

Plants ← Respiratory System → Human

Exchange of gases with the surrounding through:

Respiration Photosynthesis

Takes place **all** the time Takes place **when there is light**

Takes in oxygen and give out carbon dioxide

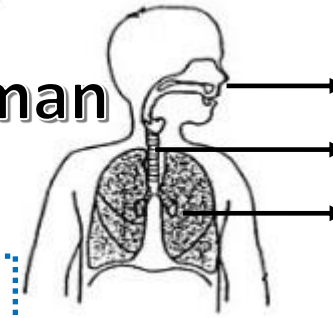
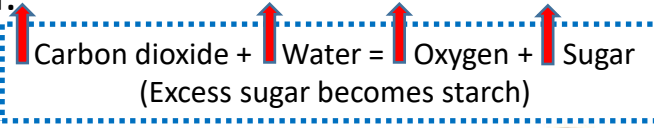
Takes in carbon dioxide and give out oxygen

Through stomata

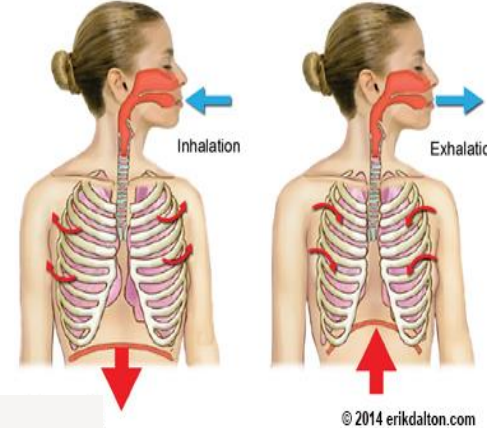
Through stomata

More stomata are found on the **underside** of the leaves, this helps to reduce water loss.

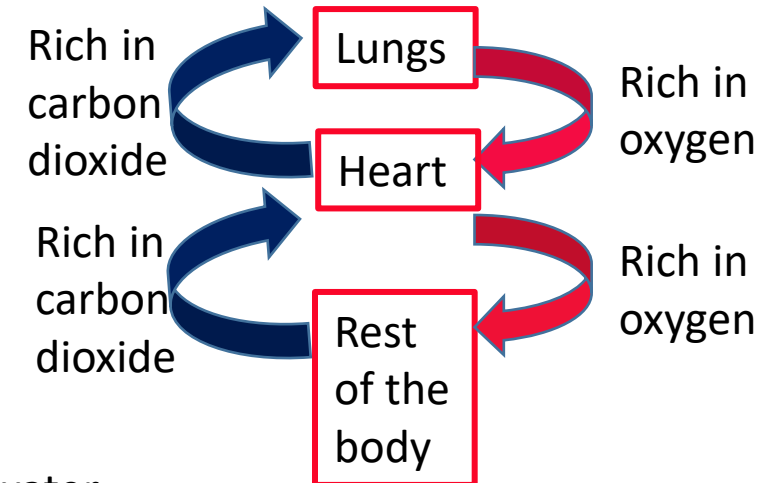
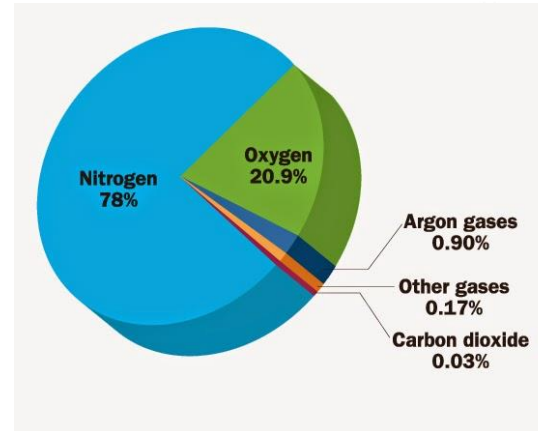
Help to maintain balance of oxygen and carbon dioxide in the air



Nose: has hair to filter the air
Windpipe
Lungs: has air sacs which increase surface area for gaseous exchange. Works with circulatory system to allow oxygen to enter the blood and carbon dioxide to leave the blood.



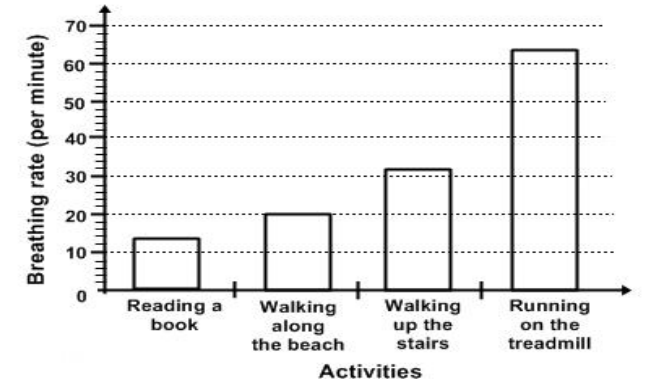
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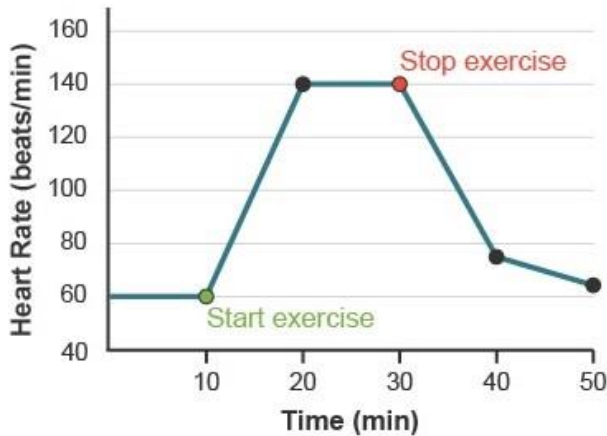
*When leaves are coated with oil, the oil does not allow water evaporation from the leaves and prevent gaseous exchange.

Why does our breathing rate increase when we exercise?

We have to breathe harder to take in more oxygen and remove more carbon dioxide from our body.



Why does our heart beat faster when we exercise?



When we exercise, our body needs more energy and oxygen. Our heart pumps blood which contains more oxygen and digested food faster to all parts of the body to give us more energy. This also allows us to remove carbon dioxide which is produced during respiration from our body faster.



Difference between inhaled air and exhaled air

Inhaled air	Exhaled air
Contains more oxygen	Contains less oxygen
Contains less carbon dioxide	Contains more carbon dioxide
Contains less water vapour	Contains more water vapour
Cooler than exhaled air	Warmer than inhaled air

Difference between respiration and photosynthesis

Respiration	Photosynthesis
Takes place in all living things	Takes place in plants
Takes place all the time	Takes place when there is light
During respiration, oxygen is taken in and carbon dioxide is given out	During photosynthesis, oxygen is given out and carbon dioxide is taken in
Releases energy from food	Produces energy in the form of food