

Scope and sequence summary	Duration: 2 weeks
Substrands: ES1 SP Data , ES1 MG Three-Dimensional Space (part) , ES1 MG Time (part) , S1 SP Data 1 (part) , S1 MG Time 1 (part)	Detail: 9 activities

Outcomes	Key considerations	Overview
<ul style="list-style-type: none"> > describes mathematical situations using everyday language, actions, materials and informal recordings MAe-1WM > uses concrete materials and/or pictorial representations to support conclusions MAe-3WM > represents data and interprets data displays made from objects MAe-17SP > sequences events, uses everyday language to describe the durations of activities, and reads hour time on clocks MAe-13MG > manipulates, sorts and represents three-dimensional objects and describes them using everyday language MAe-14MG > describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols MA1-1WM > supports conclusions by explaining or demonstrating how answers were obtained MA1-3WM > describes, compares and orders durations of events, and reads half- and quarter-hour time MA1-13MG > gathers and organises data, displays data in lists, tables and picture graphs, and interprets the results MA1-17SP 	<p><i>Key ideas</i></p> <ul style="list-style-type: none"> • Organise actual objects into data displays • Interpret data displays made from objects • Sort and manipulate three-dimensional objects found in the environment • Connect days of the week to familiar events and actions • Create data displays using objects and pictures (one-to-one correspondence) and interpret them • Name and order months and seasons • Determine the number of days in each month <p><i>ES1 language</i> Students should be able to communicate using the following language: information, collect, group, display, object, shape, size, flat, round, roll, slide.</p> <p><i>S1 language</i> Students should be able to communicate using the following language: information, collect, display, objects, symbol, picture, row, days, month, year, seasons.</p> <p><i>ES1 background information</i> In Early Stage 1, students collect information about themselves and their environment with teacher assistance. They use actual objects as data and group these objects into a data display.</p> <p><i>S1 background information</i> In Stage 1, students are introduced to the abstract notion of representing an object with a different object, picture or drawing. It is important that each object in a three-dimensional graph represents one object, except in cases where items are used in pairs, eg shoes. One object can also represent an idea, such as a person's preference.</p>	<p>Students learn at different rates, so it is important to provide differentiation within learning experiences. This unit includes outcomes from Early Stage 1 and Stage 1 to allow teachers to adjust the content to meet the needs of their students and to assist them in teaching multi-stage classes.</p> <p style="text-align: center;">Early Stage 1 content = yellow background Stage 1 content = green background</p> <p><i>This unit of work encompasses:</i></p> <ul style="list-style-type: none"> • all of the content of ES1 SP Data • some of the content of ES1 MG Three-Dimensional Space • some of the content of ES1 MG Time • some of the content of S1 Data 1 • some of the content of S1 Time 1. <p>Note that some of the Stage 1 activities in this unit assume knowledge of the months and seasons of the year.</p> <p><i>Links to learning across the curriculum</i> Students are provided with opportunities to develop literacy as they interpret information from picture books to create simple picture graphs. They use critical and creative thinking as they construct and interpret simple data displays and give reasons for their interpretations.</p>

Content	Teaching, learning and assessment	Resources
<p>Organise objects into simple data displays and interpret the displays</p> <ul style="list-style-type: none"> group objects according to characteristics to form a simple data display, eg sort blocks or counters according to colour <ul style="list-style-type: none"> compare the sizes of groups of objects by counting (Reasoning) <p>Sort, describe and name familiar three-dimensional objects in the environment (ACMMG009)</p> <ul style="list-style-type: none"> sort three-dimensional objects and explain the attributes used to sort them, eg colour, size, shape, function <ul style="list-style-type: none"> recognise how a group of objects has been sorted, eg 'These objects are all pointy' (Communicating, Reasoning) manipulate and describe a variety of objects found in the environment 	<p>Activity 1: Hoop Sort</p> <ul style="list-style-type: none"> Students are provided with a variety of objects that they can sort by colour, eg counters, blocks, geometric shapes. Hoops labelled with a colour are placed on the floor (alternatively, labelled bowls can be placed on a table). Use 4 hoops and 4 colours initially, but this can be increased or decreased according to student abilities. Students determine the colour of each object and place it into the appropriate hoop. Discuss reasons for placements in particular hoops. Students count the number of objects in each category to compare the sizes of the groups. <p><i>Extension</i> Student-generated categories could be used. Students develop their own categories for the hoop sort, eg size, shape, material from which an object is made.</p>	<p><i>Resources</i></p> <ul style="list-style-type: none"> Hoops (or bowls) Assortment of objects, eg counters, blocks, geometric shapes, teddy bear counters
	<p>Activity 2: Food Sort</p> <ul style="list-style-type: none"> Students bring one item from their lunchboxes and sit in a circle. They discuss the different foods that they have selected and, with teacher guidance, identify different ways in which to sort them, eg <ul style="list-style-type: none"> fruit, vegetable and meat sweet and savoury recess and lunch 'sometimes' and 'always' foods likes and dislikes. As categories are named, students stand and show any of their food that belongs in each category. The teacher or a student could take a photograph of students holding food that belongs in each particular category. This could form the basis for later discussion. Students count the number of objects in each category to compare the sizes of the groups. 	<p><i>Resources</i></p> <ul style="list-style-type: none"> Students' lunchboxes Digital camera (optional) <p><i>Variation</i></p> <ul style="list-style-type: none"> Complete the activity using plastic play food or empty food packaging. <p><i>Related English activity</i></p> <ul style="list-style-type: none"> Writing: Students use sentence starters to write related sentences, eg 'My favourite food is ...', 'In my lunchbox I have ...'.
	<p>Activity 3: Hurricane Sorting Game</p> <ul style="list-style-type: none"> Students sit on beanbags or chairs arranged in a circle. A 'caller' stands in the middle of the circle. The caller says 'The wind blows for everyone who ...' fits into a particular category, eg 'The wind blows for everyone who had cereal for breakfast'. 	<p><i>Resources</i></p> <ul style="list-style-type: none"> Beanbags/Chairs for all students except one

