Day 9 Light: Electricity

Science

Electricity is the flow of tiny particles called electrons and protons. It can also mean the energy you get when electrons flow from place to place. ... It can then power such things as heaters, light bulbs, and computers.

Static electricity is the build-up of an electrical charge on the surface of an object. The reason that it's actually called static electricity is because the charges stay in one area for some time and don't flow or move to a different area.

Examples of Static Electricity:

- Clothes sticking together from a dryer
- Hair standing up after jumping on a trampoline
- Dust sticking to a balloon
- "Shocking" someone when you shake hands
- Lightning

Try it out! Can you create your own examples of static electricity using the samples on this page?

1. Shuffle your socked feet on the carpet and then touching someone else

2.Hair Standing With Static Electricity

What you will need:

- an inflated balloon
- a piece of cloth

Steps:

a. Rub the surface of the balloon with the cloth for 40 seconds
b. Hold the balloon a short distance above your head and watch your hair stick to it!

How it works:
The balloon gains electrons from the cloth and becomes negatively-charged, so it attracts your hair, which is positively-charged in comparison.

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Social Studies

Electricity -- we depend on it every minute of every day. And yet to many of us, electricity seems a mysterious and even magical force. Before Ben Franklin did his famous and very dangerous kite flying experiment, electricity was thought to be a type of fire. In 1847, the year Thomas Edison was born, most people considered electricity to be some sort of dangerous fad. By the time Edison died in 1931, entire cities were powered by electricity, and Edison took credit for the invention of the lightbulb.

Taken from: www.pbslearningmedia.org/resource/phy03.sci.phys.mfe.lp_electric/electric-circuits/

Read more about how Thomas Edison invented the first commercial lightbulb with the attached handout.

Additional Resource:

Invention of the Light bulb

pbslearningmedia.org/resource/amex27-soc-edelectriclight/electric-light-american-experience/

WQED education

Day 9 Light: Electricity
Social Studies

Biography
Thomas Edison

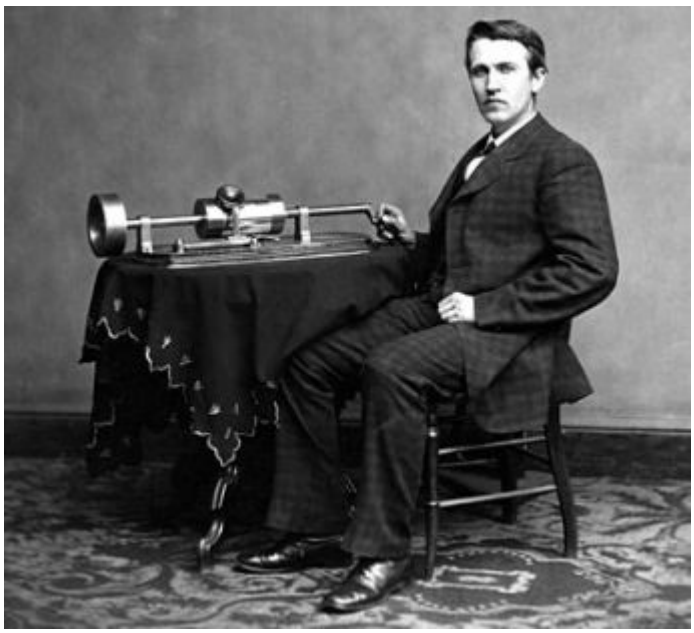
- **Occupation:** Businessman and Inventor
- **Born:** February 11, 1847 in Milan, Ohio
- **Died:** October 18, 1931 in West Orange, New Jersey
- **Best known for:** Inventing many useful items including the phonograph and a practical light bulb

Biography:

Thomas Edison may be the greatest inventor in history. He has over 1000 patents in his name. Many of his inventions still have a major effect on our lives today. He was also a business entrepreneur. Several of his inventions were group efforts in his large invention laboratory where he had lots of people working for him to help develop, build, and test his inventions. Edison used his inventions to form companies including General Electric, which is one of the biggest corporations in the world today.

Where did Edison grow up?

