By the end of this lesson, you should understand:
- the composition of blood
- the function of red blood cells and plasma
- the role of hemoglobin in the transport of oxygen
- the different types of white blood cells and their functions

Blood in the Human Body

The average human has 5 liters of blood.

It makes up 5-8% of your weight!

Blood is a transporting fluid that carries vital substances to all parts of the body.
Blood composition

- **Plasma** (55%)
- **Red blood cells** (43%)
- **White blood cells** and **Platelets** (2%)

**PLASMA**

- **Plasma** is the liquid medium of the blood.
- It is mostly made up of water
- Transports dissolved substances:
  - soluble food molecules
  - waste products
  - hormones
  - antibodies
**ERTHROCYTES**

- **Red blood cells** are also called *erthrocytes*
- There are 5-6 million per mL of blood
- Function primarily in gas exchange (O₂)
- Also carries some CO₂
- About 1 billion die each day (very short life span)
**ERTHROCYTES**

- No nucleus - extra space inside
- Contains hemoglobin
  - Hemoglobin gives blood the red colour.
  - It can carry 4 molecules of oxygen
  - Contains iron
- Bioconcave shape which increases surface area to carry more oxygen

**LEUCOCYTES**

- **White blood cells** are also called *leucocytes*
- The body's "defense"
- Part of the immune system
- 4-13 thousand per mL
- 2 types: *phagocytes* and *lymphocytes*
LEUCOCYTES

- **phagocytes** provide a non-specific response to infection - they *ingest* foreign particles
- **lymphocytes** provide a specific immune response to infectious diseases. They produce **antibodies** which kill harmful cells.

PLATELETS

- **Platelets** help the body heal from cuts
- produce tiny fibrin threads
- Threads form a web-like mesh that traps blood cells
- This hardens to form a clot or scab
PLATELETS

BLOOD AND BLOOD COMPOSITION

HOW DID WE DO?
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