



**REPUBLIC OF TRINIDAD AND TOBAGO
MINISTRY OF EDUCATION**

PRIMARY SCHOOL CURRICULUM

CURRICULUM GUIDES

SCIENCE

INFANTS 1 – STANDARD 5

**Curriculum Planning and Development Division
2013**

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Primary School Curriculum

Science

Infants 1

SCIENCE CONTENT STANDARDS: INFANTS 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|---|---|---|---|
| Students will: | | | | |
| <p>Individuals and Groups:</p> <p>1.1.1 Assess the importance of the observable parts of the body (Universal Children’s Day, Nov. 20th)</p> | <p>1.2.1 Group parts using one or more observed properties.</p> | <p>1.3.1 Display respect for themselves and each other.</p> | <p>1a. Demonstrate an understanding of the position of the observable body parts and their significance.</p> <p>1b. Appreciate that certain characteristic are common to human beings</p> | <ul style="list-style-type: none"> • Write the names of observable body parts on a drawing showing: parts of the face (eyes, ears, mouth, nose, and head), arms, elbows, hands, fingers, legs, knees, feet, toes. (1.1.1, 1.2.1, 2.2.1, 1.3.1, 2.3.1) • Explain the function of the observable body parts. (1.1.1, 2.2.1, 1.3.1, 2.3.1) • Group observable body parts according to given criteria. (1.1.1, 1.2.1, 2.2.1, 1.3.1, 2.3.1) |

SCIENCE CONTENT STANDARDS: INFANTS 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|--|---------------------|---|--|
| Students will: | | | | |
| 2.1.1 Understand the need for food as a source of energy for survival | 2.2.1 Conveying information by means of oral or written descriptions or pictures | | 2a. Recognize that food is important to sustain life. 2b. Appreciate that not all food may be healthy for our bodies | <ul style="list-style-type: none"> • Explain the consequences of not eating. (2.1.1, 2.2.1, 2.3.1,1.3.1) • Choose nutritious meals from a variety of pictures displaying healthy and unhealthy options. (2.1.1, 2.2.1, 2.3.1) |
| 3.1.1 Value the need for personal hygiene as a means of achieving/ maintaining good health. | 3.2.1 Demonstrate correct procedures to maintain personal hygiene. | | 3. Understand the importance of personal hygiene. | <ul style="list-style-type: none"> • Explain proper procedures to keep their bodies clean: <ul style="list-style-type: none"> ○ bathe at regular intervals using soap and clean water; ○ wash all external body parts; |

SCIENCE CONTENT STANDARDS: INFANTS 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|---|--|---|--|
| Students will: | | | | |
| | | | | <ul style="list-style-type: none"> ○ brush teeth; and ○ wash hands. (3.1.1, 2.2.1, 2.3.1) ● Explain why it is necessary to bathe in order to remain healthy. (3.1.1, 2.2.1, 2.3.1) ● Demonstrate the proper procedure to: <ul style="list-style-type: none"> ○ wash hands and ○ brush teeth. ([3.2.1, 1.3.1, 2.3.1) |
| <p>Form and Function:</p> <p>4.1.1 Examine the functions of everyday structures.</p> | <p>4.2.1 Construct information about functions of structures from what has been observed.</p> | <p>2.3.1 Consider safety when using everyday objects or devices.</p> | <p>4. Recognize that everyday structures perform various functions.</p> | <ul style="list-style-type: none"> ● Select the structures that are best suited for a given purpose: <ul style="list-style-type: none"> ○ stand on a structure that is stable and strong to support |

SCIENCE CONTENT STANDARDS: INFANTS 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|---|---------------------|---|---|
| Students will: | | | | |
| 5.1.1 Discriminate among objects, those that can be used as simple machines | 5.2.1 Group objects as machines using one or more observed properties | | 5. Understand the use of some simple machines | <ul style="list-style-type: none"> ○ the intended mass; ○ the suitability of a vessel to hold its contents e.g. spoon, bowl, bird nest, etc.). (4.1.1, 4.2.1, 2.3.1) <ul style="list-style-type: none"> ● Explain that simple machines make work easier. (5.1.1, 2.2.1, 2.3.1) ● Justify their choice of which simple machine to use for a given task in terms of: <ul style="list-style-type: none"> ○ reducing effort; ○ increasing speed; or ○ changing direction of the force. (5.1.1, 5.2.1, 2.2.1, 2.3.1) |

SCIENCE CONTENT STANDARDS: INFANTS 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|---|---|---|--|
| Students will: | | | | |
| Systems and Interactions: | | | | |
| <p>6.1.1 Categorise habitats based on their components. (World Habitat Day, October 1st)</p> | <p>6.2.1 Observe their environment using the senses – seeing, touching, hearing and smelling.</p> | <p>3.3.1 Exercise care to promote the well-being of themselves, others and environment when making observations.</p> <p>4.3.1 Understand the consequences of their actions.</p> | <p>6. Understand the difference between terrestrial and aquatic habitats.</p> | <ul style="list-style-type: none"> • Name three characteristics of a terrestrial habitat. (6.1.1, 6.2.1, 2.2.1, 1.3.1, 2.3.1) • Name three characteristics of an aquatic habitat. (6.1.1, 6.2.1, 2.2.1, 1.3.1, 2.3.1) • Compare and contrast habitats according to their characteristics. (6.1.1, 6.2.1, 2.2.1, 1.3.1, 2.3.1) |
| <p>7.1.1 Distinguish between types of forces as either push or pull.</p> | <p>7.2.1 Describe in advance the outcome of applying different types</p> | | <p>7. Differentiate between a push and a pull.</p> | <ul style="list-style-type: none"> • Describe simple objects in terms of their <ul style="list-style-type: none"> ○ Shape, ○ Motion, ○ Position, or |

SCIENCE CONTENT STANDARDS: INFANTS 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|----------------|---|---------------------|-----------------|--|
| Students will: | | | | |
| | <p>of forces from previous experience.</p> <p>7.2.2 Via observation, describe objects in terms of their shape, motion, position or location.</p> <p>7.2.3 Design a simple investigation to demonstrate the effect of either a push or a pull.</p> | | | <ul style="list-style-type: none"> ○ Location. (7.1.1, 7.2.2, 4.3.1) ● Classify forces in situations as either a push or pull. (7.1.1, 7.2.1, 4.3.1) ● Devise a simple experiment to demonstrate the effects of pushes and pulls and hypothesize the effect of the forces. (7.1.1, 7.2.1, 7.2.3, 4.3.1) |

