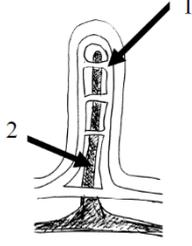
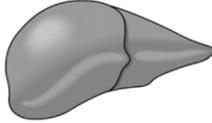
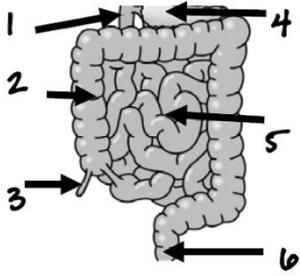
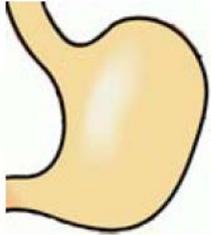
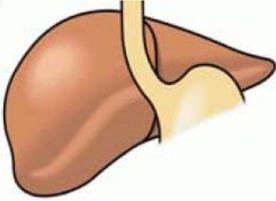
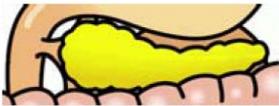
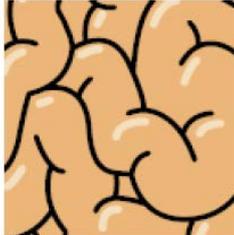
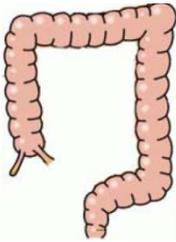


 <p>tooth type and job</p>	 <p>tooth type and job</p>	 <p>tooth type and job</p>	<p>All teeth have similar structure, with a crown and root(s), but have <u>different shapes</u> to help them perform .....</p>
<p>incisor - chisel-shaped to cut food</p>	<p>canine - for tearing and ripping food apart</p>	<p>molar - shaped to crush and finally grind food</p>	<p>different functions / jobs</p>
 <p>be able to sketch and label a tooth</p>	<p>join small molecules together to make larger ones is known as .....</p>	<p>different teeth do different jobs. incisors cut, canines tear, pre molars &amp; molars crush/grind</p>	<p>salivary amylase where.... what does it do?</p>
<p>enamel, dentine, pulp cavity, nerves &amp; blood vessels, gum, bone, crown and root</p>	<p>metabolism</p>	<p>why humans have more than one type of tooth</p>	<p>in the mouth, released from salivary glands; digests starch to maltose</p>
<p>incisors canines premolars molars <math>i = 2/2</math> <math>c = 1/1</math> <math>pm = 2/2</math> <math>m = 3/3</math></p>	<p>mechanical digestion what is it? where does it occur?</p>	<p>epiglottis what is it? where is it? what is its function?</p>	<p>break large insoluble molecules into smaller soluble ones that can be absorbed into the blood – for nutrients and for energy</p>
<p>dental formula for humans</p>	<p>physical breakdown of food in mouth (teeth) and stomach (churning)</p>	<p>flap at the rear of the tongue; stops food going down windpipe</p>	<p>purpose of digestion</p>
<p>oesophagus what is it? how is food moved along it?</p>	<p>liver how does it help in digestion?</p>	<p>small intestine what is it? how does it help in digestion?</p>	<p>stomach what is it? how does it help in digestion?</p>
<p>tube from mouth to stomach; by peristalsis</p>	<p>does not make enzymes but makes bile to emulsify fats to increase their SA</p>	<p>long tube with large SA due to villi to absorb digested food molecules</p>	<p>muscular bag; physical and chemical digestion of food (protein)</p>

pancreas - how does it help in digestion?	large intestine (colon) - what is its major job?	rectum - where is it? what does it do?	villi - what are they? where are they? what is their job?
produces enzymes and $\text{NaHCO}_3$ to neutralise acidic chyme	reabsorption of water (and useful minerals)	between large intestine and anus. stores faeces prior to egestion.	small intestine. increase its SA for absorption of digested food
lipases enzymes that digest ... to ...	 <p>villus</p>	villi line the small intestine increasing sa for absorption of digested food 1. capillaries absorb... 2. lacteal absorbs....	proteases are enzymes that digest ... to ...
fats / lipids to fatty acids and glycerol	1. capillary 2. lacteal	1. sugars & amino acids 2. fatty acids & glycerol	proteins to peptides OR peptides to amino acids
carbohydrases; enzymes that digest ... to ...	bile - where is it produced? stored? what are 2 functions?	hydrochloric acid, HCl where is it produced? what are 2 functions?	proteins are digested to ... and then to ...
starch to sugars or larger sugars to simpler sugars	liver gall bladder emulsify fats and neutralise acidic chyme	pits in stomach wall; helps pepsin digest protein and kills microbes	peptides amino acids
why does the pH of the chyme have to be different in different parts of the digestive system?	what happens to enzymes above certain temperatures? is this permanent?	why doesn't chemical digestion of all food types start in the mouth?	what is peristalsis? or why could you eat standing on your head?
different enzymes need different pH levels to work	denatured yes – permanent	food not there very long plus only has an enzyme there to digest starch	rhythmic contractions of wall of digestive system that pushes food along

