



### ***PowerSleuth* Puzzle Descriptions:**

---

#### **Coal *PowerSleuth* Puzzle**

1. Coal is delivered to the power plant to be burned.
  2. The burning coal releases heat which boils the water in the boiler and turns the water into “steam.” This steam turns the blades of huge turbines.
  3. The turbines spin a generator, creating electricity.
  4. The electricity moves through power lines to a “step up” transformer. The step up transformer increases the voltage or “push” needed to send the electricity further down a network of power lines.
  5. The electricity moves through local “step down” transformers that reduce the voltage to a correct level for homes, schools, and businesses.
- 

#### **Natural Gas *PowerSleuth* Puzzle**

1. Natural gas is piped in to the power plant to be burned.
2. The burning gas releases heat which boils the water in the boiler and turns the water into “steam.” This steam turns the blades of huge turbines.
3. The turbines spin a generator, creating electricity.
4. The electricity moves through power lines to a “step up” transformer. The step up transformer increases the voltage or “push” needed to send the electricity further down a network of power lines.
5. The electricity moves through local “step down” transformers that reduce the voltage to a correct level for homes, schools, and businesses.



### **Hydro Power *PowerSleuth* Puzzle**

1. Water is backed up behind a dam. The water falls through an opening in the dam.
  2. The falling water spins the blades of huge turbines. The turbines spin a generator, creating electricity.
  3. The electricity moves through power lines to a “step up” transformer, which increases the voltage or “push” needed to move the electricity through more power lines.
  4. The electricity moves further down a network of power lines.
  5. The electricity moves through local “step down” transformers that reduce the voltage to a correct level for homes, schools, and businesses.
- 

### **Wind Power *PowerSleuth* Puzzle**

1. The air moves creating wind. As the wind blows, it turns the blades of the wind turbines.
  2. The turbines spin a generator, creating electricity.
  3. The electricity moves through power lines to a “step up” transformer, which increases the voltage or “push” needed to move the electricity through more power lines.
  4. The electricity moves further down a network of power lines.
  5. The electricity moves through local “step down” transformers that reduce the voltage to a correct level for homes, schools, and businesses.
- 

### **Solar Power *PowerSleuth* Puzzle**

1. When the sun shines, the sunlight hits the solar cells of solar arrays, creating electricity.
2. Electricity is delivered through wires to the house and may be used immediately.
3. Unused electricity is stored in wall-sized batteries, which are located inside the house.
4. Sometimes solar arrays produce extra electricity that may be delivered through power lines to the electricity company for other homes, schools, and businesses to use.