

## Mathematics and Science Syllabi (Primary): Topics related to garden projects

Comprehensive support materials and teaching activities related to school kitchen gardens are available on the *Sustainability and Stories/Greening Island Schools* website: <https://sustainability-and-stories.org/schools-starting-a-garden/>

The primary syllabus has many affordances across key learning areas for linking teaching and learning to school kitchen garden projects. This document presents curriculum links from the following key stages, competency and learning areas. It draws on the [Maldives National Curriculum Framework](#) and the relevant [syllabi](#).

### Key stages

- Key stage 1
  - Grade 1
  - Grade 2
  - Grade 3
- Key stage 2
  - Grade 4
  - Grade 5
  - Grade 6

### Key competency

- Using Sustainable Practices

### Key learning areas

- Mathematics
  - Mathematical Process Skills
  - Measurement and Geometry
  - Chance and Data Handling
- Environmental, Science and Technology
  - Life and Living
  - Earth and Beyond
  - Material and Matter
  - Science Inquiry Skills
  - Science and Technology

Key stage	Grade	Mathematics	Environmental, Science and Technology
		<p><b>Key Competency: Using Sustainable Practices</b></p> <p>Mathematical understanding broadens the way students see the world around them. It helps them to realise the interdependence of various resources available. Concepts such as estimation, measurement, percentage, analysing data and interpreting statistics are some areas that provide opportunities to apply Mathematics in a diverse range of real world contexts. As a result, students develop the knowledge, values and skills to participate in decisions that will improve the quality of life now without damaging the planet for the future.</p>	<p><b>Key Competency: Using Sustainable Practices</b></p> <p>In science, students explore how human activities impact the environment. Students will also identify ways to take care of the environment. In addition, students will be given opportunities to understand issues from both developmental as well as environmental perspectives and will be encouraged to develop stewardship towards the environment</p>
<b>1</b>	<b>1</b>	<p><b>Mathematical Process Skills</b></p> <ul style="list-style-type: none"> <li>• MPS1 Describes mathematical situations, and methods using every day and, mathematical language, actions, materials, diagrams and symbols. Supports conclusions and explain, the process by demonstrating, how answers were obtained.</li> <li>• MPS2 Apply concepts and skills to solve, problems posed in mathematics, class as well in real life contexts.</li> <li>• Interprets the solution. Does the answer make sense? Is it, reasonable?</li> <li>• MPS3 Use Mathematical thinking skills, such as <ul style="list-style-type: none"> <li>○ Classifying</li> <li>○ Comparing</li> <li>○ Sequencing</li> <li>○ Generalizing</li> </ul> </li> </ul> <p><b>Measurement and Geometry</b></p> <ul style="list-style-type: none"> <li>• Demonstrate an understanding of length, mass and capacity by comparing two or more objects using arbitrary units and use related vocabulary in the process.</li> <li>• Use estimation in measuring length, mass and capacity.</li> <li>• Recognise, name, sort, draw and model of basic 2D shapes (circle, triangle, rectangle and square) and describe them using its properties.</li> </ul> <p><b>Chance and Data Handling</b></p> <ul style="list-style-type: none"> <li>• Collect and sort data according to the attributes of different objects. Display data in table forms and interpret the information presented.</li> </ul>	<p><b>Life and Living</b></p> <ul style="list-style-type: none"> <li>• LL101 Observe variety of living things to identify body shape, size and discuss the importance of diversity of living things</li> <li>• LL102 Observe variety of living things and their external features and identify use of main external features</li> <li>• LL103 Identify that living things live in different places to meet their basics needs</li> </ul> <p><b>Earth and Beyond</b></p> <ul style="list-style-type: none"> <li>• EB101 Observe the changes that occur in the sky and land</li> </ul> <p><b>Material and Matter</b></p> <ul style="list-style-type: none"> <li>• MM101 Identify that objects are made of particular material</li> <li>• MM102 Identify that materials have specific properties</li> </ul> <p><b>Science Inquiry Skills</b></p> <ul style="list-style-type: none"> <li>• SIS101 Ask and respond to questions about familiar objects and events</li> <li>• SIS102 Participate in guided investigations</li> <li>• SIS103 Use non-standard measurements to collect data and make simple statements/generalisations based on the information</li> <li>• SSIS104 Talk about observations and share ideas in a variety of ways</li> </ul> <p><b>Science and Technology</b></p> <ul style="list-style-type: none"> <li>• ST101 Recognise that science involves being curious, making observations, and asking questions about familiar objects and events</li> <li>• ST103 Discuss ideas and uses a range of objects and materials to make a product</li> </ul>

