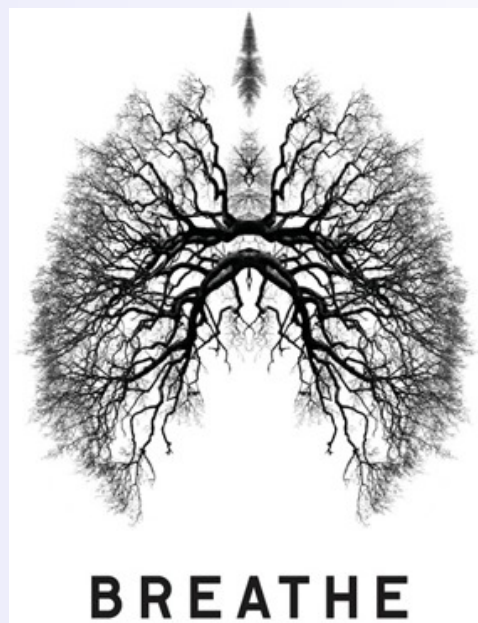


Tuesday 26th January 2021

L.O: I can identify key parts of the respiration system.

L.O: I can explain the breathing process.





Q. What is the respiratory system?

Q. Why do we breathe in and out?

The respiratory system's main function is to supply oxygen to all the parts of your body. It does this through breathing: inhaling oxygen-rich air and exhaling air filled with carbon dioxide, which is a waste gas.

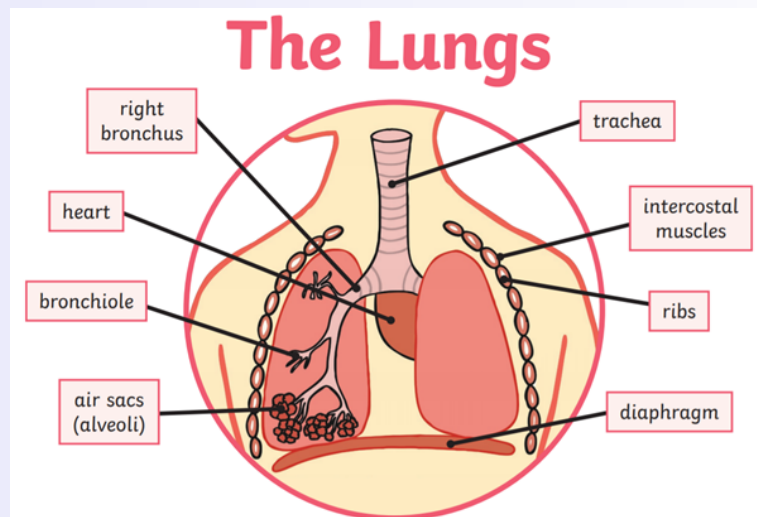
The main organs in your respiratory system are your lungs. Your lungs are, in their simplest form, nothing more than air sacs.



If your body cannot breathe, your cells will not get the oxygen they need. If this happens, your cells will quickly begin to die. Within only a few minutes from the time that you are not able to get breath, your body will die. That is how important breathing is.

As you breathe in (inhale), you fill these sacs with fresh oxygen-rich air. Your heart pumps blood into the walls of your lungs where it absorbs oxygen and releases carbon dioxide. As you breathe out (exhale), you release the carbon dioxide-rich air into the space around you.

When air is breathed in, it passes down the trachea. This divides into two airways called main bronchi, which go to the two lungs. Each splits into smaller bronchi, which then split into bronchioles. These finish in groups of tiny air sacs called alveoli.





Task - We are now going to work through the activity one sheets part by part, so keep following the video and pause when I tell you.

Task 1 - Complete the sheet.

Question 1) Label the diagram below using the key vocab at the bottom.

