STOKE DAMEREL

Aspire Achieve Thrive

Spring Term
Term 2

Science

Year 10

Name: _____

Tutor: _____

Year 10 Homework Timetable

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

Sparx Science - Reach 100% each week before Friday 4pm

Sparx Maths - Reach 100% each week before Friday 4pm

Option A (EBACC)
French
Geography
History

Option B
Art
Business Studies
Catering
Music
Sport
IT
Childcare
Triple Science
Travel and Tourism

Option C
Business Studies
Catering
Drama
Health & Social Care
Sport
Computer Science
Media
Photography
Sociology

Year 10 - Homework Plan Science

Week/Date	Homework Task 1	Homework Task 2
Week 1 DATE: 8/1/24	Complete 1 page of retrieval quizzing RAG rate the questions Answer the questions on Sparx Science	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions Answer the questions on Sparx Science
Week 2 DATE: 15/1/24	Complete 1 page of retrieval quizzing RAG rate the questions Answer the questions on Sparx Science	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions Answer the questions on Sparx Science
Week 3 DATE: 22/1/24	Complete 1 page of retrieval quizzing RAG rate the questions Answer the questions on Sparx Science	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions Answer the questions on Sparx Science
Week 4 DATE: 29/1/24	Complete 1 page of retrieval quizzing RAG rate the questions Answer the questions on Sparx Science	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions Answer the questions on Sparx Science
Week 5 DATE: 5/2/24	Complete 1 page of retrieval quizzing RAG rate the questions Answer the questions on Sparx Science	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions Answer the questions on Sparx Science
Week 6 DATE: 19/2/24	Complete 1 page of retrieval quizzing RAG rate the questions Answer the questions on Sparx Science	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions Answer the questions on Sparx Science
Week 7 DATE: 26/2/24	Complete 1 page of retrieval quizzing RAG rate the questions Answer the questions on Sparx Science	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions Answer the questions on Sparx Science

Week 8 DATE: 4/3/24	Complete 1 page of retrieval quizzing RAG rate the questions Answer the questions on Sparx Science	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions Answer the questions on Sparx Science
Week 9 DATE: 11/3/24	Complete 1 page of retrieval quizzing RAG rate the questions Answer the questions on Sparx Science	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions Answer the questions on Sparx Science
Week 10 DATE: 18/3/24	Complete 1 page of retrieval quizzing RAG rate the questions Answer the questions on Sparx Science	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions Answer the questions on Sparx Science
Week 11 DATE: 25/3/24	Complete 1 page of retrieval quizzing RAG rate the questions Answer the questions on Sparx Science	Complete the exam question. Fill the remainder of the page with retrieval quizzing on your Red and Amber questions Answer the questions on Sparx Science

WEEK 1 Questions (cover and quiz) - Atomic Structure

Question	Answer
Give an approximate size of the radius of an atom.	1 x 10^{-10} metres
What are the three subatomic constituents of an atom?	Proton, Neutron, Electron
Where is the most mass of an atom concentrated?	In the nucleus
Approximately what proportion of the total radius of an atom is the radius of the nucleus?	1/10,000
Describe the arrangement of protons, neutrons and electrons in an atom.	Protons and neutrons are in the atom's nucleus. Electrons are in discrete energy levels around the nucleus.
What charge does the nucleus of an atom have? Why?	Positive charge. Nucleus contains protons & neutrons. Protons have a positive charge, neutrons have no charge.
What charge does a proton have?	Positive / +1
What charge does a neutron have?	Neutral / 0
What charge does an electron have?	Negative / -1
Give two ways that an atom's electron arrangement can be changed.	Absorbing EM radiation, emitting EM radiation
How does an atom's electron arrangement change when it absorbs EM radiation.	Electrons move further away from the nucleus. They move to a higher energy level.
How does an atom's electron arrangement change when it emits EM radiation?	Electrons move closer to the nucleus. They move to a lower energy level.
How does the ratio of electrons to protons in an atom result in the atom having no overall charge.	Number of protons is equal to the number of electrons. Protons and electrons have equal and opposite charges, so charge cancels.
What do all forms of the same element have in common?	They all have the same number of protons.
What is the name given to the number of protons in an atom?	Atomic number
What is an atom's mass number?	The total number of protons and neutrons in an atom.
What is an isotope of an atom?	An atom of an element that has a different number of neutrons, but the same number of protons.
What may lead to a scientific model being changed or replaced?	Discovery of new experimental evidence which doesn't agree with the existing theory.
How did the plum-pudding model describe the atom?	A ball of positive charge, with negatively charged electrons distributed evenly throughout it.
Prior to the discovery of the electron what was believed about the atom?	The atom was believed to be indivisible.
Which experiment led to the plum-pudding model being discarded?	Rutherford's alpha-scattering experiment / gold foil experiment
Rutherford was the first scientist to suggest the existence of the ...	Nucleus
What were the conclusions of the alpha-scattering experiment?	Most of the mass of the atom is concentrated at the centre in the nucleus. The nucleus is positively charged.
What reinforces a scientific theory?	When experimental results agree with the hypothesised theoretical calculations and theories.
What did James Chadwick's experiments on the atom prove?	The existence of neutrons

