

National Curriculum objectives

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content;
- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Maths

Building on Year 1 number and place value:

- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: ‘equal to’, ‘more than’, ‘less than’ (‘fewer’), ‘most’, ‘least’.

Year 2:

- Interpret and construct simple pictograms, tally charts, block diagrams and simple tables;
- Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity;
- Ask and answer questions about totalling and comparing categorical data.

Education for a Connected World links

Self image and identity

- I can recognise that I can say ‘no’/‘please stop’/‘I’ll tell’/‘I’ll ask’ to somebody who asks me to do something that makes me feel sad, embarrassed or upset;
- I can explain how this could be either in real life or online;
- If something happens that makes me feel sad, worried, uncomfortable, or frightened I can give examples of when and how to speak to an adult I can trust.

Health, wellbeing and lifestyle

- I can identify rules that help keep us safe and healthy in and beyond the home when using technology;
- I can give some simple examples.

Privacy and security

- I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location);
- I can describe the people I can trust and can share this with; I can explain why I can trust them;
- I can recognise more detailed examples of information that is personal to me (e.g. where I live, my family’s names, where I go to school).

To begin this unit, the children should have already learnt:

Year 1

Data can be numbers, words or figures. Objects can be labelled using either their names or by describing their properties. Labels can be used to place objects into groups. This helps us to count and compare data easily – computers help us do this.

The learning in this unit will prepare the children to learn these things in the future:

Year 3

Branching databases can help us to identify objects within sets of data and classify the objects into groups, based on what they are or their different attributes.

Year 4

Data loggers and logging software can be used to automatically capture data – they have sensors built into them. We can use data collected draw conclusions in answer to our research questions.

Year 5

Flat-file databases organise large amounts of data so that it can be easily added to, amended, stored, and accessed. We can find the data that we need by using the ‘search’, ‘filter’ and ‘sort’ functions.

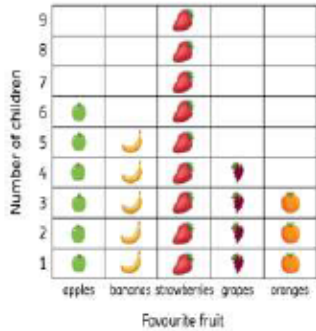
	<p><u>Year 6</u></p> <p>A spreadsheet is a computer application that allows users to organise, analyse and store data in a table and present information in meaningful graphs and charts. Spreadsheets are most used for organising and presenting finances (for example budgets and finance reports) because users can apply formulas and formatting to perform mathematical processes and make data easier to decipher.</p>
<p><u>Key Enquiry Question</u></p> <p>What does your tally chart tell you about _____? What do each of the objects have in common (attributes)? What does each picture in your pictogram represent? What information (data) should you not share with everyone?</p>	<p><u>The Big Idea:</u></p> <p>Data can be collected in the form of a tally chart and then progress onto presenting data in the form of pictograms and, finally, block diagrams. The data presented can be used to answer questions.</p>
<p>To achieve ARE, pupils will need to be secure in the following knowledge:</p>	
<p>By the end of this unit, children will know:</p> <ul style="list-style-type: none"> • Tally Charts are used to collect data; • How to compare objects, grouped by attribute; • How to construct (and complete) a given comparison question; • Appropriate headings for tally charts & pictograms; • We can present information using a computer; • Computer programs can present information in different ways; • Simple examples of why some information should not be shared. 	<p>Vocabulary:</p> <p>Information, data, search, label, group, program, similar, properties, different (introduced in Y1).</p> <p>Tally; tally chart; present; problem; attributes.</p>
<p>By the end of this unit, children will be able to do:</p> <ul style="list-style-type: none"> • Show they can enter data onto a computer; • Use a computer to view data in different formats; • Use a computer to answer different comparison questions; • Use pictograms to answer single-attribute questions; • Recognise that people, animals and objects can be described by attributes. 	<p>Useful Resources:</p> <p>Online training courses</p> <p><u>Raspberry Pi online training courses</u></p>



COMPUTING: DATA AND INFORMATION KNOWLEDGE ORGANISER



Overview

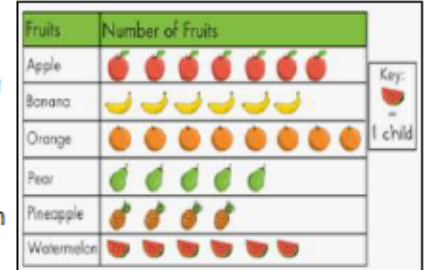


Pictograms

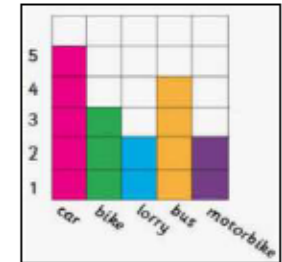
- Data can be numbers, words or figures. Information is what we can understand from looking at data.
- Objects can be organised into groups, based on what they are or their properties (features).
- Data about different groups can be recorded and presented by using pictograms, tally charts and block charts. This data can answer questions and solve problems.

Pictograms and Block Diagrams

-Pictograms: A pictogram is a chart that uses pictures to display data. They can be made using pens or paper, or they can be made using a computer. The pictogram on the right shows the favourite fruits of a group of school children. Each piece of fruit shows what each child selected.



-Block Charts: Block charts work in a similar way to pictograms, except each object is presented as a block. The block diagram on the right presents how different children get into school.



Grouping, Counting and Tallying

-Grouping: Objects can be put into different groups. These groups can be made up of objects that are the same, or objects that have the same properties (features).



Computers can help us by allowing us to put different objects into groups.

-Counting: Computers can be programmed to count the amounts in each group.

Jonie	✓
Elizabeth	✓
Ella	✗
Harry	✓
Marcus	✓
In school: 4	Absent: 1

-For example, when your teacher takes the class register, the computer program can count how many ticks and crosses there are. The computer can then tell your teacher how many children are in class.

-Tallying: Tallying helps us to record as we count. We chunk into groups of five, with the first four counts looking like sticks, and the fifth count making the 'gate.'



-Tally Charts: Tally charts are used to collect data about the number in each group quickly.

Animals	Tally Marks
Tiger	
Gauche	
Elephant	
Owl	

Presenting and Using Information

-Computer programs such as *j2data* can help us to create pictograms and block charts. Clicking the + and - icons add and subtract pictures from our diagram.

-Using Data: There should be a reason to collect data, and so it should be easy to read. E.g. this data could help someone know which fruits to buy if they are hosting a party, or help the school chef know which fruit to order in.



Answering Questions

-Pictograms can be used in order to **answer questions and solve problems.**

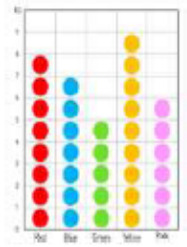
-Examples may include:

-Which colour was the most popular?

Which colour was least popular?

-How many more chose yellow than chose pink?

-What is the total of red and blue combined?



Important Vocabulary

Information

Data

Pictogram

Group

Tally

Tally Chart

Program

Properties

Present

Problem