

Exploring Your Body - in a heartbeat!

Primary/Elementary Resource

“The world is full of magic! We created the Virtuali-Tee and these resources to enable you to unlock the curiosity that exists within every student”

OVERALL LEARNING OUTCOMES

Heart Rate Activity Objectives

- To investigate how our heart rate changes with exercise
- To collect evidence by making measurements and observations
- To display and explain results

Your heart.

Can you feel your heart beating?

Place your hand in the middle of your chest.

What is happening when your heart beats?

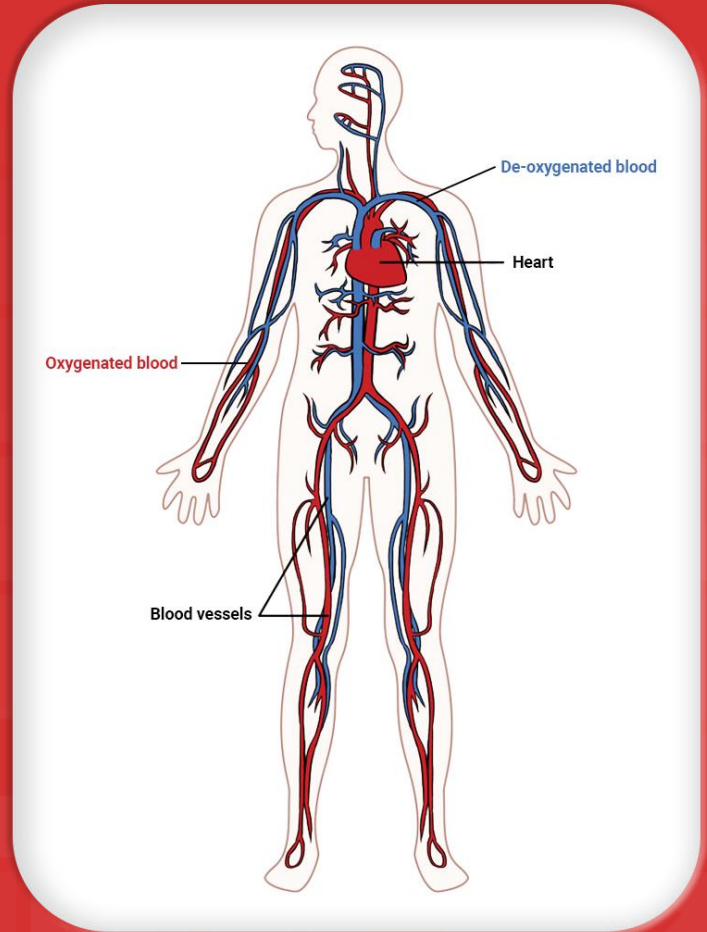
Is it sometimes faster or slower?

Why?



Your circulation.

- Circulation is the name we give to the journey your blood makes around your body.
- Blood goes from the heart to the lungs where it collects oxygen from the air we breathe in and removes carbon dioxide.
- The blood then carries the oxygen to your muscles and organs to make energy.



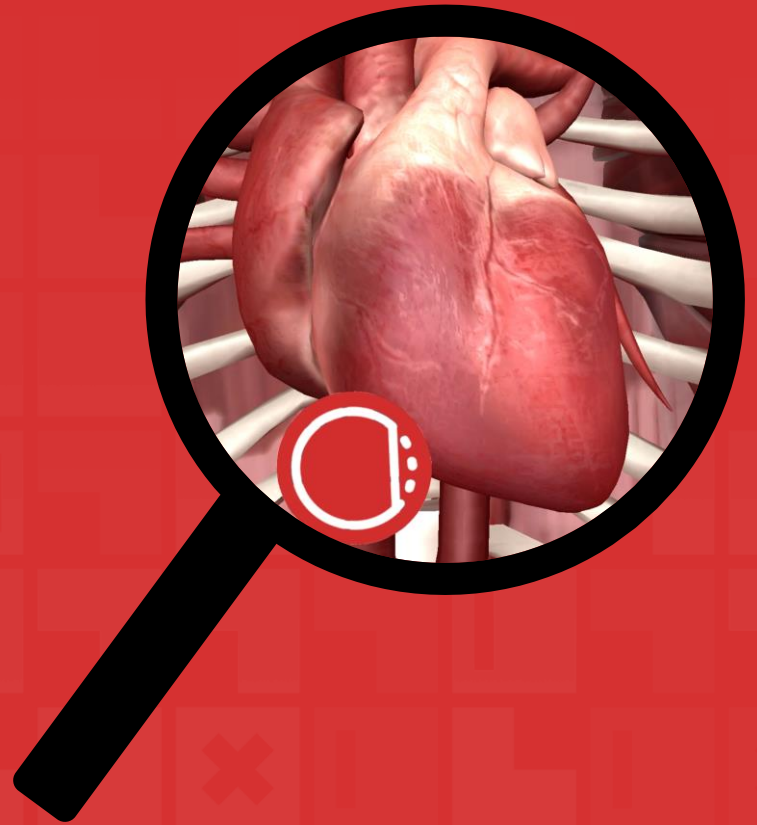
Your pulse.

