2018_NSW K-6 SCIENCE AND TECHNOLOGY SKILLS OUTCOMES (Syllabus page 16)				
SKILL STRAND	**EARLY STAGE 1**	**STAGE 1**	**STAGE 2**	**STAGE 3**
WORKING SCIENTIFICALLY	**STe-1WS-S** ▪observes, questions and collects data to communicate ideas	**ST1-1WS-S** ▪observes, questions and collects data to communicate and compare ideas	**ST2-1WS-S** ▪questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations	**ST3-1WS-S** ▪plans and conducts scientific investigations to answer testable questions, and collects and summarises data to communicate conclusions
DESIGN and PRODUCTION (Solutions)	**STe-2DP-T** ▪develops solutions to an identified need	**ST1-2DP-T** ▪uses materials, tools and equipment to develop solutions for a need or opportunity	**ST2-2DP-T** ▪selects and uses materials, tools and equipment to develop solutions for a need or opportunity	**ST3-2DP-T** ▪plans and uses materials, tools and equipment to develop solutions for a need or opportunity
DESIGN and PRODUCTION (Digital Solutions)		**ST1-3DP-T** ▪describes, follows and represents algorithms to solve problems	**ST2-3DP-T** ▪defines problems, describes and follows algorithms to develop solutions	**ST3-3DP-T** ▪defines problems, and designs, modifies and follows algorithms to develop solutions

Content detail on 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 WORKING SCIENTIFICALLY CONTINUUM (Syllabus pages 29-30)				
SKILL 'STEP'	**EARLY STAGE 1**	**STAGE 1**	**STAGE 2**	**STAGE 3**
Questioning & Predicting	▪ pose questions about familiar objects and events ▪ respond to questions about familiar objects and events	▪ pose questions about familiar objects and events ▪ respond to posed questions ▪ make predictions about possible findings	▪ identify and pose questions in familiar contexts that can be investigated scientifically ▪ make predictions based on prior knowledge	▪ pose testable questions ▪ make and justify predictions about scientific investigations
Planning & Conducting Investigations	▪ make observations using senses through participation in guided scientific investigations ▪ record observations using drawings, simple digital recording methods, oral descriptions and/or simple visual representations ▪ work collaboratively with others to investigate ideas ▪ develop safe skills when using materials and equipment	▪ explore and answer questions through participation in guided scientific investigations ▪ collect data from observations ▪ record observations accurately and honestly using observational drawings, labelling, informal measurements and digital technologies ▪ compare observations with those of others ▪ develop collaboration skills to effectively conduct investigations ▪ make safe choices when using materials and equipment	▪ plan scientific investigations with guidance ▪ conduct scientific investigations to find answers to questions ▪ use appropriate materials and equipment safely ▪ consider and apply the elements of fair tests ▪ collect and record accurate, honest observations using labelled observational drawings, basic formal measurements and digital technologies as appropriate ▪ reflect on investigations, including whether testing was fair or not ▪ participate individually and collaboratively with clear roles and goals	▪ identify questions to investigate scientific ideas ▪ plan and apply the elements of scientific investigations to answer problems ▪ identify potential risks in planning investigations ▪ manage resources ▪ decide which variable(s) is to be changed, measured and kept the same, in fair tests ▪ select appropriate measurement methods, including formal measurements and digital technologies, to record data accurately and honestly ▪ reflect on and make suggestions to improve fairness, accuracy and efficacy of a scientific investigation ▪ manage investigations effectively, individually and in groups
Processing & Analysing Data	▪ engage in discussions about observations ▪ represent ideas based on results of investigations	▪ use a range of methods to sort and collate information ▪ represent information using drawings and simple tables, including digital representation methods	▪ use a range of methods to represent data, including tables and column graphs ▪ identify patterns and trends in gathered data ▪ compare results with predictions ▪ suggest possible reasons for findings	▪ construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data ▪ employ appropriate technologies to represent data ▪ compare data with predictions ▪ present data as evidence in developing explanations
Communicating	▪ share observations and ideas based on guided investigations	▪ represent and communicate observations and ideas in a variety of ways	▪ represent and communicate observations, ideas and findings, using formal and informal representations	▪ communicate ideas, explanations and processes, using scientific representations including multimodal forms

