Scott

Scott Medical and Healthcare College

Spring Term

Term 2

Science

Year 11

Name: _____

Tutor: _____

Care to Learn

Learn to Care

GREENSHAW LEARNING TRUST

Year 11 Homework Timetable

Monday	English Task 1	Option A Task 1	Option C Task 1
Tuesday	Sparx Science	Option B Task 1	Sparx Maths
Wednesday	Sparx Maths	Science Task 1	Option C Task 2
Thursday	Option A Task 2	Sparx Catch Up	Option B Task 2
Friday	Science Task 2	English Task 2	

Sparx Science
- **Complete 100% of their assigned homework each week**

Sparx Maths
- **Complete 100% of their assigned homework each week**

Option A
Geography
History
Spanish

Option B
Geography
Psychology
Health and Social Care

Option C
Childcare
Drama
Psychology
Sport

Half Term 3 (6 weeks) - Year 11		
Week / Date	**Homework task 1 Cornell Notes**	**Homework task 2 Exam Question**
Week 1 6th January 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions
Week 2 13th January 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions
Week 3 20th January 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions
Week 4 27th January 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions
Week 5 3rd February 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions
Week 6 10th February 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions

Half Term 4 (6 weeks) - Year 11		
Week / Date	**Homework task 1 Cornell Notes**	**Homework task 2 Exam Question**
Week 7 24th February 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions
Week 8 3rd March 2025	**Mock Exams**	**Mock Exams**
Week 9 10th March 2025	**Mock Exams**	**Mock Exams**
Week 10 17th March 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions
Week 11 24th March 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions
Week 12 31st March 2025	Complete 1 page of retrieval quizzing	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions

WEEK 1 Questions (cover and quiz) - Ecology Part 1

Question	Answer
Define the keyword classification.	The organisation of living things into groups according to their similarities.
Who devised the traditional classification of living things into groups depending on their structure and characteristics?	Carl Linnaeus.
What are the seven groups used in Carl Linnaeus' classification system.	Kingdom, phylum, class, order, family, genus and species
Which two groups in the Linnaean classification system are used in the binomial naming system?	Genus and species.
What two developments lead to a change in the classification system?	Improvements in microscopes and understanding of biochemical processes.
How did the improvement of microscopes lead to new models of classification?	Evidence from internal structures became more developed.
Evidence from what type of analysis lead to the development of the three-domain classification system?	Chemical analysis.
Who developed the three-domain system of classification?	Carl Woese.
What are the domains in Carl Woese's classification system?	Archaea (primitive bacteria usually living in extreme environments), Bacteria (true bacteria), Eukaryota (which includes protists, fungi, plants and animals)
What type of organisms are in the group archaea?	Primitive bacteria usually living in extreme environments.
What type of organisms are in the group eukaryota?	Protists, fungi, plants and animals.
What do evolutionary trees show?	How scientists believe organisms are related.
What evidence is used to devise evolutionary trees?	They use current classification data for living organisms and fossil data for extinct organisms.
What is an ecosystem?	The interaction of a community of living organisms (biotic) with the non-living (abiotic) parts of their environment.
What do organisms get from their ecosystem?	A supply of materials from their surroundings and from the other living organisms there.
What do plants compete for?	Light and space, water and mineral ions from the soil.
What do animals compete for?	Food, mates and territory.
What is a community?	The different populations living in an area.
What is a population?	All the members of the same species living in an area.
What is a stable community?	A community where all the species and environmental factors are in balance so that population sizes remain fairly constant.
What do different species in a community depend on each other for?	Food, shelter, pollination, seed dispersal etc.
What keyword describes living factors in an ecosystem?	Biotic factors.
What keyword describes non-living factors in an ecosystem?	Abiotic factors.
What type of factors are light intensity, temperature, soil pH?	Abiotic factors.
What type of factors are food, new predators, new pathogens	Biotic factors.

