

Remove Science
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	Subject Knowledge and Understanding	Working Scientifically	Mathematical/ Literacy skills in Science
1	<p>A level 1 describes a student who is working towards attaining the standard usually expected for a student of that age. In relation to the curriculum at Wychwood this would be indicated by:</p> <ul style="list-style-type: none"> • I can classify substances as solid, liquid and gas and identify changes of state • I can represent states of matter using particle diagrams • I can identify common pieces of laboratory glassware • I can suggest ways of separating mixtures • I can describe the structure of the Earth • I can describe and give examples of local geographical features • I can describe some common features of living things • I can identify some organs in the human body • I can describe a balanced diet • I can identify male and female reproductive systems • I can chart variation in populations using tally charts • I can identify parts of the microscope • I can identify some components in an electrical circuit • I can identify insulators and conductors • I can describe how like poles and opposite poles interact with each other. • I can identify some forces • I can read digital ammeters and voltmeters. 	<ul style="list-style-type: none"> • I can follow instructions to carry out an experiment safely. • I can record the outcomes of experiments • I can identify a range of hazard warning symbols and take appropriate measures. 	<ul style="list-style-type: none"> • I can describe simply and accurately what I have done during an experiment.
3	<p>A level 3 describes a student whose attainment level is what would usually be expected for a student of that age. In relation to the curriculum at Wychwood this would be indicated by :</p> <ul style="list-style-type: none"> • I can use correct symbols notation for elements • I can use the particle model of matter to describe processes and phenomena • I can link changes of state to increase in energy • I can describe diffusion in terms of the Brownian motion of particles • I can differentiate between elements, compounds and mixtures • I can describe dissolving in terms of the particle model • I can describe and explain how chromatography, distillation, crystallisation and filtration can be used to separate mixtures • I can describe the structure of the layers of the Earth • I can describe and identify sedimentary, igneous and metamorphic rocks and construct a rock cycle 	<ul style="list-style-type: none"> • I can select appropriate equipment • I can plan a safe, fair test • I can draw valid simple conclusions • I can make accurate qualitative observations • I can present observational data in a suitable table • I can identify simple patterns and trends in data • I can identify hazards in experiments and suggest simple safety precautions. • I can plan and conduct experiments to test predictions • I can use a Bunsen Burner safely 	<ul style="list-style-type: none"> • I can record a method as a series of logical stepwise instructions. • I can use SI units • I can perform simple calculations • I can make simple quantitative measurements using analogue and digital devices • I can correctly use appropriate technical vocabulary associated

	<ul style="list-style-type: none"> • I can categorise weathering processes • I can describe how processes have shaped the local landscape and led to local geological features • I can set up series and parallel circuits and describe how current and voltage change through the circuit. • I can describe how a dynamo is used to produce an electric current. • I can describe how electricity is generated and brought to our homes • I can identify and describe energy changes for processes • I can describe a range of alternative energy sources and discuss their pros and cons. • I can describe the relationship between mass and weight. • I can describe the consequences of balanced and un-balanced forces on systems • I can describe modes of heat transfer and insulation • I can draw field patterns for combinations of magnets • I can use circuit symbols • I can describe the 7 life processes and relate them to living things • I can describe the nature of and inter-relation between cells, tissues and organs • I can describe the use of the microscope • I can describe the structure of plant, animal and specialised cells and the function of the organelles. • I can differentiate between unicellular and multicellular animals • I can identify key food groups and describe how to test for them. • I can discuss the importance of a balanced diet and the dangers of starvation, malnutrition and obesity • I can relate deficiencies in vitamins and minerals to diseases • I can describe digestion and explain the importance of enzymes in it • I can describe the male and female reproductive systems, sexual intercourse, fertilization and menstruation • I can describe the development of a baby and birth • I can describe variation in populations and the concept of correlation • I can classify organisms and use keys 	<ul style="list-style-type: none"> • I can take simple quantitative measurements and record them. 	<p>with the topics I am studying</p> <ul style="list-style-type: none"> • I can interpret simple graphs such as distance-time graphs
5	<p>A level 5 describes a student whose attainment level is well above what would usually be expected for a student of that age. In relation to the curriculum at Wychwood this may be indicated by, but not limited to the following examples:</p> <ul style="list-style-type: none"> • I can generate correct formulae for compounds • I can discuss flaws in the particle model. • I can analyse and interpret solubility curves 	<ul style="list-style-type: none"> • I can make and explain predictions based on scientific knowledge, understanding and reasoning. • Identify variables (independent, dependent and control variables) in an investigation 	<ul style="list-style-type: none"> • I can convert consistently between units. • I can interpret complicated graphical data such as velocity-time graphs graphs

<ul style="list-style-type: none"> • I can describe limitations in chromatography, distillation and crystallisation techniques of separating mixtures • I can make inferences about the internal structure of the Earth and other planets from given data. • I can identify circumstances that indicate fast processes of change on Earth and those that indicate slower processes • I can use the concept of balanced and unbalanced forces to explain the idea of terminal velocity • I can use scale drawings to find the resultant of forces in two dimensions • I can explain how the current generated by a dynamo can be increased. • I can apply ideas about energy stores and transfers to complex situations • I can describe the Earth's magnetic field and explain why a magnetic compass needle points north. • Discuss how the 7 life processes relate to viruses • Discuss the importance of microscopy in relation to the development of knowledge and understanding in cells and the human body. • Describe the role of particular enzymes in breaking down specific food groups • Discuss the value of classification systems and invent and evaluate keys • Describe, construct and use food chains, webs and trophic levels 	<ul style="list-style-type: none"> • I can draw conclusions which explain data using scientific knowledge and understanding • Decides on a suitable number and range of readings or results to take. 	<ul style="list-style-type: none"> • I cite my sources correctly • I can use the gradient of graphs to calculate physical quantities such as speed from a distance time graph.
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