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	<ul style="list-style-type: none"> Students who fit into the category described stand and race to swap places with each other. They cannot return to their own position. The caller tries to beat the moving students to an empty place, and the last student standing becomes the new caller. If the caller says 'Hurricane', everybody stands and moves to another seat. 	<p><i>Variation</i></p> <ul style="list-style-type: none"> The game could be played with the teacher calling and students swapping places without competing with the caller.
<ul style="list-style-type: none"> arrange objects in rows or columns according to characteristics to form a data display, eg arrange lunchboxes in columns according to colour <ul style="list-style-type: none"> give reasons why a row of three objects may look bigger than a row of five objects, eg 'The three green lunchboxes are spaced out more than the five blue lunchboxes' (Communicating, Reasoning) ❄️ predict and describe the movement of objects, eg 'This will roll because it is round' ❄️ <ul style="list-style-type: none"> use a plank or board to determine which objects roll and which objects slide (Problem Solving) ❄️ 	<p>Activity 4: 'Look at Me' Sort</p> <ul style="list-style-type: none"> Students use mirrors and discuss which features make them different from or similar to each other. Teachers should be mindful that some students might feel self-conscious about particular physical attributes. Prior to the lesson, teachers make labels with a description and pictures to represent a variety of categories, such as: <ul style="list-style-type: none"> gender hair colour hair type (straight, curly, wavy) eye colour number of teeth lost. Students line up in rows behind the appropriate label and discuss the reasons for their choice. Students compare the number of people in each row and answer questions, such as: <ul style="list-style-type: none"> Which group is the smallest? How do you know? Does the shortest row have the least number of people? Why or why not? Which groups have the same number of students? How many more children are in Group A than Group B? How many children are there altogether? <p>Activity 5: Sport Sort</p> <ul style="list-style-type: none"> Students are taken to a playground or hall where a variety of sports equipment and resources is laid out randomly. They devise appropriate labels to allow them to sort the equipment into groups. Teachers may need to prompt students to consider a variety of categories, such as: <ul style="list-style-type: none"> type, eg ball, bat, racket, rope size, eg long, short; big, small weight, eg light, heavy shape, eg round, flat 	<p><i>Resources</i></p> <ul style="list-style-type: none"> Mirrors Category labels with words and pictures (or photographs) <p><i>Resources</i></p> <ul style="list-style-type: none"> A variety of sports equipment and resources (or classroom equipment or toys) Category labels with words and pictures (or photographs) Digital camera