Key stage	Grade	Mathematics	Environmental, Science and Technology
1	2	<p><b>Mathematical Process Skills</b></p> <ul style="list-style-type: none"> <li>• MPS1 Uses appropriate terminology to describe, and symbols to represent mathematical ideas.</li> <li>• Checks accuracy of a solution and explains the process using appropriate terminology and symbols and represent, mathematical ideas.</li> <li>• Supports conclusions and explain the process by demonstrating how answers were obtained</li> <li>• MPS2 Apply concepts and skills to solve problems posed in mathematics class as well in real life contexts. Interprets the solution. Does the answer make sense? Is it reasonable?</li> <li>• MPS3 Use Mathematical thinking skills, such as <ul style="list-style-type: none"> <li>○ Classifying</li> <li>○ Comparing</li> <li>○ Sequencing</li> <li>○ Generalizing</li> <li>○ Analyzing</li> </ul> </li> </ul> <p><b>Measurement and Geometry</b></p> <ul style="list-style-type: none"> <li>• Demonstrate an understanding of measuring length, mass and capacity by using standard units (cm, m, l, g, kg).</li> <li>• Suggest a suitable unit and equipment to estimate or measure length, mass and capacity. Use estimation in measuring length, mass and capacity.</li> <li>• Identify basic shapes and make models of new shapes using cut outs of circle, triangle, rectangle and square, semi-circle, quarter circle.</li> <li>• Recognize, name and make cube, cuboid, cone and cylinder using 2D shapes and explore the difference between 2D and 3D shapes.</li> </ul> <p><b>Chance and Handling Data</b></p> <ul style="list-style-type: none"> <li>• Collect, sort and display data in simple forms including representation of data with objects and drawings where one object or drawing represents one data value (pictographs without scale) and interpret the information presented.</li> </ul>	<p><b>Life and Living</b></p> <ul style="list-style-type: none"> <li>• LL202 Explore that living things grow and change</li> </ul> <p><b>Earth and Beyond</b></p> <ul style="list-style-type: none"> <li>• EB201 Observe the changes that occur in the locality over time</li> <li>• EB202 Recognise that living things use the resources of the Earth in a variety of ways</li> </ul> <p><b>Matter and Materials</b></p> <ul style="list-style-type: none"> <li>• MM201 Classify objects according to their use and material types</li> <li>• MM202 Investigate that materials can be changed by different means</li> </ul> <p><b>Science Inquiry Skills</b></p> <ul style="list-style-type: none"> <li>• SIS201 Ask questions and make predictions about familiar objects and events</li> <li>• SIS202 Follows instructions to carry out guided investigations</li> <li>• SIS203 Use non-standard /standard measurements to collect data, represent them and interpret data to find patterns</li> <li>• SSIS204 Talk about the findings and share them in a variety of ways</li> </ul> <p><b>Science and Technology</b></p> <ul style="list-style-type: none"> <li>• ST201 Recognise that science involves making observations, asking questions about events and describing them</li> <li>• ST203 Discuss ideas and present the design idea, select materials to make a product</li> </ul>