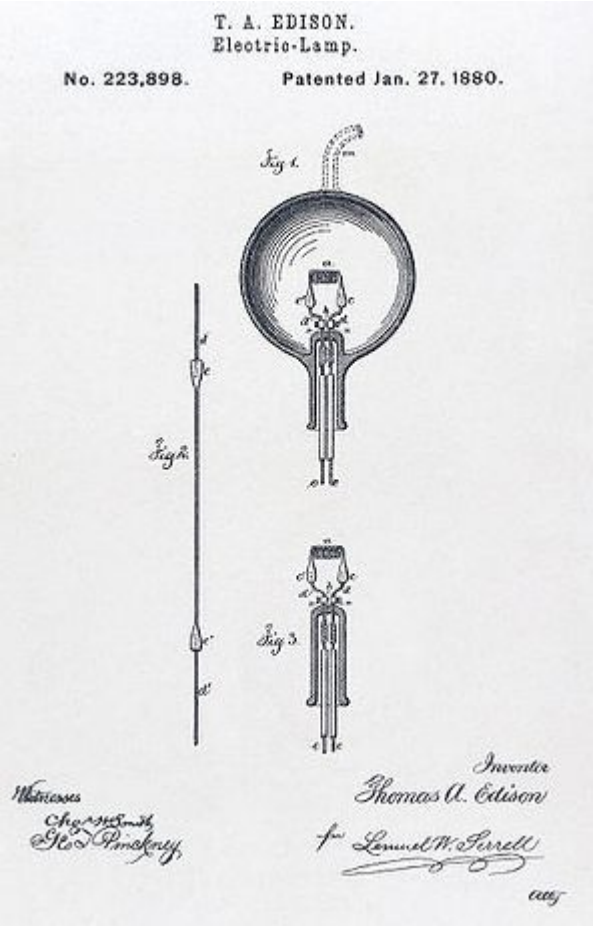
Thomas Edison was born in Milan, Ohio on February 11, 1847. His family soon moved to Port Huron, Michigan where he spent most of his childhood. Surprisingly, he did not do well in school and ended up being home schooled by his mother. Thomas was an enterprising young man, selling vegetables, candy and newspapers on trains. One day he saved a child from a runaway train. The child's father repaid Edison by training him as a telegraph operator. As a telegraph operator, Thomas became interested in communications, which would be the focus of many of his inventions.



Edison and Phonograph
by Levin C. Handy

What was Menlo Park?

Menlo Park, New Jersey is where Thomas Edison built his research labs. This was the first business or institution with the sole purpose of inventing. They would do research and science and then apply it to practical applications that could be manufactured and built on a large scale. There were a lot of employees working for Edison at Menlo Park. These workers were inventors, too, and did a lot of work on Edison's ideas to help turn them into inventions.


T. A. EDISON.
Electric-Lamp.
No. 223,898. Patented Jan. 27, 1880.
Fig 1.
Fig 2.
Fig 3.
Witnesses
Inventor
Thomas A. Edison
for Lemuel W. Serrell

Light Bulb Patent Application
by Thomas Edison

Light Bulb by Thomas Edison
Photo by Ducksters

What are Thomas Edison's most famous inventions?

Thomas Edison has the patents and credits for many inventions. Three of his most famous include:

The Phonograph - This was the first major invention by Edison and made him famous. It was the first machine that was able to record and playback sound.

Light Bulb - Although he did not invent the first electric light, Edison made the first practical electric light bulb that could be manufactured and used in the home. He also invented other items that were needed to make the light bulb practical for use in homes including safety fuses and on/off switches for light sockets.

The Motion Picture - Edison did a lot of work in creating the motion picture camera and helping move forward the progress of practical movies.

https://www.ducksters.com/biography/thomas_edison.php

Day 9 Light: Electricity
Math

NAME _____

Speed of Light Math

Directions: Read each question and solve the problem.

When you flick a light switch, your room lights up immediately, right? Light travels super-fast! It actually travels at approximately 186,000 miles per second!!! Can you solve the problems below to find out just how far light moves?

