

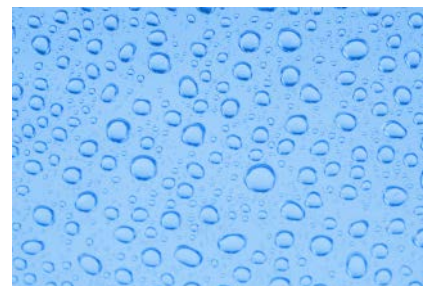
5th Grade – Lesson 2.2

Identifying an Unknown Liquid

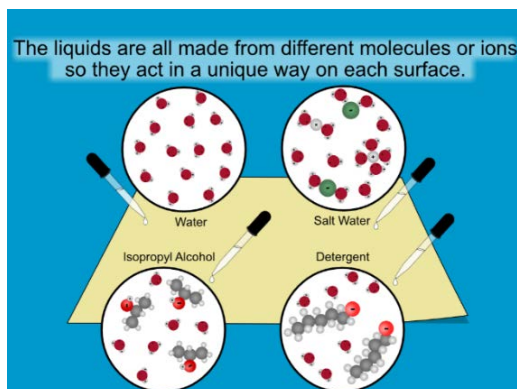
Student Reading

Liquids Have Characteristic Properties

If you put a drop of water on plastic, the water beads up. But if you put a drop of oil on the same surface, it looks and acts very differently. This is because water molecules interact with each other and with the plastic in a certain way. And oil molecules interact with one another and with plastic in a different way.



Water beads up on plastic



Different liquids like water, salt water, alcohol, and detergent solution are all made from different molecules. If you compare these liquids on a particular surface such as wax paper or construction paper, the liquids should act differently enough that you can tell them apart.

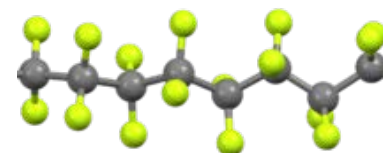
Changing the Surface Instead of the Liquid

Sometimes you want a liquid or other substance to act a certain way on a surface but the properties of the liquid won't allow it to work. One example of this is the desire to have a raw egg not stick to a metal pan while the egg is being cooked. To solve this problem, scientists are sometimes able to change the properties of the surface.



Teflon pan

A good example of this is the substance *Teflon* which is used to create a non-stick coating for cooking pans. Teflon has a long name (Polytetrafluoroethylene) but it is only made from two different kinds of atoms (carbon and fluorine). These atoms are bonded together and repeated over and over again to make a long Teflon molecule.



Teflon molecule

Because of the special properties of these molecules, something sticky like a raw egg does not stick to the Teflon surface.