Date: 8/1/24

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

Date: 8/1/24

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.

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
- include 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 2 Questions (cover and quiz) - Cell Biology

Question	Answer
When do most cells differentiate in an animal?	Foetal stage
When do cells differentiate in a plant?	They can differentiate at any time
In animals, what is cell differentiation used for?	Repair of damaged tissues or cells
Name two types of microscopes	Light/optical microscope Electron microscope
State 2 advantages and disadvantages of a light/optical microscope	Advantages: Portable, easy to use, see colour, inexpensive, live specimens Disadvantages: 2D, low resolution, low magnification
State 2 advantages and disadvantages of an electron microscope	Advantage: 3D images, high magnification, high resolution Disadvantage: Expensive, black and white images only, specimen must be dead
What is meant by the resolution or resolving power of a microscope?	The fineass of detail that can be seen in an image. The higher the resolution of an image, the more detail it holds. The ability to distinguish between 2 points.
How do you calculate magnification?	Magnification = Image size / Actual size
How many chromosomes does a human adult cell have?	46 or 23 pairs
What happens to the cell before it divides?	The nucleus disappears, chromosomes becomes short, fat and they double
What is produced during mitosis?	Genetically identical daughter cells
What is produced during meiosis?	Gametes
Why is mitosis important?	Growth, repair and maintaining the chromosome number
What do we call a cell with 2 sets of chromosomes?	Diploid
What do we call a cell with 1 set of chromosomes	Haploid
What type of cell is produced during meiosis in males and females?	Males- sperm Females- egg
Write down the definition of diffusion.	The movement of particles from an area of high concentration to an area of low concentration, down a concentration gradient
Write down the definition of osmosis.	The movement of water particles from a high water potential to a low water potential (down a concentration gradient), through a partially permeable membrane
Write down the definition of active transport.	The movement of particles against a concentration gradient, from a low concentration to a high concentration, requiring energy from respiration
State 3 substances that can move by diffusion in animal cells	Oxygen, carbon dioxide and glucose

Date: 15/1/24

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

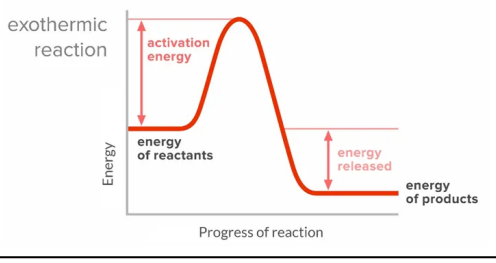
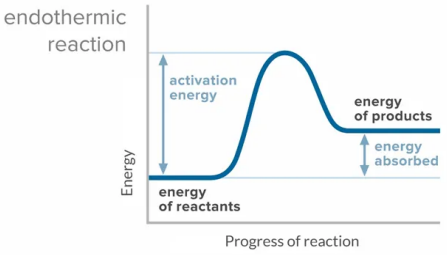
Date: 15/1/24

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.

