**Station 1. Law of Magnetism**

1. Draw a diagram that illustrates the Law of Magnetism (Use textbook page 399 as a reference.)
2. Explain how the Law of Magnetism is similar to (or different from) the Law of Charges.

**Station 2. Domain Theory**

1. Draw a diagram that illustrates the Domain Theory of magnetism. (Use textbook page 402 as a reference.)
2. Explain if all materials can be magnetised.

**Station 3. Bar Magnet (Using Iron Filings)**

1. Examine the display of how iron filings spread out to follow the invisible magnetic field lines around a bar magnet.
2. Draw a diagram that illustrates the mapping of these field lines. (Use textbook page 401 as a reference.)
3. Make sure to indicate the direction of these field lines with respect to North and South poles of the bar magnet.

**Station 4. Bar Magnet (Using Compasses)**

1. Make sure to select a few small compasses that all point in the same direction when away from the bar magnet.
2. Arrange the compasses around the bar magnet to map out the invisible magnetic field lines. Make sure to note the direction of the field lines.
3. How does this map compare to the display of iron filings? (Use textbook page 401 as a reference.)

**Station 5. Horseshoe Magnet**

1. Make sure to select a few small compasses that all point in the same direction when away from the horseshoe magnet.
2. Arrange the compasses around the poles of the horseshoe magnet to map out the invisible magnetic field lines. Make sure to note the direction of the field lines.
3. Sketch a diagram of the magnetic field and indicate where the field is the strongest.

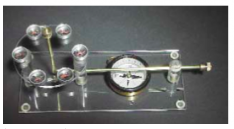
**Station 6. Oersted’s Principle (Current in a Conductor)**

NOTE: Only connect the battery for brief periods of time as you will short out the battery and greatly decrease its useful lifetime.

1. Place the large compass across a straight wire so that the compass needle is in line with (parallel to) the axis of the wire. (See Figure 12.9 on textbook page 403.)
2. Briefly connect the wire to the battery and record your results. (Note the direction of the compass needle and the direction of conventional current flow through the wire.)
3. Reverse the connection to the battery and record your results. (Note the direction of the compass needle and the direction of conventional current flow through the wire.)
4. Describe how the direction of the current in the wire affects the direction of magnetic force on the compass needle.

**Station 7. Field Around Straight Wire Conductors**

NOTE: Only connect the battery for brief periods of time as you will short out the battery and greatly decrease its useful lifetime.

1. Make sure to select a few small compasses that all point in   
   the same direction when away from a magnetic source.
2. Using the field generating apparatus, place the compasses   
   around the vertical conductor as shown in the picture.
3. Note the pointing direction of the compasses with no current   
   in the conductor.
4. Briefly connect the battery and record your results. (Note the direction of the compass needles and the direction of conventional current flow through the wire.)
5. Sketch the magnetic field around the conductor, indicating both the direction of the field and the direction of the current. (Use textbook page 403 as a reference.)
6. Reverse the connection to the battery and record your results. (Note the direction of the compass needles and the direction of conventional current flow through the wire.)
7. Describe how a change in the direction of current affects the magnetic field around the conductor. (Use textbook page 403 as a reference.)

