



Science - activities you can do from home!

KS4

Describe how you would test foods for glucose, starch, proteins and fats. 10 POINTS	Describe what an ore is and explain the advantages and disadvantages of mining. 10 POINTS	Draw and name each of the four parts of the blood. Describe the function of each part. 10 POINTS	Choose three packets of food and evaluate how healthy they are. 10 POINTS	Compare a permanent magnet and an electromagnet. Describe how they are used differently and the advantages and disadvantages of each. 10 POINTS	Describe the movements in the thorax that allow breathing to occur. 10 POINTS	Place energy, power and time in a formula triangle. Give the units of each. 10 POINTS	Describe the effects of smoking and asthma on the lungs. 10 POINTS	Write a short story to describe what happens when a sperm meets an egg and fertilisation occurs. 10 POINTS	Choose an element from the periodic table. Draw a labelled diagram of an atom. Describe the atom in as much detail as possible. 10 POINTS
Make a crossword using scientific key words for a physics topic. 10 POINTS	Choose any topic. Make a set of cards of key words and a second set of definitions. Mix them up and find the matching pairs. 10 POINTS	Write a step by step method describing how make an onion cell slide and how to view it under a microscope. Include an equipment list. 10 POINTS	Draw particle diagrams of a solid, liquid and a gas. Add arrows and labels to show evaporating, condensing, melting and freezing. 10 POINTS	Make a model of a plant cell, labelling all the parts. Describe the function of each part. 10 POINTS	Write a step by step method describing how to make a model of a plant cell, labelling all the parts. 10 POINTS	Describe how metals can be extracted from their ores using electricity. 10 POINTS	Draw a Venn diagram describing changes during puberty: those that happen to males only, females only and those that happen to both sexes. 10 POINTS	List the structures that make up the circulatory system. State the function of each structure. 10 POINTS	Explain how a blast furnace is used to extract iron. 10 POINTS
Write a step by step method describing to a Year 6 pupil how to safely light a Bunsen burner. 10 POINTS	Describe the disadvantages of industrial-scale electrolysis. 10 POINTS	Chose five appliances in your home and work out how much it costs to run them for 1 hour. 10 POINTS	Name the components of a balanced diet. Describe what each is used for by our bodies. 10 POINTS	Chose any topic in science and make a spider diagram summarising your knowledge. 10 POINTS	Describe and explain 4 ways in which the lungs are adapted for gas exchange. 10 POINTS	Draw a Venn diagram comparing series and parallel circuits. 10 POINTS	Choose a predator and its prey. Explain how each is adapted to their environment. 10 POINTS	Write a method for an experiment to investigate the pH of some household chemicals. Include an equipment list. 10 POINTS	Write 10 multiple choice questions about electricity, including the answers. 10 POINTS
Write a method for an experiment to investigate the speed of sound. Include an equipment list. 10 POINTS	Compare the solar system with an atom. How are they similar and different? 10 POINTS	Make a poster to explain how the particles behave in the reaction between iron and sulphur. 10 POINTS	Design a poster that explains how plants are adapted to scatter their seed. 10 POINTS	State the equation linking mass, weight and gravitational field strength. Explain why a 10 kg machine has a mass of 11.6 N on the moon but 90N on Venus. 10 POINTS	Describe how the different blood vessels are adapted to their function. 10 POINTS	Describe the structure of the heart, naming all the chambers and blood vessels. 10 POINTS	Explain the importance of bacteria in the digestive system. 10 POINTS	Draw a flow diagram to show what happens when the skin is damaged. Describe how the parts of the blood protect from infection and form a clot. 10 POINTS	Draw a Venn diagram comparing plant and animal cells. 10 POINTS
Write 10 multiple choice questions about forces, including the answers. 10 POINTS	Explain which properties allow metals to be used for saucepans, bells, electrical wires and jewellery. 10 POINTS	Make a crossword using scientific key words for a biology topic. 10 POINTS	Draw a labelled cross-section of each type of blood vessel. Write a summary of the difference between them. 10 POINTS	Explain why it's important to balance symbol equation for a chemical reaction. 10 POINTS	Design a pair of ear defenders. Explain your choices of material. 10 POINTS	For each of the following answers, write down the question: friction, weight, contact, magnetism and Newtonmeter. 10 POINTS	Describe how sound waves are formed by wind chimes. Explain what affects the intensity and pitch of sound. 10 POINTS	Draw a poster to explain, in as much as possible, about electrical circuits. Include series and parallel circuits. 10 POINTS	Write 10 multiple choice questions about forces, including the answers. 10 POINTS
