**Viscosity Conclusions**

*Why are Fluids Viscous?*

* We know from our knowledge of the states of matter that both liquids and gases have particles that can move passed one another
* The ability to do this gives them the ability to\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(MAKING THEM A FLUID)
* Viscosity arises from the fact that as these particles move past one another, they\_\_\_\_\_\_\_ against each other or\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into one another
* The rubbing of the particles creates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The friction is what \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ down the particles
* We call this “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”
* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_the internal friction, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the viscosity.
* The particles of the fluid will also have friction against the material over which they are flowing.
* This is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ friction, and also causes a change in flow rate



*Can Solids Be Viscous?*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Why Does Viscosity Differ?*

* As discussed, viscosity is a result of PARTICLE FLOW and INTERNAL FRICTION. As we know, not all particles are the same.
* Pictured below are a water molecule and a fructose molecule (corn syrup is a combination of fructose, glucose and water) Looking at these molecules, can you see why the two substances would have different levels of viscosity?   Water Viscosity: \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Fructose Viscosity:\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* The internal friction caused by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of fructose molecules is much higher than the internal friction caused by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the water molecules
* Gases have much \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ so regardless of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ there is more room to allow fluids to flow. This means \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

*Non-Newtonian Fluids:*

* Applying pressure to the mixture increases its viscosity (thickness). A quick tap on the surface of Oobleck will make it feel hard, because it forces the cornstarch particles together. But dip your hand slowly into the mix, and see what happens—your fingers slide in as easily as through water. Moving slowly gives the cornstarch particles time to move out of the way.