- Your pulse is the thump of your blood being pumped by your heart.
- You can feel it by placing two fingers on your wrist or on the side of your neck
- You can often feel it in your chest after exercise.
- Heart rate monitors and stethoscopes are used by doctors to listen to your heart rate
- In young people your heart rate or pulse is about 70 to 90 beats per minute (BPM)



Investigating the heart

- Your heart never takes a rest and keeps beating day and night for your whole life!
- How fast is your heart beating now?
- How could you measure your pulse?
- You could set a timer for one minute and count very carefully or...





Use the Virtuali-Tee app to explore heart rate

Today we are going to be using a very special app to explore your circulatory system

*“Explore the Human Body....
On a Human Body...”*

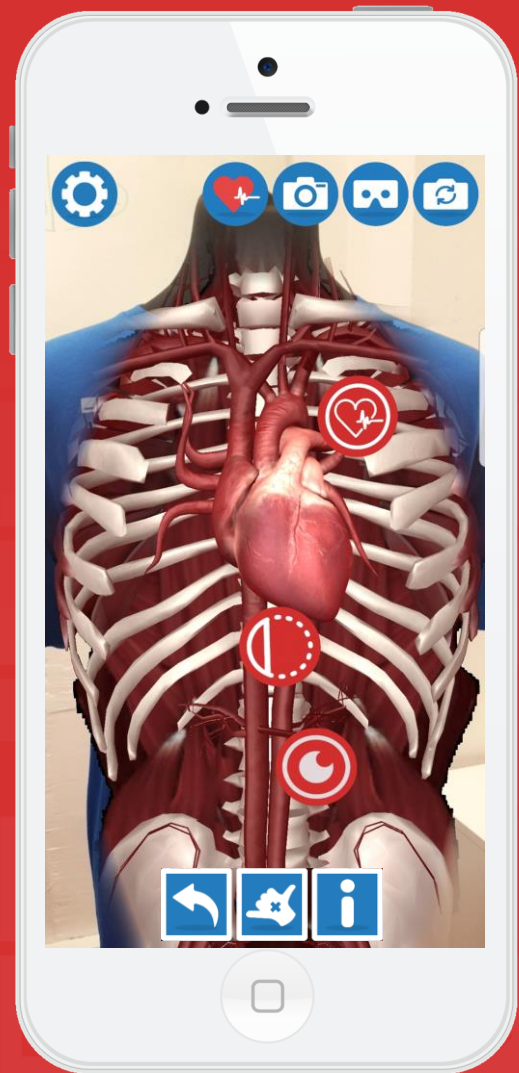


Step 1 - Take a look inside your body!

- Firstly open up the 'Virtuali-Tee' app
- Then click on the  button in the top right corner. This should open up the heart tracker functions.
- If you need subtitles or help then click this  in the top left of the screen.

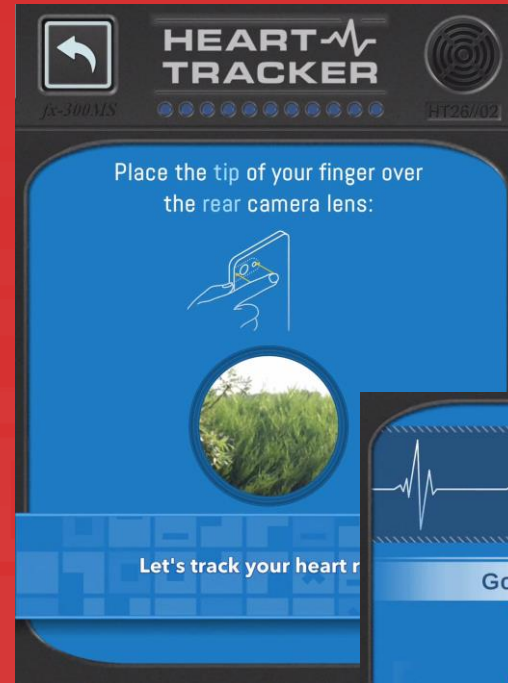
Not used the Virtuali-Tee before?
Check out our circulation or digestion lessons in the teacher resources repository for an introductory look at the app!

