Science and technology K-6 sample scope and sequence

## Semester-based – whole school

### Semester 1 – odd year

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| --- | --- | --- | --- | --- |
|  | Early Stage 1 | Stage 1 | Stage 2 | Stage 3 |
| Skills | STe-1WS-S – observes, questions and collects data to communicate and compare ideasSTe-2DP-T – develops solutions to an identified need | ST1-1WS-S – observes, questions and collects data to communicate and compare ideasST1-2DP-T – uses materials, tools and equipment to develop solutions for a need or opportunityST1-3DP-T – describes, follows and represents algorithms to solve problems | ST2-1WS-S – questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representationsST2-2DP-T – selects and uses materials, tools and equipment to develop solutions for a need or opportunityST2-3DP-T – defines problems, describes and follows algorithms to develop solutions | ST3-1WS-S – plans and conducts scientific investigations to answer testable questions, and collects and summarises data to communicate conclusions ST3-2DP-T – plans and uses materials, tools and equipment to develop solutions for a need or opportunityST3-3DP-T – defines problems, and designs, modifies and follows algorithms to develop solutions |
| Knowledge and understanding | STe-3LW-ST – explores the characteristics, needs and uses of living thingsSTe-6ES-S – identifies how daily and seasonal changes in the environment affect humans and other living thingsSTe-7DI-T – identifies digital systems and explores how instructions are used to control digital devices | ST1-5LW-T – identifies how plants and animals are used for food and fibre productsST1-11DI-T – identifies the components of digital systems and explores how data is represented | ST2-4LW-S – compares features and characteristics of living and non-living thingsST2-5LW-T – describes how agricultural processes are used to grow plants and raise animals for food, clothing and shelterST2-11DI-T – describes how digital systems represent and transmit data | ST3-4LW-S – examines how the environment affects the growth, survival and adaptation of living thingsST3-5LW-T – explains how food and fibre are produced sustainably in managed environments for health and nutritionST3-11DI-T – explains how digital systems represent data, connect together to form networks and transmit data |

### Semester 2 – odd year

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|  | Early Stage 1 | Stage 1 | Stage 2 | Stage 3 |
| Skills | STe-1WS-S – observes, questions and collects data to communicate and compare ideasSTe-2DP-T – develops solutions to an identified need | ST1-1WS-S – observes, questions and collects data to communicate and compare ideasST1-2DP-T – uses materials, tools and equipment to develop solutions for a need or opportunityST1-3DP-T – describes, follows and represents algorithms to solve problems | ST2-1WS-S – questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representationsST2-2DP-T – selects and uses materials, tools and equipment to develop solutions for a need or opportunityST2-3DP-T – defines problems, describes and follows algorithms to develop solutions | ST3-1WS-S – plans and conducts scientific investigations to answer testable questions, and collects and summarises data to communicate conclusionsST3-2DP-T – plans and uses materials, tools and equipment to develop solutions for a need or opportunityST3-3DP-T – defines problems, and designs, modifies and follows algorithms to develop solutions |
| Knowledge and understanding | STe-4MW-ST – identifies that objects are made of materials that have observable propertiesSTe-5PW-ST – observes the way objects move and relates changes in motion to push and pull forcesSTe-7DI-T – identifies digital systems and explores how instructions are used to control digital devices | ST1-6MW-S – identifies that materials can be changed or combinedST1-7MW-T – describes how the properties of materials determine their useST1-11DI-T – identifies the components of digital systems and explores how data is represented | ST2-6MW-S – describes how adding or removing heat causes a change of stateST2-7MW-T – investigates the suitability of natural and processed materials for a range of purposesST2-11DI-T – describes how digital systems represent and transmit data | ST3-6MW-S – explains the effect of heat on the properties and behaviour of materialsST3-7MW-T – explains how the properties of materials determine their use for a range of purposesST3-11DI-T – explains how digital systems represent data, connect together to form networks and transmit data |

