

Poles of Magnet

A. Choose the correct answer:

1. What happens when two like magnetic poles are brought close to each other?
 - a) They attract each other
 - b) They repel each other
 - c) They lose their magnetism
 - d) They combine into one magnet
2. Which of the following is true about the Earth's magnetic poles?
 - a) They are fixed and do not change position
 - b) The Earth's magnetic south pole is near the geographic north pole
 - c) The Earth's magnetic poles are the same as the geographic poles
 - d) The Earth's magnetic field has no effect on compasses
3. What will happen if you break a bar magnet into two pieces?
 - a) Each piece will have only one pole
 - b) The magnet will lose its magnetic properties
 - c) Each piece will form a new magnet with a north and south pole
 - d) The two pieces will attract and fuse back together

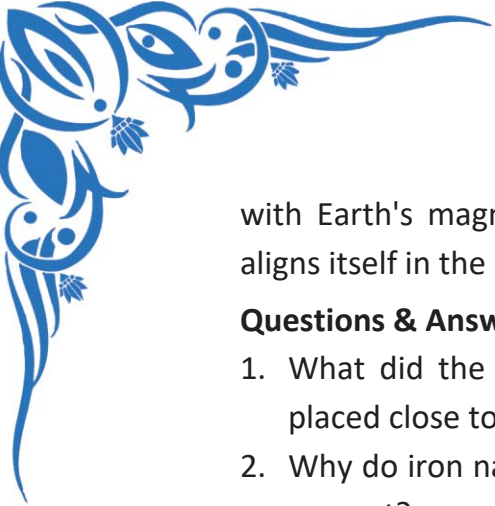
B. Fill in the Blanks:

1. The region around a magnet where its force can be felt is called the _____ field.
2. Opposite poles of a magnet _____ each other, while like poles _____ each other.
3. The Earth's magnetic field is generated due to the movement of molten _____ in its outer core.

C. Case Study:

A group of scientists conducted an experiment to study magnetic interactions. They used different types of magnets, including bar magnets and horseshoe magnets. They observed that when two bar magnets were placed with their north poles facing each other, they moved apart. However, when a north pole of one magnet was brought close to the south pole of another magnet, they quickly attracted each other.

In another experiment, they placed iron nails near a strong magnet and observed that the nails became temporarily magnetized. The scientists also experimented



with Earth's magnetic field and found that a freely suspended magnet always aligns itself in the north-south direction.

Questions & Answers:

1. What did the scientists observe when two like poles of bar magnets were placed close to each other?
2. Why do iron nails become temporarily magnetized when placed near a strong magnet?
3. Why does a freely suspended magnet align itself in the north-south direction?
4. Based on this study, how do magnets help in navigation?

D. Short Answer Questions:

1. What are the two types of magnetic poles?
2. How can you determine the poles of an unknown magnet?
3. Why does the Earth act like a giant magnet?

E. Long Answer Questions:

1. Explain the behavior of magnetic poles and their interactions in detail.
2. Describe how Earth's magnetic field is generated and its significance.
3. Discuss different types of magnets and their applications in everyday life.