

Year 8 Parents Evening

June 2025

Science Department

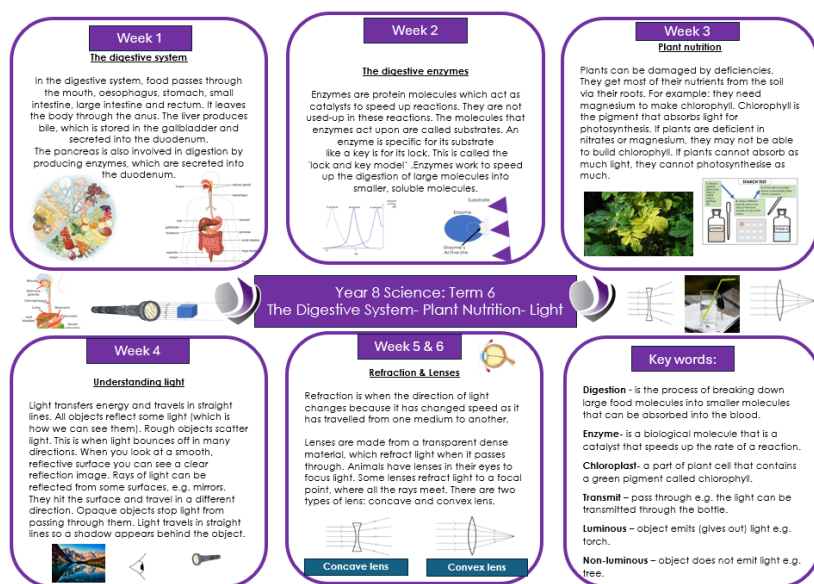
The Key Stage 3 Science Syllabus

In science lessons students study Biology, Chemistry and Physics in discrete modules following the Ark scheme of learning which has been designed to engage our learners and build skills and knowledge leading towards GCSEs. After each topic, students complete a mastery quiz which allows us to check progress in knowledge and understanding on a regular basis. They complete an end of term assessment each term.

Knowledge Organisers

Revision Tips/ Techniques

- Use Knowledge Organisers to consolidate and check weekly knowledge – practice answering the questions on the back
- Module mind maps
- Learn key words, use pictures, colours, highlighting
- Posters, including diagrams, pin them up where you will see them
- Make flash cards for each topic
- Play quizzes on GCSE Bitesize or Quizlet



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.

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.

Useful websites

There are many useful online resources that pupils can access for free. Here are some examples of useful websites with relevant material.

1. Seneca Learning for revision and consolidation materials

<https://senecalearning.com/en-GB/blog/free-key-stage-3-science-revision/>

2. BBC Bitesize is a collection of revision materials, quizzes and tests that pupils find accessible

<https://www.bbc.com/bitesize/levels/z98jmp3>

3. Education Quizzes that can be played individually

<https://www.educationquizzes.com/ks3/>

GCSE Options in Year 9

Where can your Science GCSE's take you?

The next stage in your education is split into 4 different levels:

Entry level – This is where you start if you have no GCSE grades

Level 1 – This is where you start if you have GCSE's grade 2 or under

Level 2 – You can usually start on these courses with grade 3's

Level 3 You can start on these courses if you have grade 4's or above (in usually five subjects. Courses These include BTECs and A Levels

Science is worth 2 of these!!!

You want to aim to start at Level 3 – think of the difference in earning potential. If you finish college a year earlier, it's worth about £36,000!

Everyone takes combined science, which is worth 2 GCSEs. When you choose your options in year 9 you can opt to take Triple Science which is worth 3 GCSEs

Triple Science

Taking triple science at GCSE will keep open a variety of career options and directions for the future providing students with a wide range of transferable skills highly regarded by employers.

Students can go on to pursue a variety of worthwhile, rewarding and challenging careers including:

- engineering; veterinary; biomedical science; medicine; pharmacology; analytical chemistry; food science; optometry; sports and exercise science; medical physics; nutrition; marine biology; materials science; conservation and forensic science.

People in Science careers earn much higher wages...

something to think about