Year 12 - A Level Biology

Week	Tonic	2 x hours per week	Topic	3 x hours per week
1	opic	Buffe	Topic	S x hours per week
2			Mater	
2		Microscopy - Types of microscopes (a-f)	Water	Biochem basics (+ water)
				Protein structure (primary, secondary and tertiary structure)
3				+ Fibrous and globular proteins (k-p)
	λ	Microscopy - Euk and Prok (g+h)		PAG 9 – Protein (biuret) biochem test
4	Microscopy	Microscopy (i-k) (Suitability convos buffer lesson – protein synthesis and exam questions)		Enzymes (a-c)
-	co	Protein synthesis and exam questionsy	es	(Role and mechanism)
	Ξ		Proteins and enzymes	Enzymes (d)
5			enz	(Factors the affect enzyme activity – Investigation (substrate conc, temp, pH)
		Microscopy - Mag calcs (i-k)	P	pH – Use PH probes for PAG 10
6			e su	Enzymes (d)
Ů		Microscopy Calibration and drawing (i-k)	tein	(Factors the affect enzyme activity) - Explanations and rate calculations
			ē	Enzymes (d)
7				(Factors the affect enzyme activity)
	Lipids	Microscopy test + Lipids and phospholipids (h-j) Including PAG 5 - Emulsion test		PAG4 –PAG10 – Substrate conc and serial dilution
	5			Enzymes (e + f)
8				(Co-enzymes, cofactors, prosthetic groups and inhibitors)
		Reviuew test + Lipids and phospholipids (h-j)		pH – Use PH probes for Could do amylase enzyme practical in spotting tiles
9		Biological membranes (a-b)		PAG6 – Chromatography – amino acids (test for enzymes / proteins)
10		Factors affecting membrane structure and permeability (c)		
10	rane	PAG5.1 – The effect of temperature on membrane permeability (beetroot)	Carbs	Carbohydrates structure + Biochemical test including qualitative Benedict's (PAG 9) (q-r)
	ra		ar	PAG 5.2 Quantitative Benedict's
11	Membr	Movement of molecules across membranes and diffusion rates in model cells (d-e)	5	+ (Biochem revision)
	Je.	Osmosis		Nucleic acids
12	2	PAG8.1 Working out the water potential of a potato	U	Structure of nucleotides, ATP and DNA (a-d)
			Nucleic acids	
13		Membranes and transport revision and test	aci	Semi conservative replication €
14			2	/f al Terrareities and terralation
14		Cell cycle, mitosis (spec points a,b,c,e)		(f-g) Transcription and translation
		Recent of energoint c		Start module 4 Disagree provention inflammation t
15		Recap of spec point c		Disease prevention, inflammation +
		and PAG1.1 Microscopy and -Stages of mitosis		PHAGOCYTOSIS (a-e)
		Becan of concepciate a		Specific immune system (f,g) Know the difference between neutrophils, lymphocytes, monocytes
16		Recap of spec point c		Chi Squared example blood
	_	and PAG1.1 Microscopy and -Stages of mitosis		Memory cells and immunity
17	division			+Antibodies (h,i,j)
17	vis	(f-g) Meiosis		and plasticine animations
	q	(h-l) Specialised cells	υ	
	Cell	(m) Stem cells and their uses (inner cell mass etc)	Disease	
18	0	Revision	ise	Antibiotics, resistance and
		Set PAG 11&12 Stem cells research task		Set up PAG 7.1 Bacteria and antibiotics
		(a) The need for specialised exchange surfaces		
19		(b+c) Features of specialised exchange surfaces – Alveoli and structures of mammalian gaseous exchange system		Review PAG7
19		(b+c) Features of specialised exchange surfaces – Alveoli and structures of mammalian gaseous exchange system Possible PAG1 / 2 Luna dissection and drawina and slides of luna tissue		Review PAG7 New sources of medicines, personalised medicines, synthetic bioloay (m)
		Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue		Review PAG7 New sources of medicines, personalised medicines, synthetic biology (m)
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20 21 22 23 24 25 26 27 28 28 29 30 31 32	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue Exam (d+e) Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) (G+H) Ventilation in fish and insects (PAG2) – Mackrel and dissection kit (G+H) Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 118.12 Stem cells research task (A-C) Need for transport systems, and blood vessels (c+d) Tissue fluid formation and the lymphatic system PAG 2.1 – Heart dissection and drawing ((+h) Cardiac cycle and pressure changes Easter (I,I) Haemoglobin and dissociation curves (A) Exchange and transport in animals test and The wonderful world of