Science 8 Forces, Fluids and Density Unit

Big Idea: **Are we all dense?**

# Outcome:

# FD8.3 Investigate and describe physical properties of fluids (liquids and gases),

# including viscosity and compressibility.

Understandings:

* Differing fluids have differing viscosities.
* Lab materials need to be handled and disposed of safely.
* The particle theory can explain why pressure, temperature and volume affect liquids and gases.
* There is a relationship between pressure, volume and temperature.
* Pressure can be altered.

Essential questions:

1. How should we properly handle and dispose of lab materials?
2. How can we use the particle theory to explain why pressure, temperature and volume affect liquids and gases?
3. Why might viscosity be an important quality in a product?
4. How are pressure, volume and temperature related?
5. How can pressure be altered?

Students need to know: (essential questions they are related to are in brackets)

* How to safely handle and dispose of lab materials, how to use temperature measuring technology.
* WHMIS Standards
* Vocabulary: viscosity, variable, fluid, buoyancy, pressure, compressibility, hydraulic, pneumatic, density, temperature, particle theory, qualitative, liquid, gas, surface area
* Products where viscosity is important: paint, hand lotion, motor oil, salad dressing, condiments

And be able to: (essential questions they are related to are in brackets)

- Handle and dispose of lab materials safely. (Show understanding of WHMIS) (1)

- Predict and investigate the effects of applying pressure and changing the temperature of

liquids and gases. (2)

- Describe situations in which pressure can be increased/decreased by altering surface area. (2)

- Use the particle theory to explain differences in compressibility between liquids & gases. (2)

- Identify products and design an experiment to compare and evaluate the viscosity of

products.(3)

-Use appropriate vocabulary.

-Use temperature measuring technology.

-Collect data

-Explain relationship between pressure, volume and temperature.