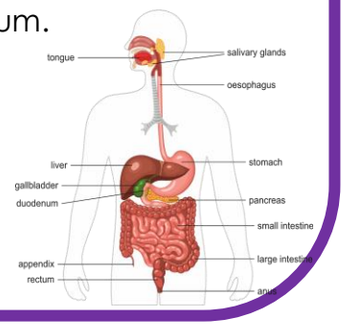
Year 8 Science: Term 6
The Digestive System- Plant Nutrition- Light

Week 1

The digestive system

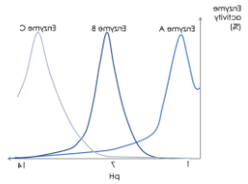
In the digestive system, food passes through the mouth, oesophagus, stomach, small intestine, large intestine and rectum. It leaves the body through the anus. The liver produces bile, which is stored in the gallbladder and secreted into the duodenum.
The pancreas is also involved in digestion by producing enzymes, which are secreted into the duodenum.

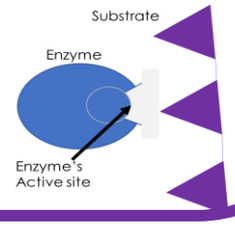


Week 2

The digestive enzymes

Enzymes are protein molecules which act as catalysts to speed up reactions. They are not used-up in these reactions. The molecules that enzymes act upon are called substrates. An enzyme is specific for its substrate like a key is for its lock. This is called the 'lock and key model' .Enzymes work to speed up the digestion of large molecules into smaller, soluble molecules.

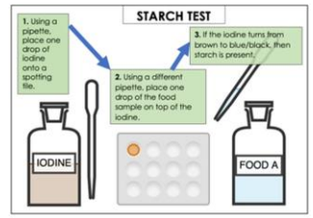


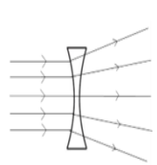


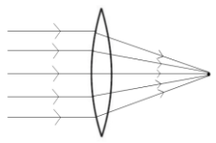
Week 3

Plant nutrition

Plants can be damaged by deficiencies. They get most of their nutrients from the soil via their roots. For example: they need magnesium to make chlorophyll. Chlorophyll is the pigment that absorbs light for photosynthesis. If plants are deficient in nitrates or magnesium, they may not be able to build chlorophyll. If plants cannot absorb as much light, they cannot photosynthesise as much.





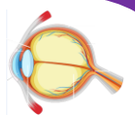


Week 4

Understanding light

Light transfers energy and travels in straight lines. All objects reflect some light (which is how we can see them). Rough objects scatter light. This is when light bounces off in many directions. When you look at a smooth, reflective surface you can see a clear reflection image. Rays of light can be reflected from some surfaces, e.g. mirrors. They hit the surface and travel in a different direction. Opaque objects stop light from passing through them. Light travels in straight lines so a shadow appears behind the object.

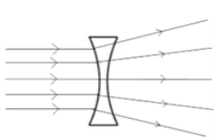
Week 5 & 6



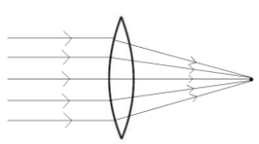
Refraction & Lenses

Refraction is when the direction of light changes because it has changed speed as it has travelled from one medium to another.

Lenses are made from a transparent dense material, which refract light when it passes through. Animals have lenses in their eyes to focus light. Some lenses refract light to a focal point, where all the rays meet. There are two types of lens: concave and convex lens.



Concave lens



Convex lens

Key words:

Digestion - is the process of breaking down large food molecules into smaller molecules that can be absorbed into the blood.

Enzyme- is a biological molecule that is a catalyst that speeds up the rate of a reaction.

Chloroplast- a part of plant cell that contains a green pigment called chlorophyll.

Transmit – pass through e.g. the light can be transmitted through the bottle.

Luminous – object emits (gives out) light e.g. torch.

Non-luminous – object does not emit light e.g. tree.

Year 8 Science: Term 6
The digestive system -Plant nutrition-Light

Week 1

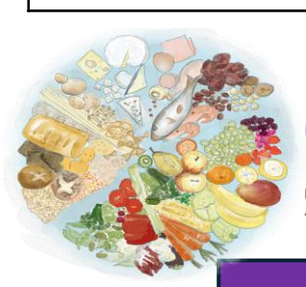
Questions	Answers
Name two types of digestion.	Mechanical (physical) and chemical.
Which part of the digestive system produces bile?	The liver produces bile,
Describe the result of a positive test for starch.	Iodine turns blue/black
Explain the function of enzymes in the digestive system.	To speed up the digestion of larger molecules into smaller, soluble molecules.
Identify the product of the digestion of starch.	Glucose

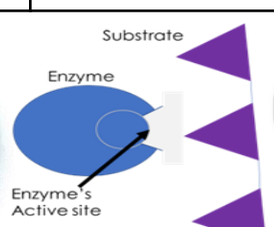
Week 2

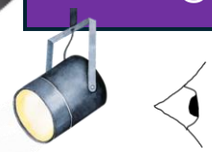
Questions	Answers
Name the enzyme that works to speed up the digestion of proteins.	Protease
What does the optimum pH of an enzyme mean?	The pH at which it works best.
What colour would Universal Indicator turn in an acidic substance?	Red/orange
What substrate does carbohydrase help speed up digestion of?	Carbohydrates (e.g. starch
What are the products of the digestion of lipids?	Fatty acids/ glycerol

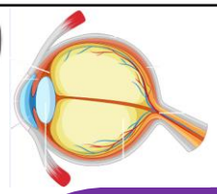
Week 3

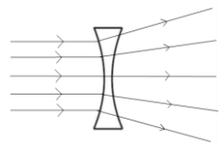
Questions	Answers
What does the plant use proteins for?	Growth and repair of tissues
Name the organelle where photosynthesis takes place.	Chloroplasts
What is produced during photosynthesis?	Glucose and oxygen
What is the danger if the plant does not get enough magnesium?	The plant will not be able to absorb sunlight for photosynthesis
What would we expect the results of the starch test to be on green parts of a leaf?	Iodine to turn blue/black

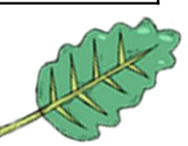












Week 4

Questions	Answers
Name two light sources.	The Sun, a lamp.
How sunlight can be dangerous to humans?	It can damage the eye (specifically the retina).
Name two pathways by which energy can be transferred.	By heating, by electricity or by radiation.
What two things are needed to form a reflection?	Light and a reflective/smooth surface
What is the name of the ray that comes back from the reflective surface?	Reflected ray.

Week 5 & 6

Questions	Answers
Explain the difference between translucent and transparent materials.	Most light is transmitted by transparent materials but only some of the light by transmitted in translucent materials.
Describe the type of surfaces that are good reflectors.	Shiny, smooth, silvery surfaces
Describe when light may change direction.	Light changes direction when it crosses from one medium to another.
Describe how light travels.	In straight lines (at 300000 km/s)
Name types of lens.	Concave and convex lens.

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