St Benedict's Catholic School: Key Stage 3 Grade Descriptors – Science Y7

Assessment Objectives				
Year 7 Expectations	**Biology**	**Chemistry**	**Physics**	**Skill Area 4**
Mastered	• Can draw cells viewed under a microscope to scale • Can calculate magnification of a microscope. • Can demonstrate a good understanding of cell structure and function. • Can relate structure and function of specialised cells. • Can evaluate different methods of seed dispersal. • Can relate the structure of the lungs to efficient gas exchange. • Can explain the changes that occur during breathing. • Can explain how organ systems link together. • Can describe diffusion. • I can label a diagram showing a cross section of the leaf. • I am able to explain why foods need to be digested. • I can recall the word equation for aerobic respiration	• I can use explain the differences in the three states of matter using the particle model. • Can predict state of matter from data on boiling and melting points. • Can compare diffusion speed in different states of matter. • Can use a pattern to predict products of decomposition reactions. • Can explain sublimation. • I can apply my knowledge of particles to explain changes of state, diffusion and dissolving.	• Can interpret a graph showing Hooke's Law in extension of a spring. • Can calculate weight using the correct equation. • Can describe situations that are in equilibrium. • I can relate the term 'energy' to work. • I understand a voltage across a circuit component. • I can use models to describe and explain phenomena, such as the flow of charge in parallel circuits. .	• Can apply my knowledge and understanding to a range of contexts including unfamiliar situations. • Can produce (unaided) precise plans for my investigations. • Can evaluate my investigations and produce structured reports. • Can make predictions using my scientific knowledge.
Extended	• Can prepare good slides and view using a microscope under different magnifications. • Can explain functions of the parts of plant and animal cells. • Can explain how different cells are specialised for their functions. • Can describe changes from fertilisation to birth. • Can describe the menstrual cycle. • Can compare the differences between wind and insect pollinated flowers. • Can relate a model of the lungs to breathing. • Can name some substances that move in and out of cells. • I understand why most food chains begin with a plant. • I can write a word equation for photosynthesis. • I can list how a leaf is adapted for photosynthesis. • I understand why we need a balanced diet. • I can describe how food is digested and absorption. • I can describe the functions of the main organs in the digestive system.	• Can interpret data about melting points. • Can interpret data from tables and graphs about changes of state. • Can explain what factors affect diffusion. • Can analyse why chemical reactions are useful. • Can explain what a thermal decomposition reaction is. I can plan (with guidance) investigations. Identifying key factors that need to be considered. • Can use ideas about particles to explain the properties of a substance in its three states. • Can use the particle model to explain boiling. • Can describe evidence for diffusion. • Can compare chemical reactions to physical reactions. • Can write word equations for common reactions. • Can explain what an oxidation reaction is. • Can explain what conservation of mass is. • Can describe some uses of neutralisation reactions. • I can describe the changes in state in heating and cooling water.	• Can compare weight and mass. • Can compare balanced and unbalanced forces. • Can explain why the speed or direction of motion of objects can change. • I can use the principle of moments in practical situations. • I can explain the process of energy transfer by conduction, convection and radiation. • I understand that global resources are limited and explain why energy should be used efficiently. • I can describe simple applications of electromagnets.	• Can apply my scientific knowledge from other investigations to plan an investigation. • Can explain my conclusions using the evidence collected and my knowledge and understanding of science. • I can plan (with guidance) investigations. Identifying key factors that need to be considered. • I can present my data clearly and concisely using graphs with lines of best fit.
Secure	• Can prepare own slides and view under a microscope. • Can draw and label plant and animal cells. • Can describe sexual intercourse and fertilisation. • Can name the label the main structures in flowers and describe fertilisation. • Can explain gas exchange across the alveoli. • I can describe how organisms are adapted. • I can draw a food chain. • I can name the food groups in a balanced diet • I can label the main organs in the digestive system.	• Can use particle model diagrams to explain the properties of different states. • Can use the particle model to explain diffusion. • Can write the chemical names for simple compounds. • Can identify reactants and products in word equations. • Can explain combustion. • I can describe some methods for separating compounds. • I can describe changes in the rock cycle.	• Can explain what forces do. • Can describe how forces deform objects. • Can evaluate how to reduce drag and friction. • Can analyse data about planets in the solar system. To explain day and night and why we have seasons. • I understand the relationship between applied force, the area over which it acts and the resulting pressure. • I can calculate the average speed from measurements made of distance and time. • I can distinguish between temperature and thermal energy. • I can describe energy conversions in terms of the principle of the conservation of energy. • I can recall that energy sources are ultimately dependent on the Sun's energy. • I can recall the properties of electromagnets.	• Can design a fair test to answer questions that arise from their work in science. • Can interpret my data and begin to explain these using my scientific knowledge and understanding. • I can use a range of apparatus with appropriate precision and safety. • I can explain my conclusions using the evidence collected and my knowledge and understanding of science.

