Finham Park School

KS3 SUBJECT Assessment Statements – Year 9 Biology

Working Towards		Working At		Greater Depth	
I know that cells are the basic structural unit of all organisms.	☐	I know how adaptations of cells relate to their function.	☐	I know the main subcellular structures of eukaryotic and prokaryotic cells.	☐
I can use a microscope.	☐	I can make a scientific drawing using a microscope.	☐	I can calculate cell size using the IAM equation.	☐
I can name ways that substances enter and leave cells.	☐	I can investigate osmosis.	☐	I understand the factors that affect the rate of transport across a membrane.	☐
I understand why cells need to divide.	☐	I know the key features of the three stages of the cell cycle.	☐	I can describe how a cell divides during mitosis	☐
I can identify some different types of plant and animal specialised cells.	☐	I can describe why differentiation is important in living organisms.	☐	I can explain how differentiation differs in animals and plants	☐
I can identify the differences between stem cells and normal body cells.	☐	I can describe the advantages of using stem cells to treat certain diseases.	☐	I can evaluate the pros and cons of using stem cells.	☐
I know the key biological molecules.	☐	I can test for different food groups.	☐	I understand the biological need for the different food groups	☐
I can name where different parts of digestion occur.	☐	I can explain how digestion by enzymes occurs.	☐	I can investigate factors affecting the rate of enzymatic reactions.	☐
I understand the role of blood.	☐	I can describe how the heart works.	☐	I can suggest ways to treat heart problems.	☐
I know the difference between breathing and respiration.	☐	I can describe the structure of the respiratory system.	☐	I understand how the lungs are adapted for gas exchanges.	☐
I know the role of the xylem and phloem in plant transport.	☐	I can explain what transpiration is.	☐	I can explain how different factors affect the rate of transpiration.	☐

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KS3 SUBJECT Assessment Statements – Year 9 Chemistry

Working Towards		Working At		Greater Depth	
I can define element, mixtures and compounds.	☐	I can explain that mass is conserved in a chemical reaction.	☐	I can balance chemical equations.	☐
I can describe how mixtures can be separated.	☐	I can describe crystalisation and chromatography.	☐	I can analyse chromatograms and calculate rF values.	☐
I can recall models of the atom	☐	I can compare the plum pudding model of the atom with the nuclear model of the atom.	☐	I can explain how the gold foil experiment was used to replace the plum pudding model of the atom.	☐
I can recall the structure of an atom.	☐	I can describe the properties of protons, electrons and neutrons.	☐	I can explain why the atom is neutral and how ions are formed.	☐
I can recall the electronic structure of the first 20 elements.	☐	I can describe isotopes and how ions are formed.	☐	I can calculate relative atomic mass and deduce the charges of ions.	☐
I can recall the arrangement of the modern periodic table.	☐	I can describe the principles underpinning the Mendeleev Periodic Table.	☐	I can link the electronic structure of atoms to the periodic table.	☐
I can recall the reactions of group 1 and group 7 elements.	☐	I can use chemical observations to work out the order of reactivity of group 1 and 7 elements.	☐	I can explain the order of reactivity of group 1 and group 7 elements using electronic structure.	☐
I can name and recall the structure of hydrocarbons.	☐	I can describe the processes of fractional distillation and cracking.	☐	I can explain the importance of fractional distillation and cracking.	☐
I can recall the name and composition of gases in the Earth's atmosphere.	☐	I can describe how the Earth's early atmosphere has evolved over time.	☐	I can explain why carbon dioxide and oxygen levels have changed over time.	☐
I can recall the names of greenhouse gases and atmospheric pollutants.	☐	I can describe the greenhouse effect and how atmospheric pollutants are formed.	☐	I can explain the effect of greenhouse gases and atmospheric pollutants on global climate change.	☐
I can recall the Earth's natural resources and how some of them are limited.	☐	I can describe the treatment of ground water and sewage water.	☐	I can explain how water is made safe to drink.	☐
I can identify the stages in a life cycle assessment.	☐	I can carry out a LCA.	☐	I can explain efficacy of recycling and re-using resources.	☐

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KS3 SUBJECT Assessment Statements – Year 9 Physics

Working Towards		Working At		Greater Depth	
I understand that energy is transferred when changes happen in a system.	☐	I can explain energy changes in a system using the stores and pathways model.	☐	I can calculate efficiency for different energy transfers.	☐
I can compare the starting conditions of a system to the final conditions.	☐	I can identify intermediate steps in more complex energy transfers in systems.	☐	I can accurately describe energy transfers for complex systems.	☐
I can identify renewable and non-renewable energy sources.	☐	I can explain how renewable and non-renewable energy sources are used on earth.	☐	I can describe energy changes when different energy sources are used.	☐
I can describe changes of state as physical changes which are reversible.	☐	I can calculate energy changes involved with heating and with changes of state.	☐	I can explain how changes in temperature lead to a change on the pressure of a gas.	☐
I can relate models of particle arrangement to the density of a substance.	☐	I can calculate density.	☐	I can successfully find the density of a range of objects by investigation.	☐
I can observe waves in different situations and describe the superposition of waves.	☐	I know the mechanisms by which sound is transferred and can describe how sounds are made.	☐	I can recall the auditory range of humans and give some uses of ultrasound.	☐
I can identify the features of a wave and say that waves transfer energy but not matter.	☐	I can compare transverse and longitudinal waves.	☐	I can calculate the wave speed, wavelength and frequency using an equation.	☐
I know the speed of electromagnetic waves in a vacuum.	☐	I can explain absorption, reflection and refraction effects and link refraction to the speed of light.	☐	I can explain how electromagnetic waves are produced and detected.	☐
I know some uses of the types of wave in the EM Spectrum.	☐	I can compare the uses and dangers of types of waves in the EM Spectrum including to body tissues.	☐	I can say how the waves of the EM Spectrum are used in medical applications.	☐

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