



RADNOR TOWNSHIP SCHOOL DISTRICT  
Course Overview



Introduction to Technology -6<sup>th</sup> Grade  
Course #

**General Information**

Credits: **RHS Only**  
Weighted: **N/A**  
Prerequisite: **N/A**

Length: Semester  
Format: 3 days per cycle  
Grade: 6th

**Course Description**

Introduction to Technology is the first chance for middle school students to formally explore the technological world around them. Besides learning about technology and the use of basic and hi-tech tools and materials processes, students will also have the opportunity to learn and apply the design process to their projects/challenges. This 6<sup>th</sup> grade course will focus on the area of technical communications specifically on graphic and electronic means. Projects are related to screen printing, image editing, computer aided drafting and design (CADD), and technical sketching. These projects will make use of advance tools like Rapid Prototypers (3-D Printer and Laser Engraver) as well as advanced design and editing software (Autodesk Inventor and Adobe Illustrator).

**Course Description (RMS Course of Studies Version):**

This project based course builds upon design principles learned in Introduction to Technology while taking a more in depth look at the technological world around students. Main themes will be built around electronics, transportation, manufacturing and communications systems. Projects will require students to use computer aided drafting & design (CADD) software along with prototyping machines (3-D Printer, Laser Engraver, Machine Tools) to design, build, and test solutions to problems. In addition to design and build projects students will also have the opportunity to try their hand at App Writing during this course for either Apple or Android platforms.

**Course Objectives:**

**Students will be able to:**

- define Technology
- apply the design process to design challenges and projects
- apply and document the brainstorming process
- use a design process to work from a problem to a solution
- identify and use criteria and constraints in a design process
- apply advanced tools and processes to create solutions to problems
- measure with an accuracy of 1/8" using a ruler
- create an original design using CADD software

**Common Assessments:**

**Required Assessments:**

Common Course Assessments:

**Technology and Design Process Quiz** – Define and identify terminology.

**Measurement Quiz** – Measure and draw lines.

**Shipping Container Project** – Student build a shipping container for a fragile item, in this case a pringle chip. Students design a prototype and then design a development drawing to fold a piece of cardboard into their box. Packaging materials are researched and eventually the chip is mailed to the school using the USPS.

**Graphic Communications Quiz**- Terminology and basic concepts.

**RMS/Logo-** Students use the design process to create a logo for Radnor Middle School that meets specified design criteria. Once the logos are done the class votes to pick two that will be screen printed. Most kids screen print on their PE shirts.

**Picture Frame Project-** Using illustrator student will create an image that will be etched onto a wooden picture frame using the laser engraver.

**Key Chain Project-** Through the design process and using Autodesk Inventor student design a keychain that will be printed out using the 3-D printer.

**Commercial Shoot-** Using Ipads and iMovie students create a commercial for a product that they come up with. They write a script and create storyboards.

**Speaker Project-** Students will build a working speaker from scratch and then brainstorm and test ways to modify the design to improve performance.

## **Major Units of Study:**

### **Introduction to Technology & Design**

Defining technology

Areas of Technology

Design Process

Design Challenge

Measurement Review Inches down to 1/8"

**Shipping Container Design Challenge**

### **Graphic Communications**

Logo Design

***RMS LOGO/Screen Printing***

Adobe Illustrator Introduction

Designing with parameters

***Picture Frame Project (Laser Engraver)***

Technical Sketching and CADD

Multiview Sketches

Isometric Sketches

Autodesk Inventor Introduction

***Keychain Design Project (3-D Printer)***

### **Electronic Communications**

Video Editing Introduction

***Commercial Shoot (Ipads)***

Speakers Basics

***Speaker build***

### ***Major Projects in Bold Italics***

*(Classroom Equipment in Parentheses)*

## **Materials & Texts**

## **Teacher Resources**

Sanders, Mark Eric. *Communication Technology: Today and Tomorrow*. Mission Hills, CA: Glenco/McGraw-Hill, 1991. Print.

Wright, R. Thomas., and Ryan A. Brown. *Technology: Design and Applications*. Tinley Park, IL: Goodheart-Wilcox, 2008. Print.

- *Design Secrets. 50 Real-life Projects Uncovered*. Gloucester, MA: Rockport, 2001. Print.