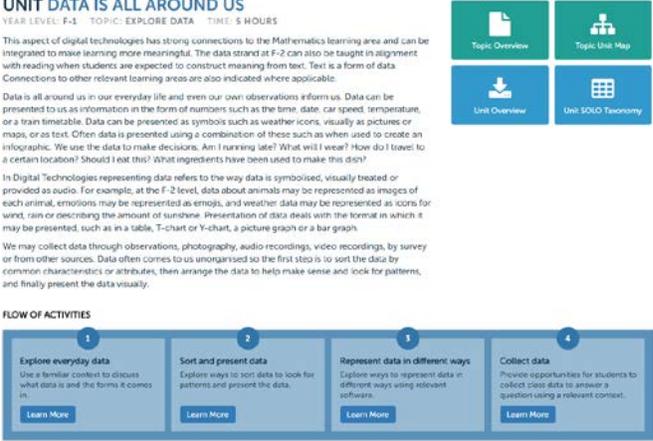
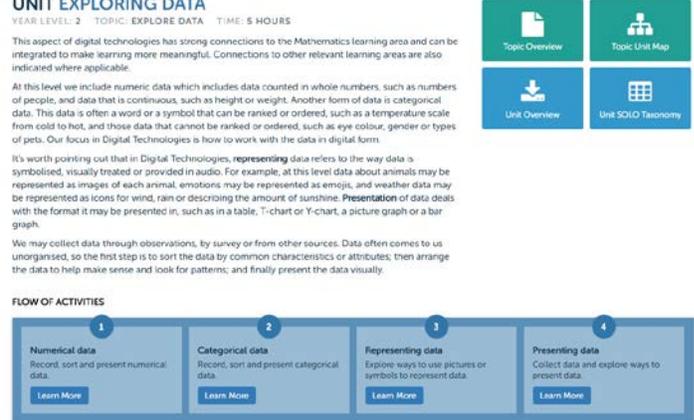
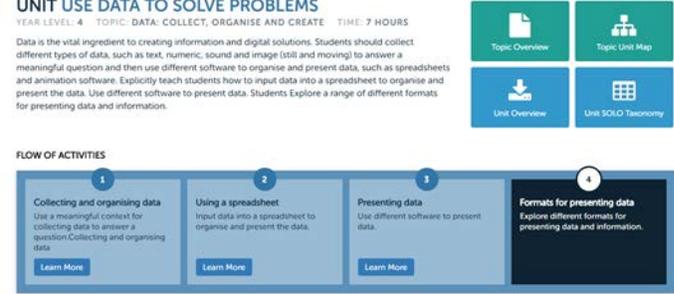


Data related resources on the DT-Hub

Year Level	Description	LINK
Years F-1	<p>A sequence focusing on exploring patterns in data and ways to represent data</p> <p>UNIT DATA IS ALL AROUND US <small>YEAR LEVEL: F-1 TOPIC: EXPLORE DATA TIME: 5 HOURS</small></p> <p>This aspect of digital technologies has strong connections to the Mathematics learning area and can be integrated to make learning more meaningful. The data strand at F-1 can also be taught in alignment with reading when students are expected to construct meaning from text. Text is a form of data. Connections to other relevant learning areas are also indicated where applicable.</p> <p>Data is all around us in our everyday life and even our own observations inform us. Data can be presented to us as information in the form of numbers such as the time, date, car speed, temperature, or a train timetable. Data can be presented as symbols such as weather icons, visually as pictures or maps, or as text. Often data is presented using a combination of these such as when used to create an infographic. We use the data to make decisions. Am I running late? What will I wear? How do I travel to a certain location? Should I eat this? What ingredients have been used to make this dish?</p> <p>In Digital Technologies representing data refers to the way data is symbolised, visually treated or provided as audio. For example, at the F-1 level, data about animals may be represented as images of each animal, emotions may be represented as emojis, and weather data may be represented as icons for wind, rain or describing the amount of sunshine. Presentation of data deals with the format in which it may be presented, such as in a table, T-chart or Y-chart, a picture graph or a bar graph.</p> <p>We may collect data through observations, photography, audio recordings, video recordings, by survey or from other sources. Data often comes to us unorganised so the first step is to sort the data by common characteristics or attributes, then arrange the data to help make sense and look for patterns, and finally present the data visually.</p> <p>FLOW OF ACTIVITIES</p> 	DATA IS ALL AROUND US
Year 2	<p>A sequence focusing on exploring data and ways to represent and present data</p> <p>UNIT EXPLORING DATA <small>YEAR LEVEL: 2 TOPIC: EXPLORE DATA TIME: 5 HOURS</small></p> <p>This aspect of digital technologies has strong connections to the Mathematics learning area and can be integrated to make learning more meaningful. Connections to other relevant learning areas are also indicated where applicable.</p> <p>At this level we include numeric data which includes data counted in whole numbers, such as numbers of people, and data that is continuous, such as height or weight. Another form of data is categorical data. This data is often a word or a symbol that can be ranked or ordered, such as a temperature scale from cold to hot, and those data that cannot be ranked or ordered, such as eye colour, gender or types of pets. Our focus in Digital Technologies is how to work with the data in digital form.</p> <p>It's worth pointing out that in Digital Technologies, representing data refers to the way data is symbolised, visually treated or provided in audio. For example, at this level data about animals may be represented as images of each animal, emotions may be represented as emojis, and weather data may be represented as icons for wind, rain or describing the amount of sunshine. Presentation of data deals with the format it may be presented in, such as in a table, T-chart or Y-chart, a picture graph or a bar graph.</p> <p>We may collect data through observations, by survey or from other sources. Data often comes to us unorganised, so the first step is to sort the data by common characteristics or attributes, then arrange the data to help make sense and look for patterns, and finally present the data visually.</p> <p>FLOW OF ACTIVITIES</p> 	EXPLORING DATA