Approaching	• Can use a microscope to view prepared slides. • Can label plant and animal cells correctly. • Can identify the main organs of the reproductive system. • Can describe the function of flowers and seeds. • Can name the main organs and structures in the breathing and circulatory systems. • I can provide simple explanations for changes affecting animal and plant behaviour, such as seasonal changes or the use of colour in camouflage.	• I can recognise the need for safety precautions • Can describe how materials are made up of particles. • Can describe changes of state using keywords. • Can explain how we know a chemical reaction has occurred. • Can compare properties of acids and alkalis. • Can use the pH scale to identify acids, alkalis and neutral solutions. • I can describe the layers of the Earth.	• Can describe the most commonly used forces. • Can draw and label a force diagram. • Can describe the effects of drag and friction. • Can compare planets in the solar system. • I understand the meaning of temperature. • I can identify a variety of energy sources and know the difference between renewable and non-renewable sources. • I can describe the effect of friction on moving objects. • I can recall the properties of magnets and the magnetic field pattern produced by a bar magnet. • I can describe the effect of changing current in an electric circuit and explain what happens in series and parallel circuits.	• Can suggest how ideas can be investigated and make predictions about what might happen. • Can carry out a fair test and say which factors need to be kept constant. • Can draw conclusions and relate it to my knowledge and understanding. • I can use a range of apparatus with appropriate precision and safety. • I can interpret my data and begin to explain these using my scientific knowledge and understanding.
Developing	• Can use a microscope with help to view prepared slides. • Can name some parts of plant and animal cells. • Can describe what the lungs and heart are for. • Can describe some changes that occur at puberty. • I can sort living things into groups using observable features, such as number of legs or shape of leaf. They sequence the basic stages of human development and know what is required to keep healthy and safe.	• Can describe a way to tell if a chemical reaction has occurred. • Can explain why a fuel is useful. • Can carry out chemical reaction practicals with some assistance. • Can describe what happens when some everyday substances are heated or cooled.	• Can describe what forces do and name some common forces. • Can describe the structure of the universe. • Can describe eclipses. • I can describe how forces can affect the movement and shape of objects. • I can identify a range of energy sources, such as a battery for a torch. • I can describe how heat transfers from different places. • I can describe how to construct simple circuits using terms, such as switches, bulbs or batteries, and identify materials as insulators or conductors.	• I can carry out a fair test and say which factors need to be kept constant. • I can draw conclusions and relate it to my knowledge and understanding. • Can suggest how ideas can be investigated and make predictions about what might happen.
Beginning	• Can only view prepared slides if microscope is already set up. • Can name very few or no parts of a plant or animal cell. • Can name only a few of the organs of the breathing and circulatory system. • I can sort living things into groups using observable features, such as number of legs or shape of leaf. • I can talk about a variety of living things and sort them into animals and plants. • They recognise and name external parts of the body, using words such as head or arm, and of plants, using words such as leaf or flower. • Can compare familiar objects, materials and living things and predict what might happen.	• Can name a fuel. • Can name one acid or alkali. • Can only carry out chemical reaction practical's with assistance.	• Can describe a force as a push or pull. • Can name some planets, but not their order. • Can name a phase of the moon. • Can compare familiar objects, materials and living things and predict what might happen. • Can only name one or two common forces. • Can name objects in the solar system. • Can describe the phases of the moon. • I can talk about some appliances in the classroom and at home which use electricity, such as a television or a kettle. • I can describe what happens when objects are pushed and pulled, using terms such as 'speeds up' or 'stops'. • I can recall that there are different sources of energy, such as oil, gas or coal. • I can outline the dangers of misuse of mains electricity and know how to use electrical appliances safely.	• I can suggest how ideas can be investigated and make predictions about what might happen. • I can use appropriate instruments to make measurements and know when a test is fair.