SPS10. Students will investigate the properties of electricity and magnetism.
c. Investigate applications of magnetism and/or its relationship to the movement of electrical charge as it relates to simple motors

Build an Electric Powered Car

An _____ is an electrical machine that converts _____ energy into _____ energy.

Today's Objective: Today you will be making an electric powered car and answering conceptual questions based upon your observations.

Materials: Battery, Simple motor, Rubber band, 20 oz water bottle, Scissors, Marker, Ruler, 2 Alligator clamps, Electric Tape, 4 bottle caps, Empty water bottle, Wood skewers, Straws, Nail

Directions:

1. Remove the wrapper from the bottle, open the 20 oz. bottle and empty the water inside. Screw the top back on the bottle.

2. Use scissors to cut the 3 inches from the top of the bottle. Draw 8 perpendicular lines across from each other on the end part of the bottle that you cut. Use the scissors to cut the ends of the bottle up to the bottle cap. You should have 8 fan blades.

3. Bend your blades back. Use the scissors to cut and shape your blades so they go in the same direction.

4. Unscrew the cap to the fan and use the nail provided to make a tiny hole in the **CENTER** of the cap. Screw the cap back on and insert your motor in the hole you made. BE CAREFUL NOT TO MAKE YOUR HOLE TO LARGE OR YOUR FAN WILL NOT ROTATE PROPERLY.

5. Cut 2 straws to about 4 inches. Tape them to the water bottle. Poke a hole in the center of the 4 bottle caps using the nail and make sure your HOLES ARE NOT TOO LARGE! Insert a wood skewer on one cap and push the other end through the straw. Adjust and cut accordingly to fit your car. Put cap on other end. Repeat for the other 2 caps.

6. Tape your motor to the end of your empty water bottle. Attach the extension alligator clamps to your motor and then attach them to the ends of your battery using the rubber-band. Tape your batter to your car near the motor. Put it on the floor and let it roll. You have just made an electric powered car. Awesome!!!

Conceptual Questions:

1. What would it mean in this case if your car 'ran out of gas? _____

2. What types of energy transfer occurred to make your electric powered car? _____

3. Tell 3 factors that made some people cars work better than others. _____

_____

4. Name 3 ways you could increase the strength of your electric powered car. _____

_____

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