Key stage	Grade	Mathematics	Environmental, Science and Technology
1	3	<p><b>Mathematical Process Skills</b></p> <ul style="list-style-type: none"> <li>• MPS1 Uses appropriate terminology to describe, and symbols to represent mathematical ideas.</li> <li>• Gives a valid reason for supporting one possible solution over another.</li> <li>• MPS2 Apply concepts and skills to solve problems posed in mathematics class as well in real life contexts.</li> <li>• Interprets the solution. Does the answer make sense? Is it reasonable?</li> <li>• Explore other methods of finding the solution.</li> <li>• MPS3 Use Mathematical thinking skills, such as <ul style="list-style-type: none"> <li>○ Classifying</li> <li>○ Comparing</li> <li>○ Sequencing</li> <li>○ Generalizing</li> <li>○ Analyzing</li> </ul> </li> </ul> <p><b>Measurement and Geometry</b></p> <ul style="list-style-type: none"> <li>• Demonstrate an understanding of the relationship between standard units (cm, m, km l, ml, g, kg).</li> <li>• Demonstrate an understanding of measuring length, mass and capacity by using standard units (cm, m, km l, ml, g, kg).</li> <li>• Suggest a suitable unit and , equipment to estimate or measure length, mass and capacity.</li> <li>• Use estimation in measuring, length, mass and capacity.</li> <li>• Demonstrate an understanding, of perimeter of regular shapes, by using centimetre or metre.</li> <li>• Explain the meaning of area, estimates and measures the area of simple shapes.</li> <li>• Recognise the number of corners and sides of 2D shapes, vertices, edges, and faces of 3D shapes.</li> <li>• Recognise symmetrical objects, shapes and pictures</li> </ul> <p><b>Chance and Handling Data</b></p> <ul style="list-style-type: none"> <li>• Collect, sort and display data in tables using tally marks and display data using Venn diagrams and bar charts.</li> <li>• Interprets and evaluates data displays, including tables, picture graphs, Venn diagrams and bar charts.</li> </ul>	<p><b>Life and Living</b></p> <ul style="list-style-type: none"> <li>• LL301 Investigate observable characteristics of living things (living and nonliving)</li> <li>• LL302 Identify the importance of classification and classify living things using observable features Interactions</li> <li>• LL303 Identify that living things have external features which are used to meet their basic needs</li> </ul> <p><b>Earth and Beyond</b></p> <ul style="list-style-type: none"> <li>• EB302 Identify that Earth’s resources are limited and living things depend on them</li> </ul> <p><b>Matter and Materials</b></p> <ul style="list-style-type: none"> <li>• MM301 Identify that uses of materials are determined by their properties</li> </ul> <p><b>Science Inquiry Skills</b></p> <ul style="list-style-type: none"> <li>• SIS301 Formulate questions with guidance in familiar context that can be investigated and make and make predictions</li> <li>• SIS302 Plan and carry out investigation with guidance, considering the safe use of equipment and materials</li> <li>• SIS303 Use standard measurements to collect, record data using tables/bar chart to interpret them to find trends and patterns</li> <li>• SSIS304 Reflect on the procedure and discuss measures taken to make it a fair test</li> </ul> <p><b>Science and Technology</b></p> <ul style="list-style-type: none"> <li>• ST301 Recognise that science involves making predictions, identifying and describing patterns</li> <li>• ST303 Discuss ideas and present the design idea, select materials to make a product and evaluate the product</li> </ul>

Key stage	Grade	Mathematics	Environmental, Science and Technology
2	4	<p><b>Measurement (Length, Mass and Capacity)</b></p> <ul style="list-style-type: none"> <li>• Recognise and use relationships between familiar units and draw lines and measure accurately using appropriate equipment, suitable units and solve problems.</li> </ul> <p><b>Measurement (Perimeter, Area and Volume)</b></p> <ul style="list-style-type: none"> <li>• Recognise and use relationships between familiar units and draw lines and measure accurately using appropriate equipment, suitable units and solve problems.</li> <li>• Estimate and record length/distance to a suitable degree of accuracy.</li> </ul> <p><b>Shape and Space</b></p> <ul style="list-style-type: none"> <li>• Recognise, name, sort, and make models of, 3D objects. Describe them using everyday, language.</li> <li>• Make skeleton models of 3D, shapes and Identify 3D shapes from, pictures and sketch all faces of 3D shapes, on paper. Make double layered solids as in, pictures using cubes.</li> <li>• Begin to identify the cross section of prisms. Visualise 3 dimensions from 2D drawings. Make cubes and cuboids from nets.</li> <li>• Recognise, name, sort, and draw 2D, shapes. Describe them using everyday, language.</li> <li>• Make compound shapes and, patterns. Identify, name and construct, triangles.</li> <li>• Recognize and sketch the, reflection of a simple 2-D shape and draw, its line symmetry.</li> <li>• Make patterns, translate, reflect and investigate about familiar, shapes.</li> <li>• Describe positions and directions. Give directions and follow short paths, draw simple paths and informal maps. Interpret and describe location and direction using grid references and inter-mediate compass points. Describe movements, and understand angle as a measure of turn.</li> <li>• Make and describe turns; estimate, draw, order and measure angles. Know the units of angles. Recognise the relationship between 90° with whole turns or quarter turns. Know angles formed at rectangles, squares or triangles.</li> </ul> <p><b>Chance and Handling Data</b></p> <ul style="list-style-type: none"> <li>• Solve a given problem by organising, representing and interpreting data in simple tables or diagrams. Construct and interpret pictographs and bar charts.</li> </ul>	<p><b>Life and Living</b></p> <ul style="list-style-type: none"> <li>• Living things can be classified in to plants, animals, fungi and bacteria.(diversity)</li> <li>• Living things have common characteristics.</li> <li>• Living things have structural features and adaptations that help them to survive in their environment.</li> <li>• Micro-organisms are everywhere; some can cause diseases/illnesses while others are useful.</li> <li>• Variety of habitats</li> <li>• Basic needs of living things</li> <li>• Interaction with each other and the environment.</li> <li>• Importance of healthy food choices and the use of foods in living things.</li> <li>• Living things have life cycles and as the organism grows they change.</li> <li>• Variations between parents and their offspring, and variations within the same species.</li> </ul> <p><b>Earth and Beyond</b></p> <ul style="list-style-type: none"> <li>• Features of local weather system</li> </ul> <p><b>Matter Materials</b></p> <ul style="list-style-type: none"> <li>• Measuring of physical properties (volume, mass, and temperature).</li> </ul> <p><b>Science and Technology</b></p> <ul style="list-style-type: none"> <li>• Formulating ideas and implementing designs.</li> <li>• Follow scientific methods to make informed decisions</li> </ul> <p><b>Working Scientifically</b></p> <ul style="list-style-type: none"> <li>• Observational skills and communicates their observations in various means and methods.</li> <li>• Conducts simple investigations with guidance.</li> <li>• Take care of themselves, others and respects others viewpoints.</li> </ul>