<p>name the 3 organs</p> 	<p>name of enzyme type made by the pancreas and small intestine that digests fats</p>	 <p>what is it? what's its role in digestion?</p>	
<p>liver, stomach, pancreas</p>	<p>lipase</p>	<p>produces bile to emulsify fats and raise the pH of chyme</p>	<p>1. duodenum 2. large intestine 3. appendix 4. pancreas 5. small intestine 6. rectum</p>
<p>enzymes are specific – what does this mean?</p>	<p>food is broken down mechanically by chewing making it easier to swallow &amp; increases sa for enzymes. saliva added containing amylase, that digests starch to maltose.</p>	<p>tube between the mouth and stomach. food is moved along it by peristalsis, waves of muscular contractions.</p>	
<p>will only work on a particular substrate molecule</p>	<p>mouth</p>	<p>oesophagus</p>	<p>stomach</p>
	<p>major role in digestive process is to provide bile to the small intestine, to aid fat digestion. bile emulsifies fats to increase their sa. bile is alkaline – neutralises acid stomach contents.</p>	<p>provides a potent mixture of enzymes to the small intestine for digestion of fats, protein and carbohydrates. produces alkaline <math>\text{NaHCO}_3</math> to neutralise acid stomach contents.</p>	<p>Muscular bag churns &amp; mixes – _mechanical digestion. Enzymatic digestion of proteins occurs by PEPSIN and foodstuffs are reduced to liquid form. Contains HCl. Walls coated in <u>mucus</u></p>
<p>liver (and stomach)</p>	<p>liver</p>	<p>pancreas</p>	<p>stomach</p>
			<p>small soluble food particles pass from gut into capillaries</p>
<p>pancreas</p>	<p>small intestine</p>	<p>large intestine</p>	<p>absorption</p>

where final stages of enzymatic digestion occur & almost all nutrients are absorbed; lined with villi to increase SA for absorption	water is absorbed, bacterial fermentation takes place and compaction of wastes forms the faeces.	carbohydrates are broken down into ... by carbohydrases	what word means "food is taken into the mouth"?
small intestine	large intestine	soluble single sugars such as glucose	ingestion
physical and chemical (enzymes) breaking down of food	lipids can be broken down into...	occurs when food is broken down into smaller pieces by the teeth or the muscle action of the stomach wall	soluble amino acids, sugars, fatty acids and glycerol are used by cells for ..... and .....
digestion	fatty acids and glycerol	physical / mechanical digestion	energy and growth
the shape, structure, number and position of ..... vary, depending on what the mammals diet mainly consists of.	herbivores need to break down the tough ..... cell wall of the plant to access the available energy. their modified molars and jaw allows them to do this.	carnivores need to be able to catch, kill, tear, and rip flesh off other animals they catch and kill; teeth type used are the .... teeth	carnivores need to be able to cut flesh; teeth acting like scissors are the .... teeth
teeth	cellulose	canine	carnassial / molars
small soluble food molecules enter cells and used for growth, repair and cellular respiration	undigested food such as plant fibre leaves the anus as faeces	the organ system that transports material in blood such as food or oxygen to every cell in the body and removes waste such as carbon dioxide	system that gets oxygen into the body and removes carbon dioxide
assimilation	egestion	circulatory system	respiratory system

