

## Prep Instructions

The following items will be required for the prep of this activity:

- sugar
- plastic sandwich container full of sugar
- measuring spoons (1 tbsp and 1/2 tbsp)
- 2 different colours of tape (red and blue)
- 6 glasses
- liquid measuring cup
- food colouring
- spoon
- clear container with flat bottom
- ruler
- marker
- wide diameter straw
- funnel
- water

### Step 1

If using a container without measurement gradations, pour 1 cup of water into the container and mark the water level with a marker (**Figure 1**). Using the first line as a reference, use a ruler to mark five more lines on the container for a total of six lines (**Figure 2**). These lines indicate the location of the different rainbow layers. It is important not to make the layers too thick because only 1 cup of water will be used to make each colour of the rainbow.



Figure 1



Figure 2

If using a container that already has measurement gradations, divide the total volume into six uniform layers and adjust the *Student Handout One* instructions accordingly. For example, an apple juice container has twelve measurement gradations and an approximate total volume of 24 cups. To make six layers, 2 cups of each coloured solution are required to fill the volume between two gradations. Therefore, in this case, the amounts provided in the *Student Handout One* should be doubled.

### Step 2

The measuring spoons used in this activity are colour-coded by wrapping coloured tape around the handles (**Figure 3**). Here, the 1 tbsp measuring spoon was labelled with red tape and the 1/2 tbsp measuring spoon with blue tape. Other colours can be used but *Student Handout One* will need to be adjusted accordingly.



Figure 3

### Step 3

If desired, use coloured tape to label the 1 cup mark on the measuring cup to make it easier for students to measure the required volume of water (**Figure 4**).

### Step 4

Pour the sugar into the plastic sandwich container to make it easier for students to fill their measuring spoons. Prepare a table at the front of the class with all of the materials needed to make the rainbow (**Figure 5**).



Figure 4



Figure 5

## Rainbow in a Bottle - Prep Instructions

### Step 5

Once all the solutions have been poured into the container, the straw must be very carefully removed because it is full of red sugar solution, which can mix into the other colours and destroy the layered rainbow effect. It is recommended to practice removing the straw from a glass of water before attempting it with the rainbow layers.

To remove the straw, place an empty glass next to the container. Cover the top of the straw with an index finger or thumb and hold it upright, while keeping the open end of the straw in contact with the bottom glass. Ensure that there is a tight seal between the thumb or index finger and the straw, and slowly lift the straw in a straight line out of the container. Be sure to keep the straw straight. Once the straw has been removed from the rainbow, quickly drain it into the empty glass (Figure 6).

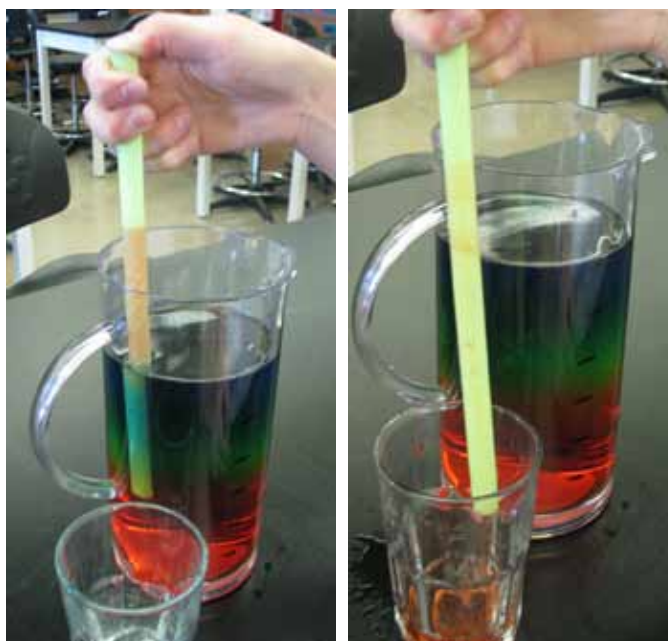


Figure 6