blood Review test and Kahoot / revision Buffe	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m) Classification: 5 Kingdoms, binomial naming (a-c) 3 Domains, phylogeny and molecular evidence for classification (c+d) Evolution by natural selection and evidence (h,i) Variation (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (c-d) Biodiversity, richness, evenness, and Simpsons index and Genetic diversity assessment (e) (i-f) Foctors effecting biodiversity In and ex situ, seedbanks etc Reesons for maintaining biodiversity Biodiversity test Review test (a-b) Transport systems / vascular Systems in plants (PAG 1+/2) Looking at plant sections (c) Transpiration rate (p) Messuring transpiration rate (p) Adaptive exam questions (f) Translocation and revision
20 21 22 23 24 25 26 27 28 28 29 30 31 32	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue Exam (d+e) Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) (G+H) Ventilation in fish and insects (PAG2) – Mackrel and dissection kit (G+H) Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 118.12 Stem cells research task (A-C) Need for transport systems, and blood vessels (c+d) Tissue fluid formation and the lymphatic system PAG 2.1 – Heart dissection and drawing ((+h) Cardiac cycle and pressure changes Easter (I,I) Haemoglobin and dissociation curves (A) Exchange and transport in animals test and The wonderful world of blood Review test and Kahoot / revision Buffe	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m)
20 21 22 23 24 25 26 27 28 28 29 30 31 32	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue Exam (d+e) Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) (G+H) Ventilation in fish and insects (PAG2) – Mackrel and dissection kit (G+H) Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 118.12 Stem cells research task (A-C) Need for transport systems, and blood vessels (c+d) Tissue fluid formation and the lymphatic system PAG 2.1 – Heart dissection and drawing ((+h) Cardiac cycle and pressure changes Easter (I,I) Haemoglobin and dissociation curves (A) Exchange and transport in animals test and The wonderful world of blood Review test and Kahoot / revision Buffe	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m) Classification: 5 Kingdoms, binomial naming (a-c) 3 Domains, phylogeny and molecular evidence for classification (c+d) Evolution by natural selection and evidence (h,i) Variation (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (a-d) Biodiversity, richness, evenness, and Simpsons index and Genetic diversity ossessment (e) (f-) Factors efficiting biodiversity In and ex situ, seedbanks etc Reasons for maintaining biodiversity Biodiversity test Review test (a-b) Transport systems / vascular systems in plants (PAG 1+/2) Looking at plant sections (C) Transpiration and factors that affect transpiration rate (D) Measuring transpiration rate PAG5/11 - Potometer, Vaseline, fans, Laurel, stop clocks, rulers, permanent pens, lamps etc (e) Xerophytes, hydrophytes + exam questions (f) Translocation and revision GCSE photosynthesis quiz / test (include cell and leaf structure)
20 21 22 23 24 25 26 27 28 28 29 30 31 32	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue Exam (d+e) Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) (G+H) Ventilation in fish and insects (PAG2) – Mackrel and dissection kit (G+H) Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 118.12 Stem cells research task (A-C) Need for transport systems, and blood vessels (c+d) Tissue fluid formation and the lymphatic system PAG 2.1 – Heart dissection and drawing ((+h) Cardiac cycle and pressure changes Easter (I,I) Haemoglobin and dissociation curves (A) Exchange and transport in animals test and The wonderful world of blood Review test and Kahoot / revision Buffe	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m) Classification: 5 Kingdoms, binomial naming (a-c) 3 Domains, phylogeny and molecular evidence for classification (c+d) Evolution by natural selection and evidence (h,i) Variation (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (f-d) Biodiversity, richnes, venemess, and Simpsons index and Genetic diversity assessment (c) (f-d) Evolution (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (f-d) Biodiversity, richnes, venemess, and Simpsons index and Genetic diversity assessment (c) (f-d) Evolution (MATHS /- standard deviation + Spearman's rank / t-test) ways of maintaining biodiversity n and ex situ, seedbanks etc Reasons for maintaining biodiversity Biodiversity test Review test (a-b) Transport systems / vascular systems in plants (PAG 1+/2) Looking at plant sections (c) Transpiration and factors that affect transpiration rate PAGS/11 – Potometer, Vaseline, fans, Laurel, stop clocks, rulers, permanent pens, lamps etc (e) Aerophytes, hydrophytes + exam questions (f) Translocation and revision GCSE photosynthesis quiz / test (include cell and leaf structure) Photosynthesis intro
20 21 22 23 24 25 26 27 28 28 29 30 31 32	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue Exam (d+e) Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) (G+H) Ventilation in fish and insects (PAG2) – Mackrel and dissection kit (G+H) Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 11812 Stem cell research task (A-C) Need for transport systems, and blood vessels (c+d) Tissue fluid formation and the lymphatic system PAG 2.1 – Heart dissection and drawing (f-h) Cardiac cycle and pressure changes [f-h) SAN / AVN etc and ECGs [1,j] Haemoglobin and dissociation curves (A) Exchange and transport is animalis test and The wonderful world of blood Review test and Kahoot / revision Buffe Y12 TWILIGH	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m) Classification: 5 Kingdoms, binomial naming (a-c) 3 Domains, phylogeny and molecular evidence for classification (c+d) Evolution by natural selection and evidence (h,i) Variation (MATHS /- stendard deviation + Spearman's rank / t-test) and adaptations (f+g) (a-d) Biodiversity, richness, evenness, and Simpsons index and Genetic diversity assessment (e) (i-f) Factors effecting biodiversity In and ex situs, seedbanks etc Reacons for maintaining biodiversity Biodiversity test Review test (a-b) Transport systems / vascular systems in plants (PAG 1+/2) tooking at plant sections (C) Transpiration and factors that affect transpiration rate (P) Measuring transpiration rate PAGS/11 - Potometer, Vascular, fans, Laurel, stop clocks, rulers, permanent pens, lamps etc (e) Xerophytes, hydrophytes + exam questions (f) Translocation and revision CCSE photosynthesis into Early earth
20 21 22 23 24 25 26 27 27 28 29 30 31 32 33	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue Exam (d+e) Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) (G+H) Ventilation in fish and insects (PAG2) – Mackrel and dissection kit (G+H) Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 1182 5 tem cells research task (A-C) Need for transport systems, and blood vessels (C+d) Tissue fluid formation and the lymphatic system PAG 2.1 – Heart dissection and drawing (+h) Cardiac cycle and pressure changes Easter (+h) SAN / AVN etc and ECGs (i,j) Haemoglobin and dissociation curves (A) Exchange and transport in animals test and The wonderful world of blood Review test and Kahoot / revision Buffe Y12 TWLIGH Ecosystems intro – Key terms, Abiotic and biotic factors (rocky share, tree, playing field), traphic levels, food chains, webs	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m)
20 21 22 23 24 25 26 27 28 28 29 30 31 32	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue Exam (d+e) Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) (G+H) Ventilation in fish and insects (PAG2) — Mackrel and dissection kit (G+H) Ventilation on f ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 118.12 Stem cells research task (A-C) Need for transport systems, and blood vessels (c+d) Tissue fluid formation and exchange surfaces of second task (c+d) Tissue fluid formation and the lymphatic system PAG 2.1 - Heart dissection and drawing (f+h) Cardiac cycle and pressure changes [F-h) SAN / AVN etc and ECGs [I,j] Haemoglobin and dissociation curves (A) Exchange and transport in animals test and The wonderful world of blood Review test and Kahoot / revision Buffe Figure Statem State S	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m) Classification: 