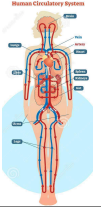

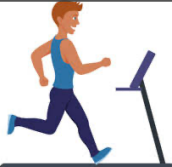
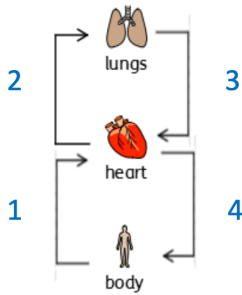


# Year 6 Science Knowledge Organiser - Animals including Humans

## Knowledge - Circulatory System

What is the circulatory system?		<ol style="list-style-type: none"> <li>1. The circulatory system is made of the heart, lungs and the blood vessels</li> <li>2. Arteries carry oxygenated blood from the heart to the rest of the body</li> <li>3. Veins carry deoxygenated blood from the body to the heart</li> <li>4. Nutrients, oxygen and carbon dioxide are exchanged via the capillaries</li> </ol>
Choices that can harm the circulatory system		<ol style="list-style-type: none"> <li>1. Some choices, such as <b>smoking</b>, drinking <b>alcohol</b> &amp; <b>over eating</b> can be harmful to our health</li> <li>2. <b>Tobacco</b> can cause short-term effects such as shortness of breath, difficulty sleeping and loss of taste and long-term effects such as lung disease, cancer and death</li> <li>3. <b>Alcohol</b> can cause short-term effects such as addiction and loss of control and long-term effects such as organ damage, cancer and death</li> <li>4. <b>Obesity</b> - being overweight contributes to vascular disease and potential blockages that stop the blood getting to the heart or around the body</li> </ol>
Why is exercise so important?		<ol style="list-style-type: none"> <li>1. Strengthen the heart</li> <li>2. Improve lung function</li> <li>3. Tone our muscles and reduce fat</li> <li>4. Increase fitness</li> <li>5. Make you feel physically and mentally healthier</li> <li>6. Improve skin</li> </ol>

## Circulatory System Diagram

Can you explain the diagram ?	
<ol style="list-style-type: none"> <li>1. Deoxygenated blood is sent to the heart from the rest of the body.</li> <li>2. This is then sent from the heart to the lungs. Here, the blood picks up oxygen and disposes of carbon dioxide.</li> <li>3. Oxygenated blood is then sent back to the heart.</li> <li>4. The heart sends the oxygenated blood back to the rest of the body</li> </ol>	

## Did you know...

The average heart is the size of a fist and how often your heart pumps is called your pulse.

## Dr Christiaan Barnard

First human heart transplant performed in South Africa 3/12/67



## Vocabulary

1. Aorta	The main artery through which blood leaves your heart before it flows through the rest of your body.
2. Arteries	A tube in your body that carries oxygenated blood from your heart to the rest of your body.
3. Blood Vessels	The narrow tubes through which your blood flows. Arteries, veins and capillaries are blood vessels.
4. Capillaries	Tiny blood vessels in your body.
5. Carbon dioxide	A gas produced by animals and people breathing out.
6. Circulatory System	The system responsible for <b>circulating blood</b> through the body, that <b>supplies nutrients and oxygen</b> to the body and <b>removes waste products</b> such as carbon dioxide.
7. Deoxygenated	Blood that does not contain oxygen.
8. Heart	The organ in your chest that pumps the blood around your body.
9. Lungs	Two organs inside your chest which fill with air when you breathe in. They oxygenate the blood and remove carbon dioxide from it.
10. Nutrients	Substances that help plants and animals to grow.
11. Organ	A part of your body that has a particular purpose.
12. Oxygenated	Blood that contains oxygen.
14. Respiration	Process of respiring; breathing; inhaling and exhaling air.
15. Vein	A tube in your body that carries deoxygenated blood to your heart from the rest of your body.
16. Vena Cava	A large vein through which deoxygenated blood reaches your heart from the body.

# Year 6 Science Skills Knowledge Organiser - Animals including Humans

## Key Concepts and what they mean

1. Physics	Physics is the study of energy and matter in space and time and how they are related to each other.
2. Chemistry	Chemistry deals with the properties of substances, the transformations they undergo, and the energy that is released or absorbed during these processes. For example, when plants use sunlight to produce energy (or food for itself).
3. Data Collection	Data collection is the process of gathering and measuring information to answer a question. For example, recording living and non living things to investigate whether numbers change depending on the weather.
4. Cause and effect	Cause and effect is the relationship between events or things, where one is the result of the other or others. For example, the weather gets colder and there is less food around, so animals hibernate.
5. Environmental	Environmental relates to the environment around us at Old Fletton.

## Experiment Steps to Success - Method

This part means what you did and how you did it. What were the steps that you took to complete your experiment? What did you do with the materials that you used? Think of this section as a step-by-step guide for your experiment.

Equipment list tells the reader exactly what they need to conduct the experiment.

- 1) You must include all the equipment needed including spoons, measuring equipment, paper towels
- 2) You must show quantities and details

For example:

Some water  **100ml of cold water**  
Beaker  **500ml glass beaker**

The method is a list of step-by-step instructions to tell the reader exactly what to do.

**Use imperative verbs:**

place, put, make, stop, pour, insert

**Use time connective words:**

next, before, after, whilst, first, second, afterwards

**Use time connective phrases:**

Before pouring, after taking, before heating, first measure



## Literacy links to this topic

Stories that relate to the topic of 'Animals including Humans' are:



Pig-Heart Boy by Malorie Blackman  
Skellig by David Almond

These stories help you to gain a greater understanding of animals including humans and may spark some questions that you might want to ask in your next science lesson!

## INDEPENDENT VARIABLE

VARIABLE THAT IS CHANGED

Amount of Water



## DEPENDENT VARIABLE

VARIABLE AFFECTED BY THE CHANGE

Size of Plant  
Number of Leaves  
Living or Dead?



## Experiment Steps to Success - Fair Testing

A fair test is a test which controls all but one variable when attempting to answer a scientific question. Only changing one variable allows the person conducting the test to know that no other variable has affected the results of the test.

To help remember how to conduct your fair test, learn the mnemonic:

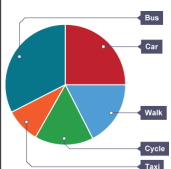


For example, testing how quickly three items - marshmallow, chocolate and wax - melt over time.

**Change 1 thing:** the item you are melting  
**Measure or observe:** melting / temperature  
**Same for everything else:** heating, beaker, size of item, thermometer

## Reading and Creating a Pie Chart

### How Children Travel to School



1. Pie Charts are a really good way to show relative sizes: it is easy to see what the most popular mode of transport is, and which are least liked, at a glance.
2. It should always be labelled, either directly on the pie chart or by means of a colour-coded key.
3. To make one, first put your data into a table, then add up all the values to get a total.
4. Next, to figure out how many degrees for each "pie slice" - divide the number (for each option) by the total and then multiply by 360.
5. Now you are ready to start drawing!