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	<ul style="list-style-type: none"> – use, eg kick, hit, throw/catch – movement, eg roll, slide, move along the ground, move through the air – colour. • Place labels on the floor and have students sort the items by placing them into rows. Students identify the general category used to sort the equipment, eg ‘They are sorted according to size’. • Students compare the number of objects in each row and answer questions, such as: <ul style="list-style-type: none"> – How many items are in each row? – Why does the row of three cricket bats look bigger than the row of six tennis balls? • Using digital photographs, students record the various categories that they used to sort the sports equipment. • Repeat the process using a different type of categorisation to sort the equipment. 	<p><i>Variation</i></p> <ul style="list-style-type: none"> • Ask students to sort classroom equipment or toys and place them in their appropriate storage spots. Labels made from photographs may be used to help students locate shelves. <p><i>Related PDHPE activity</i></p> <ul style="list-style-type: none"> • Following the Sport Sort activity, use the equipment to play an appropriate game linked to the PDHPE program.
<ul style="list-style-type: none"> • interpret information presented in a display of objects to answer questions, eg ‘How many children in our class have red pencil cases?’  • recall that there are seven days in a week • name and order the days of the week  	<p>Activity 6: ‘Hungry Caterpillar’ Data</p> <ul style="list-style-type: none"> • Read <i>The Very Hungry Caterpillar</i> by Eric Carle. • Review the order of the days of the week and what the hungry caterpillar ate on each day. The teacher pastes labels showing each day of the week onto a large chart. • Students paste cards showing pictures of foods (or plastic food) in rows above the appropriate labels to create a simple data display. • Students answer questions about the data display, such as: <ul style="list-style-type: none"> – What did the caterpillar eat on Monday, Tuesday, Wednesday, etc? – How many cherry pies are shown? – How many more or fewer plums than oranges did the caterpillar eat? – How much more food did the caterpillar eat on Friday compared to Tuesday? – How many pieces of food did the caterpillar eat altogether? 	<p><i>Resources</i></p> <ul style="list-style-type: none"> • Book: <i>The Very Hungry Caterpillar</i> by Eric Carle • Labels for each day of the week • A large chart • Cards showing pictures of foods or plastic food • Online activities related to <i>The Very Hungry Caterpillar</i> <p><i>Variation</i></p> <ul style="list-style-type: none"> • Students ‘drag and drop’ images onto a chart on an interactive whiteboard to create a digital data display.

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<p>Represent data with objects and drawings where one object or drawing represents one data value and describe the displays (ACMSP263)</p> <ul style="list-style-type: none"> use concrete materials or pictures of objects as symbols to create data displays where one object or picture represents one data value (one-to-one correspondence), eg use different-coloured blocks to represent different-coloured cars ✨ <ul style="list-style-type: none"> record a data display created from concrete materials or pictures of objects (Communicating) interpret information presented in data displays where one object, picture or drawing represents one data value, eg weather charts <ul style="list-style-type: none"> describe information presented in simple data displays using comparative language such as 'more than' and 'less than', eg 'There were more black cars than red cars' (Communicating, Reasoning) 🗣️ explain interpretations of information presented in data displays, eg 'More children like dogs because there are more dog pictures than cat pictures' (Communicating, Reasoning) write a simple sentence to describe data in a display, eg 'The most popular fruit snack is an apple' (Communicating) 🍏 <p>Name and order months and seasons (ACMMG040)</p> <ul style="list-style-type: none"> name and order the months of 	<p>Activity 7: Class Birthday Data Display</p> <ul style="list-style-type: none"> Students colour-in a template or draw a picture of their face on a small piece of card, then write their name on the card. Review the names and order of the months of the year. Appropriate songs, including those available online, may assist students in remembering the months of the year. Arrange labels for the months of the year in order from left to right on the wall or floor. Review the names and order of the seasons of the year and the months that are included in each season. The teacher asks students to raise their hand or stand if they have a birthday in January. Together, the class counts the number of students in the group. Students in that group move to the front and place their face-card down, creating a column with one face-card to represent each student born in January. Repeat for each of the other months. (Ensure that the total number of children shown on the display matches the total number of children in the class.) Ask students to identify, and check, that the display shows how many of them have a birthday in each month. Jointly devise an appropriate title for the display. Students answer questions about the data display, such as: <ul style="list-style-type: none"> How many students celebrate their birthday in March? In which month are the most or fewest birthdays celebrated? How do you know? Are there any months in which no students have a birthday? How do you know? How many more or fewer students have their birthdays in November than in July? How do you know? How many students have their birthdays in summer/autumn/winter/spring? How many students are there altogether? Is there more than one way you can work this out? Draw a large grid with 12 columns and 10 rows, and transfer the data to the grid. <ul style="list-style-type: none"> Students consider, discuss and explain the differences between the data displayed without and with the grid, eg Does the grid make it harder or easier to answer questions? How does the grid make it harder or easier to answer questions? Students construct sentences to describe observations from the data display, eg 'More of us have birthdays in January than in December', 'Six students have their birthdays in summer'. 	<p><i>Resources</i></p> <ul style="list-style-type: none"> Piece of card for each student with (or without) a template of a face Category labels for the months of the year Large graph with grid of 12 columns and 10 rows Online songs about the months of the year, such as the YouTube song by Michael Finnegan <p><i>Variations</i></p> <ul style="list-style-type: none"> Use data collected and recorded from Activity 4 and use the interactive whiteboard to arrange pictures or symbols into categories and then on a grid according to the different attributes of hair colour, eye colour, etc. Give students prepared worksheets to cut, colour and organise as a simple picture graph. If the class has a relationship with a similar class in the northern hemisphere, students could compare the results and discuss differences, such as the months in each season and the environmental characteristics of each season in the different countries.

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<p>the year 📅</p> <ul style="list-style-type: none"> name and order the seasons, and name the months for each season 		<p><i>Related English activity</i></p> <ul style="list-style-type: none"> Writing: Students use sentence starters to write a related short story, eg 'My birthday is in _____ and I will be ____ years old'.
	<p>Activity 8: Weather Chart</p> <ul style="list-style-type: none"> Review the number of days in each month, and which months are in each of the four seasons. The teacher and students discuss a classroom weather chart to record the type of weather on each day. Possible prompts include: <ul style="list-style-type: none"> How many days will there be? Which season is it? What sort of weather do you think we will have if it is summer/autumn/winter/spring? If we use pictures to represent the weather, what type of pictures will we need? How many of each picture do you think we should have? How will we record the weather on weekends? Students participate in recording the weather for each day of the month (using only one picture per day). Discuss students' observations about the chart, with prompts if necessary, such as: <ul style="list-style-type: none"> How many days in the month were sunny? How many days were cloudy? What type of weather did we have the most of this month? How many more or fewer days were sunny than cloudy? Was it easy to work out how many days were sunny? Why or why not? Is there another way that we could arrange the pictures so that it is easier to compare how many sunny days there were compared to how many rainy days? What if we rearranged all the 'sunny' pictures into a row and all the 'rainy' pictures into a row, etc? 	<p><i>Resources</i></p> <ul style="list-style-type: none"> A chart labelled with each day of the month and spaces to paste a picture or symbol for each day <p><i>Extension</i></p> <ul style="list-style-type: none"> Compare this month's data with data collected from another month.
	<p>Activity 9: What Is Your Favourite Vegetable?</p> <ul style="list-style-type: none"> Read the story <i>Eat Your Peas</i> by Kes Gray and Nick Sharratt and discuss which vegetables students like and don't like. Agree to a list of five vegetables and create labels for these using words and 	<p><i>Resources</i></p> <ul style="list-style-type: none"> <i>Eat Your Peas</i> by Kes Gray and Nick Sharratt Category labels with

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	<p>pictures. Place labels in a line on the floor or wall.</p> <ul style="list-style-type: none"> • Students decide which vegetable they like the most (or least) and place the corresponding plastic play vegetable (or a picture of the chosen vegetable) above the label to create a data display. • Discuss and determine an appropriate title for the display. • Students interpret the information presented in the display in order to draw conclusions. Possible questions include: <ul style="list-style-type: none"> – Which was the least popular vegetable? How do we know? – Based on these results, which vegetable should we serve in the canteen? – How do we know that more students like vegetable A than vegetable B? – How many people, in total, like vegetable A or vegetable B? • Draw a large grid with 5 columns and 10–15 rows, and transfer the data to the grid. • Students consider, discuss and explain the differences between the data displayed without and with the grid, such as: <ul style="list-style-type: none"> – Does the grid make it harder or easier to answer questions? – How does the grid make it harder or easier to answer questions? • Students construct sentences to describe observations from the data display, eg 'The least popular vegetable is carrot', 'Three more people like potatoes than like peas'. 	<p>words and pictures (or photographs)</p> <ul style="list-style-type: none"> • Plastic play vegetables or pictures of vegetables • Songs about vegetables and fruits found online may assist in introducing the activity, such as the song 'Wash your face with orange juice' by Peter Combe <p><i>Variation</i></p> <ul style="list-style-type: none"> • Read other stories, such as <i>Handa's Surprise</i> by Eileen Browne, and complete the task using fruits. <p><i>Extension</i></p> <ul style="list-style-type: none"> • With teacher guidance, students generate questions of personal interest and repeat the process of forming and interpreting a data display, eg determining favourite colours, types of pets owned, favourite sport. <p><i>Related English activity</i></p> <ul style="list-style-type: none"> • Modelled writing: Write up the procedure for completing a simple task concerned with food preparation, eg making vegetable soup, making a cheese sandwich, assembling a fruit platter.

Assessment overview

- *Assessment for learning activity*

Students are given a collection of objects of different sizes, colours, shapes and materials. They are asked to sort the objects into groups according to a given attribute, such as any three of the following (one attribute at a time):

- colour
- size
- shape
- material
- use.

Students are then asked to sort the objects using a fourth (alternative) attribute of their own choosing. They explain how they have sorted the objects.

- Together, students collect data about a familiar topic, eg food, weather, favourite colour, pets, etc. They are given pictures related to the chosen topic and a labelled grid template. Students create a picture graph of the data they collected.
- Students respond orally to simple questions in order to interpret data displays from the various activities listed.