiments:

- Try adding salt or sugar to the water. Can you still make a rainbow?
- Try shining a flashlight through the water; what happens? Can you create a rainbow?
- \* What are other ways you can create rainbows?