Week 1 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 1 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Explain how the percentages of nitrogen, oxygen and carbon dioxide in the Earth's atmosphere today have changed from the Earth's early atmosphere. (6)

Improvement Work: Explain how the percentages of nitrogen, oxygen and carbon dioxide changed from the Earth's early atmosphere. (6)

WEEK 2 Questions (cover and quiz) - Homeostasis 2

Question	Answer
Which body system involved in homeostasis causes slow, long lasting responses?	The endocrine system.
Which two hormones can cause rapid responses?	Insulin and adrenaline.
Which hormone is involved in the 'fight or flight' response?	Adrenaline.
Which gland secretes several different hormones and controls and coordinates other glands?	The pituitary gland.
Where in the body is the pituitary gland?	The brain.
Which hormone does FSH (follicle stimulating hormone) stimulate the ovaries to release?	Oestrogen.
Which hormone stimulates the release of oestrogen from the ovaries?	FSH (follicle stimulating hormone).
Which gland secretes FSH (follicle stimulating hormone)?	The pituitary gland.
Which hormone controls blood glucose levels?	Insulin.
Where is insulin released from?	The pancreas.
What does insulin do?	Insulin causes glucose in the blood to move into cells to be turned into glycogen and stored in the liver and muscles.
How is excess glucose stored in the human body?	As glycogen in the liver and muscles.
Which two hormones interact in a negative feedback cycle to control blood glucose levels?	Insulin and glucagon.
Which hormone causes glycogen in the liver to be converted back into glucose?	Glucagon.
When is glucagon released by the pancreas?	When blood glucose levels fall below the ideal level.
What is the difference between glucagon and glycogen?	Glucagon is a hormone that is released when blood glucose concentrations fall below the ideal level, glycogen is a complex carbohydrate used to store excess glucose in the body.
Which disease is caused if your pancreas does not produce enough insulin?	Type 1 diabetes.
Which disease is caused if your body stops responding to insulin made by the pancreas?	Type 2 diabetes.
Which type of diabetes usually starts in young children and teenagers?	Type 1 diabetes.
Which type of diabetes is linked to obesity and lack of exercise?	Type 2 diabetes.
Which type of diabetes is usually treated with insulin injections?	Type 1 diabetes.
Which type of diabetes is first treated with a controlled diet and exercise?	Type 2 diabetes.
Which hormone stimulates basal metabolic rate and has a role in growth and development?	Thyroxine.
Which gland releases thyroxine?	The thyroid gland.
Which hormone is released by the adrenal glands during times of fear or distress?	Adrenaline.
Which glands release adrenaline?	The adrenal glands.
What is the effect of adrenaline on the body?	It increases heart rate to increase the delivery of oxygen and glucose to the brain and muscles.
Is adrenaline or thyroxine controlled by negative feedback?	Adrenaline.

Week 2 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 2 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

> Stem cells are used to treat some human diseases.
>
> Stem cells can be collected from early embryos. These stem cells have not begun to differentiate, so they could be used to produce any kind of cell, tissue or organ. The use of embryonic stem cells to treat human diseases is new and, for some diseases, trials on patients are happening now.
>
> Stem cells can also be collected from adult bone marrow. The operation is simple but may be painful. Stem cells in bone marrow mainly differentiate to form blood cells. These stem cells have been used successfully for many years to treat some kinds of blood disease. Recently there have been trials of other types of stem cell from bone marrow. These stem cells are used to treat diseases such as heart disease.

Evaluate the use of stem cells from embryos or from adult bone marrow for treating human diseases. (5)

Improvement Work: Evaluate the use of stem cells from embryos or from adult bone marrow for treating human diseases. (5)