1. Light travels at 186,000 miles per second. How many miles will it travel in 5 seconds?

   _____

2. How many miles will light travel in 10 seconds?

   _____

3. How many miles will light travel in 30 seconds?

   _____

4. How many miles will light travel in one minute?

   _____

Additional Resource:
Speed of Light
http://ow.ly/aaj550AXz3y

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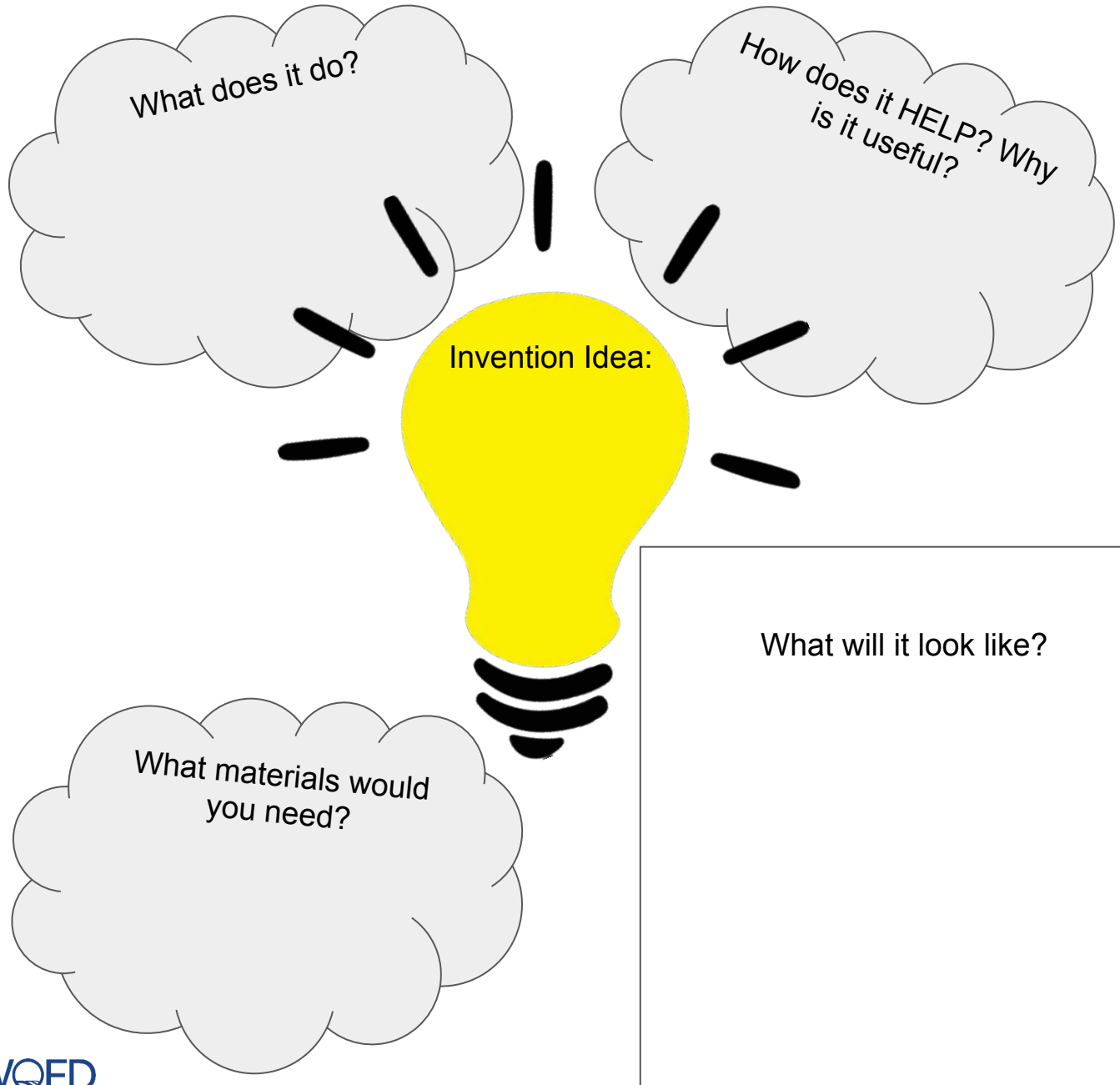
English Language Arts

Think Like An Inventor

Great inventions take creativity and courage. You won't know if an invention will be successful until you make it! The lightbulb changed the way people lived...think like an inventor. What could you create? Remember, the best inventions come from trying to solve a problem or help others. Use the brainstorming sheet to help you design your invention!



What will it look like?

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