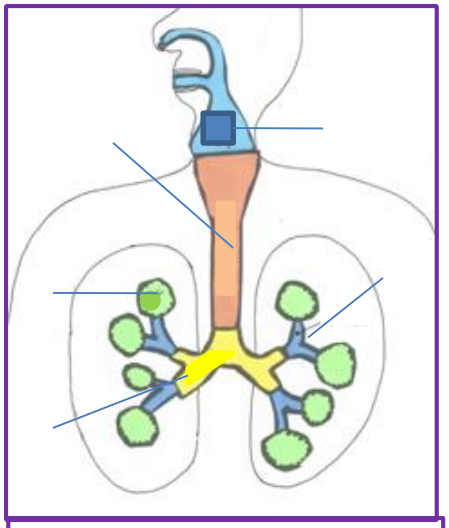
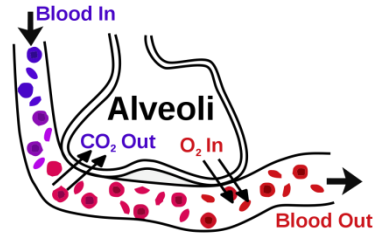


Label the diagram using the following words: *trachea, bronchi, nasal passage, alveoli, bronchioles*

Complete the following boxes to show the pathway of air.

NASAL PASSAGE



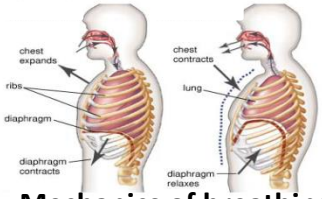
Gaseous Exchange

The process where o_____ from the air in the a_____ moves into the b_____ in the c_____, while c_____ d_____ moves from the b_____ in the capillaries into the air in the alveoli.

The Respiratory System

Features that assist gaseous exchange at the alveoli

- L_____ surface a____ of alveoli
- moist t____ walls (o___ cell thick)
- S_____ distance for diffusion (short d_____ pathway)
- lots of c_____
- large b_____ supply
- movement of gas from h_____ concentration to l___ concentration.



Mechanics of breathing

Inspiration – **d**_____contracts / flatten – **i**_____muscles **c**_____ - ribs rise – both increase size of chest cavity – increased volume - reduces pressure in chest cavity - air drawn into lungs.

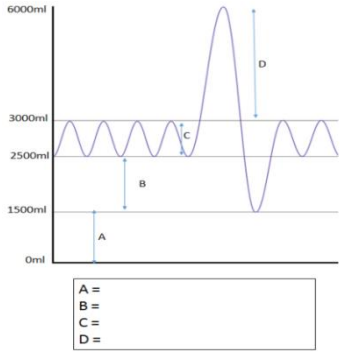
Expiration - breathing muscles **r**_____ – diaphragm returns to its dome shape; ribs descend - chest volume decreases; increasing air pressure in lungs – expelled – **p**_____

During exercise

During exercise the rib cage is pulled down quicker due to the use of the abdominal muscles.

During exercise the lungs expand more and they are assisted by the contraction of **p**_____ and **s**_____ muscles.

THE SPIROMETER TRACE



What happens during exercise?

Say whether each one will <u>increase</u>, <u>decrease</u> or have <u>no change</u> during exercise:

Breathing Rate –

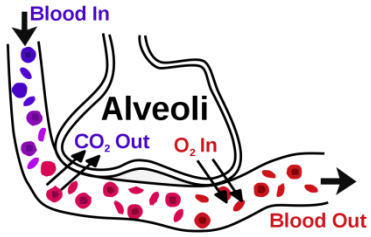
Tidal Volume –

Inspiratory Reserve Volume –

Expiratory Reserve Volume –

Residual Volume –

Gaseous Exchange:



Use the following words:

carbon dioxide
Alveoli
blood
oxygen
capillaries
blood

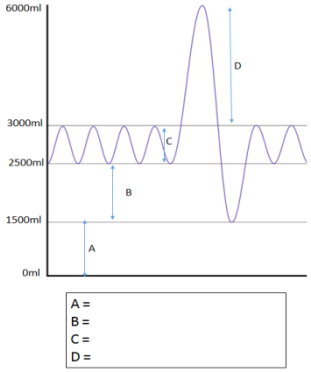
Features that assist gaseous exchange at the alveoli

- Low
- Short
- blood
- high
- area
- Thin
- Large
- distance
- capillaries

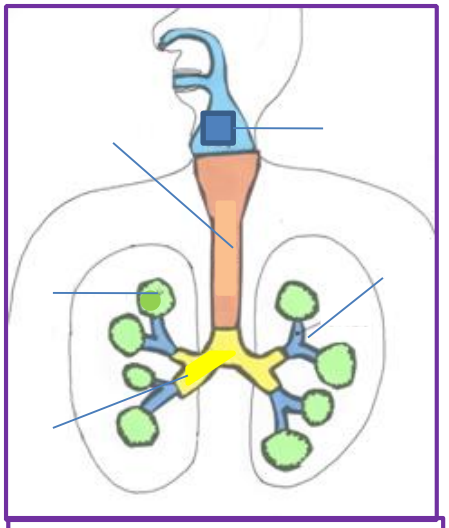
*Use the following words to explain the **mechanics of breathing:***

