

**Science 10-Electricity & Magnetism**

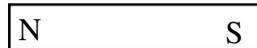
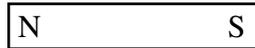
**Activity10 - Chapter 4 Review**



10

Name _____	
Due Date _____	
Show Me <input type="checkbox"/>	Hand In <input type="checkbox"/>
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1. What is meant by a **magnetic field**? \_\_\_\_\_  
\_\_\_\_\_
2. Draw the general shape of the magnetic field around the following arrangements of magnets:



3. The **north pole** of a magnet points towards the \_\_\_\_\_  
\_\_\_\_\_ of the earth.
4. What is the difference between **magnetic north** and **true north**? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. The **geomagnetic north pole** of the Earth is actually the \_\_\_\_\_  
pole of a magnet.

6. List at least **six** places around your home where magnets are used. \_\_\_\_\_

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7. Name four elements which are strongly magnetic. \_\_\_\_\_

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8. What is a **magnetic domain**? \_\_\_\_\_

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9. Show how the magnetic domains are arranged in unmagnetized iron and magnetized iron:



Unmagnetized Iron



Magnetized Iron

10. Give the compositions (what they are made up of.) of two good **permanent magnets**.

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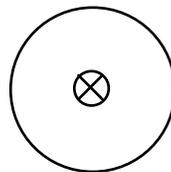
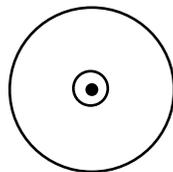


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11. Permanent magnets should be stored with \_\_\_\_\_ poles together.

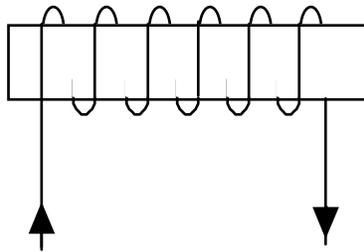
12. The scientist who first discovered the connection between **electricity** and **magnetism** was \_\_\_\_\_

13. If  $\odot$  represents conventional current coming **out of** the page through a wire and  $\otimes$  represents conventional current going **into** the page through a wire, use arrows to show the **direction of the magnetic lines of force** around each of the following wires:

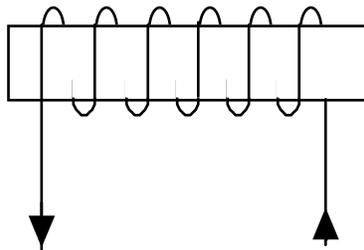


14. State the **right hand rule**. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

15. Sketch the magnetic lines of force around the following coil. The conventional current direction is shown by the arrows. Look at your results for Activity 9 and see if you can label the “N” and “S” poles.



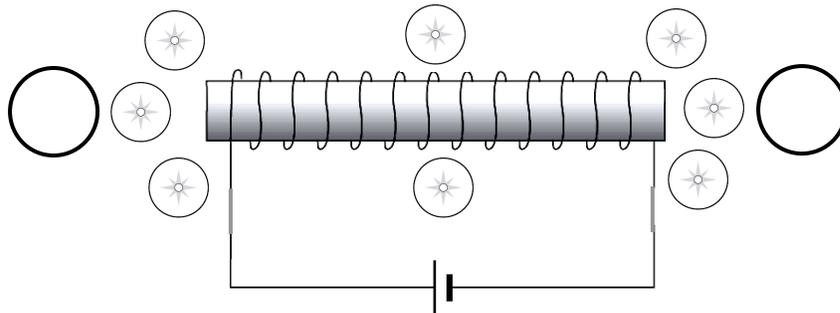
16. Label the “N” and “S” pole in the following electromagnetic coil:



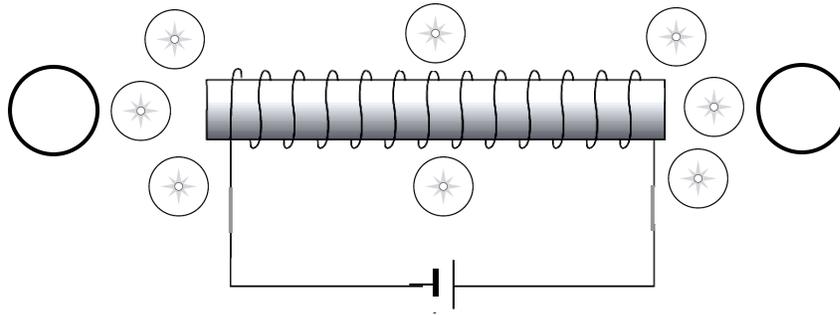
17. List 8 common uses of electromagnets. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

