

**2018\_NSW K-6 SCIENCE AND TECHNOLOGY KNOWLEDGE & UNDERSTANDING OUTCOMES (Syllabus pages 17-18)**

CONTENT AREA	EARLY STAGE 1	STAGE 1	STAGE 2	STAGE 3
<b>LIVING WORLD</b>	<b>STe-3LW-ST</b> ▪ explores the characteristics, needs and uses of living things	<b>ST1-4LW-S</b> ▪ describes observable features of living things and their environments	<b>ST2-4LW-S</b> ▪ compares features and characteristics of living and non-living things	<b>ST3-4LW-S</b> ▪ examines how the environment affects the growth, survival and adaptation of living things
		<b>ST1-5LW-T</b> ▪ identifies how plants and animals are used for food and fibre products	<b>ST2-5LW-T</b> ▪ describes how agricultural processes are used to grow plants and raise animals for food, clothing and shelter	<b>ST3-5LW-T</b> ▪ explains how food and fibre are produced sustainably in managed environments for health and nutrition
<b>MATERIAL WORLD</b>	<b>STe-4MW-ST</b> ▪ identifies that objects are made of materials that have observable properties	<b>ST1-6MW-S</b> ▪ identifies that materials can be changed or combined	<b>ST2-6MW-S</b> ▪ describes how adding or removing heat causes a change of state	<b>ST3-6MW-S</b> ▪ explains the effect of heat on the properties and behaviour of materials
		<b>ST1-7MW-T</b> ▪ describes how the properties of materials determine their use	<b>ST2-7MW-T</b> ▪ investigates the suitability of natural and processed materials for a range of purposes	<b>ST3-7MW-T</b> ▪ explains how the properties of materials determines their use for a range of purposes
<b>PHYSICAL WORLD</b>	<b>STe-5PW-ST</b> ▪ observes the way objects move and relates changes in motion to push and pull forces	<b>ST1-8PW-S</b> ▪ describes common forms of energy and explores some characteristics of sound energy	<b>ST2-8PW-ST</b> ▪ describes the characteristics and effects of common forms of energy, such as light and heat	<b>ST3-8PW-ST</b> ▪ explains how energy is transformed from one form to another
		<b>ST1-9PW-ST</b> ▪ investigates how forces and energy are used in products	<b>ST2-9PW-ST</b> ▪ describes how contact and non-contact forces affect an object's motion	<b>ST3-9PW-ST</b> ▪ investigates the effects of increasing or decreasing the strength of a specific contact or non-contact force
<b>EARTH AND SPACE</b>	<b>STe-6ES-S</b> ▪ identifies how daily and seasonal changes in the environment affect humans and other living things	<b>ST1-10ES-S</b> ▪ recognises observable changes occurring in the sky and on the land and identifies Earth's resources	<b>ST2-10ES-S</b> ▪ investigates regular changes caused by interactions between the Earth and the Sun, and changes to the Earth's surface	<b>ST3-10ES-S</b> ▪ explains regular events in the solar system and geological events on the Earth's surface
<b>DIGITAL TECHNOLOGIES</b>	<b>STe-7DI-T</b> ▪ identifies digital systems and explores how instructions are used to control digital devices	<b>S ST1-11DI-T</b> ▪ identifies the components of digital systems and explores how data is represented	<b>ST2-11DI-T</b> ▪ describes how digital systems represent and transmit data	<b>ST3-11DI-T</b> ▪ explains how digital systems represent data, connect together to form networks and transmit data

NSW Education Standards Authority (NESA) website <http://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/science/science-and-technology-k-6-new-syllabus>

