

Willerby Carr Lane Primary School - Science

Topic: Animals including Humans

Year: 4

Strand: Biology

What should I already know?

- How to be healthy by eating well and staying clean.
- Know the names for the main parts of the body.
- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores.
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.
- Animals, including humans, have offspring which grow into adults.
- Know the basic needs of animals, including humans, for survival (water, food and air).
- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.
- Animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food, they get nutrition from what they eat.
- Humans and some other animals have skeletons and muscles for support, protection and movement.

What will I know by the end of the unit?

What is the digestive system in humans?

- Humans digest food. They have a digestive system that allows them to do this. It is the system of organs that get food in and out of the body and which make use of the food to keep the body healthy.
- It is comprised of:
- Salivary glands, mouth, teeth, tongue, oesophagus, stomach, liver, gallbladder, pancreas, duodenum, small intestine, large intestine, rectum, anus.

What is the function of each part of the digestive system?

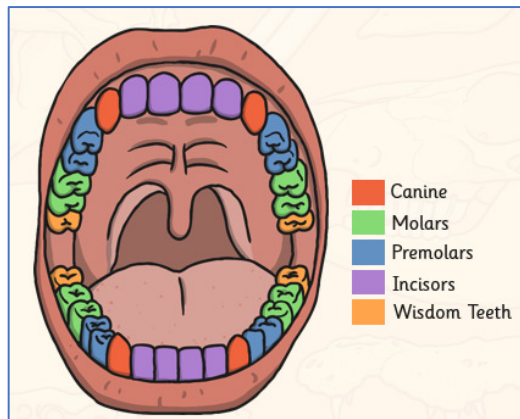
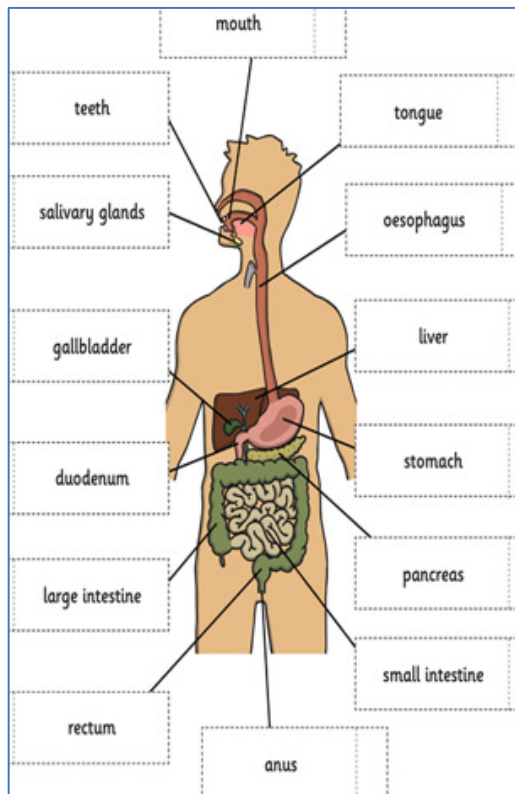
- Salivary glands: First part of the digestion process starts without you even eating! The smell of food triggers the salivary glands to produce saliva (some call it your mouth watering). The amount of saliva increases as you taste the food. Saliva is mostly made of water and it helps you to chew, taste and swallow food. Contains enzymes which start to break down the food we eat.
- Mouth: Entry point for food. Where saliva mixes with food. Location of tongue and teeth. Top part of the mouth (soft palate) helps move food along to the oesophagus.
- Teeth: Tear, cut and grind food into smaller pieces.
- Tongue: Helps mix the food and saliva.

- Oesophagus: A muscular tube which forms the path from the mouth to the stomach. Muscles contract and relax to move food down the oesophagus to the stomach.
- Stomach: Glands line the stomach produce acid and enzymes which breaks the food down further. Muscles in the stomach mix the food.
- Liver: Produces bile which helps to absorb fats. Bile is sent to the gallbladder to be stored.
- Gallbladder: Releases bile into the duodenum when needed.
- Pancreas: Produces enzymes to break down fats, proteins and carbohydrates. Releases them into the duodenum.
- Duodenum: Produces enzymes to break down fats, proteins and carbohydrates. Releases them into the duodenum.
- Small intestine: The other parts of the small intestine – (jejunum and ileum) absorb nutrients from the food. Pass any leftover broken down food to the large intestine.
- Large intestine: Connects the small intestine to the rectum.
- Absorbs water from waste food.
- Forms stool from waste food.
- Rectum: Stores stool passed to it from the large intestine.
- Makes brain aware of need to go to the toilet.
- Anus: Releases the stool. End of the digestive process.

