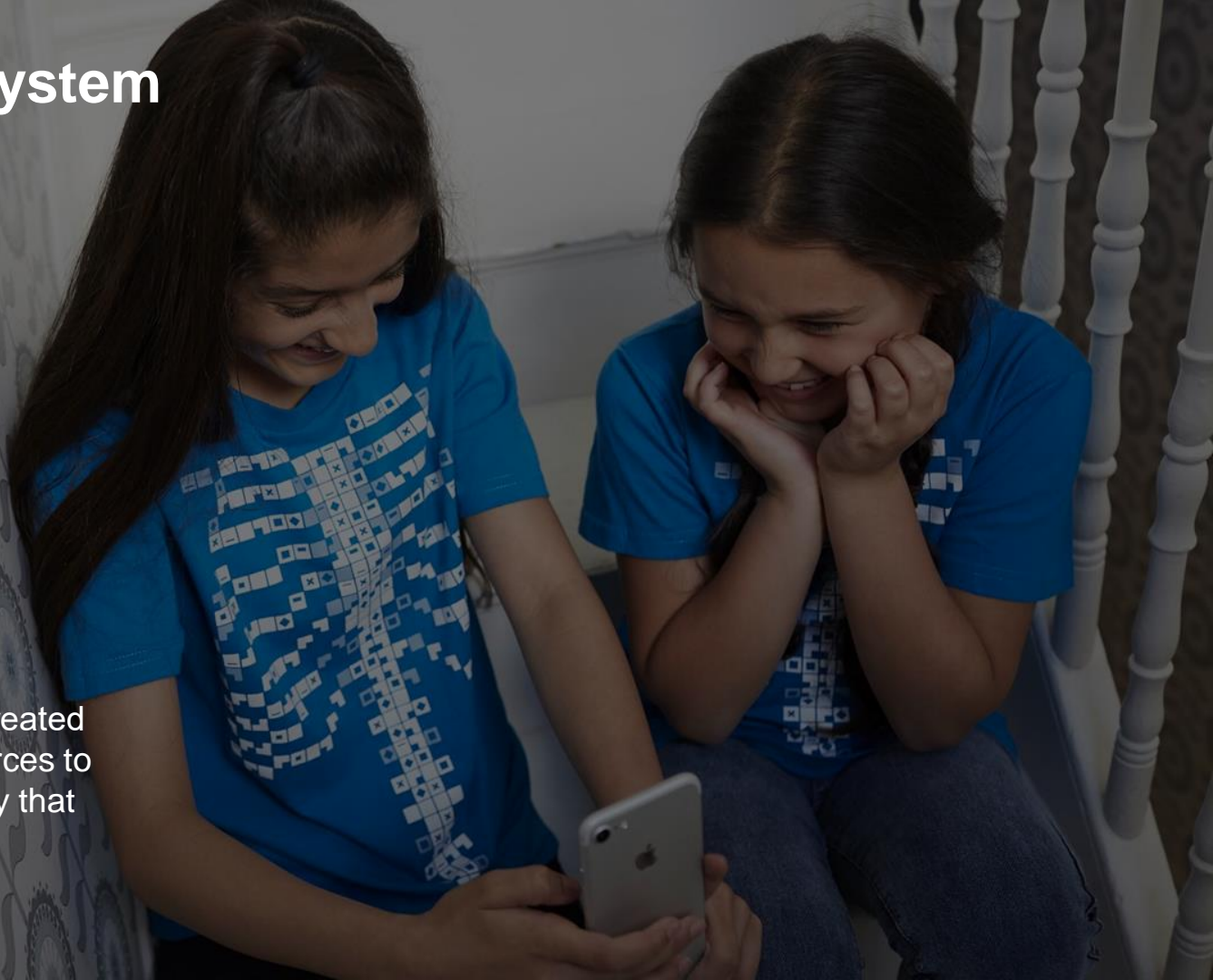


The Circulatory System

Primary/Elementary

“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

Primary / Elementary

The Circulatory System Objectives

- To describe how the circulatory system works
- To describe the purpose of the main parts of the circulatory system and their function



Let's get curious...

Have you ever cut your finger?

Where does the blood come from?

How does it get to your finger?

What would happen if you didn't stop bleeding?

Let's find out some more.....