SCIENCE CONTENT STANDARDS: INFANTS 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|--|---|---|---|--|
| Students will: | | | | |
| <p>Conservation and Sustainability:</p> <p>8.1.1 Assess the importance of energy as light, sound or heat for domestic purposes.</p> | <p>8.2.1 Group domestic household devices according to type of energy utilized.</p> | <p>5.3.1 Demonstrate conservation habits.</p> | <p>8. Understand that energy exists in various forms.</p> | <ul style="list-style-type: none"> • Distinguish amongst different forms of energy as light, sound or heat. (8.1.1, 2.2.1) • Associate common domestic appliances/devices with the type of energy they produce. (8.1.1, 8.2.1, 6.2.1, 2.2.1) • Explain the need to switch off appliances/devices that are not in use. (8.1.1, 5.3.1, 2.2.1) |

SCIENCE CONTENT STANDARDS: INFANTS 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|---|---|---|--|
| Students will: | | | | |
| 9.1.1 Differentiate amongst types of litter as plastic, paper, cans, and glass. | 9.2.1 Construct information about categories of litter from what has been observed. | 6.3.1 Be accountable for disposal of litter 6.3.2 Confidently dispose litter in the appropriate bin. | 9. Appreciate the need to reduce the amount of litter they contribute to the environment. | <ul style="list-style-type: none"> • Categorise litter into plastic, paper, cans or glass. (9.1.1, 9.2.1, 6.3.1) • Propose disposal methods for plastic, paper, cans and glass. (9.1.1, 1.3.1, 2.3.1, 6.3.1) |

Primary School Curriculum

Science

Infants 2

SCIENCE CONTENT STANDARDS: INFANTS 2

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|--|---|---|--|
| Students will: | | | | |
| <p>Individual and Groups:</p> <p>1.1.1 Distinguish between living and non-living things.</p> <p>2.1.1 Differentiate among animals according to observable characteristics.</p> | <p>1.2.1 Construct information about differences between living and non-living things based on what has been observed.</p> | <p>1.3.1 Demonstrate a sense of responsibility when interacting with living or non-living things.</p> | <p>1. Appreciate differences between living and non-living things.</p> <p>2. Demonstrate an understanding that animals are similar and different.</p> | <ul style="list-style-type: none"> • Identify at least three attributes of living things as : <ul style="list-style-type: none"> o growing (growth), o reproducing (reproduction), o sensitive to environment, o moving (locomotion), o eating (nutrition), o producing Waste (excretion), and o breathing (respiration). (1.1.1, 1.2.1, 1.3.1, 2.2.1) • Justify why something is living or non-living. (1.1.1, 1.2.1, 1.3.1, 2.2.1) |

SCIENCE CONTENT STANDARDS: INFANTS 2

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|--|---|--|---|--|
| Students will: | | | | |
| <p>3.1.1 Record the changes in growth of a seedling.</p> | <p>2.2.1 Communicating information by means of written descriptions or pictures in tabulated format.</p> <p>3.2.1 Chart the growth of a</p> | <p>2.3.1 Display honesty in recording information.</p> | <p>3. Understand the changes that take place when seedlings grow.</p> | <ul style="list-style-type: none"> • Classify animals according to observable characteristics: <ul style="list-style-type: none"> ○ limbs 2, 4 or 6 legs, wings; ○ head, thorax, abdomen; and ○ external covering etc. (2.1.1, 2.2.1, 1.3.1) • Measure the height of a seedling as it grows, using strips/ arbitrary measure. • Construct a chart to illustrate the growth of a seedling. (3.1.1, 3.2.1, 3.3.1) • Draw diagrams to show the development of a seedling at different |

SCIENCE CONTENT STANDARDS: INFANTS 2

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|--|--|---|---|
| Students will: | | | | |
| <p>4.1.1 Distinguish healthy foods from non-healthy foods based on Caribbean Food Groups. (World Food Day - Oct.16th)</p> <p>4.1.2 Discuss consequences of eating unhealthy foods.</p> | <p>seedling using an arbitrary measure.</p> <p>4.2.1 Construct information about healthy foods from what has been surveyed.</p> <p>4.2.2 Convey information orally or by drawing about these consequences.</p> | <p>3.3.1 Exhibit confidence in making responsible eating choices.</p> <p>4.3.1 Show concern for/sensitivity to others who make unhealthy eating choices.</p> | <p>4. Recognize that not all items prepared for eating are healthy.</p> | <p>stages. (3.1.1, 3.2.1, 3.3.1)</p> <ul style="list-style-type: none"> • Justify making healthy choices of food. (4.1.1,4.2.1,4.3.1) • Group basic foods using the Caribbean Food Groups. (4.1.1, 4.2.1, 3.3.1) • Explain that a healthy meal consists of food from the six food groups. (4.1.1, 4.2.1, 3.3.1,4.3.1) • Explain some of the consequences of eating unhealthy foods. (4.1.1,4.2.1,4.3.1) |

SCIENCE CONTENT STANDARDS: INFANTS 2

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|--|--|---|--|
| Students will: | | | | |
| Form and Function: | | | | |
| 5.1.1 Distinguish among solids based on physical properties. | 5.2.1 Construct an operational definition of physical properties from what has been observed. | 5.3.1 Be on task during activities. 5.3.2 Construct a simple table for recording observations | 5. Differentiate solids based on physical properties. | <ul style="list-style-type: none"> • Categorise solids based on physical properties. <ul style="list-style-type: none"> ○ colour ○ shape ○ size ○ texture (5.1.1, 5.2.1, 5.3.1, 5.3.2) |
| Systems and Interaction: | | | | |
| 6.1.1 Demonstrate the effects of forces that cause objects to: move, come to rest, move faster, change direction. | 6.2.1 Describe procedures in a sequential order. 6.2.2 Deduce from recorded information, the effects of application of pushes or pulls. | 6.3.1 Display curiosity when manipulating objects. | 6. Understand the effects of forces; push and pull. | <ul style="list-style-type: none"> • Apply forces to objects to alter speed and/or direction. (6.1.1, 6.2.1, 6.3.1) • Interpret from recorded information the effects of the application of a push/pull. (6.1.1, 6.2.2, 6.3.1) |

SCIENCE CONTENT STANDARDS: INFANTS 2

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|--|--|--|---|--|
| Students will: | | | | |
| <p>7.1.1 Compare aquatic and terrestrial habitats based on their components. (World Water Day, March 22nd; Earth Day, April 22nd; World Environment Day, June 5th).</p> | <p>7.2.1 Construct a table of characteristic features of a particular habitat.</p> | <p>7.3.1 Be objective when collecting data.</p> | <p>7. Differentiate between aquatic and terrestrial habitats.</p> | <ul style="list-style-type: none"> • Construct a table of characteristic features of aquatic and terrestrial habitats. (7.1.1, 7.2.1, 7.3.1) • Create a model or picture of an aquatic and terrestrial habitat. (7.1.1) • Classify habitats as aquatic or terrestrial from their characteristics. (7.1.1, 7.2.1, 7.3.1) |
| <p>Conservation and Sustainability:</p> <p>8.1.1 Explain that energy is conserved and converted into other form(s) in devices.</p> | <p>8.2.1 Construct information using simple flow charts about the conversion of energy in devices.</p> | <p>8.3.1 Show concern for energy conservation.</p> | <p>8. Understand that energy is converted from one form to another for use.</p> | <ul style="list-style-type: none"> • Identify the forms of energy before and after conversion in given devices/ appliances. (8.1.1) |

