AN ELECTRIFYING RIVALRY

You may know about Thomas Edison, but have you heard of Nikola Tesla? Both were inventors who created many devices that are still in use today. Interestingly, they were also rivals who often criticized each other's ideas and approaches to science. AC/DC, a famous rock band, took its name from their electrifying rivalry.

Thomas Edison

Edison patented over 1000 inventions. While his most famous invention was the light bulb, he invented the record player and motion picture camera. Without his inventions, modern music and movies would not exist today.

In the late 1800s, Edison started the General Electric Company (GE) to sell electric light bulbs and other electrical devices. Today GE is the largest electric equipment company in the world.

Nikola Tesla

Telsa patented over 300 inventions. He developed one of the first electric motors and made improvements on how radios work. He also invented the first remote-controlled vehicle, a boat controlled by radio waves. His ideas led to the invention of radar and cellular phones.

For much of his life, Tesla tried to invent a way of conducting electricity without wires. His inventions are now used to move the electricity to our homes. Modern appliances may not exist without his inventions.

AC/DC

As electric lights and equipment became popular in the early 1900s, cities started building electric power plants.

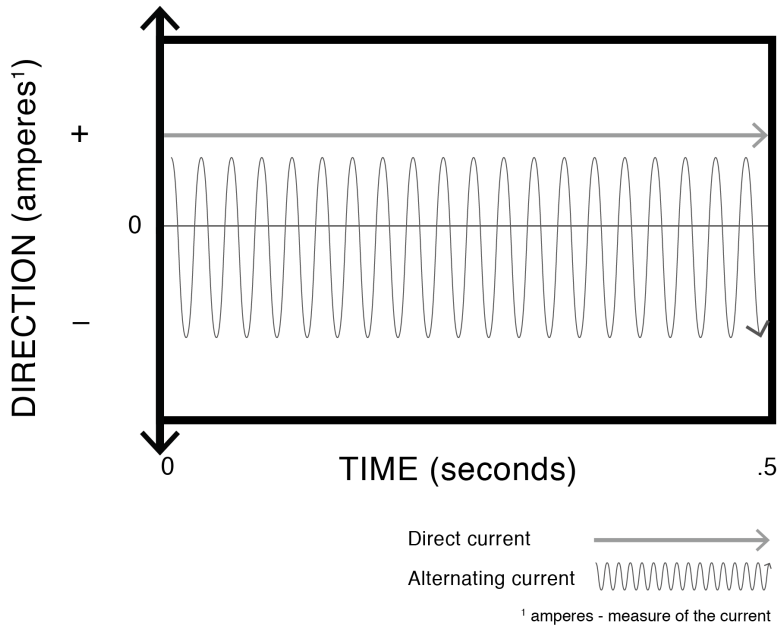
Edison designed a type of power plant that made direct current (DC). DC moves in one direction. DC electricity from these power plants could be delivered with the correct amount of voltage required to power lights and equipment.

One problem with Edison's DC power plants was that they could only carry electricity about two kilometres. That meant a large city would have to build many power plants. It also meant small towns could not afford to get electricity.

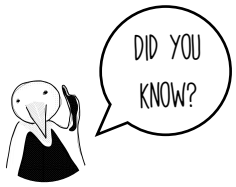
Tesla designed a power plant that generated alternating current (AC). AC changes direction sixty times every second. One of Tesla's AC power plants could deliver electricity over hundreds of kilometres. This meant that Tesla's plants were much less expensive to use because one plant could deliver electricity to several cities.

One problem with Tesla's AC power plants was that they delivered electricity at a very high voltage. Each home or business had to use special equipment to lower the voltage to make it safe.

COMPARING ELECTRICAL CURRENTS



[1] amperes - measure of the current



The Tesla Roadster is a high performance electric car that is named in Nikola Tesla's honour.

TESLA MOTORS

The War of the Currents

The two inventors argued bitterly over which power plant was better.

Tesla told reporters it was a waste to make several DC plants when one AC plant would deliver the same amount of electricity. He said that Edison was greedy and more concerned about getting rich than with inventing a practical way to deliver power. Tesla accused Edison of being a better businessman than scientist.

Edison told reporters that Tesla's AC power plant was too dangerous to use. Hoping to scare people away from trusting Tesla's AC design, Edison publicly electrocuted stray cats using AC! Edison accused Tesla of being a dreamer who could not make practical inventions.

The Nobel Prize

The Nobel Prize is a outstanding award given to outstanding individuals for their significant contributions to the world. In 1915, the Nobel Prize committee for physics considered giving the award to both Edison and Tesla for their electrical research. Angry, each scientist declared that he would never accept the award if it was offered to the other scientist.

Consequently, their fierce rivalry gave way for the father-son team of William and Lawrence Bragg to win the Nobel Prize for their powerful work with X-rays.

The Winner of the Current Wars

Most electrical power plants currently use a modern version of Tesla's AC plant. Electricity travels hundreds of kilometres from these power plants at a high voltage. The high voltage electricity then goes through a transformer to create the 110-volt electricity that powers our homes.

Today, most electrical devices run on Edison's DC. Because televisions and computers cannot use alternating current, they have transformers built into them to change AC to DC. The box on a laptop power cord is an example of one of these transformers. Nearly all electrical devices have AC/DC transformers built into their chargers.

It is amazing to think that many modern electrical devices use ideas that were developed by these two scientists years ago. We are the real winners in the electrifying rivalry between Edison and Tesla!

NONFICTION READING ASSESSMENT
GRADES 4-9

An Electrifying Rivalry

Fall Assessment: Grade 8

Text Type: Comparison and Contrast

Word Count: 762

Author

Adapted from Rob Wielgoz

Visual Credits

© Monica McGarry

Development Team

Teri Allen-Innis, Mike Bowden, Monica McGarry, Seema McGarry, Tricia Persad, Rolynda Simpson & Deanna Steptoe

References

Bellis, M. (n.d.). The Inventions of Thomas Edison. Retrieved from http://inventors.about.com/library/inventors/bled

Nikola Tesla. (2015). In Biography.com. Retrieved January 12, 2015 from http://www.biography.com/people/nikola-tesla-9504443

Nikola Tesla. (2015). In History.com. Retrieved 12 January 2015, from http://www.history.com/topics/inventions/nikola-tesla

Sanford, M. (2015). AC/DC: The Tesla–Edison Feud. *Mental Floss* Retrieved from http://mentalfloss.com/article/30140/acdc-tesla%E2%80%93edison-feud

Thomas Edison. (2015). In Biography.com. Retrieved January 12, 2015 from http://www.biography.com/people/thomas-edison-9284349

War of Currents. (n.d.). Retrieved January 12, 2015 from Wikipedia: http://en.wikipedia.org/wiki/War_of_Currents

School District No. 73
(Kamloops/Thompson)