Lesson details - Wednesday 24th June

Year Group: 7
Subject: Science
Where I will find my work: In this document
Hyperlinks: Throughout

Do Now Questions

1. Name three topics you have studied this year
2. Consider these topics, which was your favourite?
3. 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!

Biology https://www.bbc.co.uk/bitesize/subjects/z4882hv
Chemistry https://www.bbc.co.uk/bitesize/subjects/znxtyrd
Physics https://www.bbc.co.uk/bitesize/subjects/znxtyrd

Build

Complete some 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

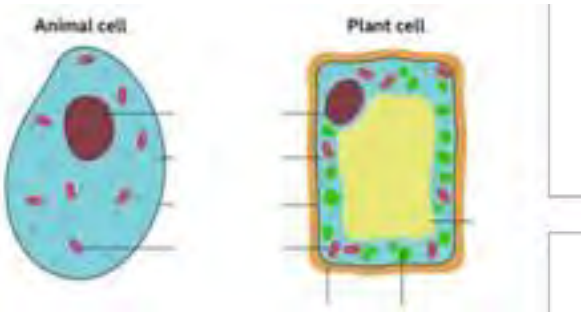
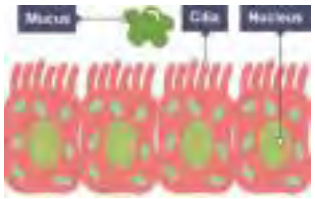
Review

Purple Pen the learning grid questions using the model answers

Well done!

Cells and body systems: learning grid. Year 7 summer learning

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

Question	***Your answer***
Label these pictures of animal and plant cells. Write what the function of each part is. What are the mitochondria? What do they do? What are the ribosomes? What do they do?	
What are the different parts of blood, and what do they do to keep our bodies healthy?	
How do plant cells use chloroplasts to capture energy from the sun and make food?	
What are cilia, and how do they help our bodies with important tasks like breathing and moving mucus?	
How does smoking affect our lungs and increase the risk of diseases like lung cancer and bronchitis?	

Cells and body systems: learning grid. Year 7 summer learning

Solutions

Question	***Solutions you can use to make your answers better.***
Label these pictures of animal and plant cells. Write what the function of each part is. What are the mitochondria? What do they do? What are the ribosomes? What do they do?	The mitochondria are used for releasing energy in cells through respiration. The ribosomes make protein inside the cells.
What are the different parts of blood, and what do they do to keep our bodies healthy?	The red blood cells carry oxygen to all the parts of our body. The white blood cells fight off microbes. The platelets help our blood to clot when we get a cut or scrape.
How do plant cells use chloroplasts to capture energy from the sun and make food?	Plant cells use chloroplasts to capture energy from the sun. With the help of chlorophyll, chloroplasts convert sunlight, water, and carbon dioxide into food for the plant through a process called photosynthesis. This food, known as glucose, provides energy for the plant to grow and thrive.
What are cilia, and how do they help our bodies with important tasks like breathing and moving mucus?	Cilia are tiny hair-like structures in our bodies that can move. They help us breathe and keep our airways clean by sweeping away mucus and dirt.
How does smoking affect our lungs and increase the risk of diseases like lung cancer and bronchitis?	Smoking is harmful to our lungs because it contains chemicals that damage the delicate tissues inside. These damages can lead to lung cancer, where unhealthy cells grow out of control, and bronchitis, which is an inflammation of the air passages in our lungs that causes coughing and difficulty breathing.

Reproduction: learning grid. Year 7 summer learning

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

Question	***Your answer***
What are the different organs in the male reproductive system, and what are their functions?	
How are sperm produced in the male body, and where are they stored?	
What are the changes that happen to girls during puberty, and why do these changes occur?	
What is the process of fertilisation, and where does it usually take place in the female body?	
How do flowers reproduce, and what are the different parts of a flower involved in reproduction?	

