



# HEALTHY HEARTS



HAVE A GO AT TAKING ON THE ROLE OF A NURSE OR MIDWIFE AND MEASURE SOME VITAL SIGNS ON YOURSELF OR A WILLING PATIENT AT HOME

Vital signs include heart rate, respiratory (breathing) rate, oxygen saturation, blood pressure and temperature. In this activity, have a go at taking some vital signs, like heart rate and respiratory rate, and observe what happens to these when you exercise!

## INTRODUCTION

Your **heart rate** is the number of times your heart beats per minute. Your heart pumps blood around the body to transport oxygen and nutrients to your organs. You can record your heart rate by feeling your pulse on your wrist or neck. Count the number of times you feel your pulse in 15 seconds, then multiply this by 4 to get the beats per minute.

Your **respiratory rate** is the number of breaths you take per minute. One complete breath is one inhalation (when you breathe in) and one exhalation (when you breathe out). Again count this for 15 seconds and multiply by 4. You breathe oxygen into your lungs and exhale carbon dioxide.

**1**

For this activity, all you need is:

- Pencil or pen
  - Stopwatch
  - Results table/graph paper from this document (or plain paper works fine too!)
- 
- First measure your heart rate and respiratory rate while sitting down resting. Record your results.
  - Then breathe in through your nose for 2 seconds, hold your breath for 2 seconds, then breathe out through your mouth for 2 seconds. Do this a few times to calm your breathing. Then take your heart and respiratory rates as before.





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2

• Next, it's time to start moving and getting your muscles using up some oxygen! Observe what happens to your breathing and heart rate. Why do you think that is?

- Walk around your house/garden/on the spot at a normal pace for one minute. Try to keep on the level rather than climbing any stairs. Take your measurements and record your results.
- Finally, do some star jumps for one minute - you should start to feel your heart beating faster! Record your results.



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• Once you've recorded your results, draw two bar graphs to show firstly how your heart rate changed with each activity, and secondly how your respiratory rate changed.

- Put the activity along the bottom (x axis) and the beats or breaths per minute up the side (y axis).
- Remember to label your axes and give your graph a title.
- You could extend the results table and graph to include some different activities to test too. What happens if you skip for one minute, ride your bike for one minute, sing and dance to your favourite song for one minute?



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• During exercise you will have noticed your respiratory rate and heart rate increased. This was so that you could get more oxygen into your body and to your muscles. Your heart had to pump more often to get the oxygen to where it was needed.

- What else might cause your heart rate to increase?
- How long did it take for your heart rate to return to normal?
- Doing plenty of exercise is one way to keep your heart healthy, but your diet is important too. Make sure you eat a balanced diet with plenty of fruit and vegetables!
- In hospital, a nurse might check your vital signs to see if you are getting better. A very high temperature, respiratory rate and heart rate while resting might be a sign that your body is fighting off an infection.



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## RESULTS TABLE

Activity	Beats in 15 seconds	Beats per minute	Breaths in 15 seconds	Breaths per minute
Sitting				
Slow breathing				
Walking				
Star jumps				



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A GRAPH TO SHOW .....

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