

Pulse Investigation

L.O.

To know that the heart is a muscle and that with the lungs, is protected by the ribs.

To recognise and understand the effects of exercise on heart rate.

To collect, represent and analyse data accurately.



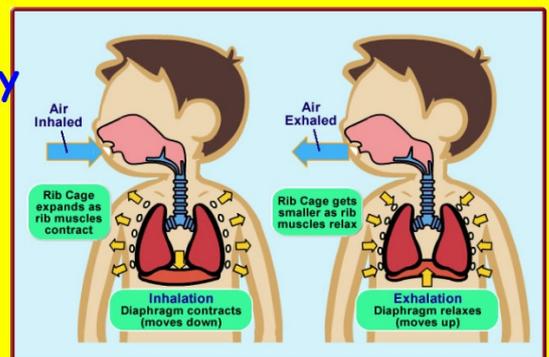
Describe what happens to the body when you exercise.



We breathe faster, feel hotter, feel tired.

Discuss with a partner why this might be.

Look at the place of the heart in the body and give a basic explanation of the respiration process.



Explain the relationship between the heart and pulse.

Pulse rate is measured as beats per unit time, usually in minutes (BPM).

How to measure our pulse



Taking a pulse from the neck:

Place the index and middle fingers on the carotid artery located below the jaw, between the throat and the muscle on the side of the neck.

Taking pulse from the wrist:

Place the index and middle fingers on the radial artery located on the wrist just above the hand, between the forearm bone (one on the thumb side) and a big tendon in the middle of the wrist.

Do not use your thumb as this has a pulse of its own that will affect the accuracy of your reading.

Practise feeling for your own pulse

Take 3 reading of your pulse

Tuesday 23rd February

My resting pulse rate

Average reading

= 1st + 2nd + 3rd divided by 3

(round to the nearest whole number)

1st reading -

2nd reading -

3rd reading -

My average resting pulse rate is

How could you change your pulse rate? What different investigations could we undertake?

Comparing different activities and recording the pulse rates or if the length of time doing an activity will affect the pulse rate.

QUESTIONS

Would the results be the same if we used adults?

Would there be a difference between boys and girls?

We are going to investigate the effects of exercise on our pulse rate.

PULSE INVESTIGATION

- Make sure you **warm up** and **stretch** before beginning this exercise.
- Start by taking a **resting pulse rate**.
- Now work with a partner to record your pulse rate for **15 seconds** after each spell of activity and rest.
- Take **short rest breaks** in-between each spell of activity.

Exercise/Activity	Prediction How many beats per minute?	Time (mins)	Pulse Rate		Did it go up or down?	Was your prediction right?
			Before	After		
Hopping for 1 minute						
Running on the spot for 1 minute						
Skipping for 2 minutes						
Run around the playground twice						

Conclusion

When I exercise my pulse rate goes _____.

When I rest it goes _____.

My fastest pulse rate was _____ per minute.

My slowest pulse rate was _____ per minute.

When I exercise my heart beats faster because my body and muscles need more
_____.

ORAL questions

What happens to our pulse rate when we exercise?

When we exercise....

Explain how your body changes when you exercise.

When we exercise our bodies...



Explain what happens to your body when you rest after exercise.

When we rest after exercise our bodies...

Why do we breathe faster after exercise?

We breathe faster after exercise because...

When I exercise my heart beats faster because my body and muscles need more

_____.

What do we need to think about when planning a Science Investigation

Aims - what are you wanting to find out?

Prediction - what do you think will happen?

Variable - what will you change and what will you keep the same? Are there different options?

Apparatus - What equipment will you use to carry out the investigation?

Method - How are you going to conduct the investigation?

Results - Gathering and recording your data and observations - How will you display these?

Conclusion - What have you found out? Explain why you think you got the results that you did? Try to use scientific reasoning.

Science Investigation



Aim - I want to find out how exercise affects my pulse rate.

Prediction - I think...

Variable - I will change...

I will keep ... the same.

Apparatus - I will need...

Method - First I will...

Results - Gather and record your data and observations - How will you display these?

Stick results sheet in book.

Conclusion - I have found out that...

REVIEW Heart Facts:

- The heart beats: 100,000 times a day, 35 million times a year, and 2.5 billion times a lifetime (on average)
- The average human will pump 48 million gallons of blood in their lifetime - it pumps 5000 gallons in 24 hours.
- The heart is about the size of a fist.
- Blood is circulated around the body every 45 seconds.
- If all the blood vessels in the body were put end to end, they would circle the world twice!
- Squeezing a tennis ball as hard as possible with a fist is roughly the same amount of force the heart uses each time it pumps blood around your body.
- Enough power is generated in the heart in one day to drive a car 20 miles.
- The heart pumps 9 pints of blood per minute.
- The heart is the hardest working muscle in the body.
- The heart pumps 1,500 gallons of blood every day.