WEEK 3 Questions (cover and quiz) - Rates of Reaction 1

Question	Answer
According to collision theory, chemical reactions can only occur...	When reacting particles collide with each other with sufficient energy.
How does a catalyst increase the rate of a reaction?	The catalyst lowers the activation energy by providing an alternative pathway for the reaction.
How does increasing the concentration of a solution increase the rate of a reaction?	There are more particles in a given volume, therefore successful collisions occur more frequently.
How does increasing the pressure of gases increase the rate of a reaction?	The particles are closer together, therefore successful collisions occur more frequently.
How does increasing the surface area of a solid cause the rate of reaction to increase?	There are more particles on the outer surface available for collisions with other reactant particles, therefore successful collisions occur more frequently.
How does increasing the temperature of a reaction increase the rate?	The particles will have more kinetic energy, so will move around faster. This increases the frequency of the collisions, therefore successful collisions occur more frequently.
If a reaction is endothermic in one direction, what is it in the other direction?	Exothermic.
If the concentration of a reactant in a reversible reaction is increased, what will happen to the amount of products?	More products will be produced; until equilibrium is reached.
What can be measured to calculate the rate of a reaction?	The mass lost in a specific amount of time / The volume of gas produced in a specific amount of time.
On a rate of reaction curve, how can you tell that the reaction has stopped?	The curve / line becomes horizontal.
On a rate of reaction curve, what does a less steep gradient tell us about a reaction?	The reaction is slower / happening at a lower rate.
On a rate of reaction curve, what does a steep gradient tell us about a reaction?	The reaction is fast / happening at a high rate.
State five factors that affect rate of reaction.	Temperature, Concentration of solution, Surface area of solids, Pressure of gases, Catalyst
What is the formula used to calculate the rate of a reaction?	Rate of reaction = Amount of reactant used / time OR Rate of reaction = Amount of product made / time
State three units which can be used for the rate of a reaction.	g/s, cm^3/s, mol/s
Using Le Chatelier's principle, explain what will happen in the following reaction in equilibrium if we increase the concentration of the hydrogen and iodine? I2(g) + H2(g) <---> 2HI(g).	Equilibrium will shift to the right to oppose the increase in hydrogen and iodine. More HI will be produced
List the equipment needed to measure the volume of gas produced in a reaction.	Conical flask / test tube (to hold reactants); stopper with delivery tube; gas syringe / upturned measuring cylinder filled with water; stopwatch.
List the equipment needed to measure the change in mass of a reaction mixture when gas is released.	Beaker / conical flask (to hold reactants); cotton wool stopper (to allow gas to escape, but not drops of water); electronic balance / weighing scales; stopwatch
What can be said about the amount of energy being transferred in each direction in a reversible reaction at equilibrium?	Same amount of energy is transferred in both directions
What colour is hydrated copper sulphate?	Blue

Week 3 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 3 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Explain why calcium fluoride has a high melting point. (4)

Improvement Work: Explain why calcium fluoride has a high melting point. (4)

WEEK 4 Questions (cover and quiz) - Waves 2

Question	Answer
What is the speed of sound in air?	330 metres per second.
What is the relationship between frequency of a wave and its time period?	Frequency = 1 / Time period
How do sound waves travel through a solid?	The particles in the solid vibrate and transfer kinetic energy through the material.
What natural event causes seismic waves to be produced? What types are produced?	Earthquakes; They produce both P-waves & S-waves
What property of waves in different mediums causes refraction?	Velocity; Wave speed is slower in denser materials, causing refraction
What type of waves can be produced by oscillations in an electrical circuit?	Radio waves
How can radio waves generate an alternating current in a circuit?	When radio waves are absorbed, they can induce oscillations in a circuit with the same frequency as the waves themselves.
What wave phenomenon is used by lenses to form an image?	Refraction
What colour does an object appear if all wavelengths are absorbed?	Black opaque
What do all bodies (objects) emit and absorb?	Infrared radiation
What happens to the quantity of infrared radiation emitted by an object as temperature increases?	The hotter the object, the more infrared radiation it will emit.
What is a perfect black body?	An object that absorbs all of the radiation that is incident upon it.
How much radiation does a perfect black body reflect or transmit?	None
Why is a perfect black body the best possible emitter of radiation?	It is a perfect absorber since it absorbs all radiation incident on it. A perfect absorber is also a perfect emitter
What can be said about the rates of emission and absorption for a body at constant temperature?	The body is absorbing and emitting radiation at the same rate.