5 Kingdoms, binomial naming (a-c) 3 Domains, phylogeny and molecular evidence for classification (c+d) Evolution by natural selection and evidence (h,i) Variation (MATHS /- stendard deviation + Spearman's rank / t-test) and adaptations (f+g) (a-d) Biodiversity, richness, evenness, and Simpsons index and Genetic diversity assessment (e) (i-f) Factors effecting biodiversity In and ex situs, seedbanks etc Reacons for maintaining biodiversity Biodiversity test Review test (a-b) Transport systems / vascular systems in plants (PAG 1+/2) tooking at plant sections (C) Transpiration and factors that affect transpiration rate (P) Measuring transpiration rate PAGS/11 - Potometer, Vascular, fans, Laurel, stop clocks, rulers, permanent pens, lamps etc (e) Xerophytes, hydrophytes + exam questions (f) Translocation and revision CCSE photosynthesis into Early earth
20 21 22 23 24 25 26 27 27 28 29 30 31 32 33 33 32 33	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue Exam (d+e) Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) (G+H) Ventilation in fish and insects (PAG2) – Mackrel and dissection kit (G+H) Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 1182 5 tem cells research task (A-C) Need for transport systems, and blood vessels (C+d) Tissue fluid formation and the lymphatic system PAG 2.1 – Heart dissection and drawing (+h) Cardiac cycle and pressure changes Easter (+h) SAN / AVN etc and ECGs (i,j) Haemoglobin and dissociation curves (A) Exchange and transport in animals test and The wonderful world of blood Review test and Kahoot / revision Buffe Y12 TWLIGH Ecosystems intro – Key terms, Abiotic and biotic factors (rocky share, tree, playing field), traphic levels, food chains, webs	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m) classification: 5 Kingdoms, binomial naming (a-c) 3 Domains, phylogeny and molecular evidence for classification (c+d) Evolution by natural selection and evidence (h,i) Variation (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (a-d) Biodiversity, richness, evenness, and Simpsons index and Genetic diversity assessment (e) (f-) Factors efficiting biodiversity In and ex situ, seedbanks etc Reesons for maintaining biodiversity Biodiversity test Review test (a-b) Transport systems / vascular systems in plants (PAG 1+/2) Looking at plant sections (C) Transpiration rate PAG5511 - Potometer, Vaseline, fans, Laurel, stop clocks, rulers, permanent pens, lamps etc (e) Xerophytes, hydrophytes + exam questions (f) Translocation and revision GCSE photosynthesis intro Early earth Figments - function Chloroplast structure
20 21 22 23 24 25 26 27 28 28 29 30 31 32 33 30 31 32 33 34 35	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue [d+e] Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) [(f+e] Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [(G+H) Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [(G+H) Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [(G+H) Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 1182 25 tem cells research tosk [A-C) Need for transport systems, and blood vessels [(-4] Tissue fluid formation and the lymphatic system PAG 2.1 - Heart dissection and drawing [(+h) Cardiac cycle and pressure changes Easter [(+h) SAN / AVN etc and ECGs [1,]) Haemoglobin and dissociation curves (A) Exchange and transport in animals test and The wonderful world of blood Review test and Kahoot / revision Buffe Y12 TWILIONI Ecosystems intro - Key terms, Abiotic and biotic factors (rocky share, tree, playing field), traphic levels, food chains, webs and pyramids basics (a) Energy (biomass) transfers through food chains and increasing productivity (b)	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m) Classification: 5 Kingdoms, binomial naming (a-c) 3 Domains, phylogeny and molecular evidence for classification (c+d) Evolution by natural selection and evidence (h,i) Variation (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (f-d) Biodiversity, richnes, venemess, and Simpsons index and Genetic diversity assessment (c) (f-d) Evolution, teachers, start (mathematication), f+g) Biodiversity, richnes, venemess, and Simpsons index and Genetic diversity assessment (c) (f-d) Evolution (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (f-d) Biodiversity, richnes, venemess, and Simpsons index and Genetic diversity assessment (c) (f-d) Evolution (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) and as situ, seedbanks etc (a-d) Biodiversity, richnes, venemess, and Simpsons index and Genetic diversity assessment (c) (f-d) Evolution (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) Biodiversity test Review test (a-b) Transport systems / vascular systems in plants (PAG 1+/2) Looking at plant sections (f-) Transport systems / vascular systems in plants (PAG 1+/2) Looking at plant sections (f-) Transport systems, fors, Laurel, stop clocks, rulers, permanent pens, lamps etc (e) Aerophytes, hydrophytes + exam questions (f-) Translocation and revision GCSE photosynthesis furo Early earth Pigments - function Chioroplast structure Pigments - funct
20 21 22 23 24 25 26 27 28 28 29 30 31 32 29 30 31 32 33 34 35 36	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue Exam (d+e) Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) (G+H) Ventilation in fish and insects (PAG2) — Mackrel and dissection kit (G+H) Ventilation on f ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 118.12 Stem cells research task (A-C) Need for transport systems, and blood vessels (c+d) Tissue fluid formation and exchange surfaces of second task (c+d) Tissue fluid formation and the lymphatic system PAG 2.1 - Heart dissection and drawing (f+h) Cardiac cycle and pressure changes [F-h) SAN / AVN etc and ECGs [I,j] Haemoglobin and dissociation curves (A) Exchange and transport in animals test and The wonderful world of blood Review test and Kahoot / revision Buffe Figure Statem State S	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m) classification: 5 Kingdoms, binomial naming (a-c) 3 Domains, phylogeny and molecular evidence for classification (c+d) Evolution by natural selection and evidence (h,i) Variation (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (a-d) Biodiversity, richness, evenness, and Simpsons index and Genetic diversity assessment (e) (f-) Factors efficiting biodiversity In and ex situ, seedbanks etc Reesons for maintaining biodiversity Biodiversity test Review test (a-b) Transport systems / vascular systems in plants (PAG 1+/2) Looking at plant sections (C) Transpiration rate PAG5511 - Potometer, Vaseline, fans, Laurel, stop clocks, rulers, permanent pens, lamps etc (e) Xerophytes, hydrophytes + exam questions (f) Translocation and revision GCSE photosynthesis intro Early earth Figments - function Chloroplast structure
20 21 22 23 24 25 26 27 28 28 29 30 31 32 33 30 31 32 33 34 35	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue [d+e] Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) [(f+e] Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [(G+H) Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [(G+H) Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [(G+H) Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 1182 25 tem cells research tosk [A-C) Need for transport systems, and blood vessels [(-4] Tissue fluid formation and the lymphatic system PAG 2.1 - Heart dissection and drawing [(+h) Cardiac cycle and pressure changes Easter [(+h) SAN / AVN etc and ECGs [1,]) Haemoglobin and dissociation curves (A) Exchange and transport in animals test and The wonderful world of blood Review test and Kahoot / revision Buffe Y12 TWILIONI Ecosystems intro - Key terms, Abiotic and biotic factors (rocky share, tree, playing field), traphic levels, food chains, webs and pyramids basics (a) Energy (biomass) transfers through food chains and increasing productivity (b)	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m) Classification: 5 Kingdoms, binomial naming (a-c) 3 Domains, phylogeny and molecular evidence for classification (c+d) Evolution by natural selection and evidence (h,i) Variation (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (f-d) Biodiversity, richnes, venemess, and Simpsons index and Genetic diversity assessment (c) (f-d) Evolution, teachers, start (mathematication), f+g) Biodiversity, richnes, venemess, and Simpsons index