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Unit 5J
Magnetism
Note-Taking Guide TEACHER

Main Ideas, Key Points, Questions:

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

Objective(s):

- ***Understand how objects become magnetized, and how electrical and magnetic fields affect one another.***
- ***Calculate the magnitude and direction of the magnetic force acting upon a moving charge in a magnetic field.***

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?"

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Unit 5J
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Questions to Consider TEACHER

Answer the following.

1. **How is the Aurora Borealis created?**

Charged particles are emitted from the sun and interact with the Earth's magnetosphere

2. **When a compass is used, to what magnetic pole does the needle point?**

The compass needle points to the geographic north pole, which is actually the magnetic south pole.

3. **Define electromagnetism in your own words.**

The interaction of electric currents or fields with magnetic fields.

4. **Describe how magnetic and electric fields interact, specifically with regards to light.**

Magnetic fields induce electric fields, and electric fields induce magnetic fields, and are both created from the interaction of electrically charged particles.

5. **Define magnetism in your own words.**

Magnetism is an effect produced by the motion of electric charge, resulting in attractive and repulsive forces between objects.

6. **What happens when two like poles of magnets interact with one another?**

The like poles of magnets repel one another.

7. **The areas in which the individual magnetic orientations of atoms line up are called** *domains* **.**

8. **What makes iron an ideal material to use as a magnet?**

Iron has four unpaired electrons, and unpaired electrons create net magnetic fields that can be lined up.

questions continued on next page

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Answer the following.

9. **In the right-hand rule for the magnetic force, identify what each part of the hand represents:**

   a. **Thumb** *the direction of the magnetic force*

   b. **Pointer finger** *the velocity of the positive charge*

   c. **Middle finger** *the direction of the magnetic field*

10. **What three factors could cause a material to become unmagnetized?**

Heating the object, placing it in a demagnetizing field, dropping it

11. **What is the unit for magnetic field strength?**

Teslas

12. **Complete the equation for the magnetic force:**

$$F_{magnetic} = qvB$$