

## Year 10 GCSE Physics Homework

Module	Homework	Task
P1ab	Thermogram research	Research and explain what a thermogram is and how they can be used.
	Latent heat practical write up	Write up the practical to plot a cooling curve for ice or stearic acid. Focus on conclusion.
	P1ab literacy exam question	Answer the extended writing exam question following the PEEL technique.
P1cd	Electromagnetic spectrum research	Find out the name, uses and dangers of the 7 waves.
	P1cd literacy exam question	Answer the extended writing exam question following the PEEL technique.
	Critical angle practical write up	Write up the practical to find the critical angle of Perspex. Focus on results.
P1ef	P1ef literacy exam question	Answer the extended writing exam question following the PEEL technique.
	Mobile phones practical write up	Write a brief description of either an experiment or study to decide if mobile phones are dangerous. Focus on prediction and fair test.
	Research the developments in radio technology	Construct a time line (on paper or using IT) to show the progression from the first radio and TV broadcasts to the use of digital transmissions.
P1gh	Uses of wireless research	Research and describe the 3 main uses of wireless technology.
	Suntan lotion practical write up	Write up the practical to test different suntan lotions using UV pens and UV lights. Focus on risk assessment and method.
	P1gh literacy exam question	Answer the extended writing exam question following the PEEL technique.

Module	Homework	Task
P2ab	Photocells practical write up	Investigate how the voltage and current from a photocell varies with distance from the light source. Focus on prediction and fair test.
	Passive solar heating research	Research how passive solar heating is used in new homes.
	P2ab literacy exam question	Answer the extended writing exam question following the PEEL technique.
P2cd	Research the evidence for global warming in the last 200 years.	Research the main points of evidence for and against global warming over the last 200 years.
	Practical write up fuels	Measure the energy released by a fossil fuel by using a candle to heat water. Focus on conclusion.
	P2cd literacy exam question	Answer the extended writing exam question following the PEEL technique.
P2ef	Radioactivity demo write up	Show the differing ranges and penetrating powers of alpha, beta and gamma radiation. Focus on risk assessment and method.
	Research the exploration of the Moon by the Apollo missions.	Research the exploration of the Moon by the Apollo missions.
	P2ef literacy exam question	Answer the extended writing exam question following the PEEL technique.
P2gh	Formation of the moon research	Research and explain the main current theory of how the moon was formed.
	Red shift questions	Analysis of red shift diagrams.
	P2gh literacy exam question	Answer the extended writing exam question following the PEEL technique.

Module	Homework	Task
P3ab	Research how speed cameras work.	Research and describe how 2 different types of speed camera work.
	Practical to calculate acceleration.	Practical measurements of falling objects can be done to collect and analyse real data for calculating acceleration. Focus on results.
	P3ab literacy exam question	Answer the extended writing exam question following the PEEL technique.
P3cd	Reserach stopping distances.	Make a wall chart, PowerPoint presentation or a leaflet to show stopping distances for different speeds.
	Practical to calculate work done.	Measuring work done lifting weights. Focus on risk assessment and method.
	P3cd literacy exam question	Answer the extended writing exam question following the PEEL technique.
P3ef	Research different fuels used for transport.	Carry out research to find out which energy sources can be used to move motor vehicles, and discover what proportion of vehicles use each source.
	Practical for car safety.	Design, build and test model crumple zones with trolleys, egg boxes, paper and straws. Focus on conclusion.
	P3ef literacy exam question	Answer the extended writing exam question following the PEEL technique.
P3gh	Practical for whirligig.	Investigate factors affecting the speed of a falling whirligig. Focus on prediction and fair test.
	Research and design a rollercoaster.	Interpret a gravity ride (roller-coaster) in terms of: <ul style="list-style-type: none"> <li>• kinetic energy (KE)</li> <li>• gravitational potential energy (GPE)</li> <li>• energy transfer.</li> </ul>
	P3gh literacy exam question	Answer the extended writing exam question following the PEEL technique.

