

Curriculum Intent for KS3 and KS4 Biology in 2021-22

Our Learning Journey as building blocks

Each row shows the progression of a key principle over the 5 years, with the core principles first. (overleaf).

Core Principles of Teaching and Learning in Biology at Lord Grey

As a content heavy subject, overlaid with investigative, literacy and mathematical skills, we have unique hurdles to overcome. As such our core principles will be:

- Show Not Say - Where possible students will be given practical and demo opportunities - not only through investigations, but through cards sorts, word games and other hands on/think first methods.
- Macro to Micro - Teach what they can see first, then what they can't. This prevents repeated content and helps students to understand each concept in turn, whilst allowing for retrieval practice. e.g. we teach the nucleus in y7, chromosomes in y9 and DNA structure in y11.
- Think First - Gone are the walls of text! Key information is already in their booklets, and slides are built as Q&A, to allow students the time to think, rather than hurriedly copy. This also encourages students to allow themselves to be wrong.
- Tick and Fix - Low stakes questioning is core to our lessons, so students can make connections and realign any misconceptions.

Lord Grey Biology Website

This will be our 'one stop shop'. It already has many specific revision resources and links sorted by topic, and will now be populated with links to all the lesson resources sorted by week, which are to be stored on virtual school.

This allows easy access for students studying from home, in refocus etc.

Self Study Expectations at Lord Grey

KS3 students will be expected to do complete one Seneca retrieval task each week;
KS4 students will be expected to complete either one GCSE Pod retrieval task or one flipped classroom task each week.

Flipped Classroom for Biology at Lord Grey

To use contact time to the best advantage of our students, and allow opportunities for students to independently 'show not say', and to 'think first', certain concepts will be set in advance of the lesson, via the biology website or google classroom.

This will allow staff to spend the lesson working with students on model answers, exam technique, working through misconceptions, and HOTS.

The Biology Learning Journey - Building Blocks

Year 7	Year 8	Year 9		Year 10	Year 11
B.T1 cells, microscopes, scale organisation B.T3 fitness, health	B.T5 digestion, breathing	B1.1 cells, microscopes B1.2 scale	B2.1 principles of organisation B2.2a digestion, B2.2b respiratory system, circulatory system B2.2c heart disease, cancer	B3 diseases, B5 nerves, reflex arc endocrine system B3 immune system, vaccinations	
B.T1 specialised cells		B1.1 specialisation B1.2 mitosis			B6.1 inheritance DNA, mitosis, meiosis B6.2 genetic engineering B6.3 resistant bacteria
B.T1 diffusion	B.T4 plant transport B.T5 gas exchange in humans & plants	B1.3 diffusion, osmosis, active transport	B2.3 transpiration B2.2 absorption, gas exchange	B5 homeostasis, blood glucose	
B.T3 balanced diet	B.T4 photosynthesis, respiration B.T4 and B.T5 biological molecules B.T5 enzymes		B2.2a biological molecules, food tests B2.2a enzymes	B4 photosynthesis, respiration metabolism	
B.T2 plant structure	B.T4 leaf structure		B2.3 plant and leaf structure		
B.T2 food chains and webs, predator prey	B.T4 decay				B7.1 biotic/abiotic factors, adaptations B7.2 food chains and webs, predator prey
	B.T6 biodiversity				B7.2 water cycle, carbon cycle B7.3 biodiversity, global warming
B.T2 pollination B.T3 reproductive systems	B.T6 variation, selective breeding, natural selection, extinction				B6.2,3 and 4 classification, evolution, variation, selective breeding, natural selection, extinction
B.T3 menstrual cycle, fertilisation				B5 reproductive hormones, menstrual cycle hormones	
B.T3 drugs				B3 antibiotics and painkillers B5 contraception and infertility	