Meiosis and mitosis are different types of division in human cells. Compare the two processes by referring to where each takes place and the kind of products that are made. (6)

Improvement Work: Meiosis and mitosis are different types of division in human cells. Compare the two processes by referring to where each takes place and the kind of products that are made. (6)

WEEK 3 Questions (cover and quiz) - Energy Changes

Question	Answer
Write down the definition of an exothermic reaction.	A reaction in which energy is transferred to the surroundings.
Write down the definition of activation energy.	The minimum amount of energy that particles must have to react.
Write down the definition of an endothermic reaction.	A reaction which absorbs energy from its surroundings,
If the energy required to break bonds is greater than the energy released by making bonds, is the reaction endothermic or exothermic?	Endothermic
If the temperature of products is lower than the temperature of the reactants, is the reaction endothermic or exothermic?	Endothermic
If the energy required to break bonds is less than the energy released by making bonds, is the reaction endothermic or exothermic?	Exothermic
If the temperature of products is greater than the temperature of the reactants, is the reaction endothermic or exothermic?	Exothermic
Reaction A: Temperature at the start is 22°C, at the end 28°C. What type of reaction is this?	Exothermic
Reaction B: Temperature at the start is 22°C, at the end 14°C. What type of reaction is this?	Endothermic
How would you measure whether an endothermic reaction had occurred?	Use a thermometer. Reaction is endothermic if temperature goes down.
How would you measure whether an exothermic reaction had occurred?	Use a thermometer. Reaction is exothermic if temperature goes up.
Is the chemical reaction that takes place when baking a cake endothermic or exothermic?	Endothermic
What needs to be done to make an endothermic reaction happen?	Heat the reactants.
Is combustion endothermic or exothermic?	Exothermic
Do sports injury packs use an endothermic or exothermic reaction?	Endothermic
Do handwarmers use an endothermic or exothermic reaction?	Exothermic
Is thermal decomposition endothermic or exothermic?	Endothermic
Sketch the reaction profile for an exothermic reaction.	
Sketch the reaction profile for an endothermic reaction.	
Why do all chemical reactions require activation energy in order to take place?	Particles must have sufficient energy to collide with other particles successfully.

Date: 22/1/24

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

Date: 22/1/24

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.

Describe a method to investigate how the temperature changes when different masses of ammonium nitrate are dissolved in water. You do not need to write about safety precautions. (6)

Improvement Work: Describe a method to investigate how the temperature changes when different masses of ammonium nitrate are dissolved in water. (6)

WEEK 4 Questions (cover and quiz) - Electricity

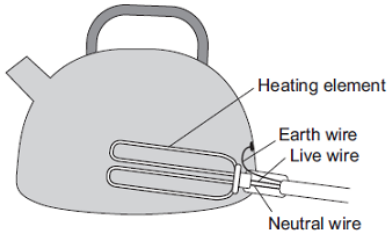
Question	Answer
What effect does increasing the number of cells in (series) have on the current in the circuit?	Current increases, when more cells are added in series to a circuit.
What effect does increasing the number of cells (in series) have on the current in the circuit?	Current decreases, when more cells are added in series in a circuit.
What effect does increasing the resistance of a circuit have on the current flow in the circuit?	Current decreases, when resistance of a circuit increases.
Name the instrument which can be used to measure the potential difference across a bulb in a circuit?	Voltmeter
How is the voltmeter connected to a component? In series or parallel?	Parallel, across the component for which the potential difference is being measured.
Name the instrument which can be used to measure the current flowing through a circuit?	An ammeter, connected in series.
Write down the equation linking power, current and resistance in a circuit.	$P = I^2 \times R$
Which measurements will need to be taken to calculate the resistance of a wire?	Current and potential difference
What are the two ways of connecting electrical components in a circuit?	Series or parallel
How many paths can current take in a series circuit.	Only one path
What does the changing gradient of an I-V graph tell us about the component?	Changes to the component's resistance
Is a fixed resistor an ohmic conductor?	Yes, a fixed resistor is an ohmic conductor.
What is meant by direct current?	Current that is always in the same direction
What is the national grid?	A system of cables, transformers and power stations.
What colour is the live wire in a UK mains plug?	Brown
What colour is the earth wire in a UK plug?	Yellow/green
What colour is the neutral wire in a UK plug?	Blue
What is the voltage supply in a main socket in the UK?	230V
What is the frequency of a UK mains supply?	50 Hertz
Which wire is a fuse connected to in the mains UK plug?	Live
What is the purpose of the earth wire in a UK plug?	The earth wire provides a path of low resistance for the current to flow through in case the live wire touches the metal casing.
What is the voltage across the neutral wire in a plug?	Voltage is close to zero
What is the purpose of a fuse inside a mains plug?	Acts as a safety feature, melts if there is a current surge, thus breaking the circuit.
What is the relationship between current, power & voltage?	$P = I \times V$
What do we mean by alternating potential difference?	A potential difference continuously varying between one direction and the other (positive and negative).
How can you calculate the total resistance of a set of resistors connected in series?	Total resistance is equal to the sum of the resistances of individual components.
At which stage of the national grid would you find a step-down transformer?	Between transmission cables and the consumer.
At which stage of the national grid would you find a step-up transformer?	After the generator and before the grid cables.
What does a step-up transformer do?	Increases the potential difference generated by the power station, so that electrical power can be transmitted at a higher potential.
What can happen when insulating materials are rubbed together?	They can become (statically) electrically charged.
What happens when two electrically charged objects are brought close together?	They exert a force on each other.