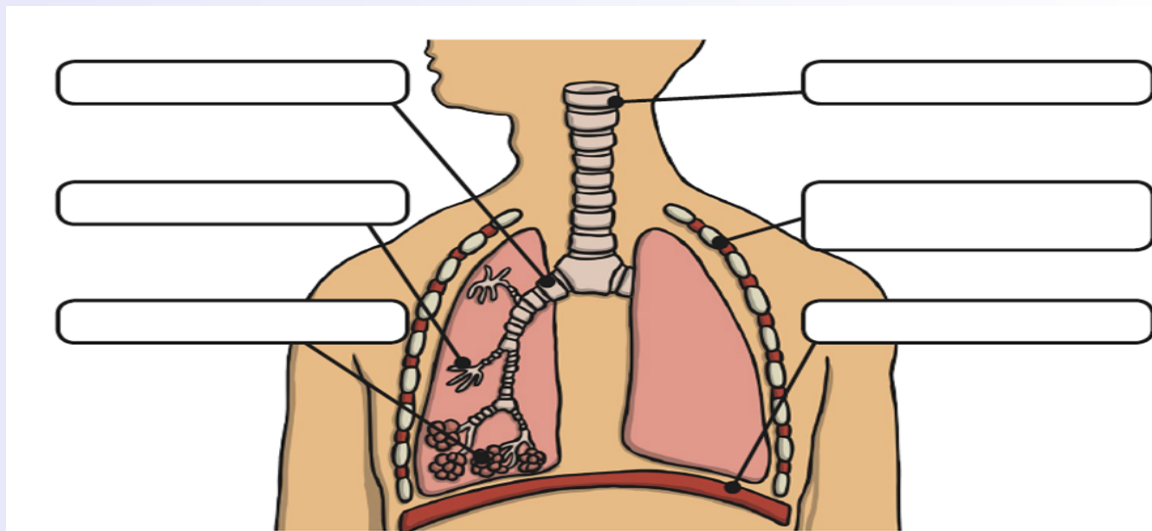
intercostal muscles
alveoli
diaphragm
trachea

bronchus
bronchiole

2) Look at the table below. Can you write the role of each part of the respiratory system?

Name	Role
rib	
diaphragm	
air sacs (alveoli)	
trachea	

First of all, I want you to complete the first activity - can you label this diagram correctly?



intercostal muscle and ribs      trachea      diaphragm

alveoli (air sacs)      bronchiole      bronchus

Let's look at each part we have just labelled in a little more detail.

**Intercostal muscles:** Your intercostal muscles (rib muscles) lift the ribs up and outward to give the lungs more space.

**Ribs:** Made up of 12 ribs, these act as a cage to protect your lungs.

**Diaphragm:** a dome-shaped muscle that works with your lungs to allow you to and exhale air.

**Alveoli:** a tiny thin-walled air sac found in large numbers in each lung, through which oxygen enters and carbon dioxide leaves the blood.

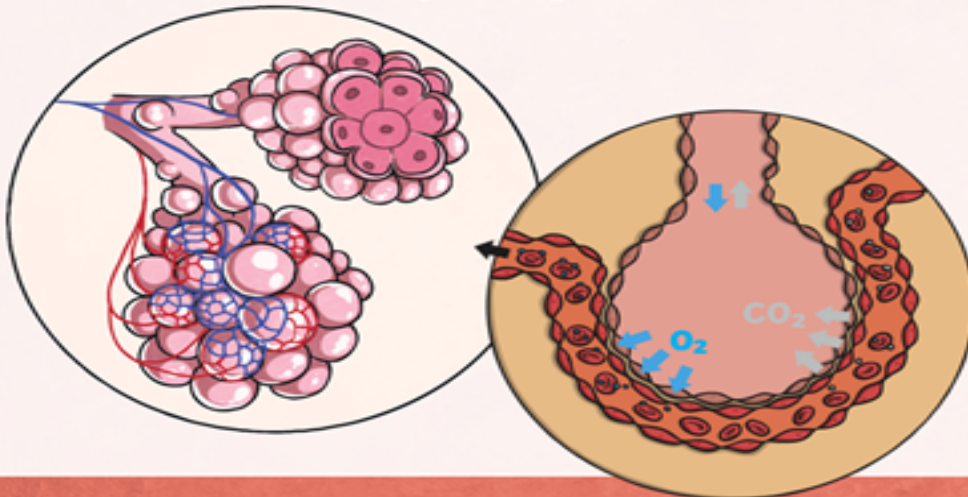
**Trachea:** (also known as the windpipe) the tube that moves air from the throat to the bronchi.

**Bronchus & Bronchioles:** The bronchus is a tube leading from the windpipe to a lung, which provides for the passage of air. A set of narrow tubes inside the lungs that branches off the main air passages bronchi.