and Genetic diversity assessment (c) (f-d) Evolution (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (f-d) Biodiversity, richnes, venemess, and Simpsons index and Genetic diversity assessment (c) (f-d) Evolution (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) and as situ, seedbanks etc (a-d) Biodiversity, richnes, venemess, and Simpsons index and Genetic diversity assessment (c) (f-d) Evolution (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) Biodiversity test Review test (a-b) Transport systems / vascular systems in plants (PAG 1+/2) Looking at plant sections (f-) Transport systems / vascular systems in plants (PAG 1+/2) Looking at plant sections (f-) Transport systems, fors, Laurel, stop clocks, rulers, permanent pens, lamps etc (e) Aerophytes, hydrophytes + exam questions (f-) Translocation and revision GCSE photosynthesis furo Early earth Pigments - function Chioroplast structure Pigments - funct
20 21 22 23 24 25 26 27 27 28 28 29 30 31 32 30 31 32 33 34 35 36 37	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue Exam (d+e) Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) (G+H) Ventilation in fish and insects (PAG2) – Mackrel and dissection kit (G+H) Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 11842 Stem cell screearch task (A-C) Need for transport systems, and blood vessels (C+d) Tissue fluid formation and the lymphatic system PAG 2.1 – Heart dissection and drawing (f+h) Cardiac cycle and pressure changes (I-J) Macmoglobin and dissociation curves (A) Exchange and transport in animals text and The wonderful world of blood Review test and Kahoot / revision Buffe Y12 TWILIGH Ecosystems intro – Key terms, Abiotic and biotic factors (rocky shore, tree, playing field), traphic levels, food chains, webs and pyramids basics (a) Energy (biomass) transfers through food chains and increasing productivity (b) Carbon cycle © Nitrogen cycle C	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m) Classification: 5 Kingdoms, binomial naming (a-c) 3 Domains, phylogeny and molecular evidence for classification (c+d) Evolution by natural selection and evidence (h,i) Variation (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (a-d) Biodiversity is richnes, venemess, and Simpsons index and Genetic diversity assessment (c) (f) Factors effecting biodiversity In and ex situ, seebanits etc Reasons for maintaining biodiversity Biodiversity test Review test (a-b) Transport systems / vascular Systems in plants (PAG 1+/2) Looking at plant sections (c) Transport systems that affect transpiration rate PAGS/11 - Patometer, Vaseline, fans, Laurel, stop clocks, rulers, permanent pens, lamps etc (e) Aerophytes, hydrophytes + exam questions (f) Translocation and revision GCSE photosynthesis into Early earth Pigments of ILC (PAG 6) LOM + Hill reaction (PAGG 4 / 1)
20 21 22 23 24 25 26 27 27 28 28 29 30 31 32 30 31 32 33 34 35 36 37 37 38	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue [d+e] Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) [d+e] Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [G+H] Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [G+H] Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [G+H] Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [G+H] Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 1182 Stem cells research task [A-C] Need for transport systems, and blood vessels [c+d] Tissue fluid formation and the lymphotic system PAG 2.1 - Heart dissection and drawing [(+h) Cardiac cycle and pressure changes Easter [(+h) SAN / AVN etc and ECGs [i,j] Haemoglobin and dissociation curves (A) Exclosuge and transport in animals test and The wonder/ul world of blood Review test and Kahoot / revision Buffee Y12 TWLICH Ecosystems intro - Key terms, Abiotic and bloic factors (rocky shore, tree, playing field), trophic levels, food chains, webs and pyramids basics (a) Energy (bloinomes) transfers through food chains and increasing pr	Transport in plants Biodiversity classific ation	New sources of medicines, personalised medicines, synthetic biology (m)
