

# MAKE A RAINBOW IN YOUR GARDEN

## 1. YOU WILL NEED:

- A sunny day
- A hose with a fine mist setting  
OR
- A cleaning spray bottle filled with water

## 2. WHAT TO DO:

Stand with your back towards the Sun. Spray the water in a fine mist in all directions until you spot a rainbow.

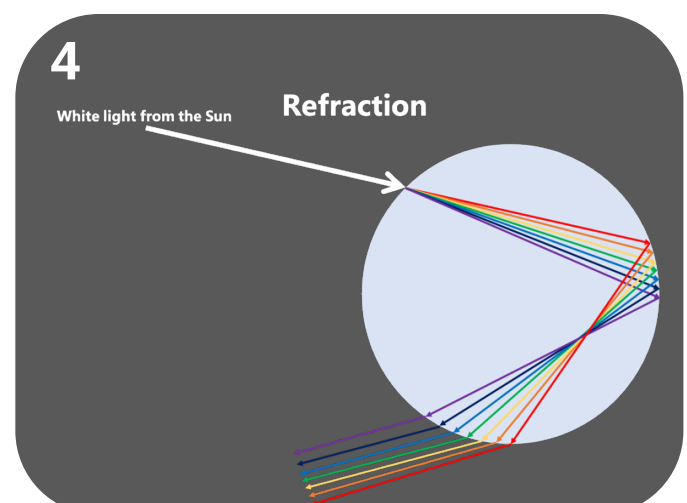
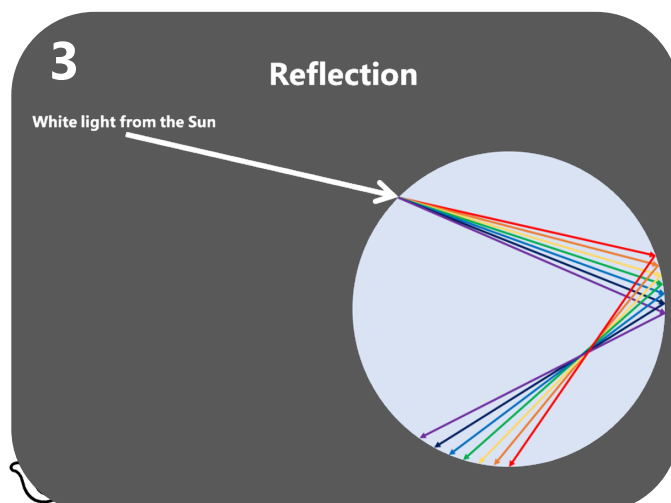
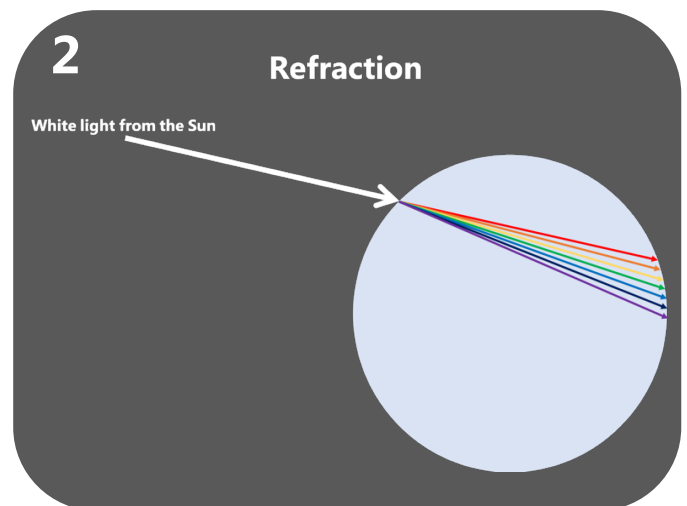
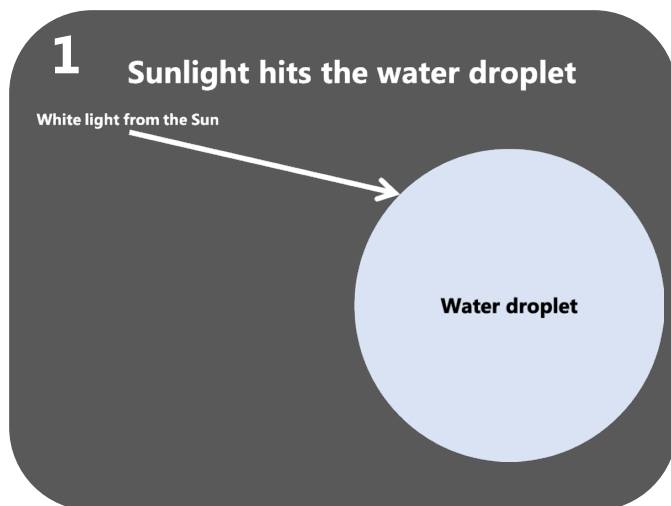
## 3. EXPERIMENT FURTHER:

Experiment by spraying the water in different directions. See if you can:

- Create a double rainbow
- Create the entire circle of the rainbow.

## 4. WHAT'S HAPPENING?

(LOOK TO NEXT PAGE FOR MORE INFO)



## Step 1:

Sunlight is made up of a mixture of all the colours of the rainbow – red, orange, yellow, green, blue, indigo and violet – we call this **white light**.

## Step 2:

When white light enters the water droplet from the air, it gets bent slightly – this is called **refraction**.

However, all the colours are bent by slightly different amounts. For example, red light gets bent the least by the water and violet gets bent the most. Because of this, refraction in the water separates all the colours of white light.

## Step 3:

The separated colours then bounce off the inside wall of the water droplet, this step is called **reflection**. They then travel to the opposite side of the droplet, still separated.

## Step 4:

The separated colours then exit the water droplet and the change from water to air means they are **refracted** again into parallel rays which travel to our eyes.

These four steps happening simultaneously in thousands of water droplets allow us to see all the colours of the rainbow from the white light coming from the Sun.