List the structures that make up the respiratory system. State the function of each structure. 10 POINTS	Think of a science keyword beginning with every letter of the alphabet. 10 POINTS	Using your knowledge of plants, design a plant capable of surviving in the desert. Explain how it is adapted. 10 POINTS	Describe how the air we breathe in differs from the air we breathe out. 10 POINTS	Describe a sink full of washing up. State whether each item is a solid, liquid or gas and an element mixture or compound. 10 POINTS	Write two lists of the properties of metals and non-metals. 10 POINTS	Write a step by step method describing how to test the strength of an electromagnet. Include an equipment list. 10 POINTS	Think of a mnemonic to remember the order of metals in the reactivity series. 10 POINTS	Make a crossword using scientific key words for a chemistry topic. 10 POINTS	Draw a transverse wave and label the amplitude, wavelength and frequency. 10 POINTS
Design a circuit diagram to allow the lights in a room to be switched on and off by two independent switches. 10 POINTS	Choose a food web. Write as many food chains as you can find. Describe how some of the organisms are adapted to their environment. 10 POINTS	Describe how enzymes work, using the lock and key hypothesis. 10 POINTS	Describe how lung volume can be measured. 10 POINTS	Write the equation involving energy, power and time into a formula triangle. Give the units of each. 10 POINTS	List the structures that make up the digestive system. State the function of each structure. 10 POINTS	Describe the digestion of a ham sandwich, naming the organs and enzymes involved. 10 POINTS	Use your knowledge of forces to explain how a lighter person can balance a heavier person on a seesaw. 10 POINTS	Describe how to calculate power using current and voltage. Give the units of each. 10 POINTS	Describe why we burn fuels. Explain what happens when fuels are burned and why these are useful reactions. 10 POINTS
Write a step by step description of how electricity is generated using coal and wind power. 10 POINTS	Draw a particle diagram and explain what is happening in the displacement reaction between iron and copper sulphate. 10 POINTS	Explain why sound travels faster through a rock than air. 10 POINTS	Explain why eating undercooked meat can cause food poisoning. Explain how your body tries to prevent food poisoning. 10 POINTS	List the sources of renewable energy and describe the advantages and disadvantages of each. 10 POINTS	Draw three different transverse waves and compare their amplitude, frequency and wavelength. 10 POINTS	Write a method for an experiment to investigate the speed of sound. Include an equipment list. 10 POINTS	Write a step by step method describing how to investigate which surfaces bacteria grow on. Include an equipment list. 10 POINTS	Draw a particle diagram to model the chemical reaction between oxygen and magnesium to produce magnesium oxide. 10 POINTS	Design a poster to explain how the greenhouse effect causes global warming. 10 POINTS
Use your knowledge of heat transfer to explain why it's better to use a wooden spoon than a metal spoon when cooking pasta. 10 POINTS	Describe how to make an electromagnet. Include an equipment list. 10 POINTS	Describe what happens to a ray of light as it passes through a cuboidal prism and a triangular prism. Use ray diagrams to help. 10 POINTS	Design an investigation to discover which antacid tablets are best to treat heartburn. Include an equipment list. 10 POINTS	Explain how selective breeding has been used to breed dairy cows with a high milk yield. 10 POINTS	Draw a poster to explain why an ice cube melts when put in a drink. 10 POINTS	Design a questionnaire that could be used to assess how healthy a person's lifestyle is. Explain why each question is important. 10 POINTS	Choose three specialised cells in the human body. Draw diagrams and explain how they are specialised to their function. 10 POINTS	Using your knowledge of photosynthesis, draw a poster to explain how a plant grows from a seed. 10 POINTS	Use your knowledge of food webs to explain why farmers use pesticides and explain the problems they cause. 10 POINTS
Draw a diagram of the Earth's crust and use it to explain the stages in the rock cycle in as much detail as possible. 10 POINTS	Draw an outline of the human body and label all the ways in which it resists infection. 10 POINTS	List the structures of the female reproductive system. State the function of each structure. 10 POINTS	Write the word equations for aerobic and anaerobic respiration. Explain why the equations are different. 10 POINTS	Draw a diagram of a Van der Graaf generator and explain how it works. 10 POINTS	Describe and explain the changes in the breathing and circulatory systems during exercise. 10 POINTS	Draw force diagrams to show the journey of a car from stationary to accelerating, to travelling at a constant speed then slowing down. 10 POINTS	Draw a circuit diagram for a torch. Use the diagram to describe and explain the flow of electricity. 10 POINTS	Draw a poster to explain what happens when sugar dissolves in a cup of tea. 10 POINTS	Write a letter to your local MP outlining your concerns about global warming. 10 POINTS