Where Did It Go?

Purpose
To illustrate that there are pockets of space between water molecules.

Materials
Blue food coloring
1 cup (250 ml) tap water
measuring jar
1 cup (250 ml) rubbing alcohol

Procedure
• Add 5 or 6 drops of food coloring to the water to make the water level easier to see.
• Pour the colored water into the measuring jar.
• Add the rubbing alcohol to the colored water.
  *CAUTION: Keep alcohol away from your nose and mouth.*
• Observe the height of the liquid.

Results
The liquid level is below the 2 mark.

Why?
The connection of water molecules forms small empty pockets (see the diagram). These pockets are filled with the alcohol, causing the combined volume to be less than two cups.