

Electrical Engineering: K.M.1

Products of an Electrical Engineer

Grade Level	K
Sessions	1– 30 minutes
Seasonality	N/A
Instructional Mode(s)	Whole class, individual
Team Size	N/A
WPS Benchmarks	0K.SC.IS.01 0K.SC.IS.06 0K.SC.PS.01
MA Frameworks	K-2.PS.1
Key Words	Electrical Engineer, Electricity, Product, Plug, Outlet, Remote, Keyboard

Summary

This lesson will introduce students to electrical engineering by means of describing different products made by an electrical engineer and how these products help to make our lives easier. In the first part of the lesson students will be given a worksheet full of pictures of different products. Each student will be instructed to circle only those products that were made by an electrical engineer. For example, a student would circle a radio and a television but not a paint brush and a stop sign. In the second part of the lesson students will be given a worksheet that has one column of products made by electrical engineers and another column of things made to help people use the products (i.e. a remote control is used with a television and headphones are used with a CD player). Each student will be instructed to draw a line from the product to the tool that helps a person use the product.

Learning Objectives

2002 Worcester Public Schools (WPS) Benchmarks for Kindergarten

0K.SC.IS.01: Ask questions about objects, organisms, and events in the environment.

0K.SC.IS.06: Discuss observations with others.

0K.SC.PS.01: Sort objects by observable properties such as size, shape, color, weight, and texture.

2001 Massachusetts Science and Technology/Engineering Curriculum Framework

K-2.PS.1: Sort objects by observable properties such as size, shape, color, weight, and texture.

Additional Learning Objectives

1. Understand the importance of electrical engineers
2. Understand what a product is

Required Background Knowledge

1. None

Essential Questions

1. What is an electrical engineer?
2. What products does an electrical engineer make?
3. Why is electrical engineering important?

Introduction / Motivation

Consider using this lesson in addition to “Sparky’s Engineer” in order to further enforce the role of electrical engineers in our society. At the start of the lesson, return to the story “Sparky’s Engineer” and read pages 11-13, which describe an electrical engineer.

Procedure

Part I – 30 minutes

The instructor will:

1. Remind students that an engineer is someone who solves problems.
2. Explain to the students that an electrical engineer is someone who designs products that use electricity such as a television, radio, or computer.
3. Describe electricity, explaining that it is the thing that lights up a light bulb and makes video games, computers, CD players, and other products work.
4. Explain that a product is something made by a person or machine.
5. Tell students that many electrical products have a plug or wires. Ask the students if they can think of anything at home that has to be plugged into the wall

to work. Tell students that the place where these plugs are inserted into the wall is called an outlet.

6. Discuss how these products make our lives easier and more fun. For example television and radio allow us to hear and see news from all over the world and also watch movies and shows, computers make it easy to look up information, learn new material, and play games.
7. Hand out one “Products of an Electrical Engineer” worksheet to each student.
8. Go over each picture as a whole class to ensure that the students know what each thing is.
9. Have students circle only those products that were made by an electrical engineer (radio, computer, TV, CD player).
10. Hand out one “Products and Tools for Use” worksheet to each student.
11. Go over each picture as a whole class to ensure that students know what each thing is.
12. Have each student draw a line from the electrical engineering product (on the left hand side of the page) to the thing that helps a person use the product (on the right hand side of the page). (TV ~ Remote; CD player ~ headphones; plug from radio ~ outlet; Video game ~ Controller; Computer ~ Keyboard)

Materials List

Materials per class	Amount	Location
None		

Materials per student	Amount	Location
“Products of an Electrical Engineer” worksheet	one	Provided with lesson
“Products and Tools for Use” worksheet	one	Provided with lesson

Vocabulary with Definitions

1. *Electrical Engineer* – An engineer that designs products that use electricity such as televisions, radios, and computers.

