

Interpretation of a Spirometer Trace:

A **spirometer** is an implement that can be used to show the amount of air inhaled and exhaled.

A **spirometer trace** is the data reading being shown as part of a graph.

In order to understand a spirometer trace, you must first be able to define the following terms:

**Tidal Volume**

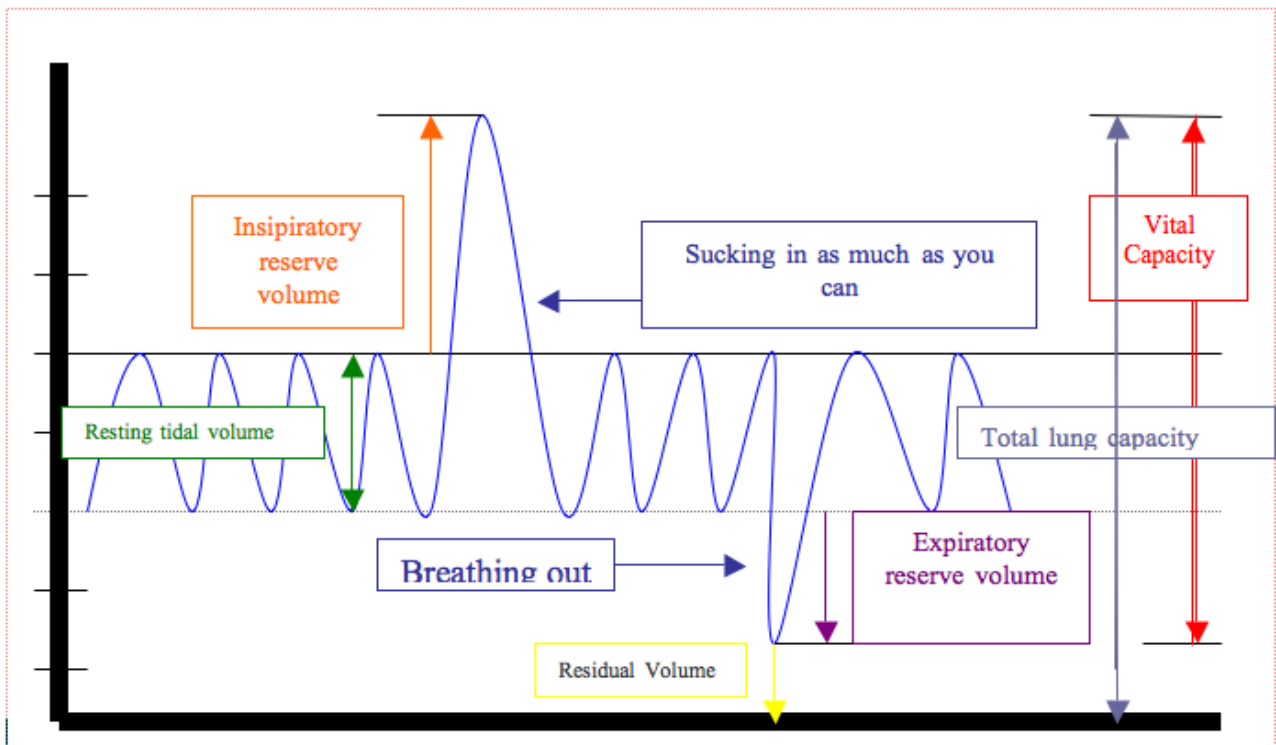
Expiratory Reserve Volume

Inspiratory Reserve Volume

Residual Volume

Vital Capacity

The image below shows how each of these terms can be displayed on a graph. This graph is showing the values for a person **at rest**. Take some times to understand this graph before having a go at the questions below.



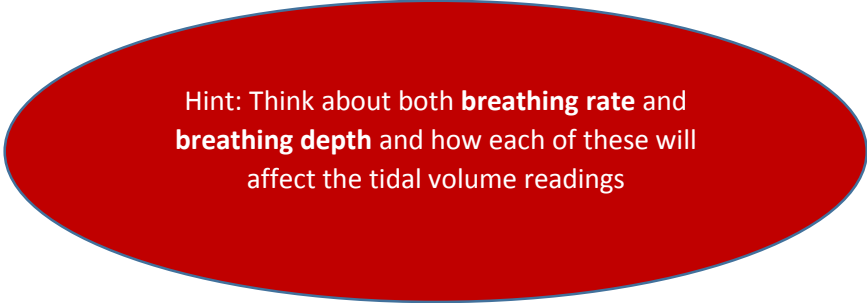
Tidal volume increases during exercise. Why does this occur?

Does your **vital capacity** increase during exercise?

Hint: Think carefully before answering this question

It is important that you are able to understand how the graph shown above will vary at exercise.

Task – Think carefully before using a separate piece of paper to draw out the same graph to show a trace for a 1500m runner towards the end of a race.



Hint: Think about both **breathing rate** and **breathing depth** and how each of these will affect the tidal volume readings

Recap:

Using any of the knowledge you have gained from this topic, name four ways that your cardio-respiratory system helps you to get oxygen to your muscles during exercise:

1. _____
2. _____
3. _____
4. _____