Stratton School Activity Outline

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10.16.09
Animal Mimicry
Massachusetts Frameworks:
- 1.1
- 2.2
- 2.3
- 2.4

10.23.09
Building a Sturdy Vehicle – Journey to the Center of the Earth
Massachusetts Frameworks:
- 1.1
- 2.2
- 2.3

11.06.09
Animation of the Solar System
Massachusetts Frameworks:
- 1.1
- 2.2
- 2.3

11.13.09
Gears – Lifting batteries (or other weight – 'moon rocks')
Massachusetts Frameworks:
- 1.1
- 1.2
- 1.3
- 2.1
- 2.2
- 2.3

11.20.09
Catapult – levers and simple machines
Massachusetts Frameworks:
- 1.1
- 1.2
- 1.3
- 2.1
- 2.2
- 2.3

12.04.09
Mini-golf course
Massachusetts Frameworks:

1.1
1.2
1.3
2.1
2.2
2.3

12.11.09
Mini-golf course
Massachusetts Frameworks:

1.1
1.2
1.3
2.1
2.2
2.3

LEARNING STANDARDS

1. Materials and Tools
Central Concept: Appropriate materials, tools, and machines extend our ability to solve problems and invent.

- **1.1 Identify materials used to accomplish a design task based on a specific property, e.g., strength, hardness, and flexibility.**
- **1.2 Identify and explain the appropriate materials and tools (e.g., hammer, screwdriver, pliers, tape measure, screws, nails, and other mechanical fasteners) to construct a given prototype safely.**
- **1.3 Identify and explain the difference between simple and complex machines, e.g., hand can opener that includes multiple gears, wheel, wedge, gear, and lever.**

2. Engineering Design
Central Concept: Engineering design requires creative thinking and strategies to solve practical problems generated by needs and wants.

- **2.1 Identify a problem that reflects the need for shelter, storage, or convenience.**
- **2.2 Describe different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.**
- **2.3 Identify relevant design features (e.g., size, shape, weight) for building a prototype of a solution to a given problem.**
- **2.4 Compare natural systems with mechanical systems that are designed to serve similar purposes, e.g., a bird's wings as compared to an airplane's wings.**