2. *Electricity* – Used to make light bulbs, televisions, radios, computers, and other electrical products work.
3. *Product* – Something made by a person or machine.
4. *Plug* – Something used to connect an electrical product to an outlet.
5. *Outlet* – Where a plug is inserted into the wall.
6. *Remote* – Object used to control a television, DVD player, VCR, or other product from a distance.
7. *Keyboard* – A set of keys that one may use to type words into or control a computer.

Assessment / Evaluation of Students

The instructor may assess the students in any/all of the following manners:

1. Ask students to explain what an electrical engineer is/does.
2. Ask students to describe a few products made by electrical engineers and why they think these products were made by an electrical engineer.
3. Ask students to explain the word “product”: clarify the definition if students do not understand.

Lesson Extensions

The instructor may wish to incorporate this lesson into a history lesson about the invention of the light bulb or of other electrical products such as the radio, color television, or video games.

Attachments

1. **“Products of an Electrical Engineer” worksheet**
2. **“Products & Tools for Use” worksheet**

Troubleshooting Tips

If either worksheet seems difficult for the student, the instructor may decide to discuss each problem as a whole class and decide which products to circle, or which lines to draw, as a group rather than individually.

Safety Issues

Be sure to explain to the students that plugs and outlets are not things that should be played with and that they can be dangerous if used in the wrong way.

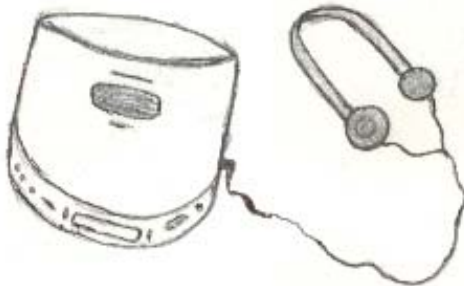
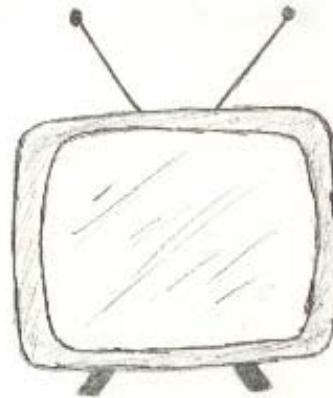
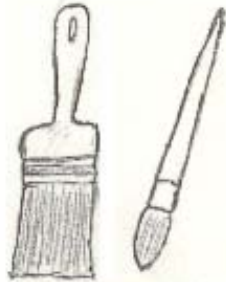
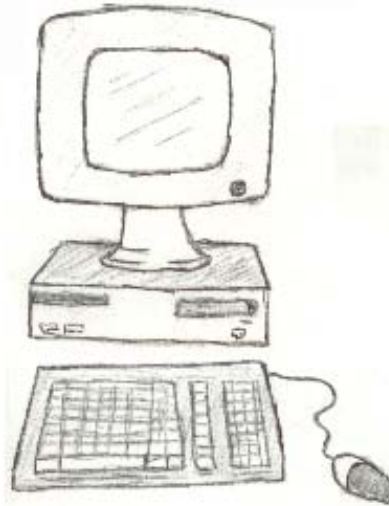
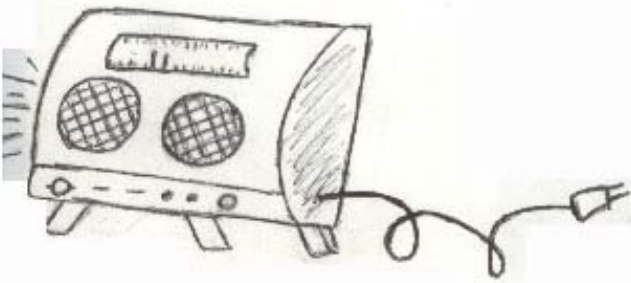
Additional Resources

None

Key Words

Electrical Engineer, Electricity, Product, Plug, Outlet, Remote, Keyboard

Products of an Electrical Engineer



Products and Tools for Use