Week 4 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 4 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Describe the difference between longitudinal waves and transverse waves. (2)

Improvement Work: Describe the difference between longitudinal waves and transverse waves. (2)

WEEK 5 Questions (cover and quiz) - Homeostasis 3

Question	Answer
What is the main male reproductive hormone?	Testosterone.
Which gland produces testosterone in males?	The testis.
What does testosterone do?	It stimulates sperm production.
After puberty on average how often is an egg released from the ovary?	Approximately every 28 days.
What happens at ovulation?	An egg is released from the ovary.
What term refers to 'the release of an egg from the ovary'?	Ovulation.
Name the four hormones involved in the menstrual cycle.	FSH (follicle stimulating hormone), LH (luteinizing hormone), oestrogen, progesterone.
Which hormone causes an egg in the ovary to mature?	FSH (follicle stimulating hormone).
Which hormone stimulates the release of a mature egg from the ovary?	LH (luteinizing hormone).
Which hormones are involved in maintaining the uterus lining?	Progesterone and oestrogen.
At what point in the menstrual cycle does a woman have her period?	Day 1-5.
At what point in the menstrual cycle is an egg released?	Day 12-16
Which gland releases LH?	The pituitary gland.
Which gland releases oestrogen?	The ovaries.
What produces progesterone?	The empty follicle after ovulation.
What is produced by the empty follicle after ovulation?	Progesterone.
What is the role of progesterone?	It maintains the uterus lining and (HT) inhibits release of FSH and LH.

Week 5 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 5 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Outline a safe plan the student could use to make pure, dry, crystals of the soluble salt copper sulphate from an insoluble metal oxide and dilute acid. (6)

Improvement Work: Outline a safe plan the student could use to make pure, dry, crystals of the soluble salt copper sulphate from an insoluble metal oxide and dilute acid. (6)

WEEK 6 Questions (cover and quiz) - Waves 1

Question	Answer
What are the two main categories of waves?	Transverse and longitudinal
What is a transverse wave?	A wave for which the oscillations are perpendicular to the direction of energy transfer.
What is a longitudinal wave?	A wave for which the oscillations are parallel to the direction of energy transfer.
Give two examples of transverse waves.	Electromagnetic waves (e.g. light, X rays), Seismic (S) waves, water waves
Give two examples of longitudinal waves.	Sound waves, Seismic (p) waves
What are the two parts of a longitudinal wave called?	Compressions and rarefactions
What is a wave's amplitude?	The maximum displacement of a point on a wave from its undisturbed position.
What is wavelength?	The distance from a point on a wave to the same position on the adjacent wave. Most commonly peak to peak or trough to trough.
What is the frequency of a wave?	The number of waves that pass a given point each second / the number of oscillations per second.
What is the unit used for frequency?	Hertz, Hz
What is meant by a frequency of 200Hz?	200 waves pass a given point each second / a point oscillates 200 times every second.
What is wave speed?	The speed at which the wave moves through a medium.
What does a wave transfer?	Energy
What is the relationship between frequency, wavelength and wave speed?	wave speed = frequency x wavelength
What word is used to describe when a wave bounces off a surface?	Reflection
How do sound waves travel through a solid?	The particles in the solid vibrate and transfer kinetic energy through the material.
Which type of waves do not require a medium to travel through?	Electromagnetic waves.
Order the types of EM radiation from lowest to highest frequency.	Radio waves, Microwaves, Infrared, Visible light, Ultraviolet, X-rays, Gamma rays
How do the speeds of EM radiation differ in a vacuum and in air?	EM waves all travel at the same speed in a vacuum and in air.
At what speed to EM waves travel through a vacuum / air?	3.0×10^8 m/s
What word is used to describe when a wave changes direction as it moves from one material to another?	Refraction
In which direction (relative to the normal) do waves refract when entering a denser medium?	They bend towards the normal The angle of refraction is less than the angle of incidence
What health effects can ultraviolet waves cause?	They can cause the skin to age prematurely They can increase the risk of developing cancer
What health effects can X-rays and gamma rays cause?	They are ionising radiation so can cause mutations in genes. They can lead to increased risk of developing various cancers.
Give three practical uses for infrared radiation	Electrical heaters, cooking food Infrared cameras
Give two practical uses for microwave radiation	Satellite communications, Cooking food
Give two practical uses for radio waves.	Television transmission, Radio transmission

