

Experiment Time!



WORK YOUR WAY THROUGH THIS POWERPOINT

- Pages with a  include questions for you to answer in your workbooks.
- Answers and helpful hints will be on the following slides so you can mark your work as you go.



**A few reminders
from this week so
far...**



What happens when we exercise?

- Our muscles need more energy when exercising. This means our muscles need more oxygen.
- We breathe quicker to inhale more oxygen more quickly
- Oxygen is transported around our bodies by our blood so our hearts also have to beat more quickly to transport the oxygen more quickly to our muscles.
- Our heart and lungs work together to give our muscles what they need.





THE BIG HEART EXPLORATION



- When you are running and jumping, or even walking quickly, your body needs more energy, so your heart beats faster to send blood around your body, carrying nutrients (from food) and oxygen (from the air) to provide enough energy.



Measuring your pulse

Your pulse



Your pulse is a measure of how fast your heart is beating. It is the number of beats your heart makes in one minute. Your heart beats faster or slower depending on what you are doing.

You can feel your pulse at certain points on your body. The easiest place to feel it is in your **wrist**, using the first two fingers of your other hand.

When you sit, the average heart beats about **80 times per minute**. However, everybody is different, so your pulse could be higher or lower than this.

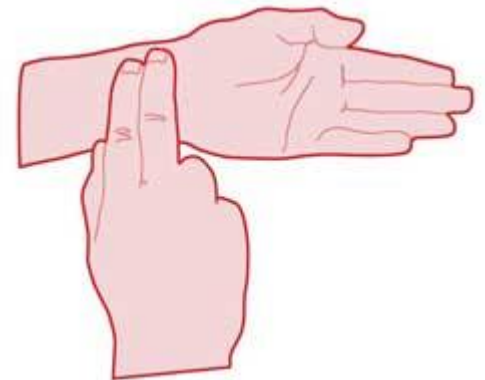
When you **exercise**, your heart beats more quickly. This is because your muscles are working harder and need more oxygen to keep going. Your lungs also work harder, making you breathe more quickly to get more oxygen.

When you **sleep**, your muscles need less oxygen, so your heart slows down.



Measuring your heart rate

Set a timer for one minute
Gently and carefully find your pulse
Start your timer
Count how many beats you feel in the minute
Record your results in your workbook.



How does exercise change your heart rate?



You are going to complete the exercises from the workout you designed and record how each one changes your heart rate.

Start by writing your prediction and explanation in your workbook

Prediction:

What will happen to your heart rate after each exercise?

Which exercise will increase your heart rate the most?

Explanation:

Why do you think this will happen? Remind yourself of yesterday's learning to help you explain this scientifically.



Draw a table to record your results



Exercise	Heart rate (set 1)	Heart rate (Set 2)
Resting heart rate		
Name of your exercise 1		
Name of your exercise 2		
Name of your exercise 3		
Name of your exercise 4		

How are you going to make it a fair test?



What variables will you keep the same?

What variable will you change?



How are you going to make it a fair test?

What variables will you keep the same?

- The length of time you complete each exercise for
- The length of time you measure your heart rate for
- The amount of effort you put into each exercise
- The amount of rest you have between exercises

What variable will you change?

