

Magnetism Test Review

Simply reading my answer key will likely not be enough studying. Historically students that work out their own review and use mine to check their work, score better than students that just read and reread my answer keys and hope to do well.

In the magnetism chapter, we watched 1 “flipped” video on magnetism at home, watched one magnetic field video in class. Completed a guided reading, and did 3 labs: 1) Magnetic force, 2) Magnetic Field, and 3) Creating an Electromagnet. Lastly, remember that we discussed electromagnetic induction the day I shocked you.

1. What is unique about the properties of atoms that make them magnetic compared to non-magnetic substances? **Only certain materials can become magnetic (Fe, Ni, & Co). Materials that are magnetic exhibit the properties of a magnet due to their aligned domains. A domain is the property of an atom, and when they align and point the same way, the material is magnetic. Some substances are permanent magnets and some substances are temporary magnets because something induces magnetism temporarily.**
2. What is characteristic of the domains of a non-magnetized piece of iron? **The domains of any non-magnetized material are random.**
3. Why do only a few materials show magnetic properties? **Only certain substances can be magnetic. Anything that exhibits magnetic properties must contain Fe, Ni, or Co.**
4. What parts of a magnet attract and repel? **The poles are where the strongest magnetic force is. North and South attract and like poles repel (N and N or S and S). The closer two magnets are, the stronger the attractive or repulsive force is.**
5. Where is the magnetic force the strongest? **The poles.**
6. What is a magnetic field? **A magnetic field is in the magnet and in the space around a magnetic where a magnetic force is exerted. The force is strongest at the poles.**
7. Where do magnetic fields exist? **In the area around a magnet. The farther away, the weaker the field.**
8. Where is the strength of the magnetic field the strongest? **The Poles.**
9. Explain electromagnetic induction. *(Hint: there are 2 ways, you can use a magnet to make current or you can use current to make a magnet.)* **One type of electromagnetic induction is when you use a coil of wire moving through a magnetic field to create current (AKA electricity), like we did with the hand crank generator. Another way is to use a current carrying wire to create a magnet. We did this when we made electromagnets.**
10. What is a motor (and function)? **A motor is a device that uses a coil of wire and a magnet to create motion from electricity.**
11. What is a generator (and function)? **A generator is a device that uses a coil of wire and moves them in a magnetic field, inducing charge to flow.**
12. What type of current did the hand crank generator create? **AC (Alternating Current) Called AC because it switches directions.**
13. How can you temporarily magnetize something like a paperclip? **Yes; If you bring something magnetic close to a paperclip or nail that is not usually magnetic, you will induce temporary magnetic poles in that paperclip, and it will become attracted to the magnet and other paperclips.**
14. How can you make an electromagnet stronger? **Use an iron core, Use more coils of wire, and use more current through the wire.**
15. Can you draw a bar magnet and the electric fields around it? **We did it in lab with the compasses. Also, here is a picture→**
16. What happens to the pieces if you break a bar magnet in half? **Each smaller piece now has a N and S pole.**

