

Curriculum Map

Year 12 Biology

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Date	Week	Topic 1	Prep work	Topic 2	Prep work
01-Sep	1	GCSE recap, Transport medium and circulatory system	Memorise the heart structure pg 6	GCSE recap, Gas exchange	Memorise the structure of an amino acid and a dipeptide, pg 36
08-Sep	2	The heart + cardiac cycle	Memorise blood vessels structure and function pg 7	Protein structure	Memorise the structure of the fluid mosaic model pg 30
15-Sep	3	Blood vessels + Atherosclerosis	What are the steps of the clotting cascade? pg 13	Cell membranes + <i>consolidation lesson on all concepts taught</i>	Which molecules can move by a) diffusion b) facilitated diffusion c) osmosis d) active transport e) endo and exocytosis? Pg 32 and 33



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22-Sep	4	Clotting + <i>consolidation lesson on all concepts taught</i>	What makes a good study? Pg 3 and 17	Cell transport + intro assessment	
29-Sep	5	CVD risk factors and what makes a good study	What are the ethics about using invertebrates such as daphnia? Pg 10	CFTR channel proteins	How do temperature and alcohol affect the membrane permeability? Pg 34 and 35
06-Oct	6	Required practical 1 the effect of caffeine on daphnia heart rate	What are the structures of a monosaccharide, disaccharide and triglyceride? Pgs 22, 23 and 24	Required practical 3 investigate membrane structure, including the effect of temperature on membrane permeability + <i>consolidation lesson on all concepts taught</i>	Label a lock and key diagram and describe how this is different to the induced fit model, pg 38 and 39
13-Oct	7	Carbohydrates and lipids	What causes an energy imbalance? Pg 20	Enzymes	How do you calculate initial rate of reaction from a graph? Pg 41
20-Oct	8	Energy budgets + numeracy lesson+ <i>consolidation lesson on all concepts taught</i>	What is LDL and HDL? Pg 25	Required practical 4 the effect of enzyme concentration on the initial rate of reaction + numeracy lesson	What do the mononucleotide structures of DNA and RNA contain? Pg 42



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03-Nov	9	Cholesterol + numeracy lesson	What is calibration curve? Pg 21	DNA structure and replication, mutations + numeracy lesson + <i>consolidation lesson on all concepts taught</i>	What are the structure and functions of mRNA and tRNA? Pg 44
10-Nov	10	Required practical 2 investigate the vitamin C content in different fruit juices + numeracy lesson	What are the strategies for reducing the risk of CVD? Pg 26 and 27	Protein synthesis + numeracy lesson	Memorise the definitions of genetic gene terms, pg 50
17-Nov	11	Reducing risks of CVD + numeracy lesson		Monohybrid inheritance + numeracy lesson	What is the impact of CF on the digestive system, reproductive system and respiratory system? Pg 55 What are the three mains uses of genetic screening? Pg 56
24-Nov	12	Obesity and Lifestyle + <i>consolidation lesson on all concepts taught</i>		CF impact on systems, Genetic Screening + <i>consolidation lesson on all concepts taught</i>	



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01-Dec	13	Revision		Genetic Screening	
08-Dec	14	Revision		Revision and WTM	
15-Dec	15	Revision	What are the structures of prokaryotes and eukaryotes? Draw 2 labelled diagrams of each cell with labelled organelles Pg 58 and 61	Revision	What is the definition what are the definitions of endemism, biodiversity, community, abiotic, biotic factors, habitat, niche, species Pg 78, 81
Date	Week	Topic 3	Prep work	Topic 4	Prep work
05-Jan	16	GCSE recap, Prokaryotes and Eukaryotes, cell organelles	Recap protein synthesis and folding of proteins pg 24, 25 and 27	GCSE recap, Species , Niche	What are the three types of adaptations to niches and give an example of each, pg 81
12-Jan	17				
19-Jan	18				



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26-Jan	19	Protein transport	Memorise structure and function of sperm and egg pg 68	Adaptations and mock review	What are the 2 equations for the Hardy Weingberg equation, what does each part represent? What are the key assumptions of the HW equation? Pg 84,85
02-Feb	20	Fertilisation		Natural selection and HW equation + <i>consolidation lesson on all concepts taught</i>	What are the groups in classification and what are the 5 kingdoms features? Pg 86
09-Feb	21	Meiosis	What are the main events in the cell cycle? What happens in interphase? Pg 66	Biodiversity and classification	How can species diversity be measured? Pg 78



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23-Feb	22	Cell cycle	How do you calculate percentage of cells undergoing mitosis in a root tip? Pg 67	Species evenness and richness, heterozygosity index	What are the cell organelles and their function of plant cells? Pg 90,91
02-Mar	23	Required practical 5 prepare and stain a root tip to observe the stages of mitosis under a microscope	What are multipotent, totipotent and pluripotent stem cells? Pg 72	Plant cell organelles and starch and cellulose + <i>consolidation lesson on all concepts taught</i>	What are the position, structure and function of xylem, phloem and sclerenchyma ? Pg 93
09-Mar	24	Totipotency + <i>consolidation lesson on all concepts taught</i>	What are the ethical issues of using stem cells? PG 74 What is differential gene expression? Pg 72	Plant transport, Required practical 6 identify sclerenchyma fibres, phloem sieve tubes and xylem vessels and their location	What are the functions of nitrate ions, calcium ions and magnesium ions? Pg 97
16-Mar	25	Stem cells, stem cell uses and gene expression	What are continuous variation, discontinuous variation? Give examples and some examples of factors that	Plant mineral deficiencies, Required practical 7 investigating plant mineral deficiencies	



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			cause continuous variation, pg 76		
23-Mar	26	Polygenic inheritance, genes and the environment	Give a summary of epigenetic control and its role in cellular processes and how they get passed on after cell division, top and bottom p 77g	Required practical 8 determine the tensile strength of plant fibres + <i>consolidation lesson on all concepts taught</i>	What are the 3 phases of drug trials and what is the purpose of each? How does this compare to what William Witering did? Pg 99
13-Apr	27	Epigenetics, Cancer		Drug testing and Required practical 9 investigate and compare the antimicrobial properties of garlic and mint	What are the purposes zoos? Pg 88 and 89
20-Apr	28	Revision + <i>consolidation lesson on all concepts taught</i>		Zoos and T1-4 assessment?	What are the purposes seedbanks? Pg 88 and 89
27-Apr	29	Revision and Assessment On Content So far		Uses of plant fibres, Seedbanks and conservation + <i>consolidation lesson on all concepts taught</i>	



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04-May	30	Revision		Revision	
11-May	31	Revision		Revision	
18-May	32	Sampling and Statistics		Sampling and Statistics	

01-Jun	33	Sampling and Statistics		Sampling and Statistics	
08-Jun	34	Sampling and Statistics and revision		Sampling and Statistics and revision	
15-Jun	37	Sampling and Statistics		Sampling and Statistics	
22-Jun	35				
29-Jun	36	Review of UCAS exam and knowledge/skill gaps topics		Review of UCAS exam and knowledge/skill gaps topics	
06-Jul	38	Review of UCAS exam and knowledge/skill gaps topics		Review of UCAS exam and knowledge/skill gaps topics	
13-Jul	39	Topic 6 introduction		Topic 5 introduction	