

Self-assessment

NAME: _____

TEACHER: _____

FORM: _____



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Topic 14 Genetics and evolution	Check 1	Check 2	Check 3	Check 4
I can define variation				
I can define characteristics				
I can state the two causes of variation				
I can define environmental variation.				
I can give two examples of environmental variation.				
I can define genetic (inherited) variation.				
I can give two examples of genetic variation.				
I can state the causes of genetic variation				
I can define gametes				
I can state the section included in a plan				
I can define a hypothesis				
I can define a prediction				
I can define the independent variable				
I can define the dependent variable				
I can explain why variables should be controlled				
I can explain how to calculate a mean				
I can describe significant figures				
I can explain why significant figures are important in science				
I can explain how to identify significant figures				
I can state conventions for how many sig figs to include when calculating				
I know how to tell if data is precise				
I know why error bars constructed				
I know how error bars constructed				
I know how error bars can provide evidence for confidence in the conclusion				
I can describe peer review				
I can explain why peer review is important				
I can describe a reproducible conclusion				
I can explain how know if your procedure is valid				
I can explain how you know if your result is accurate				
I can explain how you know if your conclusion is repeatable				
I can describe continuous variation				
I can describe discontinuous variation				
I can give an example of variation that is discontinuous.				
I can give an example of variation that is continuous.				
I can describe normal distribution				
I can state where DNA is found in a cell				
I can describe the structures DNA is found in				
I can state the number of pairs of chromosomes found in most body cells				
I can state the differences between the sex chromosomes in males and females				
I can state the number of chromosomes found in gametes				
I can explain why gametes only contain half the chromosomes of a body cell				
I can state the name for a section of DNA that codes for a characteristic				
I can define adaptation				

I can describe natural selection.				
I can define evolution.				
I can state the name of the scientist who developed the theory of evolution by natural selection				
I can state what happens to an organism that is not adapted to its environment				
I can explain what can happen to a species if it cannot adapt to changes in their environment				
I can give four examples of causes of environmental change.				
I can explain the extinction of the dinosaurs				
I can describe the evidence for the causes of dinosaur extinction				
I can explain why scientific theories sometimes change				
I can describe the evidence for human evolution				

Topic 15 The Earth and Atmosphere	Check 1	Check 2	Check 3	Check 4
I can define the universe				
I can define a galaxy				
I can define the solar system				
I can explain the solar system formed				
I can state the age of the solar system and the Earth				
I can define a theory				
I can describe the the evidence for the age of the earth				
I can describe the structure of the earth				
I can state the definition of a mineral				
I can state the definition of a metal ore				
I can define chemical weathering				
I can define physical weathering				
I can define biological weathering				
I can define erosion				
I can describe how sedimentary rocks are formed				
I can describe how an igneous rock is formed				
I can describe how the rate of cooling affects crystal size				
I can describe how a metamorphic rock is formed				
I can explain how the three types of rock are linked				
I can state the composition of our atmosphere				
I can state how long the earth's atmosphere has had its current composition				
I can explain where the Earth's atmosphere came from				
I can explain how the oceans formed				
I can explain why the amount of carbon dioxide in the early atmosphere reduced				
I can explain how the formation of coal reduced the amount of carbon dioxide in the air				
I can explain how crude oil and natural gas formed				
I can describe how scientists think life on Earth originated				
I can describe the evidence for the origins of life on Earth				
I can define a prokaryote				
I can state the symbol and word equations for photosynthesis				
I can define algae				
I can explain how the atmosphere come to contain oxygen				
I can describe the composition of the atmosphere today				
I can name three greenhouse gases				
I can explain why it is desirable to have some greenhouse gases in the atmosphere				
I can explain how greenhouse gases maintain the Earth's temperature				
I can explain how two human activities have increased the levels of carbon dioxide and methane				
I can state what scientists predict will be the outcome of increased greenhouse gases in the atmosphere				

I can explain why it is difficult to make predictions about the Earth's climate				
I can explain the disadvantages of trying to make predictions about the Earth's climate				
I can state four possible consequences of global temperature rise				
I can state four predicted environmental effects of global temperature rise				
I can explain the meaning of a carbon footprint				
I can explain how a carbon footprint can be reduced				
I can explain how an individual can reduce their carbon footprint				
I can state three causes that have increased methane production due to the world's rising population				
I can state two other reasons why it may be difficult to reduce every individual's carbon footprint				

Topic 16 Materials	Check 1	Check 2	Check 3	Check 4
I can define material				
I can define matter				
I can state the definition of a natural material				
I can state the definition of a synthetic material				
I can give an example of a natural material				
I can give an example of a synthetic material				
I can state one use of natural material				
I can state one use of synthetic material				
I can state the four types of material				
I can describe the structure of a metal				
I can describe the structure of ceramics				
I can describe the structure of composites				
I can describe the structure of polymers				
I can define a hypothesis				
I can define a prediction				
I can explain what to include when writing an evaluation				
I can state the properties of metals				
I can state some uses of metals				
I can state the definition of an alloy				
I can describe the properties of an alloy compared to a metal				
I can state some uses of alloys				
I can state the definition of a polymer				
I can state the force of attraction between polymer molecules				
I can explain why polymers are solid at room temperature				
I can explain why simple molecules such as oxygen are gases at room temperature				
I can give some examples of natural polymers				
I can give some examples of synthetic polymers				
I can describe how synthetic polymers were discovered				
I can describe what is meant by vulcanisation				
I can give some advantages of using plastics				
I can give some disadvantages of using plastics				
I can describe how plastics are organised into groups				
I can state the four stages of a products' life cycle				
I can state the definition of a life cycle assessment				
I can state three examples of new materials				
I can state the properties of aerogel				
I can state the properties of graphene				
I can state one use of graphene				
I can state the definition of biomaterials				
I can state one use of biomaterials				