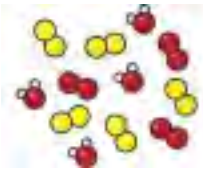
Reproduction: learning grid. Year 7 summer learning

Solutions

Question	***Answers you can use to make your answers better.***
What are the different organs in the male reproductive system, and what are their functions?	The male reproductive system includes organs such as the testes, which produce sperm, and the penis, which delivers sperm to the female body during reproduction. The testes also produce hormones that are important for the development of male characteristics.
How are sperm produced in the male body, and where are they stored?	Sperm are produced in the testes. Once produced, they are stored in a coiled tube called the epididymis, located on the back of each testicle, until they are ready to be ejaculated during sexual activity.
What are the changes that happen to girls during puberty, and why do these changes occur?	During puberty, girls experience physical and hormonal changes. These changes include breast development, the start of menstruation (periods), growth of pubic hair, and the widening of hips. These changes occur because the body is preparing for the possibility of pregnancy.
What is the process of fertilisation, and where does it usually take place in the female body?	Fertilisation is the process of combining a sperm cell with an egg cell. It usually takes place in the fallopian tubes of the female body, where the egg travels after being released from the ovary during ovulation. If a sperm successfully fertilises the egg, it can result in pregnancy.
How do flowers reproduce, and what are the different parts of a flower involved in reproduction?	Flowers reproduce through a process called pollination. The different parts of a flower involved in reproduction include the stamen (male reproductive organ), which produces pollen, and the pistil (female reproductive organ), which contains the ovary where the eggs are produced. Pollination occurs when pollen is transferred from the stamen to the pistil.

Elements and compounds: learning grid. Year 7 summer learning

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

Question	***Your answer***
What is a compound, and how is it different from an element?	
Can you give an example of a compound that contains two different elements?	
How many elements are present in the compound CaCO3 (calcium carbonate)?	
What is the role of the periodic table, and how is it used to organise elements?	
Can you name a compound that is not mentioned in the options provided?	

Elements and compounds: learning grid. Year 7 summer learning

Solutions

Question	***Answers you can use to make your answers better.***
What is a compound, and how is it different from an element?	A compound is a substance formed when two or more different elements chemically combine. It is different from an element because an element consists of only one type of atom, while a compound is made up of atoms of different elements.
Can you give an example of a compound that contains two different elements?	An example of a compound that contains two different elements is water (H_2O), which consists of hydrogen (H) and oxygen (O) atoms chemically bonded together.
How many elements are present in the compound CaCO3 (calcium carbonate)?	The compound $CaCO_3$ (calcium carbonate) contains three elements: calcium (Ca), carbon (C), and oxygen (O).
What is the role of the periodic table, and how is it used to organise elements?	The periodic table is a chart that organises elements based on their atomic number, electron configuration, and chemical properties. It helps scientists and researchers understand the relationships between different elements and predict their behaviour in chemical reactions.
Can you name a compound that is not mentioned in the options provided?	An example of a compound that is not mentioned in the options provided is sodium chloride (NaCl), which is commonly known as table salt. Sodium chloride is formed by the combination of sodium and chlorine elements.

Separating mixtures: learning grid. Year 7 summer learning

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

Question	***Your answer***
How can iron filings be separated from sand? Are there any special tools or methods used?	
What happens when liquids evaporate? Why do they turn into gas?	
Can you find examples of changes that are the reverse of each other, such as melting and freezing?	
What are the three main states of matter, and how do they differ from one another?	
How does evaporation occur? What factors affect the rate at which liquids evaporate?	

Separating mixtures: learning grid. Year 7 summer learning

Solutions

Question	***Answers you can use to make your answers better.***
How can iron filings be separated from sand? Are there any special tools or methods used?	Iron filings can be separated from sand using a magnet. The magnet attracts the iron filings, allowing them to be separated from the sand. This method takes advantage of the magnetic properties of iron.
What happens when liquids evaporate? Why do they turn into gas?	When liquids evaporate, they turn into gas. This happens because the particles of the liquid gain enough energy from heat to break free from their liquid form and become vapour in the air.
Can you find examples of changes that are the reverse of each other, such as melting and freezing?	Melting and freezing are examples of changes that are the reverse of each other. Melting is when a solid changes into a liquid due to the addition of heat, while freezing is when a liquid changes into a solid by losing heat.
What are the three main states of matter, and how do they differ from one another?	The three main states of matter are solid, liquid, and gas. Solids have a fixed shape and volume, liquids take the shape of their container but have a fixed volume, and gases can change both shape and volume depending on the container and the surrounding conditions.
How does evaporation occur? What factors affect the rate at which liquids evaporate?	Evaporation occurs when a liquid changes into a gas. It happens when the particles near the surface of the liquid gain enough energy to break away and escape into the air. Factors such as temperature, air movement, and surface area affect the rate at which liquids evaporate. Warmer temperatures, increased air movement, and larger surface areas can speed up evaporation.