20 21 22 23 24 25 26 27 27 28 28 29 30 31 32 33 31 32 33 34 35 36 37 37 38 39	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue Exam (d+e) Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) (G+H) Ventilation in fish and insects (PAG2) – Mackrel and dissection kit (G+H) Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 118.12 Stem cells research task (A-C) Need for transport systems, and blood vessels (c+d) Tissue fluid formation and the lymphatic system PAG 2.1 – Heart dissection and drawing (+h) Cardiac cycle and pressure changes (L) Haemoglobin and dissociation curves (A) Exchange and transport in animals test and The wonder[ul world of blood Review test and Kahoot / revision Buffe Y12 TWLIGHT Ecosystems intro – Key terms, Abiotic and biotic factors (rocky shore, tree, playing field), trophic levels, food chains, webs and pyramids basics (a) Energy (biomass) transfers through food chains and increasing productivity (b) Carbon cycle @ Nitragen cycle @ Nitragen cycle @ Sampling (rula on 1) or succession 1	Photosynthesis Biodiversity Classific ation	New sources of medicines, personalised medicines, synthetic biology (m) Classification: 5 Kingdoms, binomial naming (a-c) 3 Domains, phylogeny and molecular evidence for classification (c+d) Evolution by natural selection and evidence (h,i) Variation (MATHS /- standard deviation + Spearman's rank / t-test) and adaptations (f+g) (a-d) Biodiversity, richness, evenness, and Simpsons index and Genetic diversity assessment (e) ([-] Factors of Eciton Biodiversity In and ex situ, seedbanks etc Reacons for maintaining bioliversity Biodiversity test Review test (a-b) Transport systems / vascular systems in plants (PAG 1+/2) tooking at plant sections ([) Transpiration and factors that affect transpiration rate (P) Measuring transpiration rate PAGS/11 - Potometer, Vaseline, fans, Laurel, stop clocks, rulers, permanent pens, lamps etc (e) Xerophytes, hydrophytes + exam questions (f) Translocation and revision CCSE photosynthesis quiz / test (include cell and leaf structure) Photosynthesis intro Early earth Pigments - Junction Charoplast structure Eigenents and TLC (PAG 6) Eigen
20 21 22 23 24 25 26 27 27 28 28 29 30 31 32 30 31 32 33 34 35 36 37 37 38	Exchange sur	Possible PAG1 / 2 Lung dissection and drawing and slides of lung tissue [d+e] Ventilation in mammals and spirometer (PAG 10) (plus lung diseases) [d+e] Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [G+H] Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [G+H] Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [G+H] Ventilation in fish and insects [PAG2] - Mackrel and dissection kit [G+H] Comparison of ventilation and exchange surfaces of fish and insects and mammals & exam questions Collect in PAG 1182 Stem cells research task [A-C] Need for transport systems, and blood vessels [c+d] Tissue fluid formation and the lymphotic system PAG 2.1 - Heart dissection and drawing [(+h) Cardiac cycle and pressure changes Easter [(+h) SAN / AVN etc and ECGs [i,j] Haemoglobin and dissociation curves (A) Exclosuge and transport in animals test and The wonder/ul world of blood Review test and Kahoot / revision Buffee Y12 TWLICH Ecosystems intro - Key terms, Abiotic and bloic factors (rocky shore, tree, playing field), trophic levels, food chains, webs and pyramids basics (a) Energy (bloinomes) transfers through food chains and increasing pr	Photosynthesis Biodiversity Classific ation	New sources of medicines, personalised medicines, synthetic biology (m)

Year 13 - A Level Biology

Week	Topic	2 x hours per week	Topic	3 x hours per week				
1	1 Buffer							
2	Samp	Sampling (y12 and y13 theory)	Photo	Photosynthesis and wavelength of light and limiting factors				
3		Succession + revision		Photosynthesis test				
4								
5	Homeostas is	Ecosystems test <u>Homeostasis</u> Homeostasis and negative feedback Ecotherms and enatotherms	Respiration	Respiration (A,B) Respiration introduction, ATP and structure of mitochondria (C,D) Glycolysis - link reaction (J) Anaerobic respiration in eukaryotes and yeast				
6		Daphnia practical?		(D-G) Krebs, co-enzymes and Oxidative phosphorylation (H) Chemiosmosis				
7		Endocrine system. Hormones, glands, adrenal gland, pacrease and glucose reg		(J,K) Energy values and respiratory quotients				