A KWL Inquiry worksheet for the circulatory system is available in the teacher's resources repository at: <https://drive.google.com/drive/folders/17N-hPZnEAdBwevuxAYoTi-yasNatYQM9?usp=sharing>

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 heart is AMAZING!

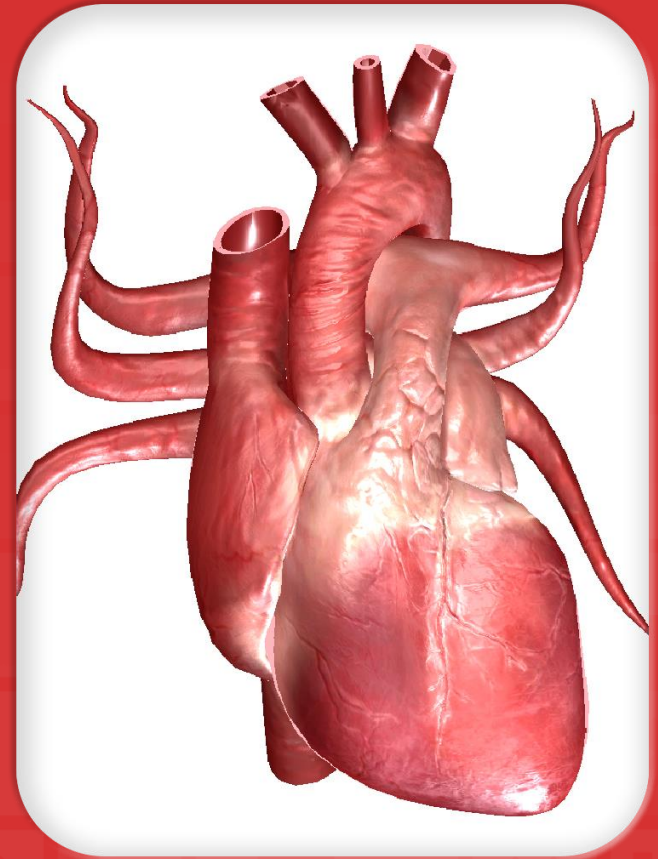
Your heart is a muscle which pumps your blood around your body.

In young people it beats at about 70 to 90 beats per minute (your heart rate or pulse)

It never takes a rest and keeps beating day and night for your whole life.

Doctors can listen to your heart with a stethoscope and you can feel your pulse on your wrist.

How fast is your heart beating now?



The Virtuali-Tee

Today we are going to be using a very special t-shirt to explore your circulatory system

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



What is the Virtuali-Tee?

A t-shirt that lets us see inside YOUR body using Augmented Reality!

We'll use a mobile device to scan the t-shirt with the app and open a portal so we can explore what is going on under your skin.



Step 1 - Getting started

To get started, simply open the Virtuali-Tee app and point at the t-shirt. The tracker image is best picked up by initially pointing at the upper chest with the device 0.5m/1.5ft from the t-shirt.

The tracking of the t-shirt requires that you are in a well lit space without heavy shadows and that the t-shirt is not stretched or heavily wrinkled.