Years 3-4	<p>A sequence focusing on Data using school waste as a context</p> <p>UNIT USE DATA TO SOLVE PROBLEMS <small>YEAR LEVEL: 4 TOPIC: DATA: COLLECT, ORGANISE AND CREATE TIME: 7 HOURS</small></p> <p>Data is the vital ingredient to creating information and digital solutions. Students should collect different types of data, such as text, numeric, sound and image (still and moving) to answer a meaningful question and then use different software to organise and present data, such as spreadsheets and animation software. Explicitly teach students how to input data into a spreadsheet to organise and present the data. Use different software to present data. Students explore a range of different formats for presenting data and information.</p> <p>FLOW OF ACTIVITIES</p> 	USE DATA TO SOLVE PROBLEMS

<p>Year 7</p>	<p>A sequence focusing on Data using meal planning as a context</p> <p>UNIT DATA AND INFORMATION <small>YEAR LEVEL 7 TOPIC: DATA REPRESENTATION TIME: 10 HOURS</small></p> <p>This sequence uses the context of meal planning to demonstrate a process to solve a problem; in this case, what meal to cook for teenagers with various needs. In decomposing the problem, students collaborate to better understand their audience's needs, the food options available and to define how the functional requirements of the solution can be met. Key to meeting the functional requirements is collecting data related to suggested meals and organising this as structured data so it can be collected, sorted and visualised in different ways. Students also need to consider one or more of the following constraints when designing their solution: sustainability (economic, environmental, social), technical considerations and usability. Teachers may substitute their own context and follow a similar process described in this sequence.</p>  <p>FLOW OF ACTIVITIES</p> <table border="1" data-bbox="418 470 1110 611"> <tr> <td> <p>1</p> <p>Decompose the problem Break down the problem into key parts and consider the functional requirements.</p> <p>Learn More</p> </td> <td> <p>2</p> <p>Collect and input data Acquire data from different sources and put it into an online spreadsheet or database to share information and create a large database of information.</p> <p>Learn More</p> </td> <td> <p>3</p> <p>Designing an app Design an app that solves the problem.</p> <p>Learn More</p> </td> <td> <p>4</p> <p>Evaluate the process and the design Evaluate the design as well as the process used to gather data and collaborate online.</p> <p>Learn More</p> </td> </tr> </table>	<p>1</p> <p>Decompose the problem Break down the problem into key parts and consider the functional requirements.</p> <p>Learn More</p>	<p>2</p> <p>Collect and input data Acquire data from different sources and put it into an online spreadsheet or database to share information and create a large database of information.</p> <p>Learn More</p>	<p>3</p> <p>Designing an app Design an app that solves the problem.</p> <p>Learn More</p>	<p>4</p> <p>Evaluate the process and the design Evaluate the design as well as the process used to gather data and collaborate online.</p> <p>Learn More</p>	<p><u>DATA AND INFORMATION</u></p>