SCIENCE CONTENT STANDARDS: INFANTS 2

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|--|--|--|--|
| Students will: | | | | |
| 9.1.1 Justify the importance of scientists. (World Science Day – early March) | 9.2.1 Convey information orally or pictures about scientific | 9.3.1 Demonstrate appreciation for the contribution of scientists. | 9. Justify the importance of scientists. | <ul style="list-style-type: none"> • Draw flow diagrams to illustrate the energy changes that take place in household devices/appliances. (8.1.1, 8.2.1, 8.3.1) • Explain the need to switch off toys, appliances and lights when not in use. (8.1.1,8.3.1) • Articulate that energy is neither created nor destroyed; it just changes form. ([8.1.1) • Discuss the contribution of named scientists. (9.1.1, 9.2.1,9.3.1) |

SCIENCE CONTENT STANDARDS: INFANTS 2

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|----------------|--|---------------------|-----------------|---|
| Students will: | | | | |
| | advancements. 9.2.2 Participate in science popularization activities. | | | <ul style="list-style-type: none"> • Make/ display posters to show the work of local scientists. (9.2.2,9.3.1) |

Primary School Curriculum

Science

Standard 1

SCIENCE CONTENT STANDARDS: STANDARD 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|--|--|--|---|--|
| Students will: | | | | |
| Individual and Groups: | | | | |
| <p>1.1.1 Distinguish between vertebrates and invertebrates.</p> | <p>1.2.1 Sort models or pictures of animals according to observed characteristics.</p> | <p>1.3.1 Handle materials carefully.</p> <p>1.3.2 Demonstrate equity in distribution of materials.</p> | <p>1. Classify animals as vertebrates or invertebrates.</p> | <ul style="list-style-type: none"> • Categorize popular farm, domestic and zoo animals as vertebrates or invertebrates. (1.1.1, 1.2.1, 1.3.1) |
| <p>2.1.1 Discuss the importance of the work of local scientists.</p> | <p>2.2.1 Convey information by means of oral presentations or visual display.</p> | <p>2.3.1 Value the contributions of scientists.</p> | <p>2. Appreciate the work of local scientists.</p> | <ul style="list-style-type: none"> • Explain the importance of the work of local scientists. (2.1.1,2.2.1,2.3.1) • Identify one local scientist and write the main idea of his/her work. (2.1.1,2.2.1,2.3.1) |

SCIENCE CONTENT STANDARDS: STANDARD 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|---|---|---|--|
| Students will: | | | | |
| Form and Function: | | | | |
| <p>3.1.1 Investigate traditional methods such as sieving and handpicking to separate mixtures of solids.</p> <p>4.1.1 Evaluate the usefulness of objects/structures based on the materials used to make them.</p> | <p>3.2.1 Choose the appropriate apparatus for separating solids of different size.</p> <p>3.2.2 Carry out procedures systematically.</p> <p>4.2.1 Investigate the flaws in structures that result from the choice of materials.</p> <p>4.2.2 Explore possible alternatives.</p> | <p>3.3.1 Be open-minded about traditional practices.</p> <p>4.3.1 Be innovative in choice of materials.</p> | <p>3. Discriminate amongst traditional methods of separation.</p> <p>4. Illustrate the usefulness of structures/objects based on the materials used to make them.</p> | <ul style="list-style-type: none"> • Explain the procedures to separate mixtures e.g.: <ul style="list-style-type: none"> ○ Handpicking: <ul style="list-style-type: none"> ▪ rice and stone; ▪ sand and rice; and ▪ Nails and pebbles. <p>(3.1.1,3.2.1,3.3.1)</p> <ul style="list-style-type: none"> • Use appropriate materials when creating models or completing projects etc. that are suitable based on <ul style="list-style-type: none"> ○ appearance, ○ texture, ○ strength, and ○ mass. (4.1.1,4.2.1,4.3.1) |

SCIENCE CONTENT STANDARDS: STANDARD 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|--|--|--|---|
| Students will: | | | | |
| 5.1.1 Differentiate among various types of simple machines as levers, pulleys, wheel and axle. | 5.2.1 Use an appropriate simple machine to complete a specified task. | 5.3.1 Value the usefulness of simple machines. | 5. Demonstrate an understanding of the use of simple machines. | <ul style="list-style-type: none"> • Classify simple machines as: <ul style="list-style-type: none"> ○ levers, ○ pulleys, or ○ wheel and axle. (5.1.1,5.2.1, 5.3.1) • Select appropriate simple machines to solve everyday problems. (5.1.1,5.2.1, 5.3.1) |
| <p>Systems and Interaction:</p> <p>6.1.1 Examine the use of forces including twists and turns.</p> | <p>6.2.1 Carry out procedures showing the use of different forces.</p> <p>6.2.2 Record observations using scientific</p> | <p>6.3.1 Be thorough when conducting investigations.</p> <p>6.3.2 Be neat in completing tasks.</p> | 6. Evaluate the effects of forces. | <ul style="list-style-type: none"> • Explain the effects of simple twists and turns. (6.1.1,6.2.1,6.3.1) • Draw and label diagrams to illustrate the use of twists and turns.(6.1.1,6.2.2,6.3.2) • Predict the most plausible o |

SCIENCE CONTENT STANDARDS: STANDARD 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|--|--|---|---|
| Students will: | | | | |
| <p>7.1.1 Investigate relationships that exist within ecosystems.</p> <p>8.1.1 Assess the importance of the daily cycle.</p> | <p>drawings.</p> <p>6.2.3 Predict the outcome of applying a force.</p> <p>7.2.1 Construct a graphic representation of the feeding habits of animals.</p> <p>8.2.1 Map events/activities in terms of sequence and period of time.</p> | <p>7.3.1 Exhibit sensitivity to the delicate balance that exists within ecosystems.</p> <p>8.3.1 Be aware of patterns of behaviours or habits.</p> | <p>7. Demonstrate an understanding of the relationships within ecosystems.</p> <p>8. Value the daily cycle.</p> | <p>outcome in given situations where twists and turns are applied. (6.1.1,6.2.2,6.3.2)</p> <ul style="list-style-type: none"> • Identify relationships existing in ecosystems. (7.1.1, 7.2.1, 7.3.1) • Create simple flow diagram to illustrate energy relationships amongst organisms in common ecosystem. (7.1.1, 7.2.1, 7.3.1) • Outline the negative effects of mans' actions within ecosystems. (7.1.1, 7.2.1, 7.3.1) |

