Year 11 Revision Schedule 2024- 2025

Subject/Course:	GCSE Combined Biology HIGHER (AQA)
Student Name:	

		Topic	Key knowledge/skills/questions	Resources/activities/links
Week 1	**Monday 13 January 2025**	4.5.1 Homeostasis 4.5.2 The human nervous system 4.5.3 Hormonal coordination in humans	• What homeostasis is and why it is important • The different parts of the nervous system and how they work together to co-ordinate a nervous response • Reflex actions- examples and how they are different to a normal nervous response • Synapses- how they work • CORE PRACTICAL- investigating reaction time • Different glands of the endocrine system – names and labels, which hormones they secrete • Controlling blood glucose using insulin and glucagon • Which hormones control puberty and the menstrual cycle • How different contraceptives work • The process of IVF and how it works • The uses of the hormones thyroxine and adrenaline in the body and where they are secreted from	• BBC bitesize homeostasis and response https://www.bbc.co.uk/bitesize/topics/zyybb82 • Educake- please log on and choose these topics to answer questions on
Week 2	**Monday 20 January 2025**	4.6.1 Reproduction 4.7.1 Adaptations, interdependence and competition	• DNA structure and function including what a genome is • What are genes and chromosomes • Sexual vs asexual reproduction • The cell cycle • The processes of mitosis and meiosis – how they work, what they are used for, the differences between them • What ecosystems are • Competition in animals and plants- why and how they do this • Adaptation in animals and plants- different types of adaptations for different environments • Abiotic and biotic factors- what these are and examples of each	• BBC bitesize Reproduction https://www.bbc.co.uk/bitesize/guides/zycmk2p/revision/1 • BBC bitesize Ecology https://www.bbc.co.uk/bitesize/topics/zxxhh39 • Educake- please log on and choose these topics to answer questions on

Week 3	**Monday 27 January 2025**	4.7.2 Organisation of an ecosystem 4.7.3 Biodiversity and the effect of human interaction on ecosystems	• Food chains- how these are structured and the naming system we use for each stage (i.e. producers/consumers) • CORE PRACTICAL: How to sample an area using quadrats or transects to estimate biodiversity or population size (e.g. of a type of plant) • The water cycle • The carbon cycle • Biodiversity- what this means and why it is important • How humans are affecting biodiversity (land use, water pollution, air pollution) • Global warming- how and why this is happening • Deforestation- reasons for doing this and the impact it has on the environment • How we can help to maintain ecosystems and biodiversity	• BBC bitesize Ecology https://www.bbc.co.uk/bitesize/topics/zxxhh39 • Educake- please log on and choose these topics to answer questions on
Week 4	**Monday 3 February**	Summarise the above Focus on Practical Skills Focus on exam technique by practising past papers	• Make sure you are confident with the content you have revised over the past 3 weeks- go over any tricky areas again • Use blank page retrieval to identify gaps and address these by making a mind map • Remind yourself of the key practical skills that might be assessed • Practise answering questions in enough detail, using key vocabulary and under timed conditions	BBC bitesize Practical Skills https://www.bbc.co.uk/bitesize/topics/zqqmmsg Link to AQA past papers https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464/assessment-resources?f.Component%7C7=Paper+2+Biology
Week 5	**Half Term Monday 10 February**	Summarise the aboveFocus on Practical Skills Focus on exam technique by practising past papers	• Make sure you are confident with the content you have revised over the past 3 weeks- go over any tricky areas again • Use blank page retrieval to identify gaps and address these by making a mind map • Remind yourself of the key practical skills that might be assessed • Practise answering questions in enough detail, using key vocabulary and under timed conditions	BBC bitesize Practical Skills https://www.bbc.co.uk/bitesize/topics/zqqmmsg Link to AQA past papers https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464/assessment-resources?f.Component%7C7=Paper+2+Biology
Week 6	**Half Term Monday 17 February**	4.1.1 Cell structure 4.1.2 Cell division 4.1.3 Transport in cells	• Eukaryote and prokaryote structure • Animal and plant cell structure and functions of sub cellular structures • How to use a microscope to observe cells and draw cells seen • Cell specialisation and cell differentiation • Differences between light and electron microscopes • How to use the magnification equation • Where chromosomes are found • What happens in the cell cycle and why the cell cycle happens	BBC bitesize Cells https://www.bbc.co.uk/bitesize/topics/z2mttv4 • Educake- please log on and choose these topics to answer questions on

