## CONTINUUM OF LEARNING IN SCIENCE K–10

### Values and Attitudes

<table>
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<tr>
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<th>Stage 4 to Stage 5 outcomes</th>
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<tr>
<td>STe-1VA, ST1-1VA, ST2-1VA, ST3-1VA shows interest in and enthusiasm for science and technology, responding to their curiosity, questions and perceived needs, wants and opportunities</td>
<td>SC4-1VA, SC5-1VA appreciates the importance of science in their lives and the role of scientific inquiry in increasing understanding of the world around them</td>
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<td>STe-2VA, ST1-2VA, ST2-2VA, ST3-2VA demonstrates a willingness to engage responsibly with local, national and global issues relevant to their lives, and to shaping sustainable futures</td>
<td>SC4-2VA, SC5-2VA shows a willingness to engage in finding solutions to science-related personal, social and global issues, including shaping sustainable futures</td>
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<td>STe-3VA, ST1-3VA, ST2-3VA, ST3-3VA develops informed attitudes about the current and future use and influence of science and technology based on reason</td>
<td>SC4-3VA, SC5-3VA demonstrates confidence in making reasoned, evidence-based decisions about the current and future use and influence of science and technology, including ethical considerations</td>
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### Skills

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<td>ST2-4WS investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken</td>
<td>ST3-4WS investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations</td>
<td>SC4-4WS identifies questions and problems that can be tested or researched and makes predictions based on scientific knowledge</td>
<td>SC5-4WS develops questions or hypotheses to be investigated scientifically</td>
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<td>STe-5WT uses a simple design process to produce solutions with identified purposes</td>
<td>ST1-5WT uses a structured design process, everyday tools, materials, equipment and techniques to produce solutions that respond to identified needs and wants</td>
<td>ST2-5WT applies a design process and uses a range of tools, equipment, materials and techniques to produce solutions that address specific design criteria</td>
<td>ST3-5WT plans and implements a design process, selecting a range of tools, equipment, materials and techniques to produce solutions that address the design criteria and identified constraints</td>
<td>SC4-5WS presents science ideas, findings and information to a given audience using appropriate scientific language, text types and representations</td>
<td>SC5-4WS presents science ideas and evidence for a particular purpose and to a specific audience, using appropriate scientific language, conventions and representations</td>
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### Knowledge and Understanding

#### Early Stage 1 outcomes

**A student:**

- STE-6NE identifies that the way objects move depends on a variety of factors
  - ST1-6PW describes some sources of light and sound that they sense in their daily lives
  - ST1-7PW describes everyday interactions between objects that result from contact forces

**A student:**

- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things
  - ST1-4ES describes some observable changes that occur in the sky and landscape
  - ST1-9ES identifies ways that people use science in their daily lives to care for the environment and the Earth's resources

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
  - ST1-12MW identifies ways that everyday materials can be physically changed and combined for a particular purpose
  - ST1-13MW relates the properties of common materials to their use for particular purposes

#### Stage 1 outcomes

**Knowledge and Understanding**

- ST1-6PW describes some sources of light and sound that they sense in their daily lives
- ST1-7PW describes everyday interactions between objects that result from contact forces

**A student:**

- STE-6NE identifies that the way objects move depends on a variety of factors
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things
- STE-9NE identifies that objects are made of materials that have observable properties

#### Stage 2 outcomes

**Knowledge and Understanding**

- ST2-6PW identifies ways heat is produced and that heat moves from one object to another
- ST2-7PW describes scientific knowledge about the transfer of light to solve problems that directly affect people's lives

**A student:**

- ST1-6PW identifies that adding or removing heat causes a change of state between solids and liquids
- ST1-7PW relates the properties of common materials to their use for particular purposes

#### Stage 3 outcomes

**Knowledge and Understanding**

- ST3-6PW describes how scientific understanding about the sources, transfer and transformation of electricity is related to making decisions about its use
- ST3-7PW explains rapid change at the Earth's surface caused by natural events, using evidence provided by advances in technology and scientific understanding

**A student:**

- STE-9NE identifies ways that people use science in their daily lives to care for the environment and the Earth's resources
- STE-9ES describes how discoveries by people from different cultures and times have contributed to advancing scientific understanding of the solar system

#### Stage 4 outcomes

**Knowledge and Understanding**

- ST4-6PW describes the action of unbalanced forces in everyday situations
- ST4-7PW describes how scientific understanding and technological developments have contributed to finding solutions to problems involving energy transfers and transformations

**A student:**

- ST1-12MW identifies ways that people use science in their daily lives to care for the environment and the Earth's resources
- ST1-9ES describes how discoveries by people from different cultures and times have contributed to advancing scientific understanding of the solar system

#### Stage 5 outcomes

**Knowledge and Understanding**

- ST5-6PW applies models, theories and laws to explain situations involving energy, force and motion
- ST5-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-9ES describes how discoveries by people from different cultures and times have contributed to advancing scientific understanding of the solar system

