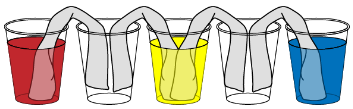
WALKING WATER RAINBOW



Introduction

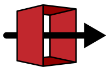
Some people are painting pictures of rainbows to share happiness. Real rainbows are made when light interacts with water droplets in the air. Water is a liquid that can move through certain materials.

In this experiment, students can see how water can move from one cup to another, through a paper towel. To do this, the water must move upwards through the paper towel, working against gravity. This process of the water climbing the paper towel is called capillary action. Capillary action is the same action that enables water to move to all parts of plants. Water travels up the fibers of the roots and stems into the leaves, working against gravity. Likewise, in this experiment, the water can travel up the fibers of the paper towels.

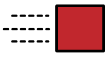
During the experiment the water from the first and third cup will move into the second cup. Water from the third and fifth cup will move into the fourth cup. The coloring in the water helps the students see the water's movement so be sure to use enough food coloring in each cup to give it a strong color. Regular liquid food coloring will work better than gel or paste food coloring because it will dissolve better in the water.

As students observe this experiment, they should see that the red water and some of the yellow water both move into the second cup, where they combine to make orange water. The blue water and more of the yellow water both move into the fourth cup, combining to make green water. The water will stop moving when each of the five cups has an equal amount of water. This process may take up to 60 minutes. You may need to stir the water in the combined cups to see the new colors.

What We Know:

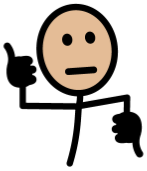
- Some people are painting pictures of rainbows to share happiness. 
- Real rainbows are made by light interacting with water droplets. 
- Water is a liquid. 
- Water can move through certain materials. 

Step 1: Ask a Question

- Can water move from one container to another through paper towels? 

Step 2: Make a Guess / Hypothesis

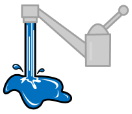
I think... 

yes	no	maybe
		

Need:

5 clear plastic cups

water



red food coloring

spoon

yellow food coloring

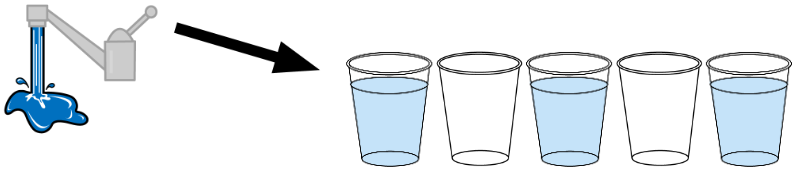
blue food coloring

4 paper towel sheets, each rolled

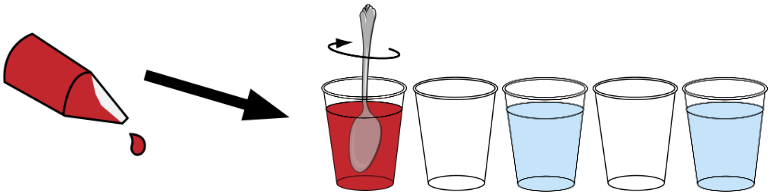
Step 3: Do an Experiment

1. Set five cups in a row, near each other.

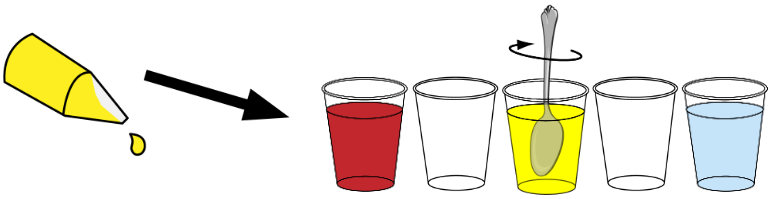
2. Put water, almost to top, into first, third and fifth cups.



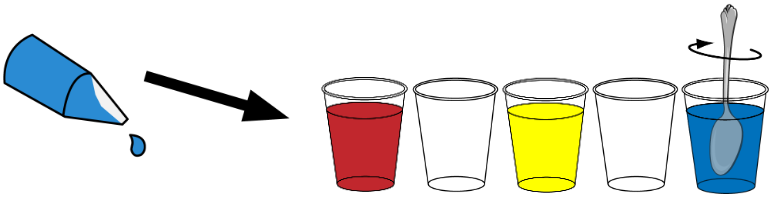
3. Put red food coloring into water of first cup. Stir.



4. Put yellow food coloring into water of third cup. Stir.

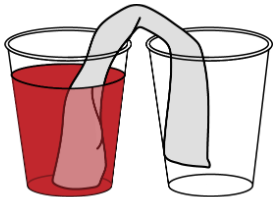


5. Put blue food coloring into water of fifth cup. Stir.

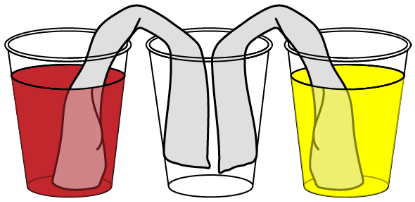


Step 3: Do an Experiment

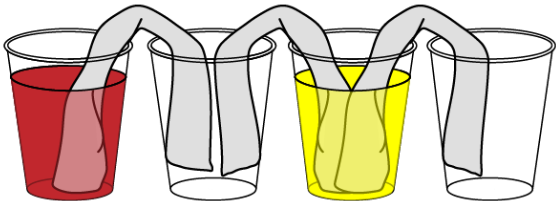
6. Put ends of one paper towel into cup with red water and empty second cup.



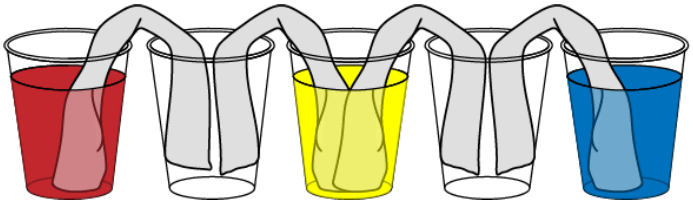
7. Put ends of one paper towel into cup with yellow water and empty second cup.



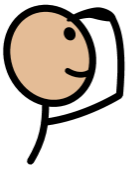
8. Put ends of one paper towel into cup with yellow water and empty fourth cup.



9. Put ends of one paper towel into cup with blue water and empty fourth cup.



10. Observe paper towels and cups.



Step 4: Organize Data

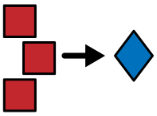
1. How many cups had water in them at the beginning?

one	three	five
1	3	5

2. How many cups had water in them at the end?

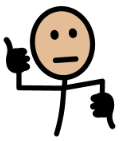
one	three	five
1	3	5

3. What color was the water in the second cup?

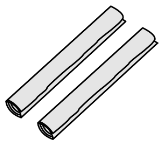
red	yellow	other
		

Step 5: Find the Conclusion

1. Did water move out of the first, third and fifth cups?

yes	no	maybe
		

2. What did the water travel through?

paper towels	table	air
		

3. Was your guess correct?

yes	no
	

Questions for Class Discussion

- What color was in the fourth cup at the end of the experiment?
- What colors would you mix to make purple?
- What other materials can water travel through?