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### Measurement (Length, Mass and Capacity)

- Recognise and use relationships between familiar units and draw lines and measure accurately using appropriate equipment, suitable units and solve problems.
- Estimate and record length/distance to a suitable degree of accuracy.

### Measurement (Perimeter, Area and Volume)

- Recognise and use the vocabulary related to perimeter.
- Calculate the perimeter and solve problems involving perimeter of simple shapes.
- Use the vocabulary related to area.
- Measure and calculate the area of compound shapes.
- Explore the relationship between the area of rectangles and squares.
- Apply and use the appropriate formula to calculate area. Investigate and solve problems involving perimeter and area.
- Know the meaning of volume.
- Understand and use the vocabulary related to volume. Estimate, measure or calculate the volume of regular and irregular objects.

### Shape and Space

- Recognise, name, sort, and make models of 3D objects. Describe them using everyday language.
- Make skeleton models of 3D shapes and Identify 3D shapes from pictures.
- Make double layered solids as in pictures using cubes. Begins to identify the cross section of prisms.
- Visualise 3 dimensions from 2D drawings. Identify and sketch different nets.
- Recognise, name, sort, and draw and sketches 2D shapes. Describe them using everyday language.
- Recognise properties of rectangles. Construct parallel lines. Identify and draw lines of symmetry. Know the position of a shape after translation. Investigate about familiar shapes.
- Describe positions and directions. Give directions and follow short paths, draw simple paths and informal maps. Read and plot co-ordinates. Interpret and describe location and direction using grid references.
- Approximately measure angles using a paper protractor. Identify types of angles, estimate or measure to the nearest 5°. Calculate angles on a straight line. Rotate and make patterns. Bisect the given line.

### Chance and Handling Data

- Solve a given problem by organising, representing and interpreting data in simple tables or diagrams.
- Construct and begin to find the range.

### Life and Living

- Variety of living things
- Classification methods to identify their relationships (diversity)
- Living things have common characteristics.
- Living things can be multi cellular or unicellular.
- Multi cellular organisms consist of systems which perform different functions.
- Living things have different external features /structures which help them to survive.
- Some diseases are caused by microorganisms
- Variety of habitats
- Basic needs of living things interaction with each other and the environment.
- Human activities and natural disasters can have various impacts on habitats.
- Importance of healthy food choices and interprets data in relation to food to make informed decisions.
- Living things undergo changes as they grow and develop.
- Reproduction is necessary for the inheritance of characteristics and the continuation of a species.

### Earth and Beyond

- Differences between weather and climate
- Weather patterns and seasons.
- Greenhouse gases
- Greenhouse effect and its impact

### Matter Materials

- Measuring of physical properties (volume and mass) using appropriate equipment accurately

### Science and Technology

- Implements designs and communicating of findings
- Applies the knowledge gained to make informed decisions

### Working Scientifically

- Makes observations to provide supporting evidence
- Conducts simple investigations
- Take care of themselves, others and respects others' viewpoints.