## The Function of the Alveoli

The oxygen is absorbed into the blood through a layer of moisture in the air sacs (alveoli). Carbon dioxide in the blood is transferred back into the air, which then travels back out of the lungs.

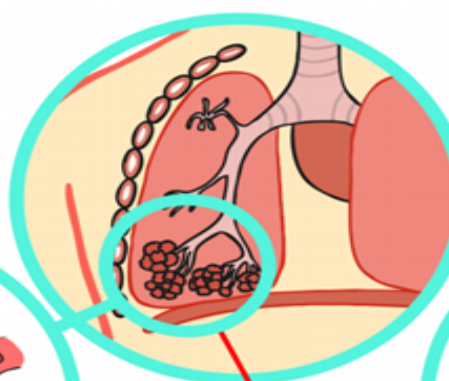
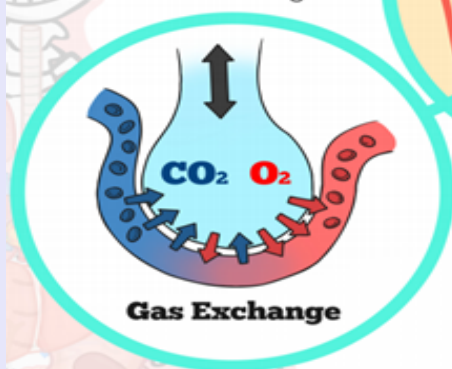


# THE Alveoli

## How it all Works

### Capillary Blood Flow

The oxygen is absorbed into the blood through a layer of moisture in the air sacs (alveoli). Carbon dioxide in the blood is transferred back into the air, which then travels back out of the lungs.



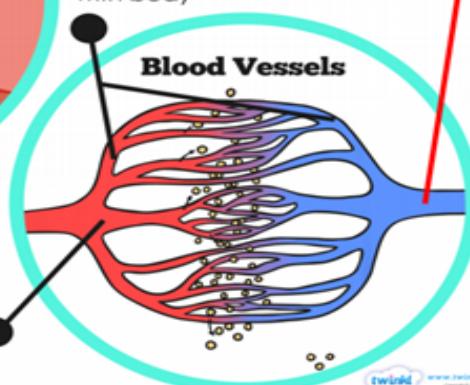
air sacs (alveoli)

Arteries: carry oxygenated blood away from the heart

Veins: carry blood from capillaries back to the heart to be pumped to the lungs to be re-oxygenated.

Capillaries: enable exchange of oxygen with body

### Blood Vessels



**diaphragm**

**air sacs (alveoli)**

**rib**

**trachea**

**Protects the lungs.**

**A muscle that moves to help get air in and out of the lungs.**

**Part of the lungs where gas exchange occurs.**

**Air that is inhaled passes through here to the bronchi and into the lungs.**

Activity 2: Pause here. Can you now complete the table showing the role of each part?

Name	Role
rib	
diaphragm	
air sacs (alveoli)	
trachea	

Activity 3) Answer the questions below:

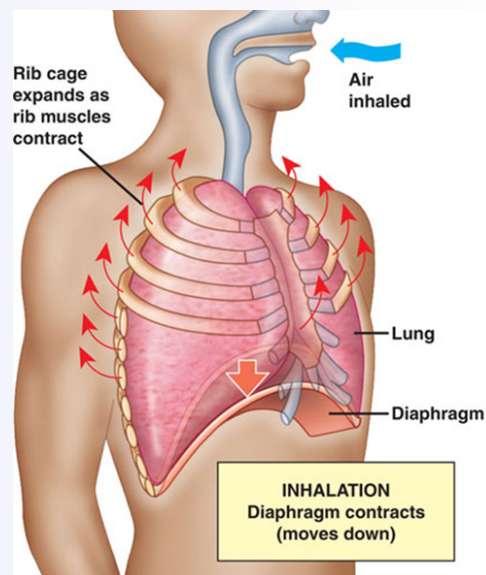
What gas do we use from the many gases in the air we breathe in?

What gas do we get rid of from our body when we exhale?

Which blood vessel helps to transfer the gasses?