Date: 29/1/24

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

Date: 29/1/24

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.



The diagram shows how the electric supply cable is connected to an electric kettle.
The earth wire is connected to the metal case of the kettle.
If a fault makes the metal case live, the earth wire and the fuse inside the plug protect anyone using the kettle from an electric shock. Explain how. (2)

Improvement Work: If a fault makes the metal case live, the earth wire and the fuse inside the plug protect anyone using the kettle from an electric shock. Explain how. (2)

WEEK 5 Questions (cover and quiz) - Ecology

Question	Answer
Give examples of conditions in an extreme environment.	High temperature, high pressure, high salt concentration.
What sort of organisms live in environments with high temperatures, pressure and/or salt concentrations?	Extremophiles.
Give an example of an extremophile?	Bacteria living in deep sea vents.
What is biomass?	The amount of biological material in an organism.
What type of organisms are producers?	Photosynthetic organisms.
What do food chains represent?	Feeding relationships within a community.
What type of organism is always at the start of a food chain?	A producer
Which molecule is synthesised by green plants and algae?	Glucose.
Which process do algae and green plants use to produce biomass?	Photosynthesis.
What do primary consumers eat?	Producers.
What do secondary consumers eat?	Primary consumers.
What do tertiary consumers eat?	Secondary consumers.
What is a predator?	A consumer that eats other animals.
What keyword means 'a consumer that is eaten by another consumer'?	Prey.
How do the numbers of predators and prey vary in a stable community	They rise and fall in cycles.
Give two experimental methods used by ecologists to determine the distribution and abundance of species in an ecosystem.	Transects and quadrats.
What technique would you use to measure the abundance of a species in an ecosystem?	A quadrat.
What technique would you use to measure the distribution of a species in an ecosystem?	A transect.
What do decomposers do?	Break down waste and dead animal and plant material.

Date: 5/2/24

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

Date: 5/2/24

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.

Students used quadrats to estimate the population of dandelion plants on a field.
Describe how quadrats should be used to estimate the number of dandelion plants in a field. (4)

Improvement Work: Students used quadrats to estimate the population of dandelion plants on a field. Describe how quadrats should be used to estimate the number of dandelion plants in a field. (4)

WEEK 6 Questions (cover and quiz) - Organic Chemistry

Question	Answer
What type of bond (ionic, metallic or covalent) is found in simple molecules?	Covalent
What state (solid, liquid or gas) is crude oil at room temperature?	Liquid
How many shared electrons are there in a single covalent bond?	Two
Which element forms long chains in simple polymers such as poly(ethene)?	Carbon
Which type of compound only contains hydrogen and carbon atoms?	Hydrocarbon
Are ‘petrochemicals’ made from petrol, rock or crude oil?	Crude oil
How many years (hundreds, thousands or millions) does it take for crude oil to form?	Millions
If something is not being made any more, is it described as ‘finite’ or as ‘non-renewable’?	Finite
How many litres of crude oil does the world use each second (180, 1800 or 180 000)?	180 000
Name the two elements found in hydrocarbons.	Carbon; Hydrogen
Name the main hydrocarbon found in natural gas.	Methane
Diesel oil is being used up faster than crude oil forms. Does this make it a finite resource or a non-renewable one?	Non-renewable
Name the polymer formed from ethene, which comes from crude oil.	Poly(ethene)
Name the state change that occurs when a gas becomes a liquid.	Condensing /condensation
What bonds or forces exist between molecules (ionic, covalent or intermolecular)?	Intermolecular
Compared with metals, do simple molecules typically have high boiling points or low ones?	Low
Name the method used to separate a mixture of two or more liquids with different boiling points.	Fractional distillation
Crude oil is a source of feedstock. Give one other type of useful substance from crude oil.	Fuels
Is crude oil described as a finite resource or an infinite resource?	Finite
Name a non-renewable fossil fuel obtained from crude oil.	Petrol/ kerosene/ diesel oil/fuel oil
What process is used to separate crude oil into useful mixtures?	Fractional distillation
Give one use for the gases fraction from crude oil.	Domestic heating/cooking
Which fraction is more easily ignited, bitumen or kerosene?	Kerosene
Which fraction is more viscous, bitumen or kerosene?	Bitumen
Which hydrocarbons have the greater boiling points, the ones with larger molecules or the ones with smaller molecules?	Larger molecules