What are the different types of teeth in humans and what are their functions?

- **Incisors:** Humans have 8 incisors altogether; 4 in the upper jaw and 4 in the lower jaw. Incisors are shovel-shaped. Used for biting and cutting food.
- **Canines:** Humans have 4 canine teeth, one in each quarter of the mouth, on either side of the incisors. Canines are pointy. Used for tearing and ripping food. Holding and crushing food.
- **Premolars:** Humans have 8 premolars, two in each quarter of the mouth. They are between the canine tooth and the molars.
- **Molars:** Humans have 8 molars, two in each quarter of the mouth. They are at the back of the mouth behind the premolars. Large and flat. Grinding food.
- **Wisdom Teeth:** Humans can have up to 4 wisdom teeth, although not everyone has them. There is 1 in each quarter of the

	mouth behind the molars. Large and flat (they are just a third molar) Some scientists think that human ancestors needed a third molar to help grind down plant tissue from thicker leaves when humans still ate them. Since the diet of humans has changed we don't need them.
What is a food chain? What are producers, predators and prey?	<ul style="list-style-type: none"> • A food web is a series of organisms related by predator-prey and consumer-resource interactions; the entirety of interrelated food chains in an ecological community. • Producers: An organism, as a plant, that is able to produce its own food from inorganic substances. • Predators: Any organism that exists by preying upon other organisms. • Prey: An animal hunted or seized for food, especially by a carnivorous animal.



Vocabulary	
acids	the bacteria in plaque produce acids that attack tooth enamel.
anus	stools are released from here at the end of the digestive system.
canines	the sharpest teeth. they are next to the incisors and are used for tearing. they are sharp and pointed in predators for killing prey.
crown	visible part of the tooth.
decomposers	decomposers are fungi or bacteria that break down decaying plants or animals. they do not eat as they have no mouths but instead turn decaying material into liquid and absorb this.
dentin	found underneath the enamel and is similar to bone.
detrivores	detrivores eat decaying plant and animals.
digestive system	the 10 organs which process food, supplying cells with energy and nutrients.
enamel	the visible part of the tooth, it protects the tooth.
enzymes	enzymes are special molecules in the body (molecules make up cells, which make up tissue, glands, organs, etc). they act to create a chemical reaction. in the digestive system the reaction they produce breaks down food. there are lots of different types of enzymes, as a type of enzyme can only do one thing – so enzymes that break down protein cannot also break down carbohydrates. they are often thought of as a lock
gallbladder	stores and releases bile.
glands	glands are organs that release fluids to be used in the body e.g. tears and sweat.
incisors	teeth at the front of the mouth and used for biting.
liver	produces bile to break down fats.
molars	the teeth at the back of the mouth. they are used for chewing and grinding food and are wide and flat in shape
oesophagus	the path from the mouth to the stomach.
pancreas	produces enzymes to breakdown fats, proteins and carbohydrates.
peristalsis	peristalsis is the involuntary movement of the muscles in the digestive tract.
plaque	a sticky film of bacteria, constantly forms on your teeth.
premolars	flat, wide teeth which are used for chewing towards the back of the mouth.
pulp	found in the centre of the tooth and is full of blood vessels and nerves. it supplies the tooth with nutrients.

rectum	stools are stored here and informs brain of the need to get rid of waste.
root	the part of a tooth below the neck of the tooth, covered by cementum rather than enamel.
salivary glands	produces saliva to soften food in the mouth and begin digestion.
scavengers	scavengers eat dead animals and so are a type of detritivore.

small intestine	nutrients are absorbed from food, waste is passed to the large intestine.
stomach	food is broken down by bile and enzymes.
tongue	mixes food and saliva.
tooth decay	the destruction of your tooth enamel, often causes pain.

Investigate!

- How long is my gut?
- Maths / science – predict after estimating the length of the digestive system.
- What happens to the food I eat?
- Create the journey of food. Write an explanation text to show the process.
- Investigate my own teeth and compare them to diagrams.
- Investigate how enamel can be damaged by food and drink.
- Investigate the terms predator, prey and producer.
- Create and explain a food web.

Common misconceptions

Some children may think:

- arrows in a food chains mean 'eats'
- the death of one of the parts of a food chain or web has no, or limited, consequences on the rest of the chain
- there is always plenty of food for wild animals
- your stomach is where your belly button is
- food is digested only in the stomach
- when you have a meal, your food goes down one tube and your drink down another
- the food you eat becomes "poo" and the drink becomes "wee".