

## Metals and their uses

### PROPERTIES OF METALS:

- Good electrical conductors
- High density
- Good thermal conductors
- High melting & boiling points
- Some are magnetic (Fe, Co, Ni)
- Sonorous (make a ringing sound when hit)
- Strong
- Easy to bend & shape (malleable & ductile)

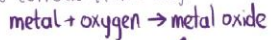
### METALS & ACIDS



Extracted using electrolysis

### METAL OXIDES

Metals can react with oxygen to form metal oxides. Metals reacting in this way is called oxidation. Metals are also said to "corrode" in this way.



pH > 7 = alkaline

Extracted from ore using carbon

Found on Earth in pure form

### ALLOYS

Combination of metals where the properties are mixed up in the alloy

PURE

ALLOY

### REACTIVITY SERIES

Potassium	] VERY reactive
Sodium	
Calcium	
Magnesium	] FAIRLY reactive
Aluminium	
Carbon	
Zinc	] NOT VERY reactive
Iron	
Lead	
Hydrogen	] NOT reactive
Copper	
Silver	
Gold	

## Breathing and Respiration

### RESPIRATION

the process of releasing energy from glucose. It's a chemical process that happens in every cell of every living organism. The energy released is used for all living processes.

### AEROBIC RESPIRATION

Respiration using oxygen  
 $glucose + oxygen \rightarrow carbon\ dioxide + water (+energy)$

### ANAEROBIC RESPIRATION

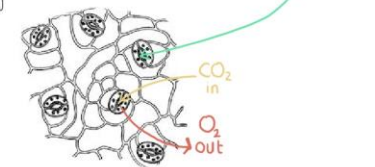
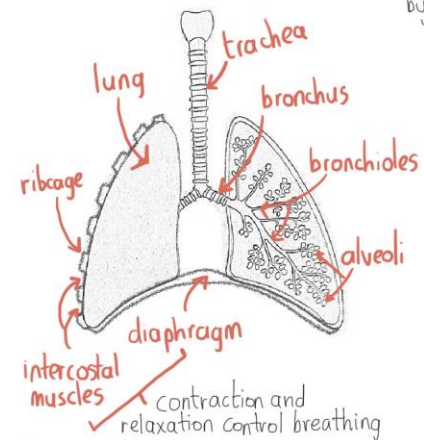
Respiration without oxygen

In humans (during hard exercise)  
 $glucose \rightarrow lactic\ acid (+energy)$   
 Lactic acid build up causes muscle pain.

In micro-organisms (like yeast)  
 $glucose \rightarrow ethanol + carbon\ dioxide (+energy)$   
 This process is fermentation and is used to make beer.

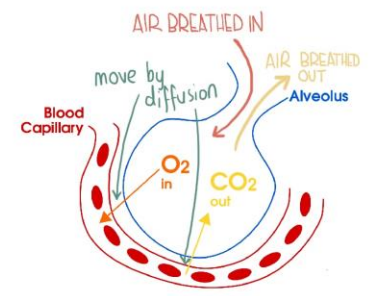
### GAS EXCHANGE SYSTEM

In plants, gas exchange is controlled by small holes in leaves called stomata



### Lung adaptations

- Good blood supply
- Large surface area (thanks to alveoli)
- Moist lining (helps with diffusion)



# Vocabulary

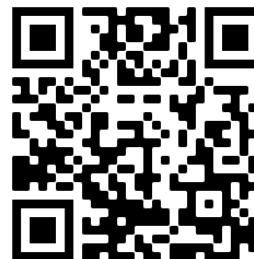
## 8G Metals and their uses

Word	Meaning
alloy	A metal with one or more other elements added to improve its properties.
catalyst	A substance that speeds up a reaction, without itself being used up.
chemical property	How a substance reacts with other substances.
composite material	A material made up of two or more substances. It has significantly different properties from the substances from which it is made.
corrosion	When something, such as stone or metal, reacts with chemicals in the air or water and gets worn away.
metal	Any element that is shiny when polished, conducts heat and electricity well, is malleable and flexible and often has a high melting point.
mixture	Two or more substances jumbled together but not joined to each other. The substances in mixtures can often be separated from each other.
non-metal	Any element that is not shiny, and does not conduct heat and electricity well.
physical property	A description of how a material behaves and responds to forces and energy. Hardness is a physical property.
pure	A single substance that does not have anything else in it.
reactive	A substance that reacts with many other substances or reacts very easily is reactive.

## 8C Breathing and Respiration

Word	Meaning
aerobic respiration	A type of respiration in which oxygen is used to release energy from substances, such as glucose.
anaerobic respiration	A type of respiration that does not need oxygen.
breathing	The movement of muscles that makes the lungs expand and contract.
diffusion	When particles spread and mix with each other without anything moving them.
excess post-exercise oxygen consumption (EPOC)	The need for extra oxygen after exercise to break down lactic acid and replace the oxygen lost from blood and muscle cells. A.K.A Oxygen debt.
gas exchange	When one gas is swapped for another. In the lungs, oxygen leaves the air and goes into the blood. At the same time, carbon dioxide leaves the blood and goes into the air in the lungs.
glucose	An important sugar that is used as a reactant in respiration.
haemoglobin	The substance that carries oxygen in red blood cells.
limewater	A solution of calcium hydroxide. It is clear and colourless but turns 'milky' in contact with carbon dioxide.
photosynthesis	A process that plants use to make their own food. It needs light to work.
ventilation	The movement of air in and out of your lungs.

## Videos



## Quizzes