### Semester 1 – even year

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|  | Early Stage 1 | Stage 1 | Stage 2 | Stage 3 |
| Skills | STe-1WS-S – observes, questions and collects data to communicate and compare ideasSTe-2DP-T – develops solutions to an identified need | ST1-1WS-S – observes, questions and collects data to communicate and compare ideasST1-2DP-T – uses materials, tools and equipment to develop solutions for a need or opportunityST1-3DP-T – describes, follows and represents algorithms to solve problems | ST2-1WS-S – questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representationsST2-2DP-T – selects and uses materials, tools and equipment to develop solutions for a need or opportunityST2-3DP-T – defines problems, describes and follows algorithms to develop solutions | ST3-1WS-S – plans and conducts scientific investigations to answer testable questions, and collects and summarises data to communicate conclusions ST3-2DP-T – plans and uses materials, tools and equipment to develop solutions for a need or opportunityST3-3DP-T – defines problems, and designs, modifies and follows algorithms to develop solutions |
| Knowledge and understanding | STe-3LW-ST – explores the characteristics, needs and uses of living thingsSTe-6ES-S – identifies how daily and seasonal changes in the environment affect humans and other living thingsSTe-7DI-T – identifies digital systems and explores how instructions are used to control digital devices | ST1-10ES-S – recognises observable changes occurring in the sky and on the land and identifies Earth’s resourcesST1-11DI-T – identifies the components of digital systems and explores how data is represented | ST2-10ES-S – investigates regular changes caused by interactions between the Earth and the Sun, and changes to the Earth’s surfaceST2-11DI-T – describes how digital systems represent and transmit data | ST3-10ES-S – explains regular events in the solar system and geological events on the Earth’s surfaceST3-11DI-T – explains how digital systems represent data, connect together to form networks and transmit data |

### Semester 2 – even year

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| --- | --- | --- | --- | --- |
|  | Early Stage 1 | Stage 1 | Stage 2 | Stage 3 |
| Skills | STe-1WS-S – observes, questions and collects data to communicate and compare ideasSTe-2DP-T – develops solutions to an identified need | ST1-1WS-S – observes, questions and collects data to communicate and compare ideasST1-2DP-T – uses materials, tools and equipment to develop solutions for a need or opportunityST1-3DP-T – describes, follows and represents algorithms to solve problems | ST2-1WS-S – questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representationsST2-2DP-T – selects and uses materials, tools and equipment to develop solutions for a need or opportunityST2-3DP-T – defines problems, describes and follows algorithms to develop solutions | ST3-1WS-S – plans and conducts scientific investigations to answer testable questions, and collects and summarises data to communicate conclusionsST3-2DP-T – plans and uses materials, tools and equipment to develop solutions for a need or opportunityST3-3DP-T – defines problems, and designs, modifies and follows algorithms to develop solutions |
| Knowledge and understanding | STe-4MW-ST – identifies that objects are made of materials that have observable propertiesSTe-5PW-ST – observes the way objects move and relates changes in motion to push and pull forcesSTe-7DI-T – identifies digital systems and explores how instructions are used to control digital devices | ST1-8PW-S – describes common forms of energy and explores some characteristics of sound energyST1-9PW-ST – investigates how forces and energy are used in productsST1-11DI-T – identifies the components of digital systems and explores how data is represented | ST2-8PW-ST – describes the characteristics and effects of common forms of energy, such as light and heatST2-9PW-ST – describes how contact and non-contact forces affect an object’s motionST2-11DI-T – describes how digital systems represent and transmit data | ST3-8PW-ST – explains how energy is transformed from one form to anotherST3-9PW-ST – investigates the effects of increasing or decreasing the strength of a specific contact or non-contact forceST3-11DI-T – explains how digital systems represent data, connect together to form networks and transmit data |

[Science and Technology K-6 Syllabus (2017)](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/science/science-and-technology-k-6-new-syllabus) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales.