Lesson details - Thursday 25th June

Year Group: 10
Subject: Science
Where I will find my work: In this document
Hyperlinks: Throughout

Do Now Questions

4. Name three topics you have studied this year
5. Consider these topics, which was your favourite?
6. Why did you enjoy this topic the most?

Engage

LO: To revise science from this year, to prepare for next year.

Keywords:

Chemistry, Biology, Physics, Cell, Atom, Force

Learn

Use the following BBC bitesize pages to refresh your knowledge!

https://www.bbc.co.uk/bitesize/topics/z2mttv4
https://www.bbc.co.uk/bitesize/topics/zwj22nb
https://www.bbc.co.uk/bitesize/topics/zysvv9q
https://www.bbc.co.uk/bitesize/topics/zshssrd

Build

Complete BBC Bitesize quizzes from the pages linked above.

Apply

Answer the learning grid questions for Cells and Body Systems; Reproduction; Elements and Compounds and Separating Mixtures

Review

Purple Pen the learning grid questions using the model answers

Well done!

Separating mixtures and compounds: learning grid. Year 10 summer learning

Read the question and do some short research. Write a couple of sentences into the answer space.

Question	***Your answer***
What is solubility, and why do some substances dissolve in water while others do not?	
Can you find examples of solutes and solutions in everyday life, such as sugar dissolving in tea or salt dissolving in water?	
How does chromatography work, and how can it be used to separate the different colours in a marker or ink?	
What is the periodic table, and how does it help scientists organise and understand different elements?	
Can you find examples of different elements on the periodic table that are used in everyday items, such as iron in nails or oxygen in the air?	

Separating mixtures and compounds: learning grid. Year 10 summer learning

Solutions

Question	***Answers you can use to make your answers better.***
What is solubility, and why do some substances dissolve in water while others do not?	Solubility is the ability of a substance to dissolve in another substance, like how sugar dissolves in water to make a sweet solution. Some substances dissolve easily in water because their molecules can mix well, while others don't dissolve as well because their molecules don't mix with water.
Can you find examples of solutes and solutions in everyday life, such as sugar dissolving in tea or salt dissolving in water?	Solutes are the substances that dissolve in a solution, like sugar or salt. Solutions are made when a solute, like sugar, is added to a solvent, like water, and mixes together to form a new mixture. We use solutions every day, like when we make lemonade by mixing lemon juice (solute) with water (solvent).
How does chromatography work, and how can it be used to separate the different colours in a marker or ink?	Chromatography is a way to separate and identify different colours or substances in a mixture. It works by putting a small amount of the mixture on a special paper or material and letting a liquid, like water or alcohol, move up the paper. As the liquid moves up, it carries different substances with it and separates them, showing different colours or patterns.
What is the periodic table, and how does it help scientists organise and understand different elements?	The periodic table is like a special chart that organises all the different elements. Elements are like building blocks of matter, and they have unique names and symbols. The periodic table helps scientists see patterns in how elements are related and learn more about their properties and uses.
Can you find examples of different elements on the periodic table that are used in everyday items, such as iron in nails or oxygen in the air?	The periodic table has lots of elements, and each element has its own unique properties. For example, iron is a strong metal found in nails and bridges, while oxygen is a gas that we need to breathe and is in the air around us. Elements in the periodic table help us understand the world and make things we use every day.

Particles and matter: learning grid. Year 10 summer learning

Read the question and do some short research. Write a couple of sentences into the answer space.

Question	***Your answer***
What is the particle model of matter, and how does it explain the behaviour and properties of solids, liquids, and gases?	
How do particles in a solid, liquid, and gas move differently, and what effect does this movement have on the state of matter?	
What happens to particles when a substance changes from one state to another, such as from a solid to a liquid or a liquid to a gas?	
How does temperature affect the movement and arrangement of particles in a substance?	
Can you investigate how different factors, such as pressure or volume, affect the behaviour of particles in a gas?	

Particles and matter: learning grid. Year 10 summer learning

Solutions

Question	***Answers you can use to make your answers better.***
What is the particle model of matter, and how does it explain the behaviour and properties of solids, liquids, and gases?	The particle model of matter helps us understand that everything around us is made up of tiny particles. Solids have tightly packed particles that don't move much, liquids have particles that can slide and flow, and gases have particles that move freely.
How do particles in a solid, liquid, and gas move differently, and what effect does this movement have on the state of matter?	When a substance melts or boils, its particles change. In a solid, particles are close together and don't move much, but in a liquid, they move more freely. When a liquid evaporates and becomes a gas, the particles spread out even more and move very quickly.
What happens to particles when a substance changes from one state to another, such as from a solid to a liquid or a liquid to a gas?	Temperature affects how fast particles move. When it's hot, particles move faster and can spread out more. When it's cold, particles move slower and come closer together.
How does temperature affect the movement and arrangement of particles in a substance?	Imagine squeezing a balloon - that's like increasing the pressure on the gas inside it. The particles get squished and come closer together. If you let air out of a balloon, the particles have more space to move and spread out.
Can you investigate how different factors, such as pressure or volume, affect the behaviour of particles in a gas?	You can explore how gases behave by doing simple experiments. For example, you can try blowing up balloons to different sizes and see how the amount of air (volume) affects how the balloon feels. You can also try squeezing a plastic bottle with a balloon inside to see how pressure affects the balloon. These experiments help us learn about the behaviour of gases and how they are affected by volume and pressure.

Atoms and radiation: learning grid. Year 10 summer learning

Read the question and do some short research. Write a couple of sentences into the answer space.

Question	***Your answer***
What are atoms, and what are they made of? How do atoms combine to form different substances?	
What is radiation, and how does it differ from other forms of energy like light or heat? Can you find examples of radiation in everyday life?	
How does radiation affect living organisms and the environment? Are there different types of radiation, and what are their properties?	
What are some ways to protect ourselves from harmful radiation? Can you explore the use of protective materials or safety measures?	
What are the effects of radiation on materials and living things?	

Atoms and radiation: learning grid. Year 10 summer learning

Solutions

Question	***Answers you can use to make your answers better.***
What are atoms, and what are they made of? How do atoms combine to form different substances?	Atoms are tiny building blocks that make up everything around us. They are made up of even smaller particles called protons, neutrons, and electrons. When atoms join, they can form different substances like water or air.
What is radiation, and how does it differ from other forms of energy like light or heat? Can you find examples of radiation in everyday life?	Radiation is a type of energy that comes from sources like the Sun or certain materials. It is different from light or heat because we can't see or feel it. Examples of radiation include sunlight, X-rays at the doctor's office, and even the signals that carry TV and radio broadcasts.
How does radiation affect living organisms and the environment? Are there different types of radiation, and what are their properties?	Radiation can have different effects on living things and the environment. Some types of radiation, like ultraviolet (UV) rays from the Sun, can give us a suntan or sunburn if we don't protect our skin. Other types, like nuclear radiation, can be harmful if we're exposed to too much of it.
What are some ways to protect ourselves from harmful radiation? Can you explore the use of protective materials or safety measures?	To protect ourselves from harmful radiation, we can use things like sunscreen and sunglasses to block UV rays from the Sun. In places where there's a lot of radiation, like around nuclear power plants or when getting an X-ray, scientists and doctors take extra precautions to keep us safe.
What are the effects of radiation on materials and living things?	Atoms can release radiation through a process called radioactive decay. When this happens, the atoms change and give off energy in the form of radiation. Scientists study radiation to understand its effects and to use it safely in things like medical treatments or to generate electricity.