

# Communication Technology

GPS  
GIS  
Telephone  
Systems  
Radio  
Systems  
Electronic  
Systems  
Video game  
simulation,  
Fiber Optics



## VIDEO GAME DESIGN

## What will you learn in Communication Technology?

**Marking Period 1: Video Game Design.** “Program your own 3D video game. Students demonstrate basic programming, design process, locating objects using rectangular coordinates, and unifying art and story. Certifications include program structure, if/then statements, for/next statements, arrays, textures, and sounds” . We use a product from [isupportlearning.com](http://www.isupportlearning.com)

<http://www.isupportlearning.com/video-game-design/>

**Marking Period 2: Telecommunications:** “ *Introduction to Telecommunications* provides students with the fundamental background knowledge in the theory, mediums of transmission, topologies and functions of systems used in businesses and Smart Homes. Students assemble, test and troubleshoot audio, visual, IR, wired and wireless connectivity systems to explore these principles”.

We use a product from CTech <http://www.c-techtraining.com/programs-telecom.htm>

**Marking Period 2-3 Two Way Long Distance Communication Design Problem:** Teams of students design a communication system that will allow each team to send and receive a message to and from another room. (ncludes: basic electronics series & parallel circuits, soldering, Multisim software, introduction to problem solving, documentation, and teamwork.

**Electronics:** We use a product from Gibson Tech Ed. <http://www.gssteched.com/tm101.html>

- Activities include using components and building simple circuits to help understand what they do in a circuit. All communication systems use electronics so this is a very basic background in electronic components.
  - L01 - Basic Electronic Circuits
  - L02 - How to Read the Resistor Color Code
  - L03 - How to Use a Solderless Circuit Board
  - L04 - How to Read Capacitor Values
    - L05 - How a Resistor Works
    - L06 - How a Potentiometer Works
    - L07 - How a Photocell Works
    - L08 - How a Capacitor Works
    - L09 - How a Speaker Works
    - L10 - How a Diode Works
    - L11 - How an SCR Works
  - L12 - How an NPN Transistor Works
  - L13 - How a PNP Transistor Works
  - L14 - A Two-Transistor Oscillator
  - L15 - How an 555 IC Timer Works

### **Marking Period 3-4 Radio and Telephone Systems**

We learn about radios and build a simple radio kit that you take home.

We learn about the telephone and build a difficult Telephone kit that you take home

### **Marking Period 4 GIS and GPS**

We learn: Map reading, compass reading, how do use a GPS. We have several GPS courses on our school property as well as 6 geocaches hidden around the property. We use a product from Digitalquest <http://www.digitalquest.com/>

#### **What is GIS**

A geographic information system (GIS) integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information.

GIS allows us to view, understand, question, interpret, and visualize data in many ways that reveal relationships, patterns, and trends in the form of maps, globes, reports, and charts.

A GIS helps you answer questions and solve problems by looking at your data in a way that is quickly understood and easily shared.

GIS technology can be integrated into any enterprise information system framework” .Learn more here: . <http://www.gis.com/content/what-gis>

**Geocache:** “**GEOCACHING** is a real-world outdoor treasure hunting game. Players try to locate hidden containers, called geocaches, using GPS-enabled devices”.

“**Global Positioning System (GPS)** is a space-based [satellite navigation](#) system that provides [location](#) and time information in all weather, anywhere on or near the Earth”.

If there is time at the end of the year we touch on **fiber optics** by making a fiber optic communication system.