Topic 17 Waves and radiation	Check 1	Check 2	Check 3	Check 4
I can name five energy stores				
I can state 4 ways that energy can be transferred				
I can define a wave				
I can describe a mechanical wave				
I can describe the motion of particles of a transverse wave				
I can state the type of wave a water wave is				
I can describe what happens when waves hit a barrier				
I can explain why waves become smaller and further apart as they move further from the source				
I can describe the motion of particles of a longitudinal wave				
I can state what type of wave a sound wave is				
I can explain why sound becomes quieter the further you are from the source				
I can define amplitude				
I can define wavelength				
I can define frequency				
I can state the equation for calculating frequency				
I can state what T in the frequency calculation represents				
I can state the most commonly-used units for frequency				
I can define a hypothesis				
I can describe how does length affect pitch				
I can explain why energy transferred more easily in solids				
I can describe how sound changes as you move further from the source				
I can explain why sound changes as you move further from the source				
I can explain why sound travels fastest in solids				
I can state the average speed of sound in air				
What is the formula for calculating speed				
I can describe the energy transfer that takes place in your ears and microphones				
I can state the hearing range for humans in hertz				
I can define an echo				
I can name one organism that uses echolocation				
I can give one use of sonar				
I can give one use of ultrasound				
I can define an electromagnetic wave				
I can define a vacuum				
I can state the average speed of electromagnetic waves				
I can state the relationship between wavelength and the energy transferred				
I can describe what happens when light hits a transparent object				
I can describe what happens when light hits a translucent object				

I can describe what happens when light hits an opaque object				
I can draw a diagram to show a light ray				
I can define incident ray				
I can define reflected ray				
I can describe a plane mirror				
I can state the relationship between the angle of incidence and the angle of reflection if light is reflected off a plane mirror				
I can give one use of infrared radiation				
I can give one disadvantage of infrared radiation				
I can give one use of radio waves				
I can give one disadvantage of radio waves				
I can give one use of ultraviolet radiation				
I can give one use of X-rays				
I can give one use of Gamma rays				
I can describe ionising radiation				
I can explain why ionising radiation dangerous				
I can state what the acronym SPF means				
I can explain how UV beads work				
I can name the seven colours that make up visible light				
I can name the primary colours of light				
I can name the secondary colours of visible light				
I can define refraction				
I can define the independent variable				
I can define dependent variable				
I can state what should be included in the plan (other than hypothesis, prediction and variables)				
I can show where you should label a graph to show the IV and DV				
I can state what you should include in an evaluation				
I can describe a strategy that can be used to analyse scientific texts or diagrams				
I can state which part of your eye converts energy transferred by waves to energy transferred by electricity				
I can state what rod cells detect				
I can state what cone cells detect				
I can explain how we see objects				
I can explain why we see objects as different colours				
I can describe what filters do				
I can name three types of nuclear radiation				
I can state the difference between alpha and beta and gamma radiation				
I can give one use of alpha radiation				
I can give one use of beta radiation				
I can give one use of gamma radiation				
I can explain why nuclear radiation is dangerous				

Topic 18 Earth and Beyond	Check 1	Check 2	Check 3	Check 4
I can state the time it takes for Earth to rotate once on its axis				
I can explain night and day				
I can state the time it takes for Earth to orbit the Sun?				
What is gravity				
I can define gravitational field strength				
I can state the gravitational field strength on Earth				
I can describe how to calculate weight				
I can state what the gravitational field strength depends on				
I can state the average temperature range for the UK				
I can explain why the temperature is higher in summer				
I can explain why the length of the day changes from season to season				
I can define a satellite				
I can describe the current theory for the origin of Earth's moon				
I can describe the position of the Earth, moon and sun when the moon is full				
I can describe the position of the moon when it is a new moon				
I can explain why we always see the same side of the moon				
I can describe the position of the Earth, moon and sun during a solar eclipse				
I can describe the position of the Earth, moon and sun during a lunar eclipse				
I can define the universe				
I can define galaxy				
I can define a solar system				
I can define a planet				
I can state the name of Earth's Galaxy				
I can describe the position of the Earth in the solar system				
I can define a star				
I can state the age of the sun				
I can describe the life cycle of a star				
I can state the order of the eight planets in the solar system				
I can define a light year				
I can define an astronomical unit (au)				
I can define an asteroid				
I can describe the 'potato radius'				
I can define a comet				
I can define a meteor				
I can name the sections in a lab report				
I can explain why are conventions used in science				
I can explain why do we present our results in a graph				
I can state the difference between a description and an explanation of results				
I can describe what should be included in an evaluation				

I can suggest changes you could make to an investigation to be more confident in the conclusion				
I can explain how scientists found out about the solar system				
I can recall when humans first walked on the moon				
I can explain how to explore and observe the solar system				
I can explain why humans are trying to colonise Mars				
I can describe some of the challenges to living on Mars				
I can define the big bang				
I can state the age of the universe				
I can describe the evidence for the expansion of the universe				
I can describe the eventual fate of the universe?				