Year 10 GCSE Chemistry Homework

Module	Homework	Task
C1ab	Research renewable energy sources	Research at least 5 different renewable energy sources.
	Combustion practical write up	Carry out an experiment to show that combustion of a hydrocarbon in a plentiful supply of air produces carbon dioxide and water. Focus on method and risk assessment.
	C1ab literacy exam question	Answer the extended writing exam question following the PEEL technique.
C1cd	Research the methods of preventing atmospheric pollution	Research 3 different methods of preventing atmospheric pollution.
	Alkene practical write up	Test for unsaturation using bromine water. Focus on conclusion.
	C1cd literacy exam question	Answer the extended writing exam question following the PEEL technique.
C1ef	Research the development of a material precisely matched to need (eg CDs, sports equipment, health contexts etc).	Choose 3 different needs and research the development of a material precisely matched to each need.
	Cooking potato practical write up	Investigate the effect of heat on potatoes. Focus on results.
	C1ef literacy exam question	Answer the extended writing exam question following the PEEL technique.
C1gh	Nail varnish practical write up	Investigate the removal of coloured nail varnish with different solvents. Focus on prediction and fair test.
	Research the uses of thermochromic pigments.	Research and describe at least 3 different uses of thermochromic paints.
	C1gh literacy exam question	Answer the extended writing exam question following the PEEL technique.

Module	Homework	Task
C2ab	Research examples of people who live near volcanoes and the reasons why.	Research 3 different locations where people live near volcanoes and for each location give a reason.
	Concrete practical write up	Investigating the strength of concrete beams. Focus on prediction and fair test.
	C2ab literacy exam question	Answer the extended writing exam question following the PEEL technique.
C2cd	Research smart alloys and their uses.	Research at least 3 smart alloys and their uses.
	Rusting practical write up	Investigate the corrosion of aluminium and iron using different conditions (eg salt water, acid rain, moist air). Focus on conclusion.
	C2cd literacy exam question	Answer the extended writing exam question following the PEEL technique.
C2ef	Research manufacturing costs for a chosen industrial process	Choose 1 manufacturing process and research the costs involved.
	Neutralisation practical write up	Simple investigation into the change in pH during neutralisation (not pH titration curves). Focus on results.
	C2ef literacy exam question	Answer the extended writing exam question following the PEEL technique.
C2gh	Research salt mining.	Research and describe salt mining.
	Electrolysis practical write up	Carry out an experiment to electrolyse sodium chloride solution, test the products hydrogen and chlorine and show, using Universal Indicator, that the solution becomes alkaline. Focus on risk assessment and method.
	C2gh literacy exam question	Answer the extended writing exam question following the PEEL technique.

Module	Homework	Task
C3ab	Research examples of how rates of reaction affect everyday life	Research at least 3 examples of how rates of reaction affect everyday life
	Temperature practical write up	Investigate the rate of reaction using magnesium ribbon or calcium carbonate and different temperatures of dilute hydrochloric acid. Focus on results.
	C3ab literacy exam question	Answer the extended writing exam question following the PEEL technique.
C3cd	Surface area practical write up	Investigate surface area using magnesium powder and ribbon with acid, or marble chips and powder with acid. Focus on conclusion.
	Research an explosion in a flour factory	Research and describe an example of an explosion in a flour factory
	C3cd literacy exam question	Answer the extended writing exam question following the PEEL technique.
C3ef	Research the uses of endo- and exothermic reactions	Research 2 uses each of endo- and exothermic reactions
	Thermal decomposition practical write up	Measure the energy released per gram during the combustion of butane and the combustion of some liquid fuels – possible use of spreadsheets to analyse results. Focus on prediction and fair test.
	C3ef literacy exam question	Answer the extended writing exam question following the PEEL technique.
C3gh	Drug extraction practical write up	Practical extraction of a natural oil from a plant (eg chlorophyll from grass). Focus on risk assessment and method.
	Research the uses of fullerenes	Research and describe 3 uses of fullerenes
	C3gh literacy exam question	Answer the extended writing exam question following the PEEL technique.

