DON BOSCO HIGH SCHOOL

LESSON 4 EXPLORING MAGNETS

1. What is a magnet?
A magnet is an object that attracts materials such as iron, nickel, and cobalt.

2. What is magnetism?
Magnetism is the property by which a magnet attracts certain materials.

3. What are magnetic materials?
Magnetic materials are materials that are attracted by a magnet.

4. Name some magnetic materials.
Iron, nickel, cobalt, and steel are magnetic materials.

5. What are non-magnetic materials?
Non-magnetic materials are materials that are not attracted by a magnet.

6. Name some non-magnetic materials.
Wood, plastic, glass, rubber, paper, and aluminium are non-magnetic materials.

7. What are the poles of a magnet?
The two ends of a magnet where the magnetic force is strongest are called its poles.

8. Name the two poles of a magnet.
The two poles of a magnet are the North Pole and the South Pole.

9. Where is the magnetic force strongest in a magnet?
The magnetic force is strongest at the poles of a magnet.

10. What happens when two like poles of magnets are brought close together?
Two like poles repel each other.

11. What happens when two unlike poles of magnets are brought close together?
Two unlike poles attract each other.

12. State the law of magnetic poles.
Like poles repel each other, while unlike poles attract each other.

13. What is a bar magnet?
A bar magnet is a rectangular-shaped magnet with a North Pole and a South Pole at its ends.

14. What happens when a freely suspended magnet is left undisturbed?
A freely suspended magnet always comes to rest in the north-south direction.

15. Why does a freely suspended magnet point in the north-south direction?
A freely suspended magnet points in the north-south direction because of the Earth's magnetic field.

16. What is a magnetic compass?
A magnetic compass is an instrument that uses a freely moving magnetised needle to show directions.

17. What is the use of a magnetic compass?
A magnetic compass is used to find directions.

18. How can you identify the poles of a magnet using a compass?
The north-seeking end of the compass needle is attracted to the south pole of the magnet and repelled by its north pole.

19. What is a horseshoe magnet?
A horseshoe magnet is a U-shaped magnet whose poles are close to each other, producing a strong magnetic field.

20. Name some common shapes of magnets.
Bar magnet, horseshoe magnet, ring magnet, disc magnet, and cylindrical magnet are common shapes of magnets.

21. What are natural magnets?
Natural magnets are magnets found in nature, such as lodestone.

22. What are artificial magnets?
Artificial magnets are magnets made by humans in different shapes for various purposes.

23. What is lodestone?
Lodestone is a naturally occurring magnetic rock.

24. What is a temporary magnet?
A temporary magnet is a magnet that loses its magnetism easily after the magnetic force is removed.

25. What is a permanent magnet?
A permanent magnet is a magnet that retains its magnetic properties for a long time.

26. How can a piece of iron be magnetised?
A piece of iron can be magnetised by stroking it repeatedly in one direction with a magnet.

27. What is the stroking method of magnetisation?
The stroking method is a process in which one pole of a magnet is rubbed repeatedly in one direction over an iron object to make it magnetic.

28. How can you test whether a material is magnetic?
A material is magnetic if it is attracted by a magnet.

29. What happens when iron filings are sprinkled around a magnet?
Iron filings arrange themselves in a pattern showing the magnetic field around the magnet.

30. What do iron filings show around a magnet?
Iron filings show the magnetic field around a magnet.

31. What is a magnetic field?
A magnetic field is the region around a magnet where its magnetic force can be felt.

32. Why do iron filings gather more at the poles of a magnet?
Iron filings gather more at the poles because the magnetic force is strongest there.

33. What are some uses of magnets at home?
Magnets are used in refrigerator doors, cupboard latches, toys, speakers, and magnetic boards.

34. What are some uses of magnets in everyday life?
Magnets are used in electric motors, cranes, compasses, loudspeakers, microphones, and door catches.

35. Why are electromagnets used in cranes?
Electromagnets are used in cranes because they can lift and release heavy iron objects easily.

36. What precautions should be taken while handling magnets?
Magnets should be kept away from electronic devices, handled carefully, and not heated or dropped repeatedly.

37. Why should magnets not be heated or hammered?
Heating or hammering a magnet can reduce or destroy its magnetic properties.

38. Why should magnets be kept away from mobile phones and computers?
Magnets should be kept away from electronic devices because they may damage stored data or affect their functioning.

39. How should bar magnets be stored?
Bar magnets should be stored in pairs with unlike poles together and soft iron keepers placed across their ends.

40. How should horseshoe magnets be stored?
Horseshoe magnets should be stored with a soft iron keeper across the poles.

41. What is a keeper?
A keeper is a soft iron strip placed across the poles of a magnet to help retain its magnetic strength.

42. Why is a keeper used?
A keeper is used to prevent the loss of magnetism during storage.

43. Which materials are attracted by a magnet?
Materials containing iron, nickel, cobalt, and steel are attracted by a magnet.

44. Is every metal attracted by a magnet?
No, not every metal is attracted by a magnet. Metals such as aluminium, copper, silver, and gold are non-magnetic.

45. Can magnets attract each other?
Yes, magnets can either attract or repel each other depending on the poles facing each other.

46. Why is steel used to make permanent magnets?
Steel is used to make permanent magnets because it retains magnetism for a long time.

47. Why is soft iron used to make temporary magnets?
Soft iron is used to make temporary magnets because it is easily magnetised and demagnetised.

48. What is the importance of magnets in daily life?
Magnets are important because they are used in many devices such as compasses, motors, generators, speakers, and household appliances.

49. Why is a compass useful to travellers and sailors?
A compass is useful because it helps them find directions even when landmarks are not visible.

50. What is the difference between magnetic and non-magnetic materials?
Magnetic materials are attracted by magnets, whereas non-magnetic materials are not attracted by magnets.