

Sci-Tech9– Core Entitlement

YG	Technology		Science			
3	<p>Generic skills to be taught are; To generate ideas, To develop ideas, To select appropriate tools, techniques and materials, To measure, mark and cut, To use simple finishing techniques, To evaluate and improve own projects.</p>	<p>Throughout the year all of the following topics should be taught at least once to fit in to each of the themes:</p> <ul style="list-style-type: none"> • Food • Textiles • Mechanisms • Structures 	<p>Throughout each year the children should develop scientific knowledge and conceptual understanding, an understanding of the nature, processes and methods of science through different types of scientific enquiries that help them answer scientific questions. They should be taught the scientific knowledge needed to understand uses and implications of science.</p>	<p>Working Scientifically</p> <ul style="list-style-type: none"> • ask questions about the science topic • make simple predictions • suggest variables to be controlled in order to carry out a scientifically fair test • take and record measurements • neatly draw labelled diagrams • record results in simple tables and present the data in bar charts • use results to draw simple conclusions • suggest improvements to investigations 	<p>Science Content</p>	<p>Plants</p> <ul style="list-style-type: none"> • functions for life and growth • parts of flowering plant and transportation • life cycles of flowering plants – pollination, seed formation and dispersal <p>Forces and Magnets</p> <ul style="list-style-type: none"> • comparing how things move on different surfaces • knowing that some forces need contact but magnetic forces repel/attract from a distance • magnetic materials and poles <p>Animals, Including Humans</p> <ul style="list-style-type: none"> • nutrition • skeletons • muscles <p>Rocks</p> <ul style="list-style-type: none"> • compare properties • soil • fossil formation <p>Light</p> <ul style="list-style-type: none"> • light sources • reflection • eye protection • shadow formation • Are materials, transparent, translucent or opaque? • Use of data loggers
4	<p>Generic skills to be taught are; To generate ideas, To develop ideas, To select appropriate tools, techniques and materials, To measure, mark and cut, To use simple finishing techniques, To evaluate and improve own projects.</p>	<p>Throughout the year all of the following topics should be taught at least once to fit in to each of the themes:</p> <ul style="list-style-type: none"> • Food • Textiles • Mechanisms • Structures 	<p>Throughout each year the children should develop scientific knowledge and conceptual understanding, an understanding of the nature, processes and methods of science through different types of scientific enquiries that help them answer scientific questions. They should be taught the scientific knowledge needed to understand uses and implications of science.</p>	<p>Working Scientifically</p> <ul style="list-style-type: none"> • ask relevant scientific questions • make predictions using some scientific knowledge to give reasons for them • recognise and explain if a test is scientifically fair by identifying controlled variables • set up simple practical enquiries, comparative and fair tests • make accurate measurements using standard units across a range of measuring equipment • gather, record, classify and present data in a table and graph where appropriate • use results to draw conclusions and write explanations using scientific vocabulary • evaluate an investigation by suggesting how accuracy and fair testing could be improved 	<p>Science Content</p>	<p>Animals including Humans</p> <ul style="list-style-type: none"> • Digestive System • teeth and food chains. <p>States of Matter</p> <ul style="list-style-type: none"> • Are materials solid, liquid or gas? • changing state • evaporation, condensation and the Water Cycle <p>Living things and their Habitats</p> <ul style="list-style-type: none"> • Classification Keys • effects of Environmental Change <p>Electricity</p> <ul style="list-style-type: none"> • Appliances • series circuits • switches • conductors and insulators <p>Sound</p> <ul style="list-style-type: none"> • How sounds are made • vibrations through a medium • pitch • volume • distance

5		<p>Throughout the year all of the following topics should be taught at least once to fit in to each of the themes:</p> <ul style="list-style-type: none"> • Food • Textiles • Mechanisms • Structures 		<ul style="list-style-type: none"> • plan scientific enquiries to answer questions which recognise and control variables where necessary • take accurate and precise measurements using a range of scientific equipment, taking repeat readings as necessary • record data and results independently by drawing tables, bar and line graphs • use test results to make predictions to set up further comparative and fair tests • report and present findings in conclusions, causal relationships and explanations using scientific vocabulary and knowledge • evaluate how reliable results of investigations are by considering accuracy and fair testing 	<p>Properties and Changes of Materials</p> <ul style="list-style-type: none"> • separation techniques • reversible and irreversible changes <p>Living things and their Habitats</p> <ul style="list-style-type: none"> • life cycles of a mammal, an amphibian, an insect and bird • reproduction in plants and animals <p>Earth and Space</p> <p>Forces</p> <ul style="list-style-type: none"> • gravity • air and water resistance • friction • levers, pulleys and gears <p>Animals, including Humans</p> <ul style="list-style-type: none"> • stages of growth and changes including Puberty • gestation periods of other animals compared to humans • length and mass of a baby as it grows
6		<p>Throughout the year all of the following topics should be taught at least once to fit in to each of the themes:</p> <ul style="list-style-type: none"> • Food • Textiles • Mechanisms • Structures 		<ul style="list-style-type: none"> • plan different types of scientific enquiries to answer questions, including recognising which variables need to be controlled and why • make their own decisions about what observations to make, what measurements to use and how long to make them for • record and present data and results with more than one series of data independently using an appropriately chosen graph (bar, line or scatter graph.) • report and present findings from enquiries, including conclusions and causal relationships • explain the degree of trust that can be given to a set of results data by evaluating the accuracy and reliability of the test conditions • use results to identify when further tests and observations might be needed • explain how scientific ideas have developed over time by identifying evidence that has been used to support or refute ideas or arguments 	<p>Living things and their Habitats</p> <ul style="list-style-type: none"> • reasons for classification (micro-organisms, plants and animals) <p>Light</p> <ul style="list-style-type: none"> • appears to travel in straight lines into the eye • how shadows have the same shape as the object blocking the light source <p>From Sept 2015:</p> <p>Evolution and Inheritance</p> <ul style="list-style-type: none"> • <i>fossils provide information</i> • <i>living things change over time</i> • <i>living things produce offspring of the same kind but with variations</i> • <i>adaptations to environment may lead to evolution</i> <p>Animals, Including Humans</p> <ul style="list-style-type: none"> • <i>human circulatory system</i> • <i>functions of heart</i> • <i>blood vessels and blood</i> • <i>impact of diet, exercise, drugs and lifestyle on function</i> • <i>nutrient transportation in animals, incl. Humans</i> <p>Electricity</p> <ul style="list-style-type: none"> • <i>how output and function of components varies with voltage of cells in circuit</i> • <i>on/off position of switches</i> • <i>use of recognised circuit diagrams and symbols</i>