			• What a stem cell is and where stems cells are found in embryos, adults and plants • Use of stem cells for therapeutic cloning and production of cloned plants • What happens in diffusion and which factors affect the rate of diffusion • How to calculate SA:V • Explain how animal and plants are adapted for exchanging materials • What is osmosis and what happened in the required practical investigating the effect of changing salt solution on the mass of plant tissue (potato chips) • What is active transport	
Week 7	**Monday 24 February**	4.2.1 Principles or organisation 4.2.2 animal tissues, organs and organ systems 4.2.3 Plant tissues, organs and organ systems	• What is the organisation in living organisms • Digestive system- what are the organs and their functions • Enzyme structure and function – including the lock and key theory • Digestive enzymes- amylase, proteas and lipase- where are these produced and what do they do • Role of bile • How temperature and pH affect enzyme activity • Required practical Food tests • Required practical effect of pH on the rate of reaction of amylase enzyme on digestion of starch • Heart structure and types of blood vessels • What is in the tissue blood • Coronary heart diseases- what it is and how valves and transplants can be treatments • Factors that can cause/ contribute to ill health • Use disease data to draw conclusions • Cancer cells and the difference between benign tumours and malignant tumours. • Plant tissues- epidermal, palisade and spongy mesophyll, xylem and phloem • Leaf structure • Adaptations of root hair cells, xylem and phloem • Transpiration-how it is measured (potometer) and which factors affect it • Role of leaves, stem, root • Translocation and where this happens in a plant	BBC bitesize Organisation https://www.bbc.co.uk/bitesize/topics/zwj22nb • Educake- please log on and choose these topics to answer questions on
Week 8	**Monday 3 March**	4.3.1 Communicable disease	• Spread of diseases • Pathogen definition • How do bacteria and viruses make us poorly • Symptoms and treatments/prevention of spread for viral diseases – measles, HIV, TMV • Symptoms and treatments/prevention of spread for bacterial diseases – *Salmonella*, Gonorrhoea, • Symptoms and treatments/prevention of spread for fungal diseases – Rose black spot	BBC bitesize Infection and response https://www.bbc.co.uk/bitesize/topics/z9kww6f • Educake- please log on and choose these topics to answer questions on

