**Project Information Handout**

**Mix and Flow of Matter  
Unit 1 Project**

**This assignment will provide you with an opportunity to demonstrate that you have mastered the key concepts in this unit.**

**You are asked to design and build a working model that applies many of the key concepts you have learned in this Unit.**

**The key concepts you should consider include:**

* **Fluid Properties**
* **Flow Rate and Viscosity**
* **Density**
* **Buoyancy**
* **Fluid Pressure**
* **Hydraulics**
* **Technologies used to move Fluids through a system.**

**The choice of Theme is up to you. You may wish to create a scale or miniature model, a game, or a creative invention that serves a useful purpose.**

* **A scale model water supply system for a trailer (camper)**
* **A miniature model hot tub system**
* **A scale model solar heating system for a solar swimming pool, or solar powered vehicle: combining the key concepts from this unit on Fluids and Pressure and another unit on Heat (Solar Energy) and Temperature.**
* **A hydraulic system that moves a marble through a maze**
* **A miniature model hydraulic dentist's chair**
* **An automatic pet care system (feeding, bathing)**
* **A fluid game using the principles of buoyancy, density and flow rate**

**The model, game or invention, should work (do what it is designed to do), but even if you are unable to make it work properly, you'll receive recognition for your efforts. All the elements of this project are outlined below, so follow the guidelines provided.**

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| **Mix and Flow Project Guidelines** | | |
| **Criteria** | **Description** | **Mark** |
| **Background...** | **Provide a description of the purpose of your model, game or invention, and justification for your design.** | **10** |
| **Components...** | **What are the component parts of your system and what is the function of each?** | **5** |
| **Operation...** | **How do the components act as subsystems of the fluid system you have designed?** | **5** |
| **Scientific Principles...** | **What scientific principles (key concepts) that you have learned in the Unit are applied to the system you have created.** | **10** |
| **Model...** | **Model, game or invention and blueprint with flow chart outlining the direction of fluid flow.** | **15** |
| **Presentation...** | **Explanation to peers relating the design and construction features of your model and how it functions.** | **30** |
|  | **Total** | **75** |
| |  |  |  | | --- | --- | --- | | **Student Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class \_\_\_\_\_\_\_\_\_\_\_** | | | | **Criteria** | **Possible Mark** | **Your Mark** | | **Background...** | **10** | \_\_\_ | | **Components...** | **5** | \_\_\_ | | **Operation...** | **5** | \_\_\_ | | **Scientific Principles...** | **10** | \_\_\_ | | **Model...** | **15** | \_\_\_ | | **Presentation...** | **30** | \_\_\_ | | **Total** | **75** | **\_\_\_\_\_** | | . | | | | **Comments:** | .\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  .\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  .\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |