Year 4 Science Knowledge Organiser - Animals including Humans
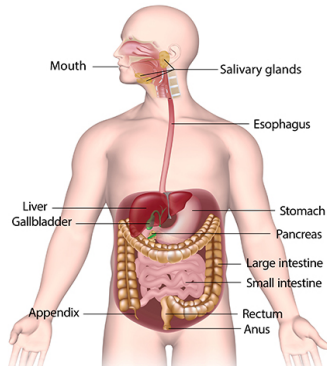
Knowledge - Teeth

Incisors	1. shovel shaped 2. help bite lumps 3. cutting food	
Canines	1. pointed 2. tearing and ripping food 3. usually used when eating meat	
Pre molars and Molars	1. flat 2. grind and crush food 3. chewing	

Knowledge - Taking care of your teeth

2 x Daily Brushing	Using a fluoride toothpaste and brushing morning and night.
Flossing	Using a cord of thin filaments to remove food and **dental** plaque from between **teeth** in areas a toothbrush is unable to reach.
Diet	Avoiding sugary foods, especially being left on the teeth for long periods and eating plenty of calcium-rich foods like cheese and green vegetables.

The Digestive System

How does the digestive system work?	1. The smell of food triggers saliva to be produced. 2. The digestive system begins with the mouth and teeth where food is ingested and chewed. 3. Saliva is mixed with the food which helps to break it up. 4. When the food is small enough to be swallowed, it is pushed down the oesophagus by muscles to the stomach (**peristalsis**). 5. In the stomach, food is mixed further. 6. The mixed, partially digested food is then sent to the small intestine which absorbs nutrients from the food. 7. Any leftover broken down food then moves on to the large intestine. 8. The food minus the nutrients arrives in the rectum where muscles turn it into faeces. It is stored here until it is pushed out by the anus. This is called excretion.

Vocabulary

1. Digestion	Breaking down ingested food material.
2. Oesophagus/ Esophagus	The part of your body that carries the food from the throat to the stomach.
3. Stomach	The organ inside your body where food is digested before it moves into the intestines.
4. Small Intestine	The part of the intestine that runs between the stomach and the large intestine.
5. Large Intestine	The major function of the large intestine is to absorb water from the remaining indigestible food matter.
6. Faeces	Waste matter remaining after food has been digested, discharged from the bowels.
7. Nutrients	A substance that provides nourishment essential for the maintenance of life and for growth.
8. Peristalsis	The involuntary constriction and relaxation of the muscles of the intestine or another canal, creating wave-like movements that push the contents of the canal forward.
9. Blood Stream	The blood circulating through the body of a person or animal.
10. Circulatory System	The system that circulates blood.
11. Carnivore	An animal that feeds on other animals (meat).
12. Herbivore	An animal that feeds on plants.
13. Omnivore	Person or animal eats all kinds of food, including both meat and plants.
14. Plaque	A sticky deposit on teeth in which bacteria thrive.
15. Tartar	A hard calcified deposit that forms on the teeth and contributes to their decay.

Did you know… Stomach rumbling or growling noises are NOT a sign you are hungry, but actually the sound of the stomach or small intestine churning to move food along - you are hearing the digestive process in action
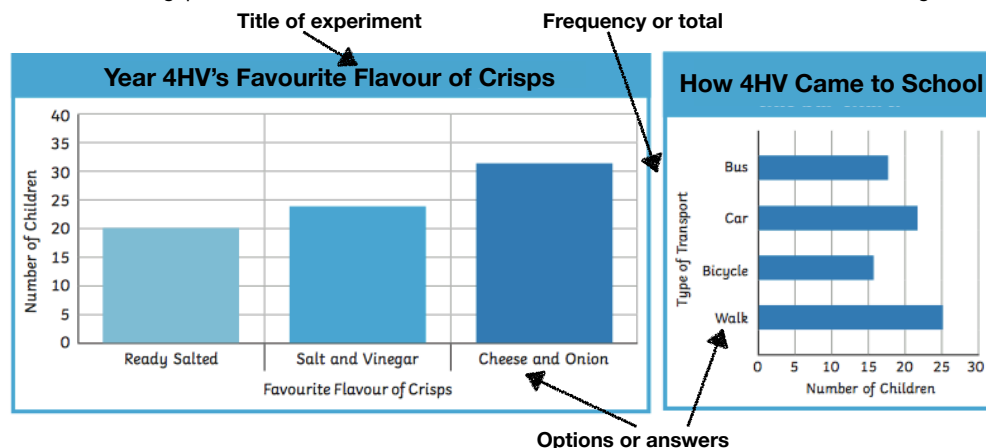
Year 4 Science Skills Knowledge Organiser - Animals including Humans

Key Concepts and what they mean

1. Biology	Biology comes from the greek word bio which means life and logy which means to study. It is the science of life and living organisms.
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. Envrionmental	Environmental relates to the environment around us at Old Fletton.

Reading Bar Charts

A bar chart has a horizontal axis and a vertical axis. Bars are used to show the data value of each category. There must be a gap between each bar. The scale of the bar chart is chosen based on the data range.

Title of experiment

Frequency or total

Year 4HV's Favourite Flavour of Crisps

How 4HV Came to School

Options or answers

| How to read the bar chart	For example
1. Look at the option or answer at the bottom 2. Look at the side scale to see what the lines go up in 3. Follow the bar upwards until it stops 4. This is the number or frequency of this option	Year 4HV's Favourite Flavour of Crisps 1. Options are ready salted, salt and vinegar or cheese and onion 2. The bars go up in 5s 3. Ready salted = 20, salt and vinegar = 23 and cheese and onion =32 How 4HV Came to School 1. Options are bus, car, bicycle or walking 2. The bars go up in 5s 3. Bus = 17, car = 23, bicycle = 16 and walk = 25

Literacy links to this topic

Stories that relate to the topic of 'Animals including Humans' are:
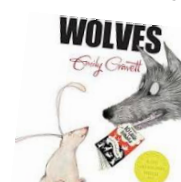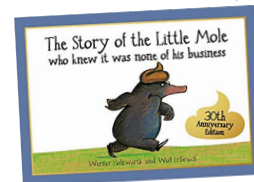
The Story of the Little Mole
who knew it was none of his business
by Werner Holzwarth
Wolves by Emily Gravett

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!

Experiment Steps to Success - Writing a Prediction

The purpose of the prediction is to tell your reader what you think will be the result of the experiment.

Good prediction
My prediction is that the coffee will stain the egg more than the other liquids.
This tells the reader what you think will happen but does not include any details.

Better prediction
My prediction is that the coffee will stain the egg more than the water and the coca-cola.
This tells the reader more information about what you are testing but does not state why you think the coffee will be the best.

Best prediction
My prediction is that the coffee will stain the egg more than the water and coca-cola. I believe this because the coffee is a thicker and darker liquid than the others, therefore will coat and stain the egg more than the thinner water or coca-cola.
This tells the reader what you think, what the other options are and why you think that using scientific reasoning.

Producing a Data Table

Data tables help you keep information organised. If you are collecting data from an experiment or scientific research, saving it in a table will make it easier to look up later.

1. Name your table - make sure the title relates to the data you will put in your table.
2. Decide how many columns and rows you need.
3. Draw the table. Using a ruler, draw a large box and making the necessary number of columns and rows.
4. Label all your columns.
5. Record the data from your experiment or research in the appropriate columns.

1)

Time taken for sweet to dissolve in different amounts of acid.

4)

Amount of acid	Time to dissolve
5ml	93s
10ml	84s
15ml	32s
20ml	12s

5)

2)