✂ No Brain Too Small ✂

usually broad flat teeth which are used to grind plant matter; lower incisors and canines modified for biting off vegetation, often lack upper incisors & canines; may have a diastema.	have pointed incisors and canines designed for killing prey and ripping muscle. the premolars and molars are designed to crush food.	relatively unspecialised compared to herbivores & carnivores; teeth designed for biting (incisors), tearing (canines), grinding (premolars), and crushing (molars)	digestive enzymes break down macromolecules into their smaller building blocks, to facilitate their ..... by the body
herbivores	carnivores	omnivores e.g. humans	absorption
the ..... produces bile which is stored in the gall bladder. pH 7.5-8.0	bile breaks up large globules of fats and oils (with a small surface area) to form a suspension of many small droplets (with a large SA) – a process called .....	respiration that needs oxygen for it to occur so it is called ..... respiration	glucose + oxygen → water + carbon dioxide + energy
liver	emulsification	aerobic	aerobic respiration
have many blood vessels (capillaries), allowing nutrients to be absorbed into the blood stream	takes place in all cells to produce the energy that they require	respiration that can occur without oxygen is called ..... respiration	maximise the absorption process by increasing the surface area where nutrients can enter the blood stream
villi	respiration	anaerobic	villi
rabbits eat a lot of ..... and they have an enlarged ..... containing bacteria, which help them break down the cellulose	rabbits have an enlarged caecum containing ..... which can digest cellulose – as the rabbit does not produce a cellulose digesting enzyme	the digestion of plant material is ..... than the digestion of meat	..... have a shorter digestive system as they can more easily obtain energy from the meat that they eat, as protein is easily digested in the stomach
cellulose caecum	bacteria	harder / slower	carnivores

enzymes are proteins that speed up or ..... chemical reactions in living things	are specific for a particular reaction, have optimal pH requirements, are affected by temperature – many have an optimal temp of 37°C.	moistens, softens and lubricates food and contains the enzyme amylase; has a ph around neutral	thick muscular walls of the ..... are constantly contracting to mix the food with the gastric juices to produce chyme
catalyse	enzymes	saliva	stomach
have very thin surface so nutrients can easily be absorbed across them	the process of releasing energy from the breakdown of glucose	energy released by respiration is used to make an energy storing molecule called ..... for use later on by the body	$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{energy}$ is the equation for ...
villi	respiration	ATP	aerobic respiration
second part of small intestine where absorption of nutrients from digested food occurs	rabbits have a longer intestines than dogs because the digestion of plant food is more ....., so it needs to be in the digestive system for a ..... time	carnivores have a shorter intestine than herbivores as the ..... they eat can more easily be digested therefore their digestive system is shorter	rabbit has a longer ..... as it needs more time to absorb water / digested molecules into the blood after they have been digested in the caecum
ileum	difficult longer	protein / meat	large intestine
type of animal / feeder that has a jaw that chews from side to side	in herbivores bacteria produce the enzymes to digest the .....	folds on the villi that further increase their surface area	absorb amino acids and glucose and water in the villi
herbivore	cellulose	microvilli	capillaries

type of tooth in a carnivore that penetrates with great force and can penetrate vital organs	structures in villi that absorb fatty acids digested fats / lipids into the lymph system	villi / microvilli are very thin walled for easy or quick ..... of digested food	finger-like projection shape of the villi increases the ..... available for absorption of digested food
canine	lacteals	absorption or diffusion	surface area
if an enzymes conditions change, the enzyme is ..... so the enzyme can no longer function as efficiently and the reaction slows down / stops	part of enzyme where substrate molecule fits and is converted to product molecule(s) is called the ....	a [long / short] gut increases surface area and separates enzymes so optimum conditions provided	when the food enters the mouth, the conditions are ..... pH; this allows salivary amylase to work most efficiently
denatured	active site	long	(almost) neutral
denaturing is a [reversible / irreversible] process	amylase cannot function when food is swallowed as it is too ..... in the stomach and the amylase is denatured	different ..... levels provide optimum conditions for enzyme activity in different part of the digestive tract.	the enzyme in the small intestine works more efficiently in slightly ..... ph conditions.
irreversible	acidic	pH	alkaline
protein molecules that act as catalysts	organ system whose function is exchanging gases with the environment or getting oxygen into the body and removing carbon dioxide	a [long / short] digestive tract means the enzymes spend a ..... time in contact with the food molecules (substrate)	job of the ..... is to absorb fatty acids from the small intestine, which have come from the digestion of fats or lipids
enzymes	respiratory	long	lacteal (lymph capillary)