- The type of exercise you are doing



Begin your experiment



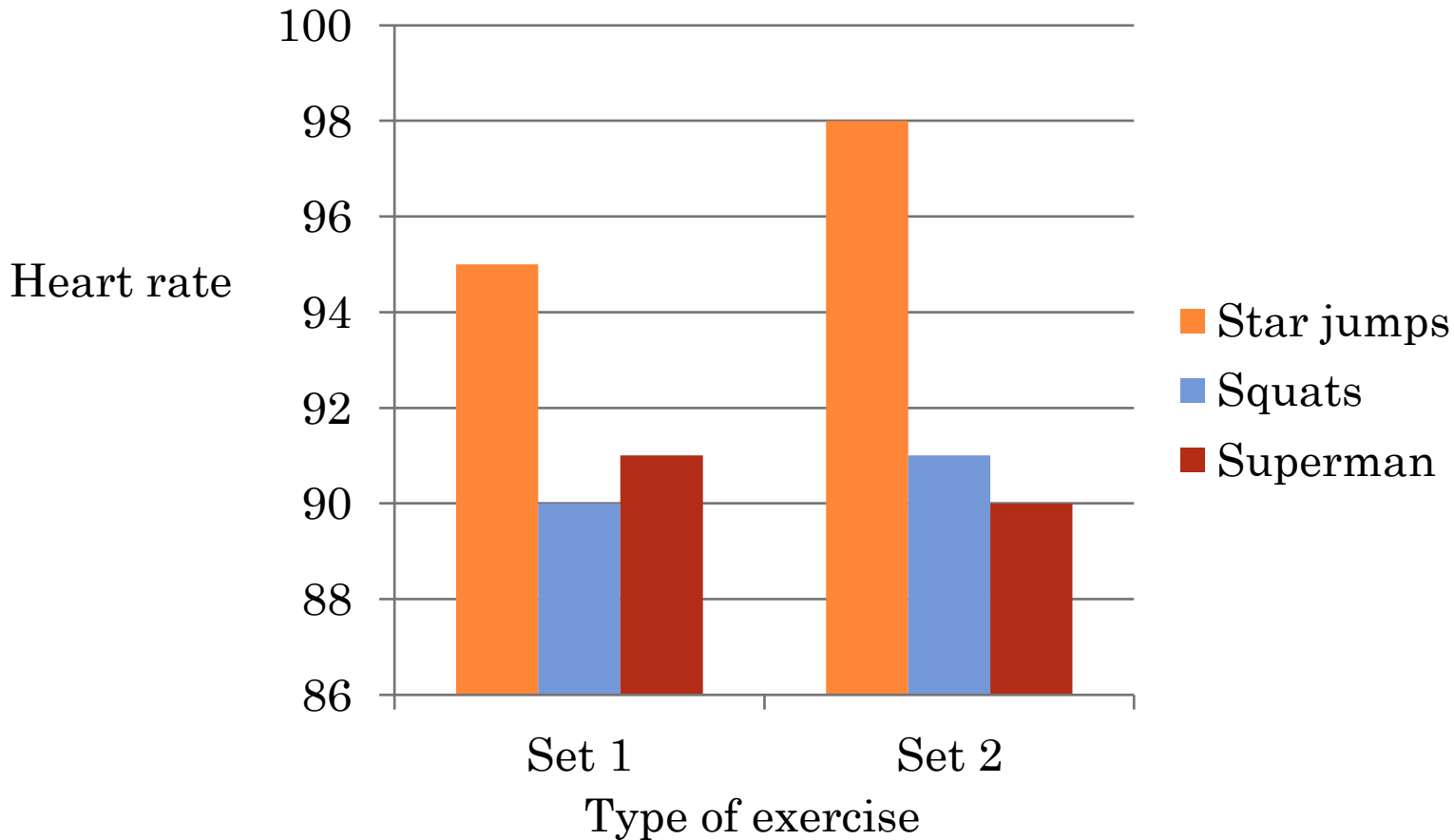
You will complete 1 set of your workout and record your results after each exercise, then complete set 2 and record your results after each exercise again

1. Complete exercise 1 for X seconds
2. Measure heart rate for 1 minute
3. Record result in the table
4. Rest until your heartrate is back to normal
5. Complete exercise 2 for X seconds
6. Measure heart rate for 1 minute
7. Record result in the table
8. Rest until your heartrate is back to normal

Repeat until you have completed all exercises and recorded your heart rate after each.



Record your results



Analyse your results



1. Which exercise caused the highest heart rate?
2. Which exercise caused the lowest heart rate?
3. Which exercise did you enjoy the most? How many more beats per minute was your heart rate during this exercise compared to your resting heart rate?
4. Which exercise do you think is most beneficial to your body? Why?
5. Why does your heart rate increase when you are exercising? Answer this question as scientifically as you can!