Date: 19/2/24

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

Date: 19/2/24

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 how crude oil is separated into fractions by fractional distillation. (4)

Improvement Work: Describe how crude oil is separated into fractions by fractional distillation. (4)

WEEK 7 Questions (cover and quiz) - Working Scientifically

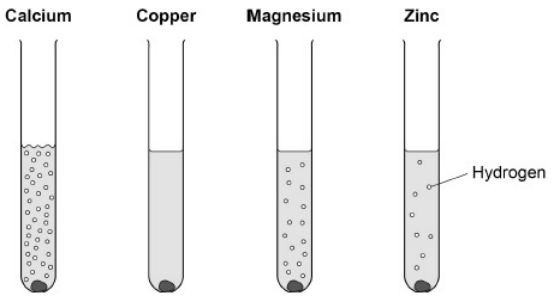
Question	Answer
What is an independent variable?	Variable that causes another variable to change (cause)
What is a dependent variable?	Variable that changes because of a change to another variable (effect)
What is a control variable?	Variable that we must keep the same during our experiment
What goes in the left hand column of a results table?	Independent variable
What goes in the right hand column of a results table?	Dependent variable
Where do we write the units in a results table?	Column headings
What is an anomalous result?	A result that does not fit the pattern / trend.
What is the definition of categorical data?	Data that can only have certain values.
What is the definition of continuous data?	Data that can have any value on a scale.
What type of graph should we draw for continuous data?	Scatter / line
What is a hazard?	An object/substance that could cause harm to someone.
What is a risk?	The harm that could be caused to someone by a hazard.
What is a control measure?	Actions we can take to reduce the risk of harm.
What type of graph should we draw for categorical data?	Bar / pie
Which variable usually goes on the horizontal axis of a scatter graph?	Independent
Which variable usually goes on the vertical axis of a scatter graph?	Dependent
What is the difference between a line and a scatter graph?	Line graph looks like a dot to dot; scatter graphs tend to draw a line or curve of best fit.
What is the definition of accurate?	How close the measurement is to the actual value.
What is the definition of random error?	Difference between measurement and actual value that can’t be predicted
What do we call a result that does not fit the pattern or trend?	Anomalous result / outlier

Date: 26/2/24

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

Date: 26/2/24

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.



The diagram shows what happens when calcium, copper, magnesium and zinc are added to hydrochloric acid. A student wants to make a fair comparison of the reactivity of the metals with hydrochloric acid. Name two variables that must be kept constant. (2)

Improvement Work: Name two variables that must be kept constant. (2)