8		Diabetes and treatment		(I) Respiration practical investigations PAG 12.1 – Yeast and tubing.				
9	S	(a, b, c, d) Plant responses theory – Stresses, and responses (tropisms and nastic responses)		Link together photosynthesis and respiration Revision and Respiration test + review time				
10	responses	(a, b, c, d) Phototropism and gravitropism mechanism and evidence		<u>Homeostasis</u> Nervous system (A – B) Role of receptors, structure and function of SRM neurones (C) Resting potential				
11		(a, b, c, d) Apical dominance, gibberellins and abscission	<u>i</u> z.	C) Action potential, positive feedback, myelination and significance of frequency of impulses				
12	Plant	(a, b, c, d) Stomata closure and seed germination	tas	(D) Synapses structure and function and their importance in summation and control				
	Р		eos	(G,H) Organisation of mammalian NS and structure of the brain				
13		Collect final data and - Commercial uses of plant hormones	Homeostasis	(I) Reflex actions,				
14	control	Cellular control (a) Y12 revision + mutations		(I) Structure of muscle, the NMJ, sliding filament model (can flow into next week too)				
15	con	(b) Controlling gene expression (3 different levels)		(J,K) Nerves and hormones working together (+adrenaline and cell signalling) Opportunity for (PAG11.1 + 12) –Effect of exercise on HR – t test				
16	ılar	(c) Homeobox genes and Hox genes		Homeostasis and animal responses test Excretion B) Excretion basics + Liver				
17	Cellular	(d) Importance of mitosis and apoptosis	Extretion	(c) Role of kidney and structure of nephrons PAG 2 Kidney dissection AND DRAWING				
18		Cellular control test Patterns of inheritance		(C) Kidney cont. Loop of Henle, Slides of kidney tissue				
	POI	Causes of variation (Different genes, new alleles, and random assortment in meiosis)		PAG1/2 – Slides of kidney tissue and microscopes EPGs and SMs				
19		Genetics basics and monohybrid crosses		E) Kidney failure, medical diagnosis GFR, Kidney transplants and dialysis				
20		Revision t	Revision buffer					
21		Y13 interim	exams					
				Pregnancy testing, anabolic steroids				
22		Chi-squared		Mock body fluids QUAL prac from last year (PAG9)?				
23		Di-hybrid crosses		Excretion revision, test and review time				
24	POI	Linkage	Biotech	(A-D) Cloning				
25	-	Epistasis		(E-H) Biotechnology				
26		Populations and sustainability (set research task)		(H) Factors affecting growth of microbes (PAG7 Streak plating and serial dilution calculations)				
27		Evolution	-	(I) Immobilised enzymes uses				
21		Evolution by natural selection and genetic drift		(I) PAG 4 - Immobilising enzymes prac				
		Easter						
28	c	Hardy-Weinberg principle		(D,E) PCR, gel electrophoresis				
29	Evolution	Speciation		(E) CF prac Natures Dice – PAG 6 Chromatography (electrophoresis) and fingerprinting				
30	Evo	Artificial selection		(A-C) Genome sequencing Sanger and others				
31		Revision / Buffer		Revision / Buffer				
32		Revision / Buffer		Revision / Buffer				