			• Symptoms and treatments/prevention of spread for protist diseases – Malaria • Non specific defence systems in the human body • Role of while blood cells defending against pathogens • Vaccination – what happens in the body • Antibiotics- what these medicines do and issues with their overuse • What do painkillers do? • Origin of drugs digitalis and aspirin and how Penicillin was discovered • Stages needed when testing a drug and why these steps are important	
Week 9	**Monday 10 March**	4.4.1 Photosynthesis 4.4.2 Respiration	• Photosynthesis equation and photosynthesis is an endothermic reaction • Effects of temperature, light intensity, carbon dioxide concentration and amount of chlorophyll on the rate of photosynthesis • Understanding these factors (above) interact and one may be a limiting factor • H: how to use the inverse square law to calculate light intensity • H: how to maximise rate of photosynthesis and maintain a profit (greenhouses) • Required practical: investigating the effect of light intensity on the rate of photosynthesis • Uses of glucose (produced in photosynthesis) • Respiration is an exothermic reaction • Equations for aerobic respiration and anaerobic respiration (muscles and yeast/plants) • Why do organisms need energy • Effect of exercise on the body and issues with ongoing anaerobic respiration occurring- muscle fatigue, lactic acid production and oxygen debt • What is metabolism (definition and examples)	BBC bitesize Bioenergetics https://www.bbc.co.uk/bitesize/topics/zgr997h • Educake- please log on and choose these topics to answer questions on
Week 10	**Monday 17 March**	4.5.1 Homeostasis 4.5.2 The human nervous system 4.5.3 Hormonal coordination in humans	• What homeostasis is and why it is important • The different parts of the nervous system and how they work together to co-ordinate a nervous response • Reflex actions- examples and how they are different to a normal nervous response • Synapses- how they work • Required practical - investigating reaction time • Different glands of the endocrine system – names and labels, which hormones they secrete • Controlling blood glucose using insulin and glucagon • Which hormones control puberty and the menstrual cycle • How different contraceptives work • The process of IVF and how it works • The uses of the hormones thyroxine and adrenaline in the body and where they are secreted from	BBC bitesize homeostasis and response https://www.bbc.co.uk/bitesize/topics/zyybb82 • Educake- please log on and choose these topics to answer questions on

Week 11	**Monday 24 March**	4.7.1 Adaptations, interdependence and competition 4.7.2 Organisation of an ecosystem 4.7.3 Biodiversity and the effect of human interaction on ecosystems	• Competition in animals and plants- why and how they do this • Adaptation in animals and plants- different types of adaptations for different environments • Abiotic and biotic factors- what these are and examples of each • Food chains- how these are structured and the naming system we use for each stage (i.e. producers/consumers) • CORE PRACTICAL: How to sample an area using quadrats or transects to estimate biodiversity or population size (e.g. of a type of plant) • The water cycle • The carbon cycle • Biodiversity- what this means and why it is important • How humans are affecting biodiversity (land use, water pollution, air pollution) • Global warming- how and why this is happening • Deforestation- reasons for doing this and the impact it has on the environment • How we can help to maintain ecosystems and biodiversity	BBC bitesize Ecology https://www.bbc.co.uk/bitesize/topics/zxxhh39 • Educake- please log on and choose these topics to answer questions on
Week 12	**Monday 31 March**	4.6.1 Reproduction 4.6.2 Variation and evolution 4.6.3 Development of understanding on genetics and evolution 4.6.4 Classification of living organisms	• The process of meiosis • Differences between sexual and asexual reproduction • Structure of DNA and define genome • Importance of understanding the human genome • Alleles, dominant, recessive, homozygous, heterozygous, genotype and phenotype • Predicting the probability of inheriting a characteristic - using a Punnett square (H constructing a Punnett square) • Inheritance of Polydactyly and Cystic fibrosis • Determination of sex • What causes differences in individuals in a population • The process of evolution • Evidence for evolution (fossils, genes, resistant bacteria) • Extinction • The process of selective breeding • The process of genetic engineering • Classification of living organisms and evolutionary trees	BBC bitesize Inheritance, variation and evolution https://www.bbc.co.uk/bitesize/topics/zppffcw BBC bitesize Cells https://www.bbc.co.uk/bitesize/topics/z2mttv4 • Educake- please log on and choose these topics to answer questions on
Week 13	**Easter Monday 7 April**	4.4.1 Photosynthesis 4.4.2 Respiration 4.2.1 Principles or organisation 4.2.2 animal tissues, organs and organ systems	• Photosynthesis equation and photosynthesis is an endothermic reaction • Effects of temperature, light intensity, carbon dioxide concentration and amount of chlorophyll on the rate of photosynthesis • Understanding these factors (above) interact and one may be a limiting factor • H: how to use the inverse square law to calculate light intensity • H: how to maximise rate of photosynthesis and maintain a profit (greenhouses)	BBC bitesize Organisation https://www.bbc.co.uk/bitesize/topics/zwj22nb BBC bitesize Bioenergetics https://www.bbc.co.uk/bitesize/topics/zgr997h

