

**➤ Main Ideas, Key Points, Questions:**

*After watching the video segment, write down key points, main ideas, and big questions.*

**➤ Objective(s):**

- *Compare and contrast motors and generators, specifically how each device works and how both devices use electromagnetic induction.*

**➤ Notes:**

*During the video segment, use words, phrases, or drawings to take notes.*

**➤ Summary:**

*After watching the video segment, write at least three sentences explaining what you learned. You may ask yourself: "If I was going to explain this to someone else, what would I say?"*

**Answer the following.**

1. How do motors and generators differ?

*Generators take mechanical energy and turn it into electricity,  
and motors take electricity and turn it into mechanical energy.*

2. How do motors and engines differ?

*Motors use electromagnetic induction to work, and engines use some type of chemical fuel to work.*

3. What is created when there is relative motion between a wire and a magnetic field?

*Relative motion between a wire and a magnetic field is called electromagnetic induction,  
which creates an electromotive force (emf) that causes current to flow.*

4. What is the result of the magnetic field acting on a wire in a direct current motor?

*When a magnetic field acts on a wire, it causes the rotor to spin.*

5. What is needed in both direct current and induction motors to turn the rotor?

*There must be a changing magnetic field to turn the rotor of any motor.*

6. What is the easiest way to increase the magnetic force acting on the rotor of an induction motor?

*Adding more coils of wire increases the length of the wire,  
subsequently increasing the magnetic force created by the current moving through the wire.*

7. What turns the turbines in the generators of nuclear, coal, and natural gas power plants?

*In these types of power plants, steam is used to turn the turbines and generate alternating current.*

8. What kind of current do power plants generate?

*Power plants generate alternating current.*

9. The purpose of transformers is to reduce the           voltage           generated at the power plant to a more manageable level for home usage.