SCIENCE CONTENT STANDARDS: STANDARD 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|--------|--------------|--|---|
| Students will: | | | | |
| <p>9.1.1 Compare the wet and dry seasons based on activities that take place in each.</p> | | | <p>9. Demonstrate an awareness of the differences between the wet and dry seasons.</p> | <ul style="list-style-type: none"> • Illustrate and predict the daily cycle. (8.1.1, 8.2.1, 8.3.1) • Associate common activities with day and night. (8.1.1, 8.2.1, 8.3.1) • Identify the characteristics of the two seasons. (9.1.1, 8.2.1, 8.3.1) • Explain why common activities are associated with a season. (9.1.1, 8.2.1, 8.3.1) • Associate natural events that occur in the seasons. E.g. wet: - hurricanes, flooding. (9.1.1, 8.2.1, |

SCIENCE CONTENT STANDARDS: STANDARD 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|---|---|--|---|
| Students will: | | | | |
| 8.3.1) | | | | |
| <p>Conservation and Sustainability:</p> <p>10.1.1 Evaluate how wind had been used as a source of energy.</p> <p>10.1.2 Create models of traditional devices that use wind.</p> | <p>10.2.1 Assemble a display conveying information on wind energy.</p> <p>10.2.2 Design and build models.</p> <p>10.2.3 Explore possible modifications of wind powered devices to improve their</p> | <p>10.3.1 Value traditional practices that incorporate the use of wind energy.</p> <p>10.3.2 Demonstrate creativity in developing designs and models.</p> | <p>10a. Explain how wind has been used as a source of energy</p> <p>10b. Create and modify models of traditional wind devices.</p> | <ul style="list-style-type: none"> • Explain that windmills have been used for grinding in some industries in the past. (10.1.1, 10.2.1, 10.3.1) • Explain some of the common uses of wind energy. (10.1.1, 10.2.1, 10.3.1) • Construct models of traditional devices that use wind. (10.1.2, 10.2.2, 10.2.3,) |

SCIENCE CONTENT STANDARDS: STANDARD 1

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|----------------|---------------|---------------------|-----------------|--|
| Students will: | | | | |
| | usefulness. | | | <ul style="list-style-type: none">• Evaluate these models and propose modifications to enhance their operation. (10.2.3, 10.3.2) |

Primary School Curriculum

Science

Standard 2

SCIENCE CONTENT STANDARDS: STANDARD 2

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | ELABORATIONS |
|---|--|--|---|---|
| Students will: | | | | |
| <p>Individuals and Groups:</p> <p>1.1.1 Categorize vertebrates into classes.</p> | <p>1.2.1 Construct operational definitions of each class of vertebrate from observations recorded.</p> | <p>1.3.1 Value the commonalities shared by individual species.</p> | <p>1. Associate each class of vertebrates with at least two distinguishing characteristics.</p> | <ul style="list-style-type: none"> • Associate common animals with the five groups of vertebrates based on the identification of distinguishing characteristics: <ul style="list-style-type: none"> ○ mammals ○ birds ○ reptiles ○ fish ○ amphibians <p>(1.1.1, 1.2.1, 1.3.1, 2.3.1)</p> |
| <p>Form and Function:</p> <p>2.1.1 Differentiate among the three states of matter.</p> | <p>2.2.1 Convey understanding of meaning of terms from observations.</p> | <p>2.3.1 Effectively communicate information in appropriate formats.</p> | <p>2. Understand that matter exists in three basic states.</p> | <ul style="list-style-type: none"> • Categorize matter into the three basic states: <ul style="list-style-type: none"> ○ solids, ○ liquids, and ○ gases <p>(2.1.1, 2.2.1, 2.3.1, 3.3.1)</p> <ul style="list-style-type: none"> • Explain that matter can change states. |

SCIENCE CONTENT STANDARDS: STANDARD 2

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | ELABORATIONS |
|---|---|--|--|---|
| Students will: | | | | |
| <p>3.1.1 Investigate the separation of solids from mixtures using filtration and magnetism.</p> | <p>3.2.1 Construct an operational definition of magnetic property from what has been observed.</p> <p>3.2.2 Report on the method used to separate mixtures into their solid components.</p> | <p>3.3.1 Share responsibility for completing assigned task.</p> | <p>3. Understand that mixtures can be separated into their components.</p> | <ul style="list-style-type: none"> ○ water ○ carbon dioxide (dry ice) (2.1.1, 2.2.1) <ul style="list-style-type: none"> ● Separate mixtures using the processes of <ul style="list-style-type: none"> ○ Filtration or ○ Magnetism. (3.1, 3.2.1, 2.3.1, 3.3.1,4.3.1) |
| <p>4.1.1 Investigate substances that dissolve in water.</p> | <p>4.2.1 Measure the volume of water using a beaker and a measuring</p> | <p>4.3.1 Demonstrate concern for safety of self and others when handling materials and</p> | <p>4. Recognize that some substances can be dissolved in water.</p> | <ul style="list-style-type: none"> ● Name common substances that can be dissolved in water. (4.1.1, 4.2.2, 4.3.1, 3.3.1,2.3.1) |

SCIENCE CONTENT STANDARDS: STANDARD 2

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | ELABORATIONS |
|--|--|---|--|---|
| Students will: | | | | |
| <p>5.1.1 Investigate the movement of water through various soil types.</p> | <p>cylinder.</p> <p>4.2.2 Make inferences about the nature of the substances from observations.</p> <p>5.2.1 Present information in tabulated format showing the movement of water through different soil types.</p> | <p>equipment.</p> <p>5.3.1 Show concern for conservation of minerals and the environment from which they are extracted.</p> | <p>5. Distinguish between soil types based on rate of flow of water.</p> | <ul style="list-style-type: none"> • Explain the terms: solute, solvent and solution. (4.1.1, 4.2.1, 4.3.1, 3.3.1, 2.3.1) • Conduct experiments to demonstrate substances that can be dissolved in water. (4.1.1, 4.2.1, 4.3.1,3.3.1,2.3.1) • Set up and conduct experiments to illustrate the movement of water through the different soil types. (5.1.1, 5.2.1, 4.3.1, 3.3.1, 2.3.1) • Read water volumes at eye level after placing measuring cylinder/beaker on a flat surface. (5.1.1,5.2.2,4.3.1) |

