Science 8 – Fireside School Mr. Adams

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Science 8 is a collection of diverse topics related to systems and the interactions and interconnections involved in these diverse systems. Special attention will be given to viewing these topics through a system’s thinking lens in order to understand the complexities of relationship and viewpoint. Systems examined include: the elements of matter, cellular systems, light and optical systems, mechanical systems, and salt and fresh water systems.

Students will study current events related to these topics and interdisciplinary studies will emerge, connecting science knowledge with social studies, language arts, mathematics and health.

**Course Content:**

**Mix and Flow of Matter**

* + - Matter on the move
    - Mixing can make it flow
    - Separating Earths Mixtures
    - Flow rate of viscosity
    - Density
    - Buoyancy
    - Fluid pressure
    - Fluid strength: Hydraulics and Pneumatics

**Cells and Systems**

* + - Living Organisms
    - Microscopes and Cells
    - The cell and its structures
    - Fluid movement in cells
    - Cell specialization and organization
    - Body systems in humans
    - Body systems and your health

**Light and Optical Systems**

* + - What is light
    - Reflection
    - Refraction
    - Lenses and vision
    - Extending human vision
    - The source of colours
    - The wave model of light
    - Beyond Light

**Mechanical Systems**

* Lever and inclined planes
* The wheel and axle, gears, and pulleys
* Energy, Friction, and Efficiency
* Force, Pressure, and Area
* Hydraulics, and Pneumatics
* Combining systems
* Machines throughout history
* People and Machines

**Fresh and Salt Water Systems**

* A world of water
* Earth’s frozen water
* Fresh water systems
* The Oceans
* Living in water
* Water quality and Water management

**Evaluation for each Term: Evaluation for each Term:**

Quizzes 20%

Unit Exams 35%

Assignments, Performance Assessments, Labs and Projects    45%

**Exams and Quizzes:** Exams will be at the end of units.  Before each exam there will be a review and an outline of what will be tested. Quizzes will be held periodically throughout the entire year, and can be used to prepare for unit finals.

**Assignments and Projects:**

Throughout the year, students will complete a variety of assignments, projects and labs. Students will be encouraged to individualize their projects while following expectations and guidelines of the teacher. Projects will include elements of our connections with current events.

All assessments will be categorized under the following headings – which are visible through PowerSchool. Students are parents are encouraged to check PowerSchool regularly for assignments, including important assignment comments.

* Demonstrates and applies knowledge and understanding of the concepts
* Uses knowledge to explain, interpret, predict, solve problems and communicate
* Demonstrates skill in using scientific inquiry to explain, interpret or make predictions
* Demonstrates understanding of the connections among science, technology, society