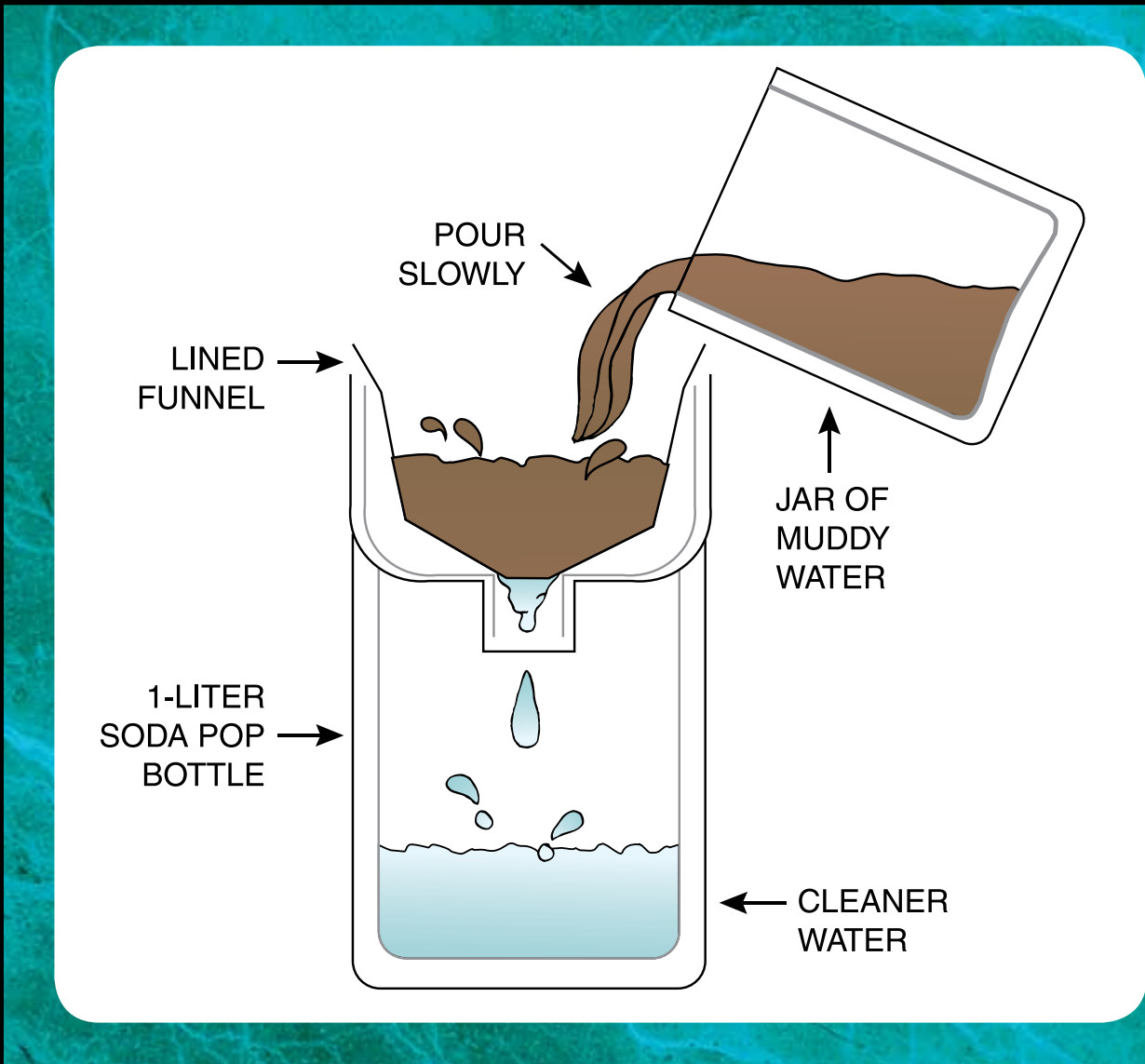


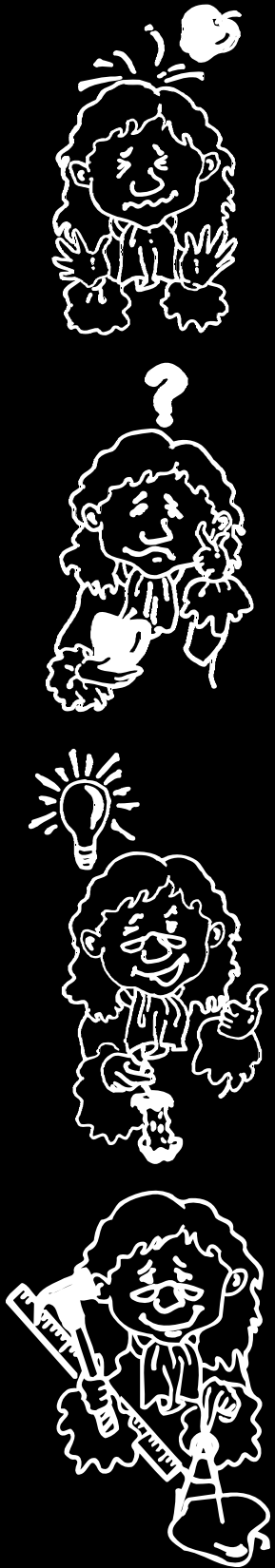
# WATER SCIENCE

## Active Science with Water



By **Edward Shevick** lecturer • teacher • author

Hands-On Science Activities  
Ready for Student Use



# WATER SCIENCE

**Active Science with Water**

***Science Action Labs***

Written by Edward Shevick  
Illustrated by Marguerite Jones



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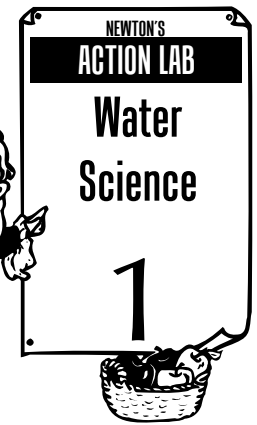
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# Water Science



## Newton Wants You to Know

Water is the main substance in living things. Most living things are at least one-half water. Your own body is two-thirds water.

You couldn't grow and change without water. You couldn't keep your size and shape without water. You couldn't even move without the water in your body.

Water is a molecule. It is made of two hydrogen atoms and one oxygen atom. The water molecule is called H<sub>2</sub>O.

Water makes up 75% of the Earth's surface. Water is a gas in clouds, a liquid in the soda we drink and a solid in the ice we skate on. Without water in the environment, there would be no life on Earth.

1. Place a few drops of water in the palm of your hand.
2. Close your eyes and let your mind dwell on the watery sensation, on your daily need for pure, unpolluted water and on your origin as a minute creature in a warm, drifting sea.
3. Combine your poetic and scientific skills to develop an eight-line poem of great significance.

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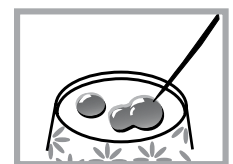
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## Water Experiments

### Tense Water

The surface of a water drop forms a "skin" that helps the water drop keep its typical shape. Scientists call this surface tension. Surface tension explains most of the water drop experiments you are going to do in this lab.



1. Place three different size drops in three different areas of an upside down paper cup. Its waxy surface has very little attraction for water molecules.

Name \_\_\_\_\_

2. Use a toothpick to roll the drops around. Combine and separate them. Roll them into and away from the cup sides.
3. Describe how your drops react to being pushed around.

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## Moving Water

Your drops of water appear to be still and motionless. Let's find out if anything is moving inside.

1. Fill the inverted bottom of your cup with water. It doesn't have to bulge upward.
2. Add only one drop of food coloring to one side of the inverted cup.
3. Do not shake the cup in any way. During the next two to five minutes, observe the coloring's movement in the water. What happened to the coloring in the water?



Why did the coloring diffuse (spread out) throughout the water?

Newton Hint: What must the individual molecules of water be doing to cause diffusion?

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## Fun with Water Drops



A drop of water can take many shapes. You are going to observe a few different kinds of drops.

1. Use an eyedropper or dispensing bottle on these experiments.
2. Have a friend form water drops falling by your eyes as shown.
3. Observe the drops carefully both at normal eye level and when they near the ground

