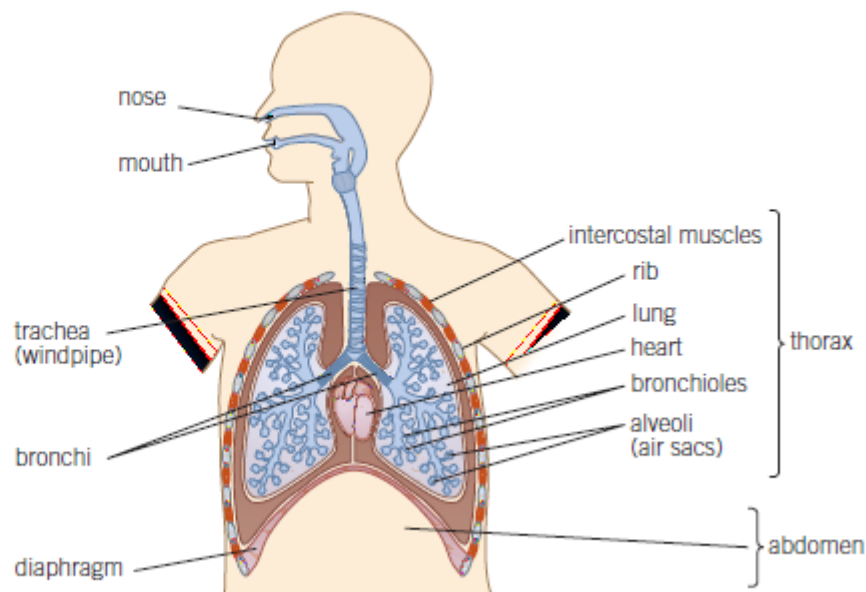


Gas exchange and breathing

- **Gas exchange** is the process of taking in oxygen and giving out carbon dioxide
- This occurs in the **respiratory system**
- The proportions of gases in the air we **inhale** and **exhale** changes due to using oxygen in **respiration** and producing carbon dioxide

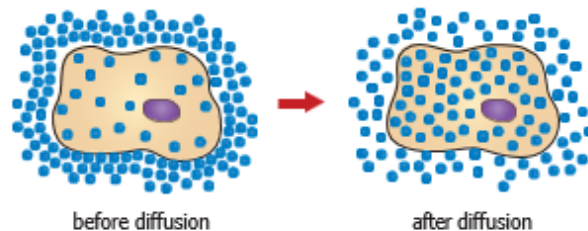


What happens when you breathe in and out

when you breathe in (inhale)	<ul style="list-style-type: none"> • muscles between the ribs contract • ribs are pulled up and out • diaphragm contracts and flattens • volume of the chest increases • pressure inside the chest decreases • air rushes into the lungs
when you breathe out (exhale)	<ul style="list-style-type: none"> • muscles between ribs relax • ribs are pulled in and down • diaphragm relaxes and moves up • volume in the chest decreases • pressure inside the chest increases • air is forced out of the lungs

Movement into and out of cells

- The process in which substances move into and out of cells is known as **diffusion**
- This occurs across the **cell membrane**
- During diffusion particles move from an area of **high concentration**, to an area of low concentration



- Oxygen and nutrients enter the cell by diffusion, carbon dioxide and waste products leave

B5

Animals

Knowledge organiser

Activate

Drugs

- **Drugs** are chemicals that affect the way that our body works
 - **Medicinal drugs** are used in medicine, they benefit health
 - If medicinal drugs are not taken in the correct way they can harm health
 - Examples include antibiotics and pain killers
-
- **Recreational drugs** are taken by people for enjoyment
 - Recreational drugs normally have no health benefits and can be harmful for health
 - Examples include alcohol and tobacco
-
- Drug **addiction** is when your body gets so used to a drug, it feels it cannot cope without it
 - If someone who has an addiction stops taking the drug, they will experience **withdrawal symptoms**



Key terms

Make sure you can write definitions for these key terms.

Aerobic respiration Anaerobic respiration Antagonistic muscle pairs Bone
 Bone marrow Cartilage Diffusion Drug Exhale Fermentation Gas exchange
 Haemoglobin Inhale Joints Lactic acid Ligaments Medicinal drug Muscle
 Oxygen debt Plasma Recreational drug Red blood cells Respiration
 Respiratory system Skeleton Tendons Tissue Withdrawal symptoms