

The role of the blood is to :

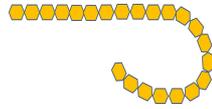
Deliver **oxygen** to the body cells (muscles, brain)

Deliver **waste carbon dioxide** to the lungs

Deliver **glucose** to the body cells

Glucose molecules can be stuck together to form long chain **carbohydrates**.

These can be used to build parts of the body/plant e.g. :
cell membranes,
cell walls,
energy stores



	Diaphragm	Ribs	Volume (in chest)	Pressure (in chest)
Inhale	Contracts, downwards	Contract, up and out	Increases	Lowered – air moves in
Exhale	Relaxes, upwards	Relax, fall downwards	Decreases	Raised – air moves out

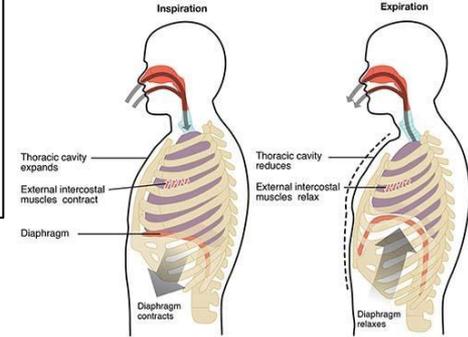
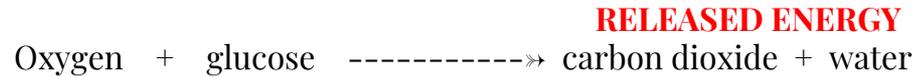
Breathing and Exercise:

Breaths become **deeper and faster** during exercise because:

Muscles need **more oxygen**

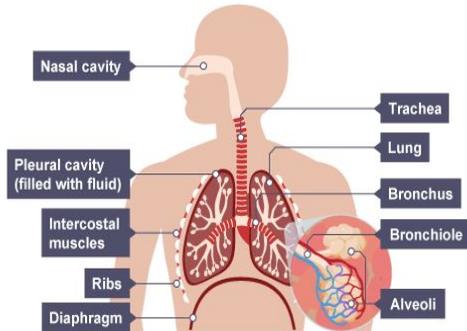
Muscles produce **more carbon dioxide**

The equation for aerobic respiration – happening in every cell of the body



Respiration

The Breathing System



Heart rate and Exercise:

Heart rate becomes **faster** during exercise to pump more blood because:

Muscles need **more oxygen and glucose**

Muscles produce **more waste carbon dioxide**

Anaerobic respiration is release of energy from glucose **without oxygen**

This releases little energy and produces the waste **lactic acid**

In some plants it produces **ethanol (alcohol)** instead of lactic acid

Effects of lactic acid:

When muscles run out of oxygen, for example during sprint exercises, lactic acid builds up.

Lactic acid causes:

- **muscle fatigue (tiredness)**
- **muscle cramp**
- **muscle pain,**

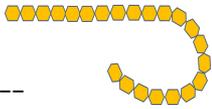
The role of the blood is to :

Deliver _____ to the body cells (muscles, brain)

Deliver **waste** _____ to the lungs

Deliver _____ to the body cells

Glucose molecules can be stuck together to form long chain _____.

These can be used to build parts of the body/plant e.g. : 
 cell _____,
 cell _____,

	Diaphragm	Ribs	Volume (in chest)	Pressure (in chest)
Inhale	Contracts, _____	_____, up and out	_____	Lowered – air _____
Exhale	Relaxes, _____	_____, fall downwards	Decreases	Raised – air _____

Breathing and Exercise:

Breaths become _____ and _____ during exercise because:

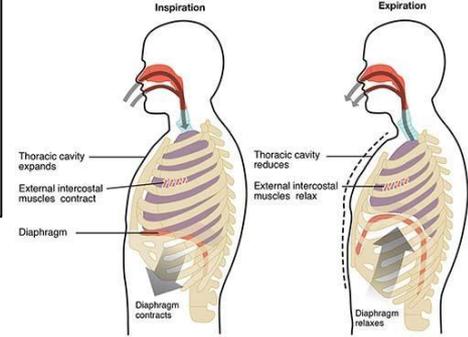
Muscles need _____ oxygen

Muscles produce _____ carbon dioxide

The equation for aerobic respiration – happening in every cell of the body

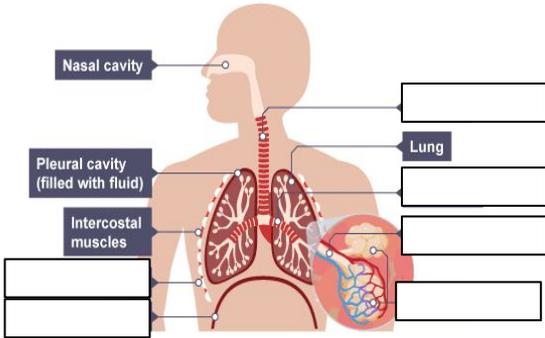
RELEASED ENERGY

_____ + _____ → _____ + _____



Respiration

Label : The Breathing System



Heart rate and Exercise:

Heart rate becomes _____ during exercise to pump more blood because:

Muscles need **more** _____ and _____

Muscles produce **more waste** _____

Anaerobic respiration is release of energy from glucose **without** _____

This releases little energy and produces the waste _____

In some plants it produces _____ (**alcohol**) instead of lactic acid

Effects of lactic acid:

When muscles run out of oxygen, for example during sprint exercises, lactic acid builds up.

Lactic acid causes:

- **muscle** _____ (tiredness)
- **muscle** _____
- **muscle** _____,