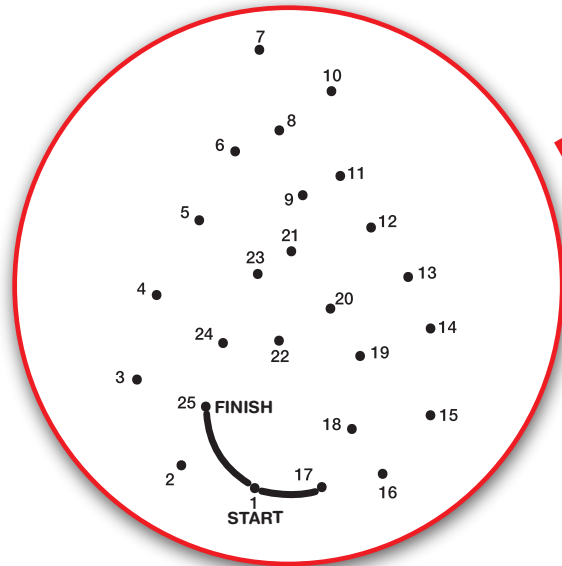


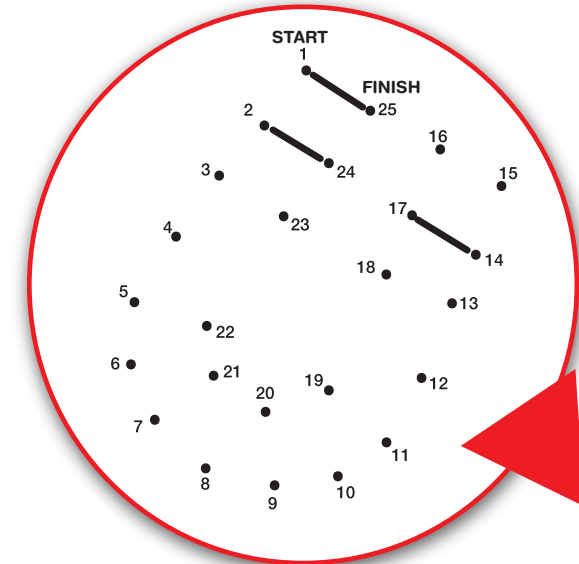
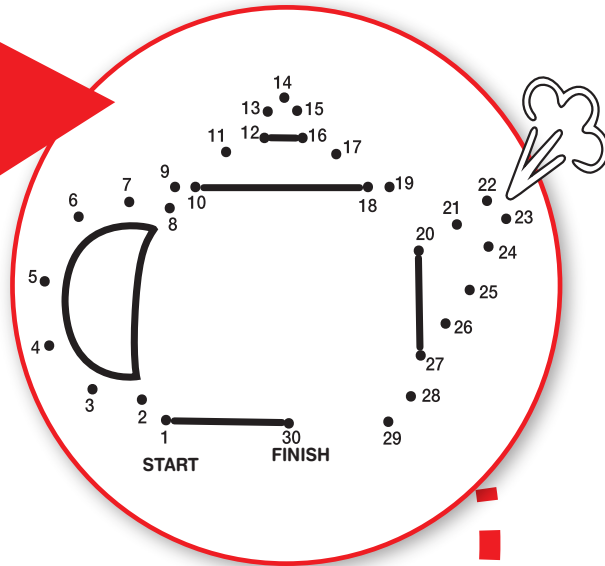
DOT TO DOT

Connect the dots to reveal how we make electricity at a power plant.

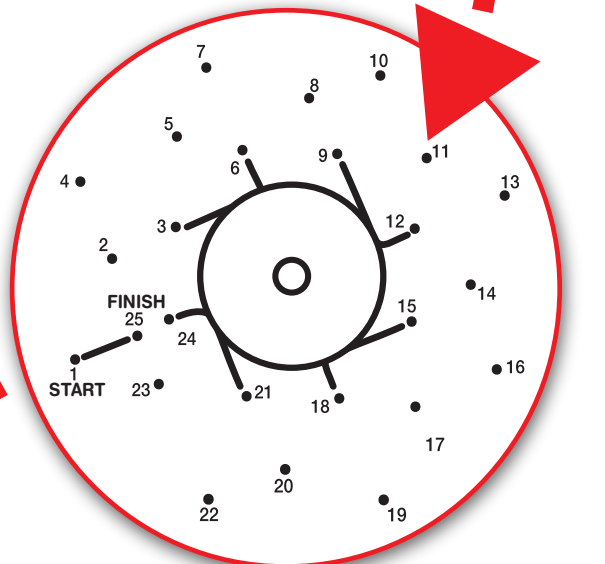
- 1.** A fuel like coal or natural gas is burned to boil vast amounts of water.



