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 ideas  STe-2DP-T – develops solutions to an identified need | ST1-1WS-S – observes, questions and collects data to communicate and compare ideas  ST1-2DP-T – uses materials, tools and equipment to develop solutions for a need or opportunity  ST1-3DP-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 representations  ST2-2DP-T – selects and uses materials, tools and equipment to develop solutions for a need or opportunity  ST2-3DP-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 opportunity  ST3-3DP-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 things  STe-6ES-S – identifies how daily and seasonal changes in the environment affect humans and other living things  STe-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 products  ST1-11DI-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 things  ST2-5LW-T – describes how agricultural processes are used to grow plants and raise animals for food, clothing and shelter  ST2-11DI-T – describes how digital systems represent and transmit data | ST3-4LW-S – examines how the environment affects the growth, survival and adaptation of living things  ST3-5LW-T – explains how food and fibre are produced sustainably in managed environments for health and nutrition  ST3-11DI-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 ideas  STe-2DP-T – develops solutions to an identified need | ST1-1WS-S – observes, questions and collects data to communicate and compare ideas  ST1-2DP-T – uses materials, tools and equipment to develop solutions for a need or opportunity  ST1-3DP-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 representations  ST2-2DP-T – selects and uses materials, tools and equipment to develop solutions for a need or opportunity  ST2-3DP-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 opportunity  ST3-3DP-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 properties  STe-5PW-ST – observes the way objects move and relates changes in motion to push and pull forces  STe-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 combined  ST1-7MW-T – describes how the properties of materials determine their use  ST1-11DI-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 state  ST2-7MW-T – investigates the suitability of natural and processed materials for a range of purposes  ST2-11DI-T – describes how digital systems represent and transmit data | ST3-6MW-S – explains the effect of heat on the properties and behaviour of materials  ST3-7MW-T – explains how the properties of materials determine their use for a range of purposes  ST3-11DI-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 ideas  STe-2DP-T – develops solutions to an identified need | ST1-1WS-S – observes, questions and collects data to communicate and compare ideas  ST1-2DP-T – uses materials, tools and equipment to develop solutions for a need or opportunity  ST1-3DP-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 representations  ST2-2DP-T – selects and uses materials, tools and equipment to develop solutions for a need or opportunity  ST2-3DP-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 opportunity  ST3-3DP-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 things  STe-6ES-S – identifies how daily and seasonal changes in the environment affect humans and other living things  STe-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 resources  ST1-11DI-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 surface  ST2-11DI-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 surface  ST3-11DI-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 ideas  STe-2DP-T – develops solutions to an identified need | ST1-1WS-S – observes, questions and collects data to communicate and compare ideas  ST1-2DP-T – uses materials, tools and equipment to develop solutions for a need or opportunity  ST1-3DP-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 representations  ST2-2DP-T – selects and uses materials, tools and equipment to develop solutions for a need or opportunity  ST2-3DP-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 opportunity  ST3-3DP-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 properties  STe-5PW-ST – observes the way objects move and relates changes in motion to push and pull forces  STe-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 energy  ST1-9PW-ST – investigates how forces and energy are used in products  ST1-11DI-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 heat  ST2-9PW-ST – describes how contact and non-contact forces affect an object’s motion  ST2-11DI-T – describes how digital systems represent and transmit data | ST3-8PW-ST – explains how energy is transformed from one form to another  ST3-9PW-ST – investigates the effects of increasing or decreasing the strength of a specific contact or non-contact force  ST3-11DI-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.