Year 10 GCSE Biology Homework

Module	Homework	Task
B1ab	Research healthy lifestyles, to produce poster	Research healthy lifestyles, to produce poster
	Write up food test practical	Carry out simple food tests on a variety of food types. Focus on results.
	B1ab literacy exam question	Answer the extended writing exam question following the PEEL technique.
B1cd	Research idea of antibody structure and antigens – complementary and specificity.	Research idea of antibody structure and antigens – complementary and specificity.
	Write up nerve endings practical	Carry out an experiment using blunt needles or forceps to determine the density of nerve endings in different skin areas. Focus on risk assessment and method.
	B1cd literacy exam question	Answer the extended writing exam question following the PEEL technique.
B1ef	Research effects of smoking on body – information used to produce an anti-smoking poster.	Research effects of smoking on body – information used to produce an anti-smoking poster.
	Experiment write-up – Skin temperature on arm and leg, graph included.	Carry out an experiment on the changing skin temperature down an arm or a leg and plot the results accurately on a graph. Focus on prediction and fair test.
	B1ef literacy exam question	Answer the extended writing exam question following the PEEL technique.
B1gh	Research inherited diseases – examples: Sickle cell anaemia, Huntigton’s Chorea and Cystic Fibrosis.	Research inherited diseases – examples: Sickle cell anaemia, Huntigton’s Chorea and Cystic Fibrosis.
	Experiment write-up – Taking cuttings and comparing success of growth (e.g. with/without rooting powder, and with/without plastic bag over pot).	Take cuttings using rooting powder to encourage root growth. Focus on conclusion.
	B1gh literacy exam question	Answer the extended writing exam question following the PEEL technique.

Module	Homework	Task
B2ab	Research examples of animal and plant sub groups, e.g. Phylum, Class, Order, Family, Genus and Species (1-2 examples from each)	Research examples of animal and plant sub groups, e.g. Phylum, Class, Order, Family, Genus and Species (1-2 examples from each)
	Write up experiment – identify organisms and produce key to show them	Collect invertebrates from local surroundings and develop a simple key. Use a simple key to identify some invertebrates. Focus on risk assessment and method.
	B2ab literacy exam question	Answer the extended writing exam question following the PEEL technique.
B2cd	Research invasive species, for example Himalayan balsam, Japanese knotweed and American crayfish.	Research and describe invasive species, for example Himalayan balsam, Japanese knotweed and American crayfish.
	Experiment write-up – To draw conclusions about different soils, e.g. compare heavily farmed “soil” with soil from field left to fallow.	Carry out an experiment to test soil for nitrates. Focus on conclusion.
	B2cd literacy exam question	Answer the extended writing exam question following the PEEL technique.
B2ef	Research resistant bacteria and discuss the problems they cause in hospitals.	Research resistant bacteria and discuss the problems they cause in hospitals.
	Write-up observation of worm observation practical.	Observe a worm using a hand lens and list all of its adaptations that make it successful for life in the soil. Focus on results.
	B2ef literacy exam question	Answer the extended writing exam question following the PEEL technique.
B2gh	Research the use of seed banks (extinct plants project at Kew).	Research and describe the use of seed banks (extinct plants project at Kew).
	Practical write-up for germination of seedlings in different levels of acid rain.	Investigate the germination of seeds and the growth of seedlings in different levels of acid rain. Focus on prediction and fair test.
	B2gh literacy exam question	Answer the extended writing exam question following the PEEL technique.



Module	Homework	Task
B3ab	Research the roles of Watson, Crick and others in increasing our understanding of the structure of DNA.	Research and describe the roles of Watson, Crick and others in increasing our understanding of the structure of DNA.
	Write-up cheek cell slide	Make a stained cheek cell slide and examine it using a microscope. Focus on results.
	B3ab literacy exam question	Answer the extended writing exam question following the PEEL technique.
B3cd	Research uses of anaerobic respiration, to include differences between humans and yeast	Research and describe uses of anaerobic respiration, to include differences between humans and yeast
	Practical write-up for either experiment – fist clench or finger lift	Carry out a fist clenching exercise with arm raised and then lowered to demonstrate muscle fatigue. Or: Carry out a weight lifting exercise by a finger to show muscle fatigue. Focus on prediction and fair test.
	B3cd literacy exam question	Answer the extended writing exam question following the PEEL technique.
B3ef	Research and present a report on disorders of the blood, e.g. haemophilia, sickle-cell anaemia and leukaemia	Research and present a report on disorders of the blood, e.g. haemophilia, sickle-cell anaemia and leukaemia
	Experiment write-up – Onion cell vs. bacterial cells List comparisons/differences	Make an onion cell slide and examine it using a microscope. Focus on conclusion.
	B3ef literacy exam question	Answer the extended writing exam question following the PEEL technique.
B3gh	Research examples of different animal and plant breeds that have been produced by selective breeding.	Research and describe examples of different animal and plant breeds that have been produced by selective breeding.
	Write up experiment for meristem tissue culture. Focus on conditions and properties of cultured tissue.	Carry out a meristem tissue culture using cauliflower. Focus on risk assessment and method.
	B3gh literacy exam question	Answer the extended writing exam question following the PEEL technique.