

# The Shrinking Mixture of Liquids

<b><u>The Action</u></b>	Help students discover that spaces actually exist between molecules even if we cannot see them with our naked eye.
<b><u>Grade Level</u></b>	Grade 3 – Properties of Matter Grade 5 – Matter and its Changes
<b><u>Materials</u></b>	A test tube & small beaker Water Alcohol – ethyl-, methyl-, or isopropyl-alcohol
<b><u>Instructions</u></b>	Fill the test tube half full with water. Hold the test tube slanted and place your thumb on the mouth of the tube, making sure that no air bubble is trapped. Show the students that the tube is completely full. Invert the tube several times (keeping thumb on the opening of the test tube at all times). Let the students see that the liquid level in the beaker has now lowered.
<b><u>Safety</u></b>	
<b><u>Hints</u></b>	If ethyl alcohol is not available, rubbing alcohol can be easily obtained from a drug store, and may replace it.
<b><u>Science Principle</u></b>	By closing the opening of the test tube tightly with the thumb, and not taking it off while inverting, no evaporation or spilling of the liquid could occur. By inverting the test tube, mixing of water and alcohol takes place, and because there are spaces between the molecules, the alcohol molecules slip between the water molecules, thus making the total volume of the mixture become less. Although the spaces between the molecules cannot be seen with the naked eye, this demonstration shows that there must be room between molecules.