

**Pleasant Hills Middle School
Technology Education Curriculum**

6th Grade
Exploring Technology

May 2004

Overview

In 6th grade students will be given a broad overview of the scope of technology as it relates to them and the world around them and the importance of design and problem solving as the main process used for solving technological challenges. The main activity is intended to not only reinforce the content of technology, but also be consistent with the Pennsylvania Academic Standards for Science and Technology and integrate learning that occurs in mathematics and science. Students will be designing and testing a magnetic levitation vehicle by following an engineering design process. In addition, students will be developing an ability to represent their thinking by conveying technical ideas using sketching, and technical drawing. Finally, students will use a digital camera and PowerPoint to create a short presentation that summarizes how they designed, built, and tested their vehicle.

Standards:

- 1.6.8.E: Participate in small and large group discussions and presentations.
- 3.1.7.A: Explain the parts of a simple system and their relationship to each other.
- 3.2.7.D: Know and use the technological design process to solve problems.
- 3.6.7.A: Explain information technologies of encoding, transmitting, receiving, storing, retrieving and decoding.
- 3.6.7.B: Explain information technologies of encoding, transmitting, receiving, storing, retrieving and decoding.
- 3.7.7.A: Describe the safe and appropriate use of tools, materials and techniques to answer questions and solve problems.
- 3.7.7.D: Apply computer software to solve specific problems.
- 3.8.7.A: Explain how sciences and technologies are limited in their effects and influences on society.
- 3.8.7.B: Explain how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.

Course Outline

Day 1: What is Technology?

- ✓ Definitions
 - Technology
 - Design
 - Science
- ✓ Modes of Technology
 - Physical Technology
 - Information Technology
 - Biorelated Technology

Day 2: Invention

- ✓ Famous Inventors and their characteristics
- ✓ Inventions and their impacts

Day 3: Engineering Design Process

- ✓ Get to Know the Problem
- ✓ Explore Ideas

- ✓ Plan and Develop
- ✓ Test and Evaluate
- ✓ Present the Solution

Day 4-6: Idea Representation

- ✓ Sketching Overview
- ✓ Technical Sketching Process
- ✓ Technical Sketching Practice

Day 7: Transportation Systems

- ✓ Universal Systems Model
- ✓ Systems of transportation

Days 8-9: Digital Photography and Documentation

Days 10-16: Magnetic levitation Design Activity

Day 10: Get to Know the Problem

Day 11: Aerodynamics/Explore Ideas

Days 12-14: Plan and Develop

Days 15-16: Test and Evaluate

Day 17-18: PowerPoint Basics

Day 19-20: Present the Solution

Days 21: Final Exam

Day 22: Catch-up Day

Resources:

See attachment for approximately 300 students.

Pitsco, Inc.

P.O. Box 1708

Pittsburg, KS 66762-9964

Phone: 800-835-0686

Fax: 800-533-8104

Web: www.pitsco.com