**2018\_NSW K-6 SCIENCE AND TECHNOLOGY KNOWLEDGE & UNDERSTANDING CONTENT (Syllabus pages 41-93)**

<b>CONTENT AREA</b>	<b>EARLY STAGE 1</b>	<b>STAGE 1</b>	<b>STAGE 2</b>	<b>STAGE 3</b>
<b>LIVING WORLD</b>	<ul style="list-style-type: none"> <li>▪ Characteristics and needs of living things: require air, water &amp; food</li> <li>▪ Uses of living things: food &amp; fibre source for humans</li> </ul>	<ul style="list-style-type: none"> <li>▪ External features of living things and their environments</li> <li>▪ How environments suit the needs of living things</li> <li>▪ How living things change as they grow</li> <li>▪ How humans use plants and animals: food, clothing, shelter</li> </ul>	<ul style="list-style-type: none"> <li>▪ How living and non-living things are grouped</li> <li>▪ Similarities and differences between the life cycles of living things</li> <li>▪ Interdependency of environments and living things e.g., bees &amp; flowers, animals &amp; seed dispersal</li> <li>▪ Food and fibre products from animals and plants</li> </ul>	<ul style="list-style-type: none"> <li>▪ How the physical conditions of the environment affect the growth, survival and adaptation of living things</li> <li>▪ Structural and behavioural features of living things that aid survival</li> <li>▪ Sustainable production of food and fibre</li> </ul>
<b>PHYSICAL WORLD</b>	<ul style="list-style-type: none"> <li>▪ Types of and causes of movement of familiar objects</li> <li>▪ Effects of push/pull forces on objects</li> <li>▪ Movement of objects on land, in water and in air</li> </ul>	<ul style="list-style-type: none"> <li>▪ Common forms of energy (light, sound heat...) and some characteristics of sound energy</li> <li>▪ How light, sound and heat are produced, and how they are detected by humans</li> <li>▪ How forces and energy are used purposefully in products to create movement or change</li> </ul>	<ul style="list-style-type: none"> <li>▪ Characteristics and effects of common forms of energy: light, heat</li> <li>▪ Sustainable ways to generate electricity</li> <li>▪ How push and pull contact and non-contact forces affect an object's motion by changing speed and/or direction</li> <li>▪ Forces and energy in products and systems</li> </ul>	<ul style="list-style-type: none"> <li>▪ How energy is transformed from one form to another: gravitational -&gt; movement, heat -&gt; light, electrical -&gt; light</li> <li>▪ The effects of increasing or decreasing the strength of a specific contact or non-contact force</li> <li>▪ How electricity can be used in a product or system: toaster, microphone, solar panel</li> </ul>
<b>EARTH AND SPACE</b>	<ul style="list-style-type: none"> <li>▪ Daily and seasonal changes in the environment</li> <li>▪ How living things respond to regular changes in their environment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Observable changes occurring in the sky: Sun, Moon, stars, clouds...</li> <li>▪ How seasonal changes affect living things</li> <li>▪ Earth's resources including soil and water</li> <li>▪ Sustainable use of resources – water, electricity, rubbish</li> </ul>	<ul style="list-style-type: none"> <li>▪ Changes to the Earth's surface over time: natural processes (soil characteristics, natural erosion) and human actions</li> <li>▪ Interactions between Earth and Sun: Sun = major energy source, relative sizes and movements (day &amp; night &amp; year)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Composition, relative distances and sizes, regular events in our solar system</li> <li>▪ Role of light energy in observing Sun, Moon, planets, stars</li> <li>▪ How geological changes and extreme weather events affect the Earth's surface</li> <li>▪ Planning for and managing natural disasters</li> </ul>
<b>MATERIAL WORLD</b>	<ul style="list-style-type: none"> <li>▪ Objects are made of materials that have observable properties</li> <li>▪ Materials are used based on their properties</li> </ul>	<ul style="list-style-type: none"> <li>▪ Materials can be changed (bending, twisting, stretching...) or combined</li> <li>▪ The properties of materials determine their use</li> </ul>	<ul style="list-style-type: none"> <li>▪ Solids, liquids and gases are states of matter</li> <li>▪ Adding or removing heat causes a change of state: solid &lt;-&gt; liquid</li> <li>▪ The suitability of natural and processed materials for a range of purposes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Properties of solids, liquids and gases and how state can be changed</li> <li>▪ Combining materials -&gt; new substance or mixture</li> <li>▪ Separating mixtures</li> <li>▪ The properties of materials determines their use for a range of purposes</li> </ul>
<b>DIGITAL TECHNOLOGIES</b>	<ul style="list-style-type: none"> <li>▪ Digital systems in everyday life</li> <li>▪ Following steps to achieve a goal</li> </ul>	<ul style="list-style-type: none"> <li>▪ Components of digital systems</li> <li>▪ Data and how it is represented</li> <li>▪ Recording instructions for others to follow and understand</li> </ul>	<ul style="list-style-type: none"> <li>▪ How digital systems share and transmit information, instructions, data</li> <li>▪ Different ways to represent and share data</li> <li>▪ Solve a problem using steps and decisions involving user input and branching</li> </ul>	<ul style="list-style-type: none"> <li>▪ How digital systems interact and transmit data: composition of and transmission within digital networks</li> <li>▪ Decision-making in algorithms using a visual programming language involving user input, branching and iteration</li> </ul>