Week 6 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 6 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

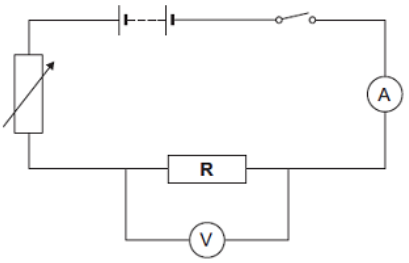
Describe a method to investigate if the amount of water in the soil affects the number of buttercups in the field. (6)

Improvement Work: Describe a method to investigate if the amount of water in the soil affects the number of buttercups in the field. (6)

WEEK 7 Questions cover and quiz
Use your blue mock sheet for your retrieval practice this week.

Week 7 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 7 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.



A resistor is a component that is used in an electric circuit. Describe how a student would use the circuit to take the readings necessary to determine the resistance of resistor R. (6)

Improvement Work: A resistor is a component that is used in an electric circuit. Describe how a student would use the circuit to take the readings necessary to determine the resistance of resistor R. (6)

WEEK 8 cover and quiz
Use your blue mock sheet for your retrieval practice this week.

Week 8 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 8 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing on your Red and Amber questions on your blue sheet.

Describe the model now used for the structure of an atom. In your answer you should give details of the individual particles that make up an atom, including the relative masses and relative charges of these particles. Do not include a diagram in your answer. (6)

Improvement Work: Describe the model now used for the structure of an atom. (6)

WEEK 9 Questions (cover and quiz) - Organic Chemistry 2

Question	Answer
What is the most abundant element in air?	Nitrogen/N_2
Which gas reacts with hydrocarbons when they burn?	Oxygen/O_2
Name one fossil fuel used in cars.	Petrol/diesel oil
Name a gas produced when carbon burns.	Carbon monoxide/carbon dioxide
What compound forms when hydrogen burns in air?	Water
To get a roaring blue Bunsen burner flame, do you open or close the air hole?	Open it
Which cells in the blood carry oxygen around the body?	Red blood cells
What is the black solid element found in soot and smoke?	Carbon
What are the products of the complete combustion of hydrocarbon fuels?	Carbon dioxide; water
Which gas is produced during incomplete combustion, but not complete combustion, of hydrocarbon fuels?	Carbon monoxide
What solid element is produced during the incomplete combustion of hydrocarbon fuels?	Carbon
Name the fuel used for large ships and some power stations.	Fuel oil
Which gas reacts with hydrocarbon fuels when they burn?	Oxygen
What is the pH of pure water?	7
Name the gas formed when acids react with metals.	Hydrogen
Name the gas formed when acids react with calcium carbonate.	Carbon dioxide
Name the solid yellow element placed below oxygen in group 6 of the periodic table.	Sulfur
Which fraction ignites more easily, kerosene or fuel oil?	Kerosene
Which fraction contains hydrocarbon molecules with the longer molecules, gases or bitumen?	Bitumen
Name the process used to separate crude oil into simpler, more useful mixtures.	Fractional distillation
Name the homologous series to which ethanol belongs.	Alkanes
What are the two products of complete combustion of ethane?	Carbon dioxide; water
What type of rain forms when sulfur dioxide, from some hydrocarbon fuels, dissolves in rainwater?	Acid
Name the greenhouse gas released when any hydrocarbon fuel burns.	Carbon dioxide
Which occupies the least volume, 1 kg of hydrogen gas or 1 kg of liquid hydrogen?	1 kg of liquid hydrogen

Week 9 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 9 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing on your Red and Amber questions on your blue sheet.