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<p>Year 9</p>	<p>A sequence focusing on Data exploring innovation</p> <p>UNIT DATA-DRIVEN INNOVATION <small>YEAR LEVEL 9 TOPIC: DATA TIME: 10 HOURS</small></p> <p>Data from individuals and connected technologies is used to inform society, businesses, industry and governments. Smartphones can be used to collect data and contributes to a person's digital footprint. While this data may benefit the broader community it also raises privacy concerns about personal information. Problems and challenges faced by society can provide a useful context for examining existing data-driven digital solutions. Autonomous cars provide a useful context to examine the data required to enable this technology to work safely and become a reality on our roads.</p>  <p>FLOW OF ACTIVITIES</p> <table border="1" data-bbox="410 938 1097 1058"> <tr> <td> <p>1</p> <p>My smartphone data Share ideas about what smartphone data may reveal about everyday actions and behaviours.</p> <p>Learn More</p> </td> <td> <p>2</p> <p>Consumer data Explore and present examples of ways personal data is used to inform companies.</p> <p>Learn More</p> </td> <td> <p>3</p> <p>Critically evaluate Explore case studies of businesses that have designed a digital solution to solve a problem.</p> <p>Learn More</p> </td> <td> <p>4</p> <p>Autonomous solutions Examine data and technology involved in autonomous devices and machines.</p> <p>Learn More</p> </td> </tr> </table>	<p>1</p> <p>My smartphone data Share ideas about what smartphone data may reveal about everyday actions and behaviours.</p> <p>Learn More</p>	<p>2</p> <p>Consumer data Explore and present examples of ways personal data is used to inform companies.</p> <p>Learn More</p>	<p>3</p> <p>Critically evaluate Explore case studies of businesses that have designed a digital solution to solve a problem.</p> <p>Learn More</p>	<p>4</p> <p>Autonomous solutions Examine data and technology involved in autonomous devices and machines.</p> <p>Learn More</p>	<p><u>DATA-DRIVEN INNOVATION</u></p>
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<p>Year 10</p>	<p>UNIT ORGANISE, VISUALISE AND ANALYSE <small>YEAR LEVEL 10 TOPIC: DATA TIME: 10 HOURS</small></p> <p>Data visualisation is the presentation of numerical data pictorially or graphically so that users can more easily make sense of complex data to identify patterns and trends. Usually, data visualisations allows input of new sets of data for circumstances so that the solution can model the effects of that changed data. When working with large amounts of data, tools are needed (for example, a spreadsheet or programming language such as Python) to manage the volume of information and get the most value from it. Databases enable data to be stored so it can be efficiently and reliably retrieved using relevant queries. When students are asked to respond to meaningful questions that they want to answer, they will be engaged when applying their understandings and developing their skills of data analysis and visualisation.</p>  <p>FLOW OF ACTIVITIES</p> <table border="1" data-bbox="415 1337 1105 1457"> <tr> <td> <p>1</p> <p>Meaningful questions Apply understandings about, and develop skills of data analysis and data visualisation.</p> <p>Learn More</p> </td> <td> <p>2</p> <p>Working with data Use tools to enable the students to manage large amounts of data to get the most value from it.</p> <p>Learn More</p> </td> <td> <p>3</p> <p>Channels of information Explore how data can be encoded and represented visually as channels of information.</p> <p>Learn More</p> </td> <td> <p>4</p> <p>Presenting information Consider both the appearance and functionality of information when presenting information.</p> <p>Learn More</p> </td> </tr> </table>	<p>1</p> <p>Meaningful questions Apply understandings about, and develop skills of data analysis and data visualisation.</p> <p>Learn More</p>	<p>2</p> <p>Working with data Use tools to enable the students to manage large amounts of data to get the most value from it.</p> <p>Learn More</p>	<p>3</p> <p>Channels of information Explore how data can be encoded and represented visually as channels of information.</p> <p>Learn More</p>	<p>4</p> <p>Presenting information Consider both the appearance and functionality of information when presenting information.</p> <p>Learn More</p>	<p><u>ORGANISE, VISUALISE AND ANALYSE</u></p>
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