**Lab Activity Handout #1 KEY**

1. Make a sketch of the pattern formed by the filings

**The sketch should look like the picture on slide 5.**

Answer the following questions and hand in for a grade.

1. Does the compass indicate that there is a force surrounding your magnet? **o Yes**
2. Do the compass indications show the direction of the flux lines? Explain why your compass

indicates the flow. **o Yes,**

**o Because the compass needle is magnetized and it will orient in the direction of the external magnetic field.**

1. Do the iron filings concentrate at the poles?
2. **Yes,**
   1. **Because the magnetic field is stronger near the poles.**
3. Why are the lines of flux spread out when not in the vicinity of the poles? Give two reasons.
   1. **The magnetic field lines get further apart.**
   2. **The magnetic field lines get weaker.**
4. Do the lines of flux cross each other?
   1. **No,**
   2. **Magnetic field lines never cross.**
5. Give at least three other characteristics of magnetic fields that are illustrated by the position of the iron filings.
   1. **Are continuous and form loops**
6. **Pass through all materials, magnetic and non-magnetic**
   1. **Always enter or leave the magnetic material at right angles to the surface**

J. Return the materials to their storage area