Penicillin is an antibiotic which stops bacteria from reproducing. Explain how natural selection could have produced strains of penicillin resistant bacteria. (5)

Improvement Work: Penicillin is an antibiotic which stops bacteria from reproducing. Explain how natural selection could have produced strains of penicillin resistant bacteria. (5)

WEEK 10 Questions (cover and quiz) - Magnetism

Question	Answer
At which part of a magnet are the magnetic forces strongest?	The poles of the magnet
What happens when two magnets are brought close to each other?	They exert a force on each other
What type of force is exerted if two like poles of a magnet are brought near each other?	A repulsive, non-contact force
What type of force is exerted if two unlike poles of a magnet are brought near each other?	An attractive, non-contact force
What is the difference between a permanent magnet and an induced magnet?	A permanent magnet produces its own magnetic field An induced magnet becomes magnetic when placed in a magnetic field
What type of force does induced magnetism always cause?	A force of attraction
What happens when an induced magnet is removed from a magnetic field?	The induced magnet loses most/all of its magnetism
What is a magnetic field?	The region surrounding a magnet where another magnet or magnetic material experiences a non-contact force.
Give four examples of magnetic materials	Iron, Steel, Cobalt, Nickel
What can always be said about the force between a magnet and a magnetic material?	It is always attractive
How does the strength of a magnetic field alter as you move further away from the magnet producing it?	The magnetic field strength decreases the further you move away.
In what direction does a magnetic field point?	In the direction that a north pole would experience a force if placed in the field. From north seeking pole to the south seeking pole of a magnet
What does a magnetic compass contain?	A small bar magnet that points in the direction of the Earth's magnetic field
What is produced when current flows through a conducting wire?	A magnetic field is produced around the wire
What determines the strength of the magnetic field around a current-carrying wire?	The magnitude of the current flowing through the wire The distance from the wire
What is a solenoid?	A coil of wire which when current passes through a strong magnetic field
Describe the magnetic field found inside a solenoid.	Strong and uniform
What is an electromagnet?	A solenoid with an added iron core Adding the iron core increases the strength of the magnetic field
Why must the current flowing through the primary coil of a transformer be alternating?	For current to be induced in the secondary coil, the magnetic field in the core must be continuously changing. For the magnetic field to be changing, the current in the primary coil must be alternating
In which direction do the arrows on the field lines point at the north pole of a magnet?	Outwards (from N to S)
In which direction do the arrows on the field lines point at the south pole of the magnet?	In towards the south pole

Week 10 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 10 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Explain how the properties of α, β and γ radiation affect the level of the hazard at different distances. (6)

Improvement Work: Explain how the properties of α, β and γ radiation affect the level of the hazard at different distances. (6)

WEEK 11 Questions (cover and quiz) - Ecology 3

Question	Answer
What is biodiversity?	The variety of all the different species of organisms on earth, or within an ecosystem.
Why is a high biodiversity important?	It ensures the stability of ecosystems by reducing the dependence of one species on another for food, shelter and the maintenance of the physical environment.
How do humans reduce the amount of land available for other species?	By building, quarrying, farming and dumping waste.
What human activities reduce biodiversity?	Habitat destruction (deforestation, building, quarrying, farming), Pollution (air, water, dumping waste)
Why is burning peat as a fuel a problem?	It releases carbon dioxide into the atmosphere.
Explain why the increasing human population is a problem?	Rapid growth in the human population means that increasingly more resources are used and more waste is produced. Unless waste and chemical materials are properly handled, more pollution will be caused
What pollutes water?	Sewage, fertiliser or toxic chemicals.
What pollutes air?	Smoke and acidic gases.
What pollutes land?	Landfill and toxic chemicals.
Why is pollution a problem?	It can kill plants and animals which can reduce biodiversity.
Why are large area of tropical forests being destroyed?	To provide land for cattle, rice fields and to grow crops for biofuels.
What is deforestation?	The cutting down of large areas of forest.
Which gases in the atmosphere are increasing and contributing to global warming?	Carbon dioxide and methane.
What are the biological consequences of global warming?	Loss of habitats due to flooding, changes in the distribution of organisms due to changes in temperature or rainfall, changes in the migration patterns of animals.
Which gases cause acid rain?	Sulfur dioxide and nitrogen oxides.
What problem is caused by increasing levels of carbon dioxide and methane in the atmosphere?	Global warming.