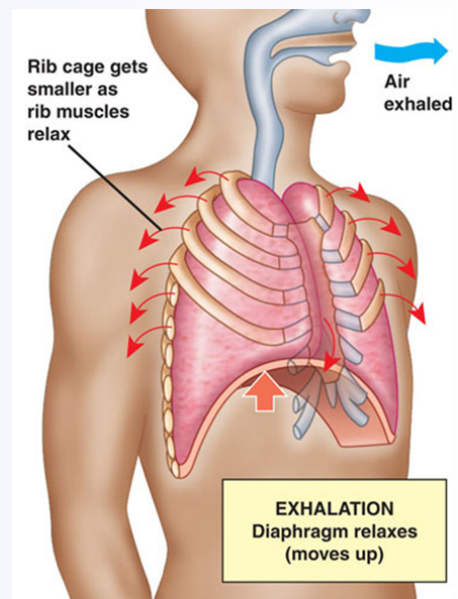
Breathe in. What can you feel happening?

- Your chest lifts up
- Your chest comes out
- Air comes in



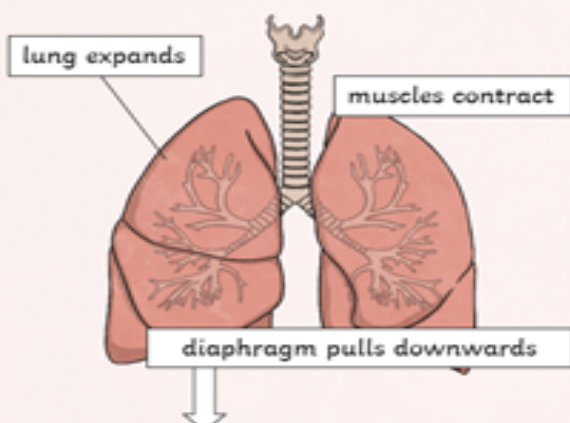
Breathe out. What can you feel happening?

- Chest pulls down.
- Chest comes back towards you
- Air goes out

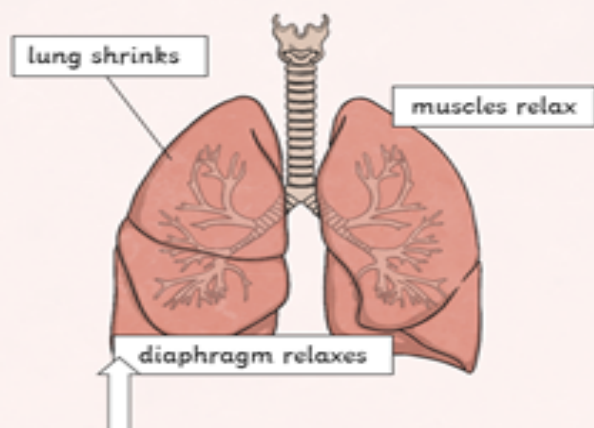


Let's be a little bit more scientific now using key vocabulary.

When we breathe in (inhale), the intercostal muscles contract and the diaphragm pulls down, making the chest expand. This causes air to be sucked into the lungs.



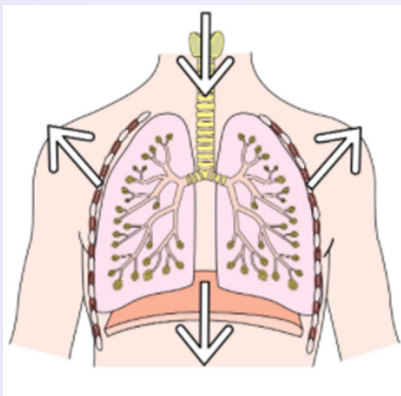
The intercostal muscles and diaphragm then relax and the air is pushed out of the lungs (exhale) as the ribcage falls downward and inhale.



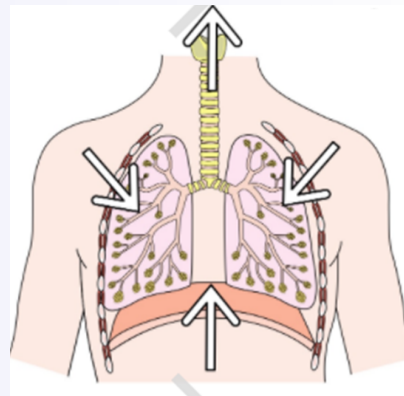


Pause here. Using activity 4 on your sheet, can you describe what happens when you breathe in and out using these pictures?

Inhale



Exhale



Key words -

Intercostal muscles, ribs, diaphragm, air, inhale, exhale