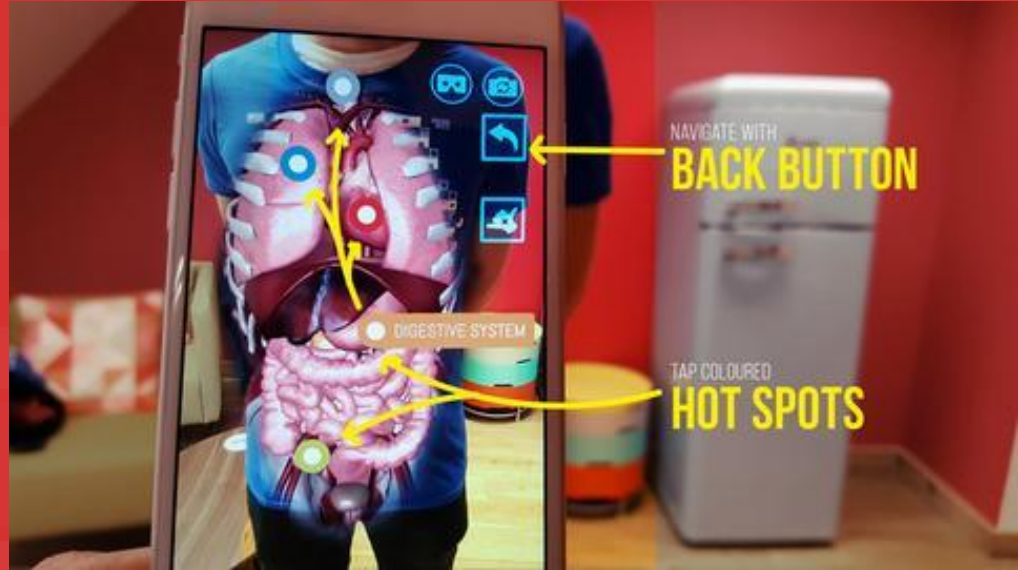


STARTING DISTANCE of
0.5 METRES

Step 2 - Wow, the organs look amazing...now what!?

Well, we have implemented some pretty cool features into the app. Just tap the screen to get started. You can then isolate the physiological system by tapping on the coloured hot spots. You'll see some buttons floating outside the chest, use the back button to navigate between systems.

We encourage you to explore, if you see a button....tap it to find out what it does!



Step 3 - Surprise! Meet Hans Glover.... your virtual expert on the body!

Think of Hans as a holographic guide to the body. He'll talk you through the anatomy and physiological systems in the body. Just tap the Hans button and he'll appear.

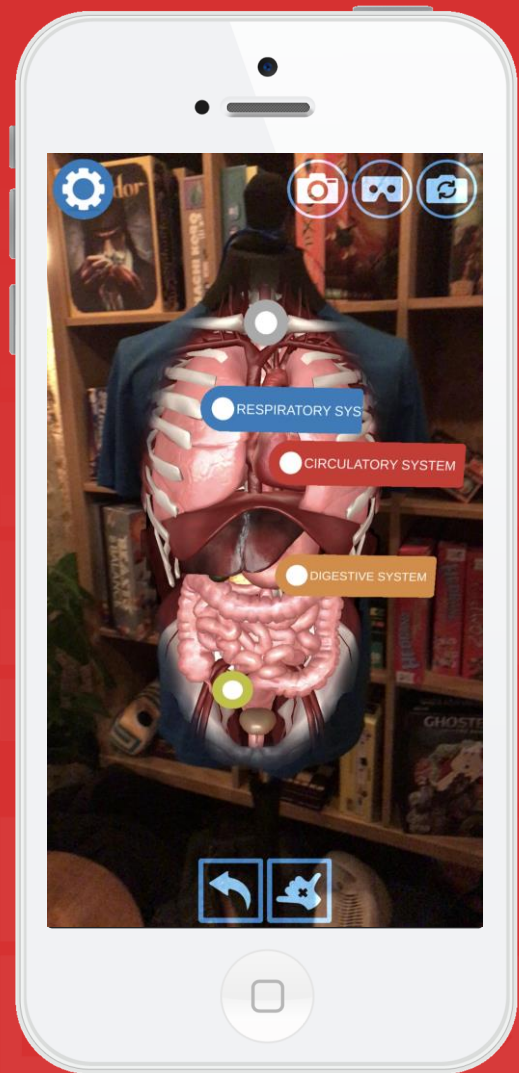


Getting into your circulatory system

Tap on the circulatory system hotspot and the app will isolate to just that system. See your heart beating!

Tap on the  button to call Dr Hans, who will give you a guided tour!

Tap the  button if you would like subtitles.