WEEK 8 Questions (cover and quiz) - Bioenergetics

Question	Answer
How many hours each day do plants respire?	24 hours.
Write the balanced symbol equation for photosynthesis	$6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$
How does carbon dioxide concentration affect photosynthesis?	As carbon dioxide levels increase the rate of photosynthesis increases.
How does light intensity affect photosynthesis?	As light level increases the rate of photosynthesis increases.
If starch is present what colour does iodine turn?	Blue-black.
What is the chemical formula for glucose?	$C_6H_{12}O_6$
Write the word equation for photosynthesis	Carbon dioxide + Water → Glucose + Oxygen
What are the reactants of photosynthesis?	Carbon dioxide and Water.
What substance causes plants to be green?	Chlorophyll.
What type of reaction is photosynthesis?	Endothermic.
Plants often use lipids as an energy store for seeds, why do seeds need this?	For respiration as the plant germinates before it can photosynthesise.
Why do leaves have veins?	For water to be brought to the cells via the Xylem and products of photosynthesis to be removed via the phloem.
What are the products of photosynthesis?	Glucose and Oxygen.
What product of photosynthesis do plants use to respire?	Glucose.
Where do plants that live in nitrate-poor soil (e.g. Venus flytraps or sundews) get their nutrients from?	Insects they catch.
Name the four limiting factors for photosynthesis	Light intensity / Temperature / Carbon dioxide concentration / chlorophyll levels in the leaves.
What is the limiting factor for photosynthesis at night?	Light intensity
During photosynthesis energy is transferred from the environment to the chloroplast by?	Light.
What is the main energy store in plants?	Starch.
How does temperature affect photosynthesis?	The rate of photosynthesis increases as the temperature reaches about 37°C. Above 40°C the rate of photosynthesis decreases rapidly.
Why do leaves contain chlorophyll in chloroplasts?	To absorb light for photosynthesis.
Why do leaves have air spaces?	To allow carbon dioxide to diffuse into the cells and oxygen out of the cells.
Why are most leaves thin?	To decrease the distance gases need to diffuse.
Why are most leaves broad	To increase the surface areas for light to fall on.
Why do leaves have guard cells?	To open and close the stomata in order to regulate gas exchange.
When is starch used in plants?	When it is dark or low light levels starch is converted back to glucose.

Date: 4/3/24

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

Date: 4/3/24

Week 8 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 student investigated the effect of different colours of light on the rate of photosynthesis at room temperature.

Describe how the student should make accurate measurements to obtain valid results for the rate of photosynthesis. (4)

Improvement Work: Describe how the student should make accurate measurements to obtain valid results for the rate of photosynthesis. (4)

WEEK 9 Questions (cover and quiz) - Chemical Analysis

Question	Answer
What is crystallisation?	Method of mixture separation where a solvent is evaporated leaving the solid solute behind
What is distillation?	A separation technique which means a mixture of two liquids is heated to evaporate the one with the lower boiling point, then condensing this substance into a different container.
Why might you use an oil bath to determine the boiling or melting point of a substance?	Oil will be a liquid at higher temperatures than water
What is the chemical test for carbon dioxide?	Turns limewater cloudy
What is the test for oxygen gas?	Relights a glowing splint
What is the test for hydrogen gas?	Burns with a squeaky pop
What is the test for chlorine gas?	Chlorine bleaches damp litmus paper
A mixture that has been designed as a useful product is called…	A formulation
A student wrote down the following description for testing chlorine: "Litmus paper changes from red to blue.” Where has he gone wrong?	Damp litmus paper needs to be used; litmus paper is bleached (turns white; blue litmus paper will turn red first, then white)
True or False: Amino acids can be identified using chromatography.	TRUE
An unknown gas gives out a squeaky pop when a burning splint is put into it. What is the gas?	Hydrogen
Fuels, alloys, fertilisers, pesticides, cosmetics and food products are all types of formulations: True or False?	TRUE
Give two examples of formulations.	Fuels, cleaning agents, paints, medicines, alloys, fertilisers and foods (or any other example)
How are formulations made?	Mixing the components in carefully measured quantities to ensure the product has the required properties.
What test could be used to distinguish between a pure substance and a mixture?	Test melting / boiling point.
How do you make a glowing splint?	Blow out a lit splint
If a glowing splint relights what gas is present?	Oxygen
Is a substance pure or impure if it boils and melts at precise temperatures?	Pure
If damp litmus paper is bleached white what gas is present?	Chlorine
If lime water turns milky what gas is present?	Carbon dioxide

Date: 11/3/24

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

Date: 11/3/24

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.

