Science and technology K-6 sample scope and sequence

## Term-based questions and content

### Early Stage 1

#### Term 1 – material world (properties of materials)

In Term 1 students focus on the observable properties of materials and how they can be used for making useful products. They investigate how the properties of materials determine their use in design solutions. This strand introduces students to the material sciences and design thinking. There are opportunities for integration with English and geography.

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| Outcomes | Inquiry/focus questions | Content |
| Working scientifically: STe-1WS-SDesign and production: STe-2DP-TMaterial world: STe-4MW-STDigital technologies: STe-7DI-T | What are some of the observable properties of materials? How do the properties of materials affect their use?How does following steps help to achieve a goal? | Students will:* observe and describe some properties of a range of materials
* explore the use of materials in the built environment based on their properties
* identify and describe how the properties of different materials suit their design purpose
* plan, design and evaluate a product considering an identified need or opportunity
* explore how algorithms (a sequence of steps) are used to solve problems.
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#### Term 2 – living world (needs and uses of living things)

In Term 2 students focus on living things, their characteristics, needs, behaviours, and the environment in which they live. They explore how plants and animals satisfy our needs by providing us with the resources for the production of food and fibre. This strand introduces students to the biological sciences and how food and fibre are used and are essential to society and its needs. There are opportunities for integration with English and PDHPE.

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| Outcomes | Inquiry/focus questions | Content |
| Working scientifically: STe-1WS-SDesign and production: STe-2DP-TLiving world: STe-3LW-STDigital technologies: STe-7DI-T | What do we notice about living things? How can living things be used to meet our needs?How are digital technologies used in everyday life? | Students will:* recognise that living things have basic needs including air, food and water
* compare the basic needs of some plants and animals
* participate in guided investigations to identify living things and the external features of plants and animals in the local environment
* communicate findings of observations of living things in their environment
* recognise that plants and animals can be used as food, or materials (fibres) for clothing and shelter
* explore a range of foods obtained from plants and animals
* explore everyday items that are designed and produced from fibres sourced from plants and animals
* explore digital systems and devices and how they are used to communicate.
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#### Term 3 – physical world (forces)

In Term 3 students focus on the physical characteristics of objects and the effects of these on how they move. They investigate how push and pull forces create movement. This strand introduces students to the fundamental concepts of force and motion.

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| Outcomes | Inquiry/focus questions | Content |
| Working scientifically: STe-1WS-SDesign and production: STe-2DP-TPhysical world: STe-5PW-STDigital technologies: STe-7DI-T | What causes objects to move in different ways?How does following steps help to achieve a goal? | Students will:* observe the way a variety of familiar objects move
* observe the effects of push and pull forces on familiar objects
* participate in guided investigations to explore how particular objects move on land, water and/or in the air, and how these objects are affected by forces
* design a process to solve a problem.
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#### Term 4 – Earth and space (effects of weather and seasons)

In Term 4 students focus on daily and seasonal changes in the environment. They investigate how living things respond to these changes in the environment. This strand introduces students to the Earth as a dynamic interrelated part of physical and biological systems.

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| Outcomes | Inquiry/focus questions | Content |
| Working scientifically: STe-1WS-SDesign and production: STe-2DP-TEarth and space: STe-6ES-SDigital technologies: STe-7DI-T | How do daily and seasonal changes affect the environment?How are digital technologies used in everyday life? | Students will: * identify daily and seasonal changes that occur in our environment, such as day and night, and changes in the weather
* explore how living things respond to regular changes in their environment
* observe, ask questions about and describe changes in objects and events
* explore familiar digital devices
* explore how people use digital systems to communicate.
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[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.