Lesson details - Thursday 25th June

Year Group: 7
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!

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 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!

Energy: 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 the difference between kinetic energy and potential energy? Can you give examples of each?	
How does the energy store change when an object falls or is lifted higher?	
What are the different units used to measure weight, energy, and force?	
Can you find examples of energy stores that change such as boiling water or accelerating a car?	
What are the different types of forces that can act on objects?	

Energy: learning grid. Year 7 summer learning

Solutions

Question	***Answers you can use to make your answers better.***
What is the difference between kinetic energy and potential energy? Can you give examples of each?	Kinetic energy is the energy of an object in motion, while potential energy is the stored energy an object has. For example, when a ball is rolling, it has kinetic energy, and when it is held up high, it has gravitational potential energy.
How does the energy store change when an object falls or is lifted higher?	When an object falls, its potential energy decreases while its kinetic energy increases. When an object is lifted higher, its potential energy increases while its kinetic energy decreases.
What are the different units used to measure weight, energy, and force?	Weight is measured in units called Newtons (N), energy is measured in units called Joules (J), and force is measured in units called Newtons (N).
Can you find examples of energy stores that change such as boiling water or accelerating a car?	Boiling water involves a change in thermal energy, where heat energy is transferred to the water, causing it to change from a liquid to a gas. Accelerating a car involves a change in kinetic energy, where the car gains speed and its motion energy increases.
What are the different types of forces that can act on objects?	There are different types of forces that can act on objects, such as gravity, friction, magnetic force, electrical force, and applied force. For example, gravity pulls objects towards the Earth, friction opposes motion between two surfaces, and magnetic force attracts or repels objects with magnetic properties.

Forces: 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 friction, and how does it affect the movement of objects? Can you find examples of situations where friction is helpful or unhelpful?	
What are the different units used to measure force, weight, and work in scientific contexts?	
How might you investigate different surfaces and determine which ones have more or less friction?	
What happens when forces acting on an object are balanced?	
How does the extension of a spring change when different forces are applied to it?	

Forces: learning grid. Year 7 summer learning

Solutions

Question	***Answers you can use to make your answers better.***
What is friction, and how does it affect the movement of objects? Can you find examples of situations where friction is helpful or unhelpful?	Friction is a force that acts between two surfaces in contact and opposes their relative motion. It affects the movement of objects by making it harder for them to slide or roll smoothly. Friction can be helpful in situations like walking, where it provides grip and prevents slipping. However, friction can be unhelpful when it causes resistance and makes it difficult to move objects, like when trying to push a heavy box on the ground.
What are the different units used to measure force, weight, and work in scientific contexts?	Force is measured in units called Newtons (N), weight is also measured in Newtons (N), and work is measured in units called Joules (J).
How might you investigate different surfaces and determine which ones have more or less friction?	To investigate different surfaces and determine their friction, one could conduct experiments by sliding objects of the same weight or size on different surfaces and observing how far they travel or how easily they slide. Surfaces with more friction would slow down the objects or make them stop quickly, while surfaces with less friction would allow the objects to slide further.
What happens when forces acting on an object are balanced?	When forces acting on an object are balanced. In this case, the object remains still or continues to move at a constant speed without changing its motion.
How does the extension of a spring change when different forces are applied to it?	The extension of a spring changes when different forces are applied to it. If a greater force is applied, the spring will extend more, and if a smaller force is applied, the spring will extend less. The extension of the spring is directly proportional to the force applied to it.

Sound: 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 does sound travel? Can you find examples of different mediums where sound can or cannot travel?	
Label the different sections of the human ear.	
Are there factors that can affect the speed of sound in different materials?	
What is frequency? Can you find examples of sounds with high and low frequencies?	
What are echoes, and how are they produced?	

Sound: learning grid. Year 7 summer learning

Solutions

Question	***Answers you can use to make your answers better.***
How does sound travel? Can you find examples of different mediums where sound can or cannot travel?	Sound travels as waves of vibrations through different mediums, such as air, water, and solids. It cannot travel in a vacuum (empty space without any air or matter).
Label the different sections of the human ear.	
Are there factors that can affect the speed of sound in different materials?	The speed of sound in different materials can be affected by factors such as temperature, density, and elasticity. For example, sound travels faster in solids like metal than in liquids or gases.
What is frequency? Can you find examples of sounds with high and low frequencies?	Frequency refers to the number of vibrations or cycles per second in a sound wave and is measured in Hertz (Hz). Sounds with high frequencies, such as a bird chirping or a whistle, have a high-pitched tone, while sounds with low frequencies, like a rumbling thunder or a deep bass sound, have a low-pitched tone.
What are echoes, and how are they produced?	Echoes are reflected sound waves that bounce off surfaces and return to our ears. They are produced when sound waves encounter a barrier, such as a wall or a canyon, and bounce back towards the source of the sound, creating a repetition or delay in what we hear.

How science works, experimental skills: 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 is mass measured in science? What tools are commonly used to measure mass accurately?	
What is the difference between independent variables and dependent variables in a scientific experiment?	
How is the volume of a liquid measured in science?	
What should you do if you spill acid in a science lab?	
What are fair tests in scientific experiments, and why are they important?	

How science works, experimental skills: learning grid. Year 7 summer learning

Solutions

Question	***Answers you can use to make your answers better.***
How is mass measured in science? What tools are commonly used to measure mass accurately?	Mass is measured in science using a tool called a balance or a scale. These tools can accurately measure the amount of matter in an object by comparing it to known standards.
What is the difference between independent variables and dependent variables in a scientific experiment?	In a scientific experiment, an independent variable you change. A dependent variable, on the other hand, is the factor that you measure.
How is the volume of a liquid measured in science?	The volume of a liquid is commonly measured using a tool called a cylinder. The liquid is poured into the cylinder, and the volume is read from the scale marked on the side of the cylinder at the level of the liquid.
What should you do if you spill acid in a science lab?	If you spill acid in a science lab, you should immediately inform your teacher or a responsible adult. They will guide you on proper cleanup procedures to ensure your safety and minimize any potential harm.
What are fair tests in scientific experiments, and why are they important?	Fair tests in scientific experiments involve controlling variables other than the independent variable to ensure a reliable and accurate comparison. They are important because they allow scientists to isolate the effects of the independent variable and determine its true impact on the experiment's outcome.