Week 11 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 11 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

Water pollution is a problem for humans and wildlife. Explain how human activities are polluting rivers, lakes and seas. (6)

Improvement Work: Water pollution is a problem for humans and wildlife. Explain how human activities are polluting rivers, lakes and seas. (6)

WEEK 12 Questions (cover and quiz) - Rates of Reaction 2

Question	Answer
What does a horizontal line on a rate of reaction graph mean?	Reaction has stopped
What happens in a reversible reaction between gases in an enclosed system when pressure is increased?	The equilibrium position shifts in the direction of fewer moles of gas (to oppose the increase in pressure)
What happens to the gradient of a line if the rate of reaction is increased?	Becomes steeper.
What is a catalyst?	A substance which increases the rate of reaction but is not used up during the reaction
What is added to anhydrous cobalt chloride to change its colour from blue to pink in a reversible reaction?	Water.
Write down a definition of collision theory using the following keywords: reaction, particles, reactant, energy.	For a chemical reaction to happen the reactant particles must collide with sufficient energy
What is the definition of concentration in chemistry?	Number of particles in a given volume
(Higher only) State Le Chatelier's Principle.	If a system is at equilibrium and a change is made to any of the conditions, then the equilibrium position will shift to oppose the change
What is meant by the term 'activation energy'?	Minimum amount of energy that particles must have to react
What is meant by the term equilibrium?	Forward and reverse reactions occur at the same rate; concentrations of all substances stay constant
What is the definition of the rate of a reaction?	Rate at which reactants are being turned into products / rate at which products are made
What is the name for the minimum amount of energy needed for a reaction to start?	Activation Energy
What is the name of a type of reaction in which the products can reform the reactants easily?	Reversible
What is the word for chemicals which react with each other?	Reactants
What conditions are required for dynamic equilibrium to be reached?	Closed system; apparatus prevents the escape of reactants and products
What three factors can be changed in a system at equilibrium?	Concentration of substances, temperature and pressure
(Higher only) What type of equilibrium exists when the forward and backward reactions happen at the same rate in a closed system?	Dynamic equilibrium
(Higher only) Use Le Chatelier's principle to explain what will happen if there is an increase in temperature of this reaction (the forward reaction is exothermic): $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$	More hydrogen and nitrogen will be made as the backward reaction is endothermic. Equilibrium shifts in the endothermic direction to oppose the increase in temperature.
(Higher only) What will happen to the amount of product in an endothermic reaction (going forward) at equilibrium if the temperature is decreased?	Amount of product (yield) will decrease
(Higher only) What will happen to the amount of product in an endothermic reaction (going forward) at equilibrium if the temperature is increased?	Amount of products (yield) will increase
(Higher only) What will happen to the amount of product in an exothermic reaction (going forward) at equilibrium if the temperature is increased?	Amount of products (yield) will decrease
(Higher only) What would be observed in a container where there is a reversible reaction in dynamic equilibrium?	No visible changes would be observed
(Higher only) What would happen to the position of equilibrium in a gaseous reaction if pressure increases?	Equilibrium would shift towards the side with the smaller number of moles of gases

Week 12 Task 1 - 1 Page of retrieval quizzing - do not use full sentences

Week 12 Task 2 - Complete the exam question then fill the remainder of the page with retrieval quizzing. Use full sentences for the exam question, but not the quiz.

A stimulus from the hot pan will cause the muscle in the arm to contract and move the finger away. Describe how the stimulus from the hot pan reaches the muscle in the arm.(4)

Improvement Work: Describe how the stimulus from the hot pan reaches the muscle in the arm.(4)