18. An **electrical generator** transforms \_\_\_\_\_  
energy into \_\_\_\_\_ energy.

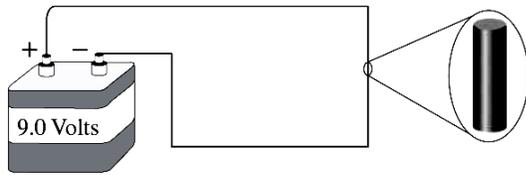
19. To make a generator, you need a \_\_\_\_\_ and a \_\_\_\_\_, and one of them has to be moving.
20. What is an **armature**? \_\_\_\_\_
21. What is meant by **Alternating Current (AC)**? \_\_\_\_\_
22. The AC current we get from the power company has a frequency of \_\_\_\_\_ cycles per second. This means the current changes direction \_\_\_\_\_ times each second.
23. Sketch a diagram showing what **one cycle** of AC would look like on an oscilloscope screen
24. What is meant by **Direct Current (DC)**? \_\_\_\_\_
25. Chemical cells (or batteries) produce which type of current, AC or DC? \_\_\_\_\_
26. An **electric motor** transforms \_\_\_\_\_ energy into \_\_\_\_\_ energy.
27. Given the following coil sketch the direction a compass needle would point when placed in each position. Label the North and South pole of the magnet in the circles on the far left and right.



28. Given the following coil sketch the direction a compass needle would point when placed in each position. Label the North and South pole of the magnet in the circles on the far left and right.



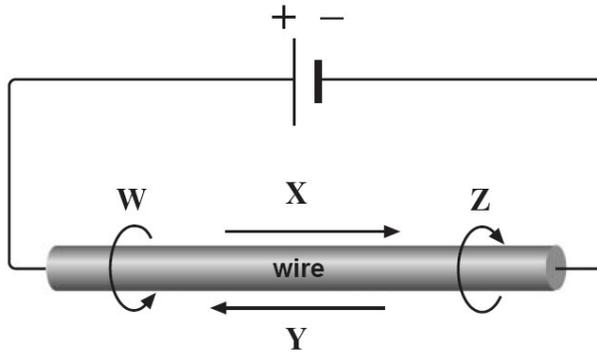
29. Given the following diagram of a simple circuit:



What is the direction of the magnetic field at the point indicated on the diagram?

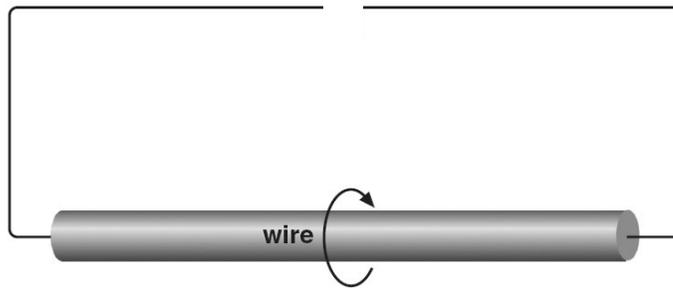
- A. A vertical wire with two upward-pointing arrows on either side, representing the magnetic field.
- B. A vertical wire with two circular arrows around it, indicating a clockwise magnetic field when viewed from above.
- C. A vertical wire with two circular arrows around it, indicating a counter-clockwise magnetic field when viewed from above.
- D. A vertical wire with two downward-pointing arrows on either side, representing the magnetic field.

30. The following diagram shows a circuit with a section of the wire magnified.



Which arrow represents the direction of **conventional current** in the wire? \_\_\_\_\_

31. What is created when a bar magnet is moved inside a solenoid?
32. Increasing the current through a solenoid will \_\_\_\_\_crease the strength of the magnetic field.
33. Increasing the number of coils in a solenoid will \_\_\_\_\_crease the strength of the magnetic field.
34. Magnetic field lines **outside** a permanent magnet point from the north end of the magnet to the south end of the magnet.   A. True    B. False    Answer \_\_\_\_\_
35. In the following diagram, draw in the symbol for the cell showing which sides the positive and negative are on.



36. Given the following coil sketch the direction a compass needle would point when placed in each position. Label the North and South pole of the magnet in the circles on the far left and right.