SCIENCE CONTENT STANDARDS: STANDARD 2

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | ELABORATIONS |
|---|---|---|---|---|
| Students will: | | | | |
| | or visual presentation about minerals. 6.2.2 Create a display of ways minerals are used. | | | <ul style="list-style-type: none"> ○ asphalt ○ limestone ○ coal ○ gold ○ silver ○ iron (6.1.1, 6.2.1, 5.3.1, 2.3.1) <ul style="list-style-type: none"> ● Describe ways to conserve minerals and the environment they are extracted from. (6.1.1, 6.2.2, 5.3.1, 2.3.1) |
| Systems and Interaction: 7.1.1 Demonstrate that plants need light and water for growth. | 7.2.1 Deduce the variables that relate to an investigation of the growth of plants. 7.2.2 Carry out procedures systematically, | 6.3.1 Communicate findings in a concise and logical manner. | 7. Discuss some of the conditions necessary for plant growth. | <ul style="list-style-type: none"> ● Conduct experiments to demonstrate that plants need light and water to grow. (7.1.1, 7.2.1, 6.3.1, 4.3.1, 3.3.1,2.3.1) ● Represent findings in appropriate graphic organizers which: |

SCIENCE CONTENT STANDARDS: STANDARD 2

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | ELABORATIONS |
|--|--|--|--|---|
| Students will: | | | | |
| <p>8.1.1 Justify the importance of the water cycle in making water available for life processes.</p> | <p>present findings and draw conclusions.</p> <p>8.2.1 Draw an annotated diagram of the water cycle.</p> | <p>6.3.1 Display conservation habits when using water.</p> | <p>8. Value the importance of the water cycle.</p> | <ul style="list-style-type: none"> ○ are easy to extract information from ○ are labelled appropriately (7.1.1, 7.2.1, 6.3.1, 4.3.1, 3.3.1,2.3.1) ● Predict what is likely to occur if plants are deprived of water (7.1.1, 7.2.2, 6.3.1, 4.3.1, 3.3.1,2.3.1) ● Explain the processes in the water cycle: <ul style="list-style-type: none"> ○ evaporation ○ condensation ○ precipitation. (8.1.1,8.2.1,6.3.1) ● Label a diagram of the water cycle using |

SCIENCE CONTENT STANDARDS: STANDARD 2

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | ELABORATIONS |
|--|--|---|---|--|
| Students will: | | | | |
| | | | | <ul style="list-style-type: none"> ○ appropriate title and ○ labels placed on right of diagram/page. (8.1.1,8.2.1, 6.3.1) ● Assess water conservation habits that incorporate reduce, reuse and recycle. (8.1.1,8.2.1,6.3.1) |
| <p>Conservation and Sustainability:</p> <p>9.1.1 Examine the use of fossil fuels such as petroleum and natural gas.</p> | <p>9.2.1 Extract appropriate information from various media.</p> | <p>7.3 1 Develop an appreciation for the need to conserve energy resources.</p> | <p>9. Understand the need to conserve energy.</p> | <ul style="list-style-type: none"> ● List traditional sources of energy as: <ul style="list-style-type: none"> ○ petroleum (gasoline, diesel, kerosene) and ○ natural gas. (9.1,9.2,7.3) ● Name alternative sources |

SCIENCE CONTENT STANDARDS: STANDARD 2

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | ELABORATIONS |
|---|---|--|---|---|
| Students will: | | | | |
| <p>10.1.1 Justify the need to conserve potable water.</p> | <p>10.2.1 Gather and represent information on daily usage of water in various contexts.</p> | <p>8.3.1 Recognise when it is important to maintain confidentiality concerning personal information.</p> | <p>10. Understand the importance of conserving water.</p> | <p>of energy as:</p> <ul style="list-style-type: none"> ○ wind, ○ solar, and ○ hydroelectric. (9.1.1,9.2.1,7.3.1) <ul style="list-style-type: none"> ● Explain why energy needs to be conserved with reference to: <ul style="list-style-type: none"> ○ cost, ○ availability, (9.1.1,9.2.1,7.3.1) ● Represent research data on water usage in appropriate graphic organizers. (10.1.1,10.2.1,8.3.1) ● Defend why it is necessary to conserve potable water. (10.1.1,10.2.1,8.3.1) ● Discuss ways to conserve potable water including: |

SCIENCE CONTENT STANDARDS: STANDARD 2

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | ELABORATIONS |
|----------------|---------------|---------------------|-----------------|--|
| Students will: | | | | |
| | | | | <ul style="list-style-type: none">○ fixing leaks;○ turning off taps not in use;○ reducing shower time; and○ using eco-friendly toilets. (10.1.1,10.2.1,8.3.1) |

Primary School Curriculum

Science

Standard 3

SCIENCE CONTENT STANDARDS: STANDARD 3

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|--|--|---|---|
| Students will: | | | | |
| <p>Individuals and Groups:</p> <p>1.1.1 Discriminate among the stages in the life cycle of animals showing complete metamorphosis.</p> | <p>1.2.1 Draw annotated diagrams of the stages in the life cycle of animals.</p> | <p>1.3.1 Be objective when representing scientific information as a drawing.</p> | <p>1. Understand that some animals go through different stages in growth.</p> | <ul style="list-style-type: none"> • Explain the stages of the metamorphosis process. <ul style="list-style-type: none"> ○ egg ○ larvae ○ pupa and ○ adult (1.1.1, 1.3.1) • Classify common animals as those that undergo complete metamorphosis. <ul style="list-style-type: none"> ○ mosquito ○ house fly ○ butterfly and ○ frog. (1.1.1, 1.2.1, 1.3.1) • Draw and label diagrams to illustrate life cycles of named |

SCIENCE CONTENT STANDARDS: STANDARD 3

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|---|---------------------|---|--|
| Students will: | | | | |
| <p>2.1.1 Examine distinguishing features in animals and plants that allow for variation and adaptation.</p> | <p>2.2.1. Illustrate distinguishing features through scientific drawings.</p> | | <p>2. Recognize that variation within a species exists as a result of adaptation.</p> | <p>organisms. Diagrams should:</p> <ul style="list-style-type: none"> ○ be clear and clean; ○ contain smooth lines; ○ be large (half page); ○ be properly labelled and ○ contain appropriate titles. <p>(1.1.1, 1.2.1, 1.3.1)</p> <ul style="list-style-type: none"> ● Differentiate among some of the distinguishing features of animals and the uses of such features as: <ul style="list-style-type: none"> ○ limbs; ○ head and ears; ○ eyes (predator, |

SCIENCE CONTENT STANDARDS: STANDARD 3

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|----------------|--------|--------------|----------|--|
| Students will: | | | | |
| | | | | <ul style="list-style-type: none"> ○ prey); ○ camouflage; ○ fins and gills; and ○ external covering. (2.1.1, 2.2.2) ● Differentiate among some of the distinguishing features of plants e.g. <ul style="list-style-type: none"> ○ leaves –size, shape (including cacti) ○ external covering (bark, leaf, flower colour). (2.1.1, 2.2.1) |

SCIENCE CONTENT STANDARDS: STANDARD 3

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|---|---|---|---|
| Students will: | | | | |
| Form and Function: | | | | |
| <p>3.1.1 Investigate the separation of soluble solids from solutions.</p> | <p>3.2.1 Measure temperature using a thermometer.</p> <p>3.2.2 Manipulate variables to identify the factors that affect the separation of soluble solids from solutions.</p> <p>3.2.3 Make inferences from data recorded.</p> | <p>2.3.1 Be efficient when using materials to avoid wastage.</p> | <p>3. Understand that the solute and solvent can be separated from solutions.</p> | <ul style="list-style-type: none"> • Design and conduct experiments to separate solutions of <ul style="list-style-type: none"> ○ Salt/sugar and water. (3.1.1, 3.2.2, 2.3.1) • Explain that temperature and surface area facilitate the separation of mixtures. • Manipulate, use and label the parts of a thermometer. (3.2.1) |
| <p>4.1.1 Examine the external parts of the flower.</p> | <p>4.2.1 Draw external flower parts and label each clearly.</p> | <p>3.3.1 Be careful when handling delicate materials and fragile equipment.</p> | <p>4. Differentiate amongst the external parts of the flower.</p> | <ul style="list-style-type: none"> • Draw and label the external parts of the flower showing: <ul style="list-style-type: none"> ○ Petals, Sepals |

| SCIENCE CONTENT STANDARDS: STANDARD 3 | | | | |
|---|--|--|--|---|
| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
| Students will: | | | | |
| | | | | <ul style="list-style-type: none"> ○ Anther, Filaments (parts of the stamen) ○ Style, Stigma (parts of the pistil). (4.1.1, 4.2.1, 3.3.1) |
| Systems and Interaction: 5.1.1 Justify the need to protect aquatic habitats including wetlands. | 5.2.1 Construct an argument in support of initiatives to protect wetlands. | 4.3.1 Be aware of their responsibility to preserve wetlands. | 5. Understand the delicate nature of aquatic habitats. | <ul style="list-style-type: none"> ● Differentiate amongst aquatic habitats as: <ul style="list-style-type: none"> ○ rivers, ○ ponds, ○ swamps, and ○ marine environments. (5.1.1, 4.3.1) ● Explain how natural factors affect aquatic environments. |

SCIENCE CONTENT STANDARDS: STANDARD 3

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|----------------|---------------|---------------------|-----------------|--|
| Students will: | | | | |
| | | | | <ul style="list-style-type: none"> ○ climate and weather ○ temperature change ○ drought and flooding ○ overpopulation ○ predator/prey relationship ○ food supply. (5.1.1, 5.2.1, 4.3.1) ● How human activities affect aquatic environments. <ul style="list-style-type: none"> ○ pollution ○ over exploitation, indiscriminate use of resources ○ introduction of non-native species. |

SCIENCE CONTENT STANDARDS: STANDARD 3

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|--|---|---------------------|--|--|
| Students will: | | | | |
| <p>6.1.1 Justify that interdependency exists among plants and animals.</p> | <p>6.2.1 Construct information about food webs using graphic representation.</p> <p>6.2.2 Predict the impact of the introduction of non-native or loss of native species.</p> | | <p>6. Understand that interdependency exists among plants and animals.</p> | <p align="right">(5.1.1, 5.2.1, 4.3.1)</p> <ul style="list-style-type: none"> • Construct food webs to illustrate the feeding relationships among common animals in <ul style="list-style-type: none"> ○ terrestrial habitats and ○ aquatic habitats. (6.1.1, 6.2.1) • Predict the impact of: <ul style="list-style-type: none"> ○ introduction of non-native species ○ loss of native species. (6.1.1, 6.2.2) |

SCIENCE CONTENT STANDARDS: STANDARD 3

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|---|---|--|---|
| Students will: | | | | |
| <p>Conservation and Sustainability:</p> <p>7.1.1 Examine the uses of solar energy as an alternative to fossil fuels.</p> | <p>7.2.1 Construct an operational definition of alternative energy based on observations.</p> | <p>5.3.1 Share their views CONFIDENTLY via multiple methods.</p> | <p>7. Appreciate solar energy as an alternative to fossil fuels.</p> | <ul style="list-style-type: none"> • Differentiate between alternative forms of energy and fossil fuels. (7.1.1, 7.2.1, 5.3.1) • Explain some ways that solar energy can be used. (7.1.1, 7.2.1, 5.3.1) • Explain the benefits of solar energy as being: <ul style="list-style-type: none"> ○ Clean, ○ Renewable and ○ Available due to our tropical location. (7.1.1, 7.2.1, 5.3.1) |

SCIENCE CONTENT STANDARDS: STANDARD 3

| CONTENT | SKILLS | DISPOSITIONS | OUTCOMES | ELABORATIONS |
|---|--|---------------------|--|--|
| Students will: | | | | |
| 8.1.1 Evaluate the effects of pollution: <ul style="list-style-type: none"> • on land, • in air, and • in water. | 8.2.1 Present arguments against pollution. | | 8. Evaluate the effects of pollution: <ul style="list-style-type: none"> • on land, • in air, and • in water. | <ul style="list-style-type: none"> • Differentiate among land, air and water pollution. (8.1.1) • Discuss the effects of land, air and water pollution. (8.1.1, 8.2.1) • Discuss simple strategies for reducing pollution. (8.1.1) • Justify why pollution must be reduced. (8.1.1, 8.2.1) |

Primary School Curriculum

Science

Standard 4

SCIENCE CONTENT STANDARDS: STANDARD 4

| CONTENT | SKILLS | DISPOSITIONS | STANDARDS | INDICATORS |
|--|--|--|--|--|
| Students will: | | | | |
| <p>Individuals and Groups:</p> <p>1.1.1 Examine the biological changes that take place in animals and plants during the growth process.</p> | <p>1.2.1 Measure lengths using instruments of varying ranges.</p> <p>1.2.2 Compose a suitable aim for investigating changes in measurable physical characteristics that vary with growth.</p> <p>1.2.3 Report procedures in logical sequence and appropriate language.</p> | <p>1.3.1 Show respect for the variations that exist among all forms of life.</p> <p>1.3.2 Demonstrate self-assurance about their uniqueness.</p> | <p>1. Understand the changes that take place in plants and animals as they mature.</p> | <ul style="list-style-type: none"> • Represent the dimensions of plants and animals using metric units. (1.1.1, 1.2.1, 1.3.1) • Explain that as plants and some animals mature, their parts grow in size. <ul style="list-style-type: none"> ○ height ○ mass ○ span ○ girth (1.1.1, 1.2.1, 1.3.1) • Differentiate between adults and their young. (1.1.1, 1.2.1, 1.3.1) • Formulate and test hypotheses. (1.1.1, 1.2.1, 1.2.2, 1.3.2) |