<https://drive.google.com/drive/folders/17N-hPZnEAdBwevuxAYoTi-yasNatYQM9>



Step 2 - Finding your heart rate

- Now there should be instructions on screen to help you!
- Place the tip of your finger over the lens of the back camera and hold really still!
- Using really clever technology, the app will then work out your heart rate for you, the number of beats per minute.
- Once it tells you what number that is, you can click the back arrow in the top left corner to go back to the app if you are using the Virtuali-Tee.
- The heart you see should now beat in time with your heart!



The Virtuali-Tee to explore heart rate

Today we are going to:

- Measure our resting heart rate
- Experiment to see what happens to our heart rate when we exercise
- Discover what happens to our heart rate when we stop exercising and recover
- Display and explain our results



Recording Your Heart Rate

- Your teacher will give you the experiment worksheet and explain how the groups will work.
- First we will need to take a resting heart rate using the 'Virtuali-Tee' app. You should have been sitting nice and still in class for at least 10-minutes.
- After recording your resting heart rate, you will need to do 1-minute of intense exercise. As a class, you can decide what type of exercise this is. We suggest star jumps!
- Immediately after the 1-minute of exercise, record your new heart rate and sit down to recover.
- Exactly every 1-minute after this exercise reading, you need to take a recovery heart rate reading.

Learning about circulation... in a heartbeat!

Aim Let's investigate what happens to our heart rate when we rest and exercise.

Method

Use the Curiscope 'Virtuali-Tee' app to take heart rate measurements and then note them down on the table. Measure your heart rate every minute until it has returned to near the resting rate, this should be less than 10 minutes.

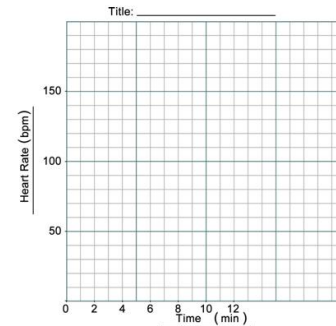
Materials

Timer or stop watch
Curiscope 'Virtuali-Tee' app heart rate monitor



Results

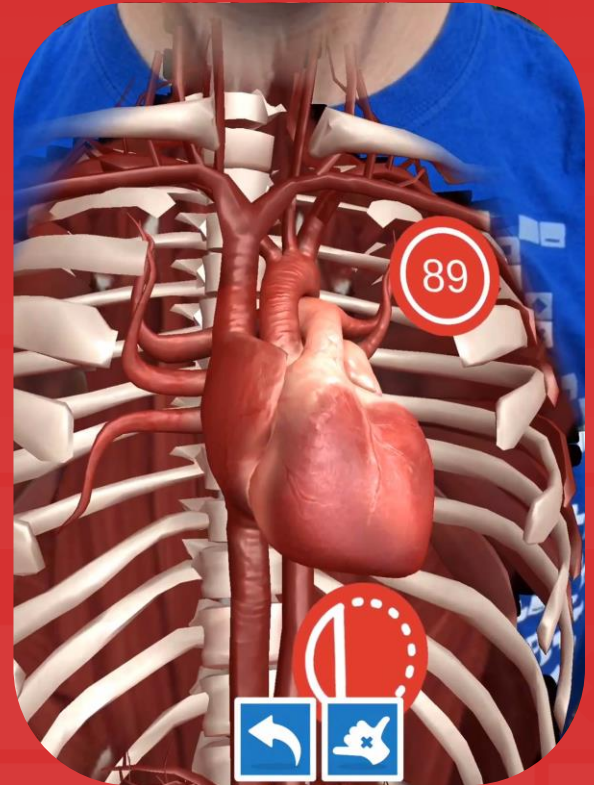
Time (minutes)	Activity	Heart rate (BPM)
0	Resting	
1	Complete 1 minute of exercise (e.g. star jumps)	
2	Recovering	
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		



Worksheet available in teacher resources repository:
<https://drive.google.com/drive/folders/17N-hPZnEAdBwvuxAYoTi-yasNatYQM9>

Well Done! You have successfully measured your resting heart rate and investigated it's impact!

- Was there anything you found difficult with the activity?
- Can you think of ways to improve it?
- How long did your heart rate take to recover?
- Why did results vary from group to group?
- Can you think of any ways you could help your heart rate slow down more quickly?



Extension

- Can you devise another experiment to investigate the impact on heart rate of different activities - it doesn't have to be sports.
 - Can you make predictions?
 - How will you make it a fair test?

Hint: To make sure that your experiment is a **fair test**, you must change only one factor at a time while keeping all other conditions the same.

