Science 8 Course Outline 2013-2014

Mother Teresa

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Text: Science in Action 8

Addison Wesley

**Course Overview**

Mix and Flow of Matter. This unit focuses on science and technology. Students will study fluids used in technological devices and everyday materials; they will also look at the composition of fluids and how they behave in solutions. They will compare the properties of gases and liquids and the variations in their viscosity, density, buoyancy and compressibility.

Cells and Systems. The nature and science is the focus of this unit. Students will study living things and identify general structure, function, and organization. They will describe the role of cells within living things, as well, they will study human body systems and how the body uses them to function.

Light and Optical Systems. The nature and science is the focus of this unit. Students will investigate the nature of light and vision and the role that invention played in developing current knowledge. Students will study the transmission of light and describe its behavior; they will also look at image formation and vision.

Mechanical Systems. This unit focuses on science and technology. Students will describe, compare, and interpret mechanical devices. They will analyze machines by describing structures and functions of the overall, subsystems, and component parts. The will also look at the transmission of force and energy between parts of a mechanical system. Students will analyze the social and environmental contexts as they apply to the development of mechanical devices.

Freshwater and Saltwater Systems. This unit has a social and environmental emphasis. Students will look at the distribution and characteristics of water in local and global environments and the significance of a water supply. They will look at the link between landforms, water, and climate; the species distribution in marine and freshwater environments; and human impact on aquatic systems.

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Unit Title Dates

A Mix and Flow of Matter Sept-Nov

B Cells and Systems Dec-Jan

C Light and Optical Systems Feb-Mar

D Mechanical Systems Mar-Apr

E Freshwater and Saltwater Systems May-June

- Review and Test Last week

**Course Content:**

**Mix and Flow of Matter**

Topic 1- Fluids are used in technological devices and everyday materials.

Topic 2- The properties of mixtures and fluids can be explained by the particle model of matter.

Topic 3- The properties of gases and liquids can be explained by the particle model of matter.

Topic 4- Many technologies are based on the properties of fluids.

**Cells and Systems**

Topic 1- Living things share certain characteristics and have structures to perform functions.

Topic 2- Cells play a vital role in living things.

Topic 3- Healthy human function depends on a variety of interacting and reacting systems.

Topic 4- Scientific investigation leads to a new knowledge about body systems and new medical applications.

**Light and Optical Systems**

Topic 1- Our knowledge about light and vision comes from explanations, inventions, and investigations.

Topic 2- Light behaves in predictable ways.

Topic 3- Light is part of the electromagnetic spectrum and travels in waves.

Topic 4- Eyes and cameras capture images using the properties of light.

**Mechanical Systems**

Topic 1- Machines are tools that help humans do work.

Topic 2- An understanding of mechanical advantage and work helps in determining the efficiency of machines.

Topic 3- Science, society, and the environment are all important in the development of mechanical devices and other technology.

**Fresh and Saltwater Systems**

Topic 1- Humans depend on water supply and quality.

Topic 2- Water in its various states affects Earth’s landforms and climate.

Topic 3- Living things in aquatic environments are affected by many factors.

Topic 4- Human activities affect aquatic environments.

**Evaluation per Term:**

25% Assignments

20% Labs

15% Quizzes

40% Tests

**Overall Year Evaluation**:

20% Term 1

30% Term 2

30% Term 3

20% Final exam

**Classroom Expectations:**

Come to class on time. (If you are late and the door is closed, knock once, and wait quietly.)

Always be prepared. (Never come to class empty handed. Always have your binder, textbook, and other required materials.)

Quizzes and tests will come at regular intervals and be preceded by adequate review and notification. Complete all of your assignments. Just because you were not there for class doesn’t mean it didn’t happen! Classroom work missed is your responsibility, if you are absent you are still responsible for that work.

Any questions or concerns please feel free to contact me at any time!

Have an awesome year!

Miss G. Otte