Plan a chromatography experiment to investigate the colours in an ink. (6)

Improvement Work: Plan a chromatography experiment to investigate the colours in an ink. (6)

WEEK 10 Questions (cover and quiz) - Energy

Question	Answer
What is the exothermic reaction in which glucose is broken down using oxygen to produce carbon dioxide and water and release energy for the cells?	Aerobic respiration.
Which type of respiration produces the most energy?	Aerobic respiration.
Which type of respiration takes place when there is oxygen present?	Aerobic respiration.
Which type of respiration takes place when there is no oxygen present?	Anaerobic respiration.
Why does your breathing rate change during exercise?	As your breathing rate increases it increases the amount of oxygen getting into your blood.
What needs to removed from cells after aerobic respiration?	Carbon dioxide and water.
What do both types of respiration release that is useful?	Energy.
What type of reaction is aerobic respiration?	Exothermic.
What is anaerobic respiration in yeast cells also known as?	Fermentation.
What is the word equation for aerobic respiration?	Glucose + Oxygen → Carbon dioxide + Water
What is the word equation for anaerobic respiration in plants?	glucose → ethanol + carbon dioxide
What is the word equation for anaerobic respiration in humans?	glucose → lactic acid
What does the liver convert lactic acid into?	Glucose.
What carbohydrate do muscles store glucose as?	Glycogen.
Where are the enzymes needed for aerobic respiration found in cells?	Inside the mitochondria.
During exercise what happens to your breathing rate?	It increases and you breathe more deeply.
Why does your heart rate increase during exercise?	It increases to increase the blood flow to the muscles (& around the body) and so the delivery of glucose and oxygen to the respiring cells.
What is formed during the incomplete breakdown of glucose in anaerobic respiration?	Lactic acid.
The sum of all the reactions taking place in a cell or the body of an organism is called?	Metabolism.
What is it called when your muscles stop contracting efficiently?	Muscle fatigue.
An example of a metabolic reaction is the conversion of glucose into?	Starch or glycogen or cellulose.
Which industries use anaerobic respiration in yeast?	The alcoholic drinks and bread making industries.
What is oxygen debt?	The extra oxygen needed after exercise to complete respiration of lactic acid.
Why do you breathe more deeply during exercise?	To increase the amount of oxygen being taken in with each breath and you need more energy to be released from respiration.

Date: 18/3/24

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

Date: 18/3/24

Week 10 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.

Explain how an increase in blood flow to an athlete's muscles helps them to run. (4)

Improvement Work: Explain how an increase in blood flow to an athlete's muscles helps them to run. (4)

WEEK 11 Questions (cover and quiz) - Organisation

Question	Answer
What is the definition of organ?	A collection of different tissues working together to carry out a specific function.
What is the definition of an organ system?	A group of organs that work together to carry out a specific function and form organisms.
What is the definition of tissue?	A group of specialised cells with a similar structure and function.
What type of animal tissue contracts, bringing about movement?	Muscular tissue.
Name the four major plant organs.	Roots / Leaves / Stem / Flower
What are the names of the two transport tissues in plants?	Xylem and Phloem.
What is cardiovascular disease?	Any disease that involves the heart or blood vessels.
What are the three main types of blood vessels?	Arteries, veins and capillaries.
Which type of blood vessel carries blood away from the heart?	Arteries.
Which blood vessel has a small lumen and a thick layer of muscle and elastic fibres	Artery.
What can be used to correct irregularities in the heart rhythm?	Artificial pacemakers.
What is the network of tiny vessels linking arteries to veins called?	Capillaries.
Which blood vessel has a thin wall that allows diffusion of gases and nutrients?	Capillary.
What does the natural pacemaker do?	Controls a group of cells in the right atrium that controls the resting heart rate.
What does the vena cava do?	It carries deoxygenated blood from the body into the heart.
What does the pulmonary artery do?	It carries deoxygenated blood from the heart to the lungs.
What does pulmonary vein do?	It carries oxygenated blood from the lungs to the heart.
What does the heart do?	It pumps blood around the body.
What does the aorta do?	It takes oxygenated blood away from the heart to the rest of the body.
What does plasma do?	It transports blood cells and other substances around the body.
What is the name of the fluid part of the blood?	Plasma.
Which part of the blood consists of small fragments of blood cells that help clotting?	Platelets.

Date: 25/3/24

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

Date: 25/3/24

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.

Arteries and veins have different structures and different functions. Explain how the different structure of arteries and veins relates to their different functions. (6)

Improvement Work: Arteries and veins have different structures and different functions. Explain how the different structure of arteries and veins relates to their different functions. (6)

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