



higher education
& training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA



Tshwane South
TVET College

"achieve the future"

SUBJECT: FOUNDATIONAL SCIENCE

LEVEL: PLP

MODULE/CHAPTER NO: MODULE 3

**UNIT 4.2 ELECTRICITY AND
MAGNETISM**

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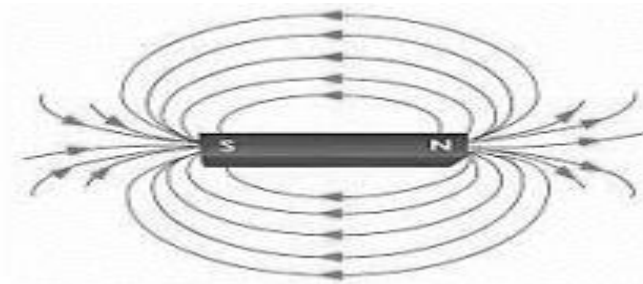
After completing this topic, you will be able to:

1. Define magnetism
2. Distinguish between the three different types of magnets
3. Know the properties of magnets
4. Identify the similarities between electricity and magnetism

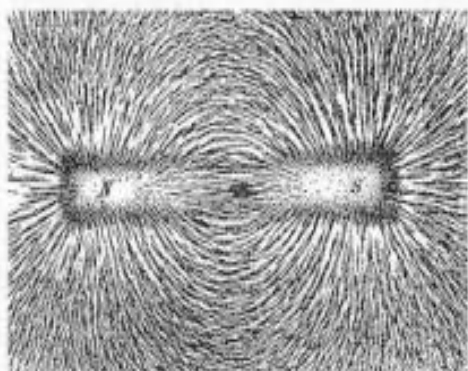
UNIT 4.2 ELECTRICITY AND MAGNETISM

Properties of magnets

Magnets are surrounded by a magnetic field. Here is the magnetic field surrounding a bar magnet:

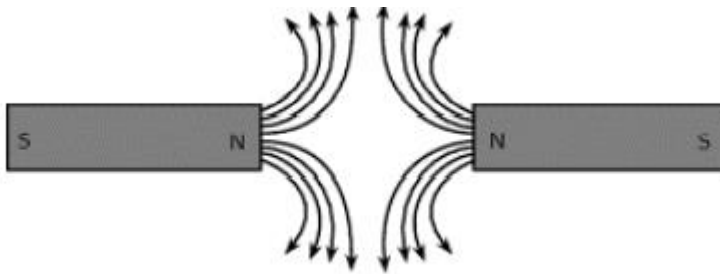


You will notice on the sketch above that magnetic fields are shown with lines. The magnetic field lines always point away from North and toward South. (This is also one of the arbitrary decisions that scientists made: to always draw it like that.) If you sprinkle iron filings (small iron pieces) around a magnet, the iron pieces will arrange themselves along the magnetic field lines:

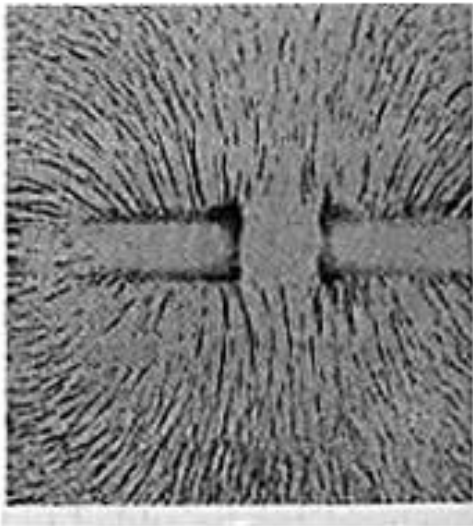


A photograph of the field pattern around a bar magnet

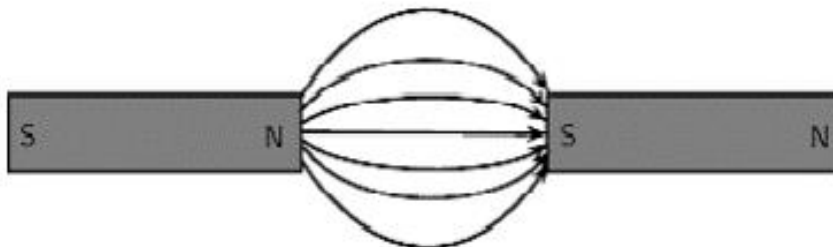
Here is a sketch of two magnets with like poles facing each other:



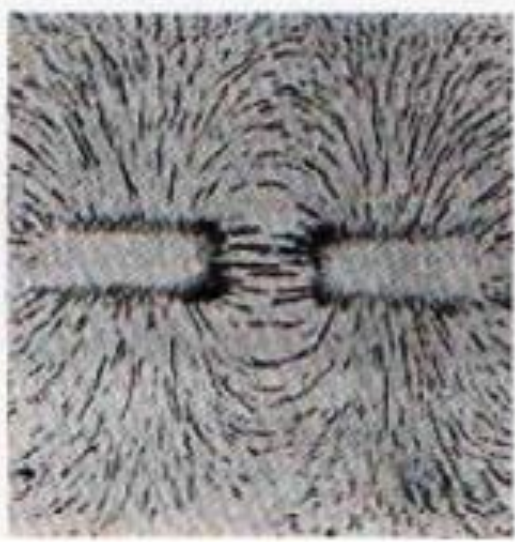
Here is a photograph of two magnets with like poles facing each other:



Here is a sketch of two magnets with opposite poles facing each other:



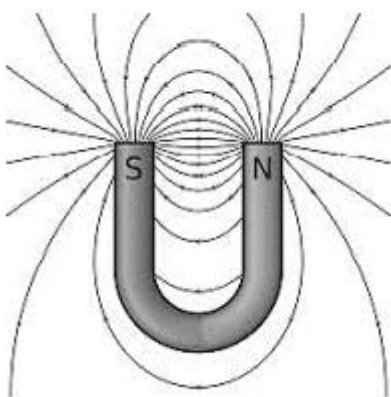
Here is a photograph of two magnets with opposite poles facing each other:



A horseshoe magnet

A horseshoe magnet is often used because it has its two poles next to each other and this makes it much stronger.

Here is a sketch of the field lines around a horseshoe magnet:



Here is a photograph of the field lines around a horseshoe magnet:

