

# Science 8 Unit A: Mix and Flow of Matter

## **1.0 Fluids are used in technological devices and everyday materials**

Hazardous symbol

WHMIS

Symbol Shapes and Colours:

7 Pictures of chemical hazards

## **1.2 The Many uses of Fluids**

Fluid:

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Slurries:

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Fluids Become Solids:

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Fluids Can Hold Other Materials:

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Useful Properties of Fluids:

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## **2.1 Pure Substances and Mixtures**

Pure substance:

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Mixture:

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Mechanical mixture:

Heterogeneous mixture:

Homogeneous mixture:

Solution:

Suspension:

Colloid:

Paper Chromatography:

## **2.2 Concentration and Solubility**

Solute:

Solvent: HUT - 0.5CM RULED

## Measuring Concentration

Concentration:

## Comparing concentrations: Dilute vs Concentrated

Unsaturated solutions:

Saturated solutions:

Solubility:

Saturation point

Comparing Solubility of common substances

## **2.3 Factors affecting Solubility**

Solubility depends on at least three factors:

### **Types of solutes and Solvents**

Aqueous solution:

Solubility Changes with temperature

Thermal pollution

## **2.4 The Particle Model of Matter and the Behavior of mixtures**

The Particle Model of Matter – four parts:

How the particle model explains mixing substances

Factors affecting the rate of dissolving – three parts

**3.0 the properties of gases and liquids can be explained by the particle model of matter**

**3.1 Viscosity and the effect of temperature:**

Viscosity with the ramp method

Understanding viscosity and temperature

**3.2 Density of Fluids**

Density:

Understanding Density:

Calculating Density Using an Equation:

### **3.3 Density, Temperature, and Buoyancy**

The particle Model as an explanation for density changes:

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Different temperature, different density:

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Changing Density by changing concentration:

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Buoyancy:

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Buoyant Force:

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Plimsoll Line:

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Hot air Balloon

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### **3.4 Compression of Fluids**

Compressibility:

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Differences in compressibility between gases and liquids:

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Incompressible:

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### **3.5 Pressure in Fluids – Pascal’s Law**

Pressure:

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Equation:

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## **Pressure and Depth**

The greater the depth, the greater the pressure:

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Pascal's law:

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Hydraulic Devices and Hydraulic Systems:

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Pneumatic Devices and Pneumatic Systems:

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Maintaining the Pressure – Leaks are Bad!

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## **4.0 Many technologies are based on the properties of fluids**

### **4.1 Technologies Based on Solubility**

## **Diving and Decompression**

### **4.2 Technologies Based on Flow Rates and moving Fluids**

Pump:

The Bicycle pump:

Pipeline Pigs:

Valves:

### 4.3 Designing a Working Model of A fluid-using device

Explain how a cartesian Diver Works:

How a submarine works

Diagram of a submarine