2018_NSW K-6 SCIENCE AND TECHNOLOGY DESIGNING & PRODUCING CONTINUUM (Syllabus pages 31-34)				
SKILL 'STEP'	**EARLY STAGE 1**	**STAGE 1**	**STAGE 2**	**STAGE 3**
Identifying & Designing	• identify and describe needs or opportunities for designing • identify the technologies needed to achieve designed solutions • follow a sequence of steps and decisions (algorithms) needed to solve problems ▪ order a sequence of steps and decisions (algorithms) needed to solve problems	• recognise needs or opportunities for designing solutions through evaluating products • investigate and explain the needs of an audience in defining a problem • identify technologies and appropriate materials needed to realise designed solutions • follow a sequence of steps and decisions (algorithms) to solve problems ▪ segment, describe and represent a sequence of steps and decisions (algorithms) needed to solve problems	• critique needs or opportunities for designing solutions through evaluating products and processes • define a need or opportunity according to functional and aesthetic criteria • consider potential resources in defining design needs and opportunities • investigate and research materials, components, tools and techniques to produce design solutions • define simple problems by determining and defining a process ▪ develop a sequence of steps and decisions (algorithms) to solve a problem	• examine and critique needs, opportunities or modifications using a range of criteria to define a project • define a need or opportunity according to functional and aesthetic criteria • consider availability and sustainability of resources when defining design needs and opportunities • investigate materials, components, tools, techniques and processes required to achieve intended design solutions • examine and determine functional requirements to define a problem ▪ identify data required to formulate algorithms to improve a process
Researching & Planning	• generate and express ideas for design possibilities • consider available resources when planning design solutions ▪ record and express design ideas through drawings and play-based models, supported with explanations and descriptions, including digital recordings	• generate ideas for design solutions for a defined purpose • consider sustainable use of resources in planning design solutions • develop design ideas in response to defined brief ▪ record design ideas using labelled and annotated drawings including simple digital graphic representations	• identify and define a design problem with consideration of practical and aesthetic needs • consider sustainable use of resources and time constraints in planning design solutions • develop, record and communicate design ideas and decisions using appropriate technical terms • produce labelled and annotated drawings including digital graphic representations ▪ plan a sequence of production steps when producing designed solutions individually and collaboratively	• research, identify and define design ideas and processes for an audience • consider functional and aesthetic needs in planning a design solution • develop, record and communicate design ideas, decisions and processes using appropriate technical terms • produce labelled and annotated drawings including digital graphic representations for an audience • consider sustainability of resources when researching and planning design solutions • manage projects within time constraints • design, modify and follow simple algorithms • extend sequences of steps to provide a series of possibilities through branching ▪ develop solutions through trialling and refining using iterations

Producing & Implementing	▪ develop skills to safely manage tools ▪ explore and manipulate materials to discover possibilities of their uses ▪ produce designed solutions through iteration ▪ sequence steps to solve a problem with guidance ▪ collaborate to improve ideas and solve a problem	▪ effectively manage a variety of tools ▪ manipulate a range of materials for a purpose ▪ consider safety, sustainability and time constraints when producing solutions ▪ segment and sequence steps for making designed solutions ▪ collaborate to develop designed solutions ▪ perform strategic roles within a group to solve a problem ▪ collect, sort, organise and present data to communicate information	▪ select appropriate tools for a specific purpose ▪ select and effectively manipulate appropriate materials for a specific purpose ▪ use safe work practices ▪ consider sustainability and constraints when choosing resources and managing time in the production of designed solutions ▪ generate visual programs using algorithms to create simple digital solutions ▪ organise and perform strategic roles within a group to solve a problem ▪ collect, access and present data, using software to present and communicate information and solve problems	▪ select and use tools competently for specific purposes ▪ accurately cut, join, bend and measure a range of selected materials to construct the designed solution ▪ demonstrate safety and sustainability when choosing resources to produce designed solutions, managing constraints and maximising opportunities ▪ develop project plans that consider resources when producing designed solutions individually and collaboratively ▪ implement digital solutions as visual programs involving branching, iteration and user input ▪ work collaboratively to share, appraise and improve ideas to achieve design purposes ▪ identify, organise and perform strategic roles within a group to solve a problem ▪ acquire, store, access and validate different types of data, and use a range of software to present, interpret and visualise data
Testing & Evaluating	▪ evaluate success of design ideas, processes or solutions according to personal preferences and/or predetermined criteria ▪ consider and discuss the impact of a design solution within an environment ▪ explore how people safely use information systems to meet information, communication and recreation needs	▪ evaluate the success of design ideas, processes and solutions according to a scale of personal preference ▪ identify the positive and negative impact of a design solution within an environment ▪ explore how people safely use information systems to meet information, communication and recreation needs	▪ develop a set of criteria for success with guidance, based on defined needs and opportunities ▪ develop criteria to evaluate the environmental impact of a design with guidance ▪ devise a fair process to test a designed solution with guidance ▪ evaluate design ideas, processes and solutions, based on criteria for success ▪ explain how existing information systems meet personal, school or community needs	▪ negotiate criteria for success, based on defined needs, sustainability and aesthetics ▪ develop appropriate and fair processes to test a designed solution according to criteria ▪ evaluate design ideas, processes and solutions according to criteria for success ▪ explain how students' solutions and existing information systems meet current and future local community needs