Year 2 – Pictograms

Unit introduction

Learners will begin to understand what the term data means and how data can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams. Learners will use the data presented to answer questions.

During this unit of work learners will use j2e pictogram tool which can be accessed online using a desktop, laptop or tablet computer. Your school may have access to an equivalent alternative which could be used instead.

Overview of lessons

Lesson	Brief overview	Learning objectives
1 Counting and comparing	During this lesson learners will begin to understand the importance of organising data effectively for counting and comparing. They will create their own tally charts to organise data, and represent the tally count as a total. Finally, they will answer questions comparing totals in tally charts using vocabulary such as 'more than' and 'less than'.	To recognise that we can count and compare objects using tally charts • I can record data in a tally chart • I can represent a tally count as a total • I can compare totals in a tally chart
2 Enter the data	During this lesson learners will become familiar with the term 'pictogram'. They will create pictograms manually and then progress to creating them using a	To recognise that objects can be represented as pictures

	computer. Learners will begin to understand the advantages of using computers rather than manual methods to create pictograms, and use this to answer simple questions.	• I can enter data onto a computer • I can use a computer to view data in a different format • I can use pictograms to answer simple questions about objects
3 Creating pictograms	During this lesson learners will think about the importance of effective data collection and will consider the benefits of different data collection methods: why, for example, we would use a pictogram to display the data collected. They will collect data to create a tally chart and use this to make a pictogram on a computer. Learners will explain what their finished pictogram shows by writing a range of statements to describe this.	To create a pictogram • I can organise data in a tally chart • I can use a tally chart to create a pictogram • I can explain what the pictogram shows
4 What is an attribute?	During this lesson learners will think about ways in which objects can be grouped by attribute. They will then tally objects using a common attribute and present the data in the form of a pictogram. Learners will answer questions based on their pictograms using mathematical vocabulary such as 'more than'/'less than' and 'most'/'least'.	To select objects by attribute and make comparisons • I can tally objects using a common attribute • I can create a pictogram to arrange objects by an attribute • I can answer 'more