How Does a Battery Work?

Most people do not take the time to understand just how batteries work. It is one of those things that most of us just take for granted. We put them in and like magic, our favorite toy or gadget works! However, in everything from cars to computers; to toys and household appliances; batteries are essential to make the device function properly and they are actually a complicated appliance developed through science and chemistry. When your batteries go dead in your remote control, mp3 player or Nintendo, chances are you just replace them. Have you ever been curious about the science behind them?

Batteries are basically a can with chemicals in them. The chemicals inside the battery produce electrons that power whatever you are using. Every battery whether it be a large one for a vehicle or a small AA battery has two posts on it. The posts are one positive and one negative and are usually marked with a + and a – sinus on them. When you put batteries in your flashlight the chemicals inside cause a reaction. This reaction starts a flow of electrons or electricity that runs on a wire from the negative pole of the battery to the positive pole of the battery that ultimately powers up the flashlight. When the chemicals run out, the battery is considered dead and needs to be replaced.

A scientist named Alessandro Volta invented the first battery in 1800. This battery was very different from the batteries used today. The chemicals that he used were a combination of paper soaked in salt

water and silver and layers of zinc. Later in the 1800's a new battery was invented called the Daniell cell that used several layers of paper, zinc and silver to increase the power of the battery. The more layers inside the battery, the more power it would have and the larger it would be. This is why today's batteries come in different sizes as well. Each battery is designed to offer a higher or lower charge depending on the need of the appliance it is being used for. The downfall to the older model batteries is that they used wet chemicals which today's modern batteries do not. These batteries typically powered things like the telegraph in the late 1800's.

Today, batteries have become quite sophisticated and powerful. They have invented rechargeable batteries and are used to run everything from generators to laptops. The batteries of today are powerful, but can be dangerous if used improperly. It is also important to discard of batteries properly because they will not disintegrate in landfills. In the years ahead, technology will surely change the shape, quality and life of batteries, as they are mainstay of our society.

Name _____ Date _____

How Does a Battery Work? Quiz

1. **What do the chemicals inside a battery produce?**
    a. **chemicals**
    b. **electrons**
    c. **neutrons**
    d. **a charge**
    e. **wires**

2. **About how many years ago was the first battery invented?**
    a. **300**
    b. **210**
    c. **275**
    d. **280**

3. **What are some standard battery sizes that you have heard of**
    a. **A**
    b. **AA**
    c. **AAA**
    d. **D**
    e. **All of the above**

4. **Who invented the first battery?**
    a. **Benjamin Franklin**
    b. **Daniell**
    c. **Volta**
    d. **Duracell**

5. **What are the two poles on a standard battery**
    a. **east and west**
    b. **left and right**
    c. **positive and plural**
    d. **positive and negative**

6. **What is one downfall to the extensive use of batteries**
    a. **they die quickly**
    b. **they are rechargeable**
    c. **they are not biodegradable in landfills**
    d. **they are hard to use**

Name _____ Date _____

How Does a Battery Work? Free Response Quiz

1. **Think of ten things in your home that you use batteries for?**

2. **Do you think that the invention of rechargeable batteries is a good idea or not? What will they help to do?**

3. **Why do you imagine that early scientists needed batteries, after all they didn't have Nintendo's back then? What could they have been used for?**

4. **When your flashlight goes dead, why do you think that sometimes it will work again by only replacing one of the two batteries inside?**

5. **Do you think using batteries is better or worse for the environment than using electricity that needs to be plugged in? Why or why not?**

6. **What are some of the things that are possible because of the invention of batteries?**

7. **Do you think that our society will be using batteries in the future? Why or why not?**

How Does a Battery Work? Answer Key

1. **b**
2. **b**
3. **e**
4. **c**
5. **d**
6. **c**