

I am deepening my understanding of the effects that exercise has on my pulse rate.

### Key knowledge

To know what a pulse is and how to measure it

To describe the effects of exercise on the body

*Skill: collecting data and drawing a graph*

# Measuring heart rate

What is a pulse?

Where are the main pulse points in the body?

Take your own pulse.

To check **your pulse** at **your** wrist, place two fingers between **the** bone and **the** tendon over **your** radial artery — which is located on **the** thumb side of **your** wrist. When you feel **your pulse**, count **the** number of beats in 15 seconds. Multiply this number by four to calculate **your** beats per minute.

# Exercise and Heart Rate

Predict how exercise will affect your heart rate

*You need to say what you think will happen to the heart rate and explain using scientific knowledge*

Practical - exercise for 2 mins and then take your pulse every 2 mins after exercise.

Total of 10mins

Repeat the above for different types of exercise.

## 8Bb/1 Back to resting

Name \_\_\_\_\_ Class \_\_\_\_\_

You are going to find out how long it takes for your **pulse rate** to get back to normal after exercise.

P

### Apparatus

- Stopclock or stopwatch

### Method

- 1 Hold two fingers firmly on your wrist in the position shown in the diagram. You should be able to feel your pulse. If you cannot feel it, ask your teacher for some help.
- 2 Once you have found your pulse, start timing and count how many pulses you feel in one minute. Write down your answer in the space below. This is called your **resting pulse rate**.  
I felt \_\_\_\_\_ pulses in 1 minute.
- 3 Now do some exercise for 2 minutes. Your teacher might give you some ideas, like running or doing star jumps. As soon as you have finished your exercise, measure your pulse rate again.
- 4 Now wait for 1 minute and then measure your pulse rate again (for 1 minute).
- 5 Repeat step 4 until your pulse rate is the same as it was before you did the exercise.



### Recording your results

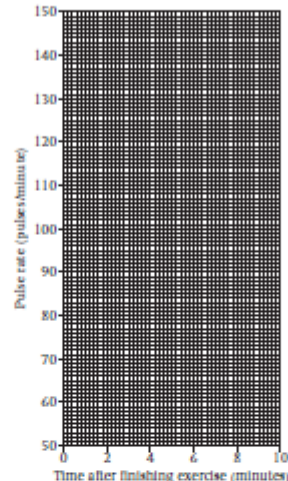
Record your results in this table.

Time after finishing exercise (mins)	Pulse rate (pulses/minute)
0	
2	
4	
6	
8	
10	

## 8Bb/1 Back to resting (continued)

### Considering your results/conclusions

Use your results to plot a line graph on these axes.



How many minutes did it take for your pulse to get back to your resting pulse rate, after you stopped doing the exercise?

What causes the pulse?

Imagine that, for one day, you do no exercise. Work out how many pulses you would expect to measure during this day. Show your working.

Pulses in 1 day = \_\_\_\_\_

**S** observing, considering

8  
B  
b

# Different types of activity

What happens to the pulse rate whilst someone is running?

The body needs to release more energy:

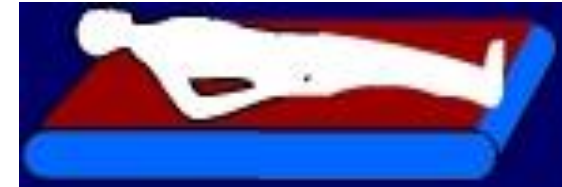
- so oxygen and glucose need to reach muscle cells quickly
- so blood is pumped around the body faster
- so the pulse is faster



What happens to the pulse rate whilst someone is sleeping?

The body needs to release less energy:

- so oxygen and glucose need to reach muscle cells slowly
- so blood is pumped around the body more slowly
- so the pulse is slower



# Results

- Plot your data on graph paper.
- How many minutes did it take for your pulse to return to your resting pulse rate after you stopped doing the exercise?
- What causes the pulse?
- Imagine that for one day, you do no exercise. Work out how many pulses you would expect to measure during this day.