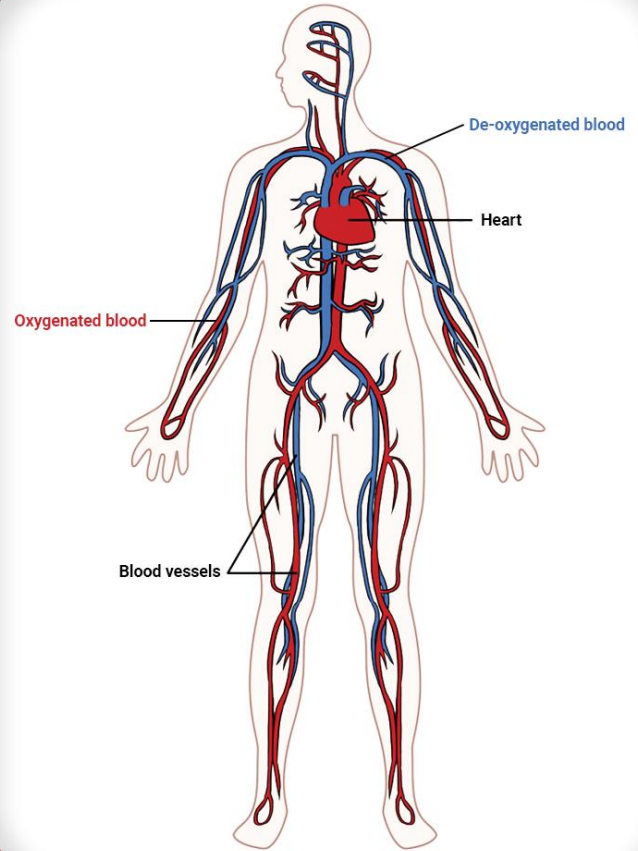
Circulatory system

The heart pumps blood through blood vessels around your body to deliver oxygen and nutrients to your organs and muscles.

Blood then returns to the heart with the oxygen and nutrients used up.

Tubes called Arteries take the blood away from the heart.

Tubes called Veins take the blood back to the heart.



Your blood is amazing!

Tap on the  icon in the circulatory system to look inside your bloodstream.

You can see the red blood cells and white blood cells and hear what they do.

Blood is made up of plasma (a yellowish watery liquid). Inside the plasma are blood cells.

The red blood cells carry oxygen and make blood red.

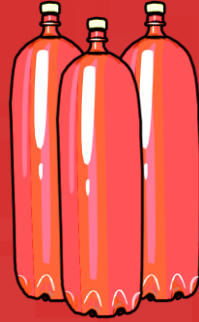
White blood cells fight infection.

FUN FACT There are 250 million red blood cells in a single drop of blood!



How much blood do you have?

The amount of blood you have depends on your height and weight.



An average 10 year old has 3 litres



The average adult has 5 litres

Curious facts!

If you were to lay all your blood vessels in a long line they would stretch about 60,000 miles (96,560 km)! (that's over two times around the entire world).

Your heart beats about 100,000 times a day.

Your heart beats without you having to think about it.

The image on the right is a satellite image of rivers in southern Australia. It's interesting that they look like blood vessels.



Quiz

Can you fill in the blanks and show what you've learnt today? Use the words in blue to help you.

Our heart is a _____ which pumps blood through our body. You can feel your _____ in your wrist. You can feel your heartbeat by placing your hand on your _____. If you get excited or do exercise your heart rate gets _____. Your blood delivers oxygen and nutrients to your body. A ten year old has about _____ of blood in their body. Blood is made of plasma and blood cells. _____ is carried in red blood cells. White blood cells fight _____. The right side of the heart receives blood from the body and the left side sends _____ from the lungs to the rest of the body. The process of blood going round the body is called _____.

Oxygen - infection - faster - muscle - chest - pulse -
circulation - 3 litres - oxygen-rich blood

Quiz

Can you fill in the blanks and show what you've learnt today? Use the words in blue to help you.

Our heart is a **muscle** which pumps blood through our body. You can feel your **pulse** in your wrist. You can feel your heartbeat by placing your hand on your **chest**. If you get excited or do exercise your heart rate gets **faster**. Your blood delivers oxygen and nutrients to your body. A ten year old has about **3 litres** of blood in their body. Blood is made of plasma and blood cells. **Oxygen** is carried in red blood cells. White blood cells fight **infection**. The right side of the heart receives blood from the body and the left side sends **oxygen-rich blood** from the lungs to the rest of the body. The process of blood going round the body is called **circulation**.

Keeping your heart healthy

Take regular exercise that makes your heart beat faster

Eat healthily – fruit and vegetables and not too much salt sugar or fat

Take time to relax and avoid too much stress

Don't smoke

Print friendly take home sheet

Students can enjoy colouring in and labelling a circulation diagram, indicating oxygenated blood in red and deoxygenated blood in blue. Arrows to be added to show the direction of blood flow.

The take home sheet is available in the teacher resources repository:

<https://drive.google.com/drive/folders/17N-hPZnEAdBwevuxAYoTi-yasNatYQM9?usp=sharing>