SCIENCE CONTENT STANDARDS: STANDARD 4

| CONTENT | SKILLS | DISPOSITIONS | STANDARDS | INDICATORS |
|----------------|--------|--------------|-----------|--|
| Students will: | | | | |
| | | | | <ul style="list-style-type: none"> • Design and conduct experiments to investigate the physical changes which take place as plants grow. (1.1.1, 1.2.1, 1.2.2, 1.3.2) • Report findings using logical sequencing and appropriate graphic organizers using: <ul style="list-style-type: none"> ○ past tense, ○ concise language, and ○ third person. (1.1.1, 1.2.3, 1.3.2) • Interpret data on growing plants and animals. (1.1.1, 1.2.4, 1.3.2) |

SCIENCE CONTENT STANDARDS: STANDARD 4

| CONTENT | SKILLS | DISPOSITIONS | STANDARDS | INDICATORS |
|--|--|--|---|---|
| Students will: | | | | |
| <p>2.1.1 Justify the need for eating healthy foods (balanced and natural).</p> | <p>1.2.4 Interpret recorded data</p> <p>2.2.1 Extract information about ingredients and methods of food preparation from varied sources.</p> | <p>2.3.1 Exhibit self-control in choosing healthy options.</p> <p>2.3.2 Be sensitive when discussing food related illnesses or challenges.</p> | <p>2a. Justify their choice of healthy foods.</p> <p>2b. Exhibit sensitivity to individuals who suffer from food related illnesses or challenges.</p> | <ul style="list-style-type: none"> • Explain that healthy foods are impacted by <ul style="list-style-type: none"> ○ ingredients used and ○ method of preparation. (2.1.1, 2.2.1) • Select healthy foods from pictures and lists. (2.1.1, 2.2.1, 2.3.1) • Defend their food choices. (2.1.1, 2.2.1, 2.3.1) • Demonstrate appropriate responses and behaviours to individuals who do not choose healthy food options. (2.3.2) |

SCIENCE CONTENT STANDARDS: STANDARD 4

| CONTENT | SKILLS | DISPOSITIONS | STANDARDS | INDICATORS |
|---|--|--|---|---|
| Students will: | | | | |
| <p>Form and Function:</p> <p>3.1.1 Investigate the properties of materials such as:</p> <ul style="list-style-type: none"> • ability to transmit sound and light, • absorbency • strength, and • conduction of heat and electricity. | <p>3.2.1 Measure temperature using a thermometer.</p> <p>3.2.2 Formulate a hypothesis and select a workable method.</p> <p>3.2.3 Interpret data to confirm or refute hypothesis.</p> <p>3.2.4 Draw appropriate conclusion.</p> | <p>3.3.1 Propose innovative recommendations.</p> | <p>3. Defend the choice of materials based on their properties.</p> | <ul style="list-style-type: none"> • Design experiments to compare the properties of materials based on: <ul style="list-style-type: none"> ○ ability to transmit: <ul style="list-style-type: none"> ▪ sound and/or ▪ light; ○ absorbency; ○ strength; ○ conduction of <ul style="list-style-type: none"> ▪ heat, and/or ▪ electricity. (3.1.1, 3.2.1) • Use a thermometer correctly by immersing the bulb into liquid to be tested. (3.1.1, 3.2.1) • Formulate and test hypotheses on the most suitable material to be used in |

SCIENCE CONTENT STANDARDS: STANDARD 4

| CONTENT | SKILLS | DISPOSITIONS | STANDARDS | INDICATORS |
|---|--|--------------|---|--|
| Students will: | | | | |
| <p>4.1.1 Investigate the factors that affect the stability of simple structures</p> | <p>4.2.1 Explore possible modifications of simple structure to improve its stability.</p> <p>4.2.2 Select the best solution.</p> | | <p>4. Modify simple structures to improve their stability</p> | <p>given situations. (3.1.1, 3.2.2, 3.2.3)</p> <ul style="list-style-type: none"> • Interpret data and draw appropriate conclusions from observations made. (3.1.1, 3.2.3, 3.2.4) • Propose innovative recommendations for improvement to apparatus/equipment. (3.1.1, 3.3.1) • Create a stable simple structure with consideration of: <ul style="list-style-type: none"> ○ choice of basic material; ○ shape; ○ width of base; ○ overall height; ○ placement of load; and ○ centre of gravity. |

| SCIENCE CONTENT STANDARDS: STANDARD 4 | | | | |
|---|---|---|---|--|
| CONTENT | SKILLS | DISPOSITIONS | STANDARDS | INDICATORS |
| Students will: | | | | |
| | 4.2.3 Evaluate the selected solution. | | | (4.1.1, 4.2.1) <ul style="list-style-type: none"> Analyse simple structures and improve their stability by attempting to lower the centre of gravity. |
| Systems and Interaction: 5.1.1 Differentiate between weather and climate. | 5.2.1 Observe weather pattern over a period of time. 5.2.2 Chart the weather pattern in various locations. 5.2.3 Interpret inferences from data gathered. | 5.3.1 Be proactive in preparing for extreme weather conditions (Natural Disasters). | 5. Distinguish between weather and climate. | <ul style="list-style-type: none"> Observe and record weather patterns using symbols. [5.1.1, 5.2.1] Explain the difference between weather and climate. [5.1.1, 5.2.1] Outline steps to prepare for extreme weather conditions. (5.1.1, 5.3.1) |

| SCIENCE CONTENT STANDARDS: STANDARD 4 | | | | |
|---|---|---|--|---|
| CONTENT | SKILLS | DISPOSITIONS | STANDARDS | INDICATORS |
| Students will: | | | | |
| | | | | |
| <p>Conservation and Sustainability:</p> <p>6.1.1 Differentiate between renewable and non-renewable sources of energy.</p> <p>7.1.1 Investigate the Greenhouse Effect and its link to Global Warming.</p> | <p>6.2.1 Construct operational definition of terms renewable and non-renewable from activities.</p> <p>7.2.1 Conduct demonstrations of the Greenhouse Effect.</p> | <p>6.3.1 Demonstrate initiative in conserving electrical energy.</p> <p>7.3.1 Be accountable for their negative attitudes and behaviours towards the environment.</p> | <p>6. Assess uses of renewable and non-renewable energy.</p> <p>7. Differentiate between the Greenhouse Effect and the Enhanced Greenhouse Effect.</p> | <ul style="list-style-type: none"> • Understand that non-renewable energy stores are finite. (6.1.1, 6.2.1) • Explain the difference between renewable and non-renewable energy. (6.1.1, 6.2.1) • Explain how the earth becomes warm as a result of the Greenhouse Effect. (7.1.1, 7.2.1) • Draw and label diagrams to illustrate the Greenhouse Effect. (7.1.1, 7.2.1) |