		4.2.3 Plant tissues, organs and organ systems	• Required practical: investigating the effect of light intensity on the rate of photosynthesis • Uses of glucose (produced in photosynthesis) • Respiration is an exothermic reaction • Equations for aerobic respiration and anaerobic respiration (muscles and yeast/plants) • Why do organisms need energy • Effect of exercise on the body and issues with ongoing anaerobic respiration occurring- muscle fatigue, lactic acid production and oxygen debt • What is metabolism (definition and examples) • What is the organisation in living organisms • Digestive system- what are the organs and their functions • Enzyme structure and function – including the lock and key theory • Digestive enzymes- amylase, proteas and lipase- where are these produced and what do they do • Role of bile • How temperature and pH affect enzyme activity • Required practical Food tests • Required practical effect of pH on the rate of reaction of amylase enzyme on digestion of starch • Heart structure and types of blood vessels • What is in the tissue blood • Coronary heart diseases- what it is and how valves and transplants can be treatments • Factors that can cause/ contribute to ill health • Use disease data to draw conclusions • Cancer cells and the difference between benign tumours and malignant tumours. • Plant tissues- epidermal, palisade and spongy mesophyll, xylem and phloem • Leaf structure • Adaptations of root hair cells, xylem and phloem • Transpiration-how it is measured (potometer) and which factors affect it • Role of leaves, stem, root • Translocation and where this happens in a plant	• Educake- please log on and choose these topics to answer questions on
Week 14	**Easter Monday 14 April**	4.3.1 Communicable disease	• Spread of diseases • Pathogen definition • How do bacteria and viruses make us poorly • Symptoms and treatments/prevention of spread for viral diseases – measles, HIV, TMV • Symptoms and treatments/prevention of spread for bacterial diseases – *Salmonella*, Gonorrhoea, • Symptoms and treatments/prevention of spread for fungal diseases – Rose black spot	BBC bitesize Infection and response https://www.bbc.co.uk/bitesize/topics/z9kww6f • Educake- please log on and choose these topics to answer questions on

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Week 15	**Monday 21 April**	4.1.1 Cell structure4.1.2 Cell division 4.1.3 Transport in cells	• Eukaryote and prokaryote structure • Animal and plant cell structure and functions of sub cellular structures • How to use a microscope to observe cells and draw cells seen • Cell specialisation and cell differentiation • Differences between light and electron microscopes • How to use the magnification equation • Where chromosomes are found • What happens in the cell cycle and why the cell cycle happens • What a stem cell is and where stems cells are found in embryos, adults and plants • Use of stem cells for therapeutic cloning and production of cloned plants • What happens in diffusion and which factors affect the rate of diffusion • How to calculate SA:V • Explain how animal and plants are adapted for exchanging materials • What is osmosis and what happened in the required practical investigating the effect of changing salt solution on the mass of plant tissue (potato chips) • What is active transport	BBC bitesize Cells https://www.bbc.co.uk/bitesize/topics/z2mttv4 • Educake- please log on and choose these topics to answer questions on
Week 16	**Monday 28 April**	Paper 1 revision	Paper 1 personal revision (4.1 cells, 4.2 Organisation, 4.3 Infection and response and 4.4 Bioenergetics) Complete blank page retrieval of your revision sheets for these chapters Identify which gaps you still have Use revision guides, bbc bitesize and educake to address these issues	BBC bitesize trilogy science revision: https://www.bbc.co.uk/bitesize/examspecs/z8r997h AQA past paper questions paper 1 https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464/assessment-resources?f.Component%7C7=Paper+1+Biology