- 2.** As that water boils, it creates steam. The steam is forced through smaller and smaller steam lines until it becomes highly pressurized (like steam shooting through the top of a tea kettle).



- 4.** The turbine is connected to giant magnets and electricity is generated. It then goes to a substation, via power lines, to transformers on utility poles and eventually into our homes.

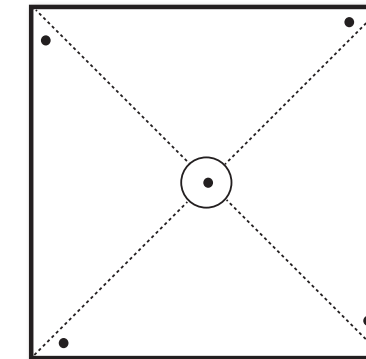


- 3.** The pressurized steam is powerful enough to spin a turbine.

Make Your Own PINWHEEL



Wind is caused by warm air rising over cool air. Wind makes things move. A pinwheel will spin as the wind pushes it around. Make your own pinwheel by following these simple directions.



What You'll Need

- Construction paper
- One sharpened pencil
- One pair of scissors
- One paper fastener
- One plastic drinking straw
- Crayons, colored pencils or markers

How to Make a Pinwheel:

1. Draw the diagram above on a sheet of paper.
2. Cut out the pinwheel on the solid lines only.
3. Decorate both sides of the construction paper pinwheel.
4. Use a sharpened pencil to poke a hole through the four tiny dark circles and directly in the center circle.
5. Cut on the dotted lines from the four corners to the center circle. Do not cut into the center circle.
6. Take the straw and carefully push the pencil point through it about 1/2 inch from the top.
7. Flip the flaps and line up the tiny holes on the four points to meet at the center circle.
8. Push the ends of the paper fastener through the holes on the pinwheel. Then push the fastener through the center circle.
9. Place the straw on the back side of your pinwheel and push the ends of the fastener through the hole in the straw. Open up the fastener by flattening the ends in opposite directions.

Now you are ready to try your beautiful pinwheel. A pinwheel is a mini version of a wind turbine, which can be used to generate electricity on wind farms.

A STATIC ELECTRICITY Experiment



In this activity, static electricity will be generated between an inflated balloon and your hair!

What You'll Need

- Two inflated balloons with string attached
- Your hair
- One aluminum can
- Wool fabric

If any students have latex allergies, feel free to skip this lesson and move on.

Procedure:

1. Blow up two balloons and attach a string to each one.
2. Rub the two balloons one at a time with the wool fabric, and then try to put the balloons together.

Note: Do they attract each other or are they repelled by each other?

3. Rub one of the balloons back and forth on your hair and then slowly pull it away.
4. Take the aluminum can and put it on its side on a table. Rub the balloon on your hair again and hold the balloon close to the can and watch as it rolls towards it. Slowly move the balloon away from the can. The aluminum can will follow the balloon.

What's Happening?

Rubbing the balloons against the wool fabric or your hair creates static electricity. This involves negatively charged particles (electrons) jumping to positively charged objects. In the first experiment both the balloons were negatively charged. Because of this, they were repelled by each other. When you rub the balloons against your hair or the wool fabric they become negatively charged. They have taken some of the electrons from your hair and left them positively charged. Your positively charged hair is attracted to the negatively charged balloon and starts to rise up to meet it. This is similar to the aluminum can, which is drawn to the negatively charged balloon as it becomes positively charged.

Suggested Grades: 4-5 • **Purpose of Activity:** Review

Four Cs: Critical Thinking, Creativity • **Cognitive Level:** Recall and Reproduction

The Power of Energy Sources

We use natural resources to make electricity. Coal and natural gas are non-renewable resources that we use sparingly to make electricity. Wind, hydro and solar are all renewable resources that will last forever.

Types of Resources:



Coal: A non-renewable resource made from fossilized plants and carbon that we use sparingly to make electricity.



Wind: A renewable resource that uses giant turbines and moving air to create electricity.



Hydro: A renewable resource that uses fast moving water to create electricity.



Solar: A renewable resource that uses the rays from the sun to create electricity.



Nuclear: Utilizes the splitting of atoms to release large amounts of energy that is used to generate electricity.



Natural Gas: A non-renewable resource that is formed when buried plants and animals are exposed to heat and pressure over thousands of years.

Match the Resource

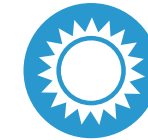
Draw a line to match the symbol with its corresponding resource.



Coal



Natural Gas



Hydro



Wind



Nuclear



Solar

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At Indiana Michigan Power, we use a combination of resources to power homes and businesses every day.

Suggested Grades: 2-5 • **Purpose of Activity:** Review, Identify Details

Four Cs: Critical Thinking • **Cognitive Level:** Skills and Concepts