Learning Intentions

- Understand how to describe magnetic fields.

Notes

1. Magnets: How do they work?

    a. In Ancient Greece, people discovered that _____ would attract iron.

    b. When free to spin, these naturally occurring magnets would orient themselves in a _____ / _____ orientation

    c. This is due to the Earth's natural _____ _____, caused by the Earth's _____ _____.

    d. The _____ pole of a magnet is defined as the end that will face the Earth's _____ pole. The other end of a magnet is called the _____ pole.

    e. All magnets have 2 ends; if you break a magnet in half, you end up with _____ magnets.

        i. Einstein's General Theory of Relativity predicts the existence of _____, or magnets with only 1 pole, but they have not been found… yet.

    f. In magnetism, like poles _____ each other and opposite poles _____ each other.

See over →

2. Only 5 elements are known to have strong magnetic effects: _____, _____, _____, _____, and _____.
    a. They are known as _____ elements.
    b. In these elements, individual atoms are aligned into regions called _____.
    c. If we align the _____, we can generate a _____ _____.
    d. Magnets can be broken by _____ _____, _____, and exposing them to a _____ _____ _____.
3. _____: this is the symbol for a magnetic field
    a. A magnetic field is a (vector / scalar).
    b. Magnetic field lines are a drawn from _____ to _____.
    c. If you place a compass in a magnetic field, it will _____ itself with the field.
    d. Magnetic field lines always form a _____ _____.
        i. Inside the magnet itself, the field lines flow from _____ to _____.
    e. Where the magnetic field is stronger, the field lines will be _____ _____.