Week 17	**Monday 5 May**	Paper 1 revision	Paper 1 personal revision (4.1 cells, 4.2 Organisation, 4.3 Infection and response and 4.4 Bioenergetics) Complete blank page retrieval of your revision sheets for these chapters Identify which gaps you still have Use revision guides, bbc bitesize and educake to address these issues	BBC bitesize trilogy science revision: https://www.bbc.co.uk/bitesize/examspecs/z8r997h AQA past paper questions paper 1 https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464/assessment-resources?f.Component%7C7=Paper+1+Biology
Week 18	**Monday 12 May**	13th May Biology paper 1 4.6.1 Reproduction 4.6.2 Variation and evolution 4.6.3 Development of understanding on genetics and evolution 4.6.4 Classification of living organisms	• The process of meiosis • Differences between sexual and asexual reproduction • Advantages and disadvantages of sexual and asexual reproduction (H) • Structure of DNA and define genome • Importance of understanding the human genome • Alleles, dominant, recessive, homozygous, heterozygous, genotype and phenotype • Predicting the probability of inheriting a characteristic -using a Punnett square (H constructing a Punnett square) • Inheritance of Polydactyly and Cystic fibrosis • Determination of sex • What causes differences in individuals in a population • The process of evolution • Evidence for evolution (fossils, genes, resistant bacteria) • Extinction • The process of selective breeding • The process of genetic engineering • Classification of living organisms and evolutionary trees	BBC bitesize Inheritance, variation and evolution https://www.bbc.co.uk/bitesize/topics/zppffcw • Educake- please log on and choose these topics to answer questions on
Week 19	**Monday 19 May**	4.5.1 Homeostasis 4.5.2 The human nervous system 4.5.3 Hormonal coordination in humans	• What homeostasis is and why it is important • The different parts of the nervous system and how they work together to co-ordinate a nervous response • Reflex actions- examples and how they are different to a normal nervous response • Synapses- how they work	BBC bitesize homeostasis and response https://www.bbc.co.uk/bitesize/topics/zyybb82 • Educake- please log on and choose these topics to answer questions on

			• Required practical - investigating reaction time • Different glands of the endocrine system – names and labels, which hormones they secrete • Controlling blood glucose using insulin and glucagon • Which hormones control puberty and the menstrual cycle • How different contraceptives work • The process of IVF and how it works • The uses of the hormones thyroxine and adrenaline in the body and where they are secreted from	
Week 20	**Monday 26 May Half Term**	4.7.1 Adaptations, interdependence and competition 4.7.2 Organisation of an ecosystem 4.7.3 Biodiversity and the effect of human interaction on ecosystems	• Competition in animals and plants- why and how they do this • Adaptation in animals and plants- different types of adaptations for different environments • Abiotic and biotic factors- what these are and examples of each • Food chains- how these are structured and the naming system we use for each stage (i.e. producers/consumers) • CORE PRACTICAL: How to sample an area using quadrats or transects to estimate biodiversity or population size (e.g. of a type of plant) • The water cycle • The carbon cycle • Biodiversity- what this means and why it is important • How humans are affecting biodiversity (land use, water pollution, air pollution) • Global warming- how and why this is happening • Deforestation- reasons for doing this and the impact it has on the environment • How we can help to maintain ecosystems and biodiversity	BBC bitesize Ecology https://www.bbc.co.uk/bitesize/topics/zxxhh39 • Educake- please log on and choose these topics to answer questions on

Week 21	**Monday 2 June**	Paper 2 Revision Homeostasis and response, inheritance variation and evolution and ecology	Paper 2 personal revision (4.5 Homeostasis, 4.6 Inheritance, variation and evolution, 4.7 Ecology) Complete blank page retrieval of your revision sheets for these chapters Identify which gaps you still have Use revision guides, bbc bitesize and educake to address these issues	BBC bitesize trilogy science revision: https://www.bbc.co.uk/bitesize/examspecs/z8r997h AQA past paper questions paper 2 https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464/assessment-resources?f.Component%7C7=Paper+2+Biology
Week 22	**Monday 9 June**	9th June Biology paper 2		