SCIENCE CONTENT STANDARDS: STANDARD 4

| CONTENT | SKILLS | DISPOSITIONS | STANDARDS | INDICATORS |
|----------------|---------------|---------------------|------------------|---|
| Students will: | | | | |
| | | | | <ul style="list-style-type: none"> • Create models to illustrate the Greenhouse Effect. (7.1.1, 7.2.1) • Explain how man’s actions have created the Enhanced Greenhouse Effect. (7.1.1, 7.2.1, 7.3.1) |

INTERIM

Primary School Curriculum

Science

Standard 5

SCIENCE CONTENT STANDARDS: STANDARD 5

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | INDICATORS |
|---|--|--|---|--|
| Students will: | | | | |
| <p>Form and Function:</p> <p>1.1.1 Justify the use of various technologies in everyday life.</p> | <p>1.2.1 Measure mass using a balance.</p> <p>1.2.2 Measure weight using a spring balance.</p> <p>1.2.3 Construct operational definition of forces that can be an effort or load.</p> <p>1.2.4 Investigate the use of simple machines (levers, gears and inclined planes) to reduce the effort needed.</p> | <p>1.3.1 Be responsive to new technologies.</p> <p>1.3.2 Be innovative as they adapt to technological changes.</p> | <p>1. Justify the use of various technologies in everyday life.</p> | <ul style="list-style-type: none"> • Differentiate between mass and weight (1.1.1, 1.2.1, 1.2.2) • Use appropriate devices to measure mass and weight avoiding common reading errors. <ul style="list-style-type: none"> ○ Zero error ○ Parallax ○ Using a level surface. (1.1.1, 1.2.1, 1.2.2) • Differentiate among load, effort and fulcrum in the different types of levers. • Draw and label force diagrams: <ul style="list-style-type: none"> ○ arrow begins at application of force; ○ arrow head shows |

SCIENCE CONTENT STANDARDS: STANDARD 5

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | INDICATORS |
|----------------|--------|--------------|----------|--|
| Students will: | | | | |
| | | | | <ul style="list-style-type: none"> force direction; <ul style="list-style-type: none"> ○ length of arrow is proportional to size of force. (1.1.1, 1.2.1, 1.2.2, 1.2.4) ● Explain using force diagrams, that some devices/ equipment reduce the effort needed to overcome the load, namely: <ul style="list-style-type: none"> ▪ levers, ▪ gears, and ▪ inclined planes. (1.1.1, 1.2.4) ● Design or modify simple machines that can make our lives easier, using the steps in the IDEATE model. <ul style="list-style-type: none"> ○ I - Identify the problem. ○ D - Define the problem. ○ E - Explore possible |

SCIENCE CONTENT STANDARDS: STANDARD 5

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | INDICATORS |
|--|--|--|--|--|
| Students will: | | | | |
| | | | | solutions. ○ A - Access the various solutions. ○ T - Try-out and Test the solution. ○ E - Evaluate the solution. (1.1.1, 1.2.1, 1.3.1) |
| <p>Conservation and Sustainability:</p> <p>2.1.1 Justify the use of energy efficient devices and practices to conserve electrical energy.</p> | <p>2.2.1 Identify an energy saving strategy to address a particular problem.</p> | <p>2.3.1 Make responsible choices that will sustain the environment.</p> | <p>2. Justify the use of energy efficient devices and practices to conserve electrical energy.</p> | <ul style="list-style-type: none"> ● Discuss the use of energy efficient devices used in the community, including: <ul style="list-style-type: none"> ○ energy star products; ○ energy efficient lighting; <ul style="list-style-type: none"> ▪ fluorescent lighting and ▪ Light Emitting Diodes. (LEDs) <p>(2.1.1, 2.2.1, 2.3.1)</p> |

SCIENCE CONTENT STANDARDS: STANDARD 5

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | INDICATORS |
|----------------|--|--------------|----------|---|
| Students will: | | | | |
| | 2.2.2 Explore possible options and select the one that is most viable. | | | <ul style="list-style-type: none"> • Construct contextually relevant operational definitions of the term “energy efficient”. • Propose alternative methods of <ul style="list-style-type: none"> ○ washing and drying clothes; ○ using artificial lighting; ○ using electrical water pumps; ○ using air-conditioning. (2.1.1, 2.2.1, 2.3.1) • Design model homes that are energy efficient. (2.1.1, 2.2.1, 2.3.1) • Explain the effects of global warming. |

SCIENCE CONTENT STANDARDS: STANDARD 5

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | INDICATORS |
|--|---|---|--|--|
| Students will: | | | | |
| <p>3.1.1 Justify the need to reduce the effects of Global Warming</p> <p>4.1.1 Appraise strategies used for conserving and sustaining the environment.</p> | <p>3.2.1 Evaluate the effectiveness of the proposed solution.</p> <p>4.2.1 Interpret data to detect impact of Global Warming.</p> <p>4.2.2 Research initiatives of various environmental protection agencies.</p> | <p>3.3.1 Be sensitive about issues that affect our environment.</p> <p>4.3.1 Show concern about the destruction of the environment.</p> | <p>3. Understand the need to reduce Global Warming.</p> <p>4. Appreciate the need for conservation as a means of sustaining the environment.</p> | <ul style="list-style-type: none"> • Predict what will happen if earth’s temperature continues to rise. (2.1.1, 2.2.2, 2.3.1) • Devise plans to reduce the production of major Greenhouse Gases. (3.1.1, 3.2.1, 3.3.1) • Discuss strategies used in environmental conservation including: <ul style="list-style-type: none"> ○ responsible use of resources; <ul style="list-style-type: none"> ▪ reduce ▪ reuse ▪ recycle ○ using natural ways of doing things; ○ using alternative transportation; <ul style="list-style-type: none"> ▪ cycling |

SCIENCE CONTENT STANDARDS: STANDARD 5

| CONTENT | SKILLS | DISPOSITIONS | STANDARD | INDICATORS |
|----------------|--------|--------------|----------|---|
| Students will: | | | | |
| | | | | <ul style="list-style-type: none"> ▪ walking ▪ carpooling • Explain initiatives used by environmental protection agencies. • Interpret data which illustrates the impact of Global Warming. • Devise personal plans to demonstrate environmental conservation. (4.1.1, 4.2.1, 4.3.1) |