Key stage	Grade	Mathematics	Environmental, Science and Technology
		<ul style="list-style-type: none"><li>• Interpret bar charts, bar line charts or line graphs.</li><li>• Find the mode of a set of data.</li><li>• Use the language associated with probability to generate discussion.</li><li>• Order chance events and conduct simple experiments.</li></ul>	

Key stage	Grade	Mathematics	Environmental, Science and Technology
2	6	<p><b>Measurement (Length, Mass and Capacity)</b></p> <ul style="list-style-type: none"> <li>• Recognise and use relationships between familiar units and draw lines and measure accurately using appropriate equipment, suitable units and solve problems.</li> <li>• Estimate and record length/distance to a suitable degree of accuracy.</li> </ul> <p><b>Measurement (Perimeter, Area and Volume)</b></p> <ul style="list-style-type: none"> <li>• Recognise and use the vocabulary related to perimeter. Calculate the perimeter of compound shapes. Solve problems involving perimeter of simple shapes.</li> <li>• Measure and calculate the area of compound shapes.</li> <li>• Explore the relationship between the area of rectangles and squares. Apply and use the appropriate formula to calculate area. Investigate and solve problems involving perimeter and area.</li> <li>• Know the meaning of volume.</li> <li>• Understand and use the vocabulary related to volume.</li> <li>• Estimate, measure or calculate the volume of regular and irregular objects.</li> </ul> <p><b>Shape and Space</b></p> <ul style="list-style-type: none"> <li>• Describe and visualise properties of solid shapes. Use Euler’s formula and investigate. Sketch all faces of 3D shapes on paper. Make double layered solids as in pictures using cubes. Make skeleton models of 3D shapes. Begin to identify the cross section of prisms. Visualise 3 dimensions from 2D drawings. Identify and sketch different nets.</li> <li>• Recognise, name, sort, and draw 2D shapes. Describe them using everyday language. Sketch the reflection of a simple 2-D shape. Identify and draw lines of symmetry. Know the position of a shape after translation. Investigate about familiar shapes.</li> <li>• Describe positions and directions. Give directions and follow short paths, draw simple paths and informal maps. Read and plot co-ordinates. Interpret and describe location and direction using grid references.</li> <li>• Estimate and measure angles to the nearest degree. Know and calculate the sum of the angles in a triangle. Calculate angles at a point. Explore a regular polygon. Sketch the position of a simple shape after a rotation about a vertex. Bisect the given angle.</li> </ul> <p><b>Chance and Handling Data</b></p> <ul style="list-style-type: none"> <li>• Solve a given problem by organising, constructing and interpreting bar charts or bar line charts. Begin to interpret simple pie charts. Find the mode and range of a set of data. Begin to find the median and mean.</li> <li>• Use the language associated with probability to generate discussion. Identify and record all possible outcomes of an event.</li> </ul>	<p><b>Life and Living</b></p> <ul style="list-style-type: none"> <li>• Characteristics of living things with the scientific terms</li> <li>• Identify relationships among living things using classification systems (diversity)</li> <li>• All living things are made up of cells can differ depending on the basic units of life called cells.</li> <li>• Multi cellular organisms have specialized structures and systems to perform basic functions of life.</li> <li>• Living things have different body parts for different functions.</li> <li>• Malfunctioning of body parts or organs can affect life processes.</li> <li>• Living things have different external features/structures which help them to survive.</li> <li>• Common microorganisms can cause diseases.</li> <li>• Controlled by adopting behaviors that prevent the spread of disease.</li> <li>• Individuals and groups of organisms interact with each other and their environment to full fill their basic needs. E.g. feeding relationship (food chain) between living things.</li> <li>• Human activities can have various impacts on populations living in different habitats.</li> <li>• Importance of healthy food choices and interprets data in relation to food to make informed decisions.</li> <li>• Living things undergo changes as they grow and develop.</li> <li>• Reproduction is necessary for the inheritance of characteristics.</li> </ul> <p><b>Earth and Beyond</b></p> <ul style="list-style-type: none"> <li>• Factors that influence weather and climate systems</li> <li>• Causes and their effects on climate change on living things and the environment.</li> </ul> <p><b>Matter Materials</b></p> <ul style="list-style-type: none"> <li>• Measuring a range of physical quantities using appropriate methods and apparatus.</li> </ul> <p><b>Science and Technology</b></p> <ul style="list-style-type: none"> <li>• Implements designs and communicating of findings</li> <li>• Applies the knowledge gained to solve real life problems</li> </ul> <p><b>Working Scientifically</b></p> <ul style="list-style-type: none"> <li>• Makes observations to provide supporting evidence</li> <li>• Conducts simple investigations</li> <li>• Take care of themselves, others and respects others viewpoints.</li> </ul>