Diaphragm
Intercoastal
Contract
Pectoral
Relax
Passive
Inhalation
Exhalation
Sternocleidomastoid

THE SPIROMETER TRACE



Use the following words to label the diagram:
Tidal Volume
Residual Volume
Expiratory reserve volume
Inspiratory reserve volume



Label the diagram

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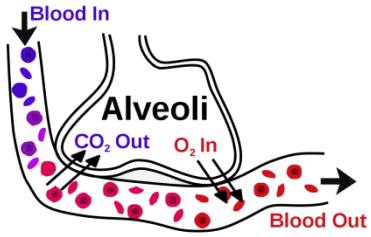
NASAL PASSAGE



Gaseous Exchange

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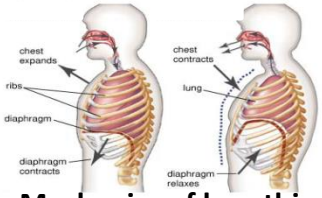
Features that assist gaseous exchange at the alveoli

-
-
-
-
-
-

The Respiratory System



Mechanics of breathing

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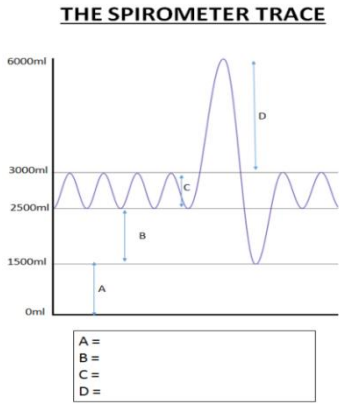

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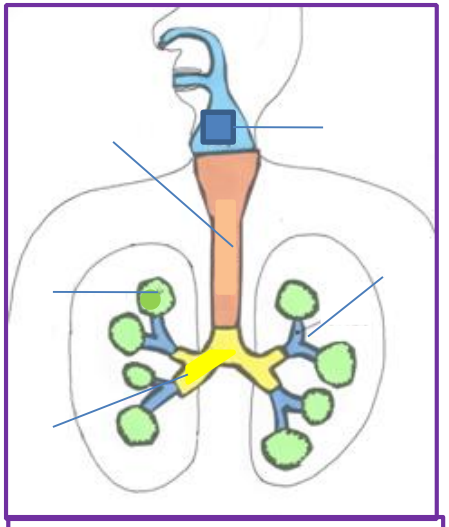
Breathing Rate –

Tidal Volume –

Inspiratory Reserve Volume –

Expiratory Reserve Volume –

Residual Volume –



Label the diagram

Describe the pathway of air from the nasal passage to the alveoli.

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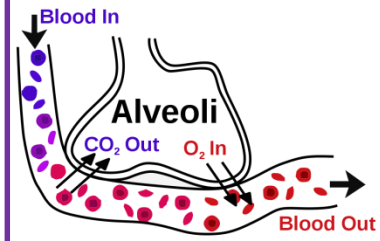


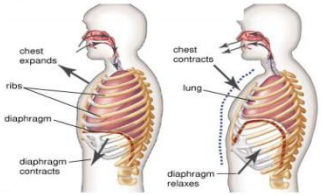
Gaseous Exchange

Explain gaseous exchange below:

Features that assist gaseous exchange at the alveoli

-
-
-
-
-
-

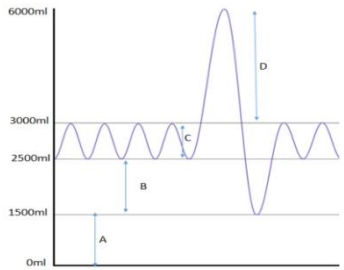
The Respiratory System



Mechanics of breathing *(explain below)*

How it changes during exercise *(explain below)*

THE SPIROMETER TRACE



A =
B =
C =
D =

Explain the spirometer trace :

What happens to lung volumes during exercise?

0 9 Breathing enables gaseous exchange to occur at the alveoli.

Outline how **two** features of the alveoli assist in gaseous exchange.

[2 marks]

1.

2.

1 6 Zack is a 16-year-old GCSE PE student. He is just about to play a game of basketball for his school team.

1 6 . 1 Zack's respiratory system will experience a number of changes before and during the game of basketball.

Define the terms tidal volume **and** residual volume.

[2 marks]

1 6 . 2 Outline what will happen to Zack's tidal volume **and** residual volume once exercise starts.

[2 marks]