#### Stage 6 outcomes

**Knowledge and Understanding**

- SC6-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC6-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-8NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things

#### Stage 7 outcomes

**Knowledge and Understanding**

- SC7-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC7-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things

#### Stage 8 outcomes

**Knowledge and Understanding**

- SC8-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC8-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things

#### Stage 9 outcomes

**Knowledge and Understanding**

- SC9-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC9-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things

#### Stage 10 outcomes

**Knowledge and Understanding**

- SC10-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC10-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things

#### Stage 11 outcomes

**Knowledge and Understanding**

- SC11-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC11-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things

#### Stage 12 outcomes

**Knowledge and Understanding**

- SC12-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC12-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things

#### Stage 13 outcomes

**Knowledge and Understanding**

- SC13-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC13-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things

#### Stage 14 outcomes

**Knowledge and Understanding**

- SC14-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC14-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things

#### Stage 15 outcomes

**Knowledge and Understanding**

- SC15-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC15-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things

#### Stage 16 outcomes

**Knowledge and Understanding**

- SC16-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC16-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things

#### Stage 17 outcomes

**Knowledge and Understanding**

- SC17-6PW applies models, theories and laws to explain situations involving energy, force and motion
- SC17-7PW applies models, theories and laws to explain situations involving energy, force and motion

**A student:**

- STE-9NE identifies that objects are made of materials that have observable properties
- STE-7NE observes, using their senses, how daily and seasonal changes in the environment affect them and other living things
## CONTINUUM OF LEARNING IN TECHNOLOGY K–8

### Values and Attitudes

**Early Stage 1 to Stage 3 outcomes**

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<td>STe-1VA, ST1-1VA, ST2-1VA, ST3-1VA shows interest in and enthusiasm for science and technology, responding to their curiosity, questions and perceived needs, wants and opportunities</td>
<td>4.1.1 applies design processes that respond to needs and opportunities in each design project</td>
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<td>STe-2VA, ST1-2VA, ST2-2VA, ST3-2VA demonstrates a willingness to engage responsibly with local, national and global issues relevant to their lives, and to shaping sustainable futures</td>
<td>4.1.2 describes factors influencing design in the areas of study of Built Environments, Products, and Information and Communications</td>
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<td>STe-3VA, ST1-3VA, ST2-3VA, ST3-3VA develops informed attitudes about the current and future use and influence of science and technology based on reason</td>
<td>4.4.1 explains the impact of innovation and emerging technologies on society and the environment</td>
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<td>4.6.2 identifies and explains ethical, social, environmental and sustainability considerations related to design projects</td>
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### Skills

**Early Stage 1 outcomes**

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<td>STe-4WS explores their immediate surroundings by questioning, observing using their senses and communicating to share their observations and ideas</td>
<td>4.2.1 generates and communicates creative design ideas and solutions</td>
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<td>STe-5WT uses a simple design process to produce solutions with identified purposes</td>
<td>4.2.2 selects, analyses, presents and applies research and experimentation from a variety of sources</td>
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<td>STe-5WT uses a structured design process, everyday tools, materials, equipment and techniques to produce solutions that respond to identified needs and wants</td>
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<td>ST3-5WT plans and implements a design process, selecting a range of tools, equipment, materials and techniques to produce solutions that address the design criteria and identified constraints</td>
<td>4.1.1 applies design processes that respond to needs and opportunities in each design project</td>
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<p>|  | 4.2.1 generates and communicates creative design ideas and solutions |
|  | 4.2.2 selects, analyses, presents and applies research and experimentation from a variety of sources |
|  | 4.3.1 applies a broad range of contemporary and appropriate tools, materials and techniques with competence in the development of design projects |
|  | 4.3.2 demonstrates responsible and safe use of a range of tools, materials and techniques in each design project |
|  | 4.4.1 explains the impact of innovation and emerging technologies on society and the environment |
|  | 4.6.2 identifies and explains ethical, social, environmental and sustainability considerations related to design projects |
|  | 4.5.1 applies management processes to successfully complete design projects |
|  | 4.5.2 produces quality solutions that respond to identified needs and opportunities in each design project |
|  | 4.6.1 applies appropriate evaluation techniques throughout each design project |</p>
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<td>ST3-8ES describes how discoveries by people from different cultures and times have contributed to advancing scientific understanding of the solar system</td>
<td>SC4-12ES describes the dynamic nature of models, theories and laws in developing scientific understanding of the Earth and solar system</td>
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<td>Ste-9ME identifies that objects are made of materials that have observable properties</td>
<td>ST1-9PW describes external features, changes in and growth of living things</td>
<td>ST2-9PW describes that living things have life cycles, can be distinguished from non-living things and grouped, based on their observable features</td>
<td>ST3-9PW describes how structural features and other adaptations of living things help them to survive in their environment</td>
<td>SC4-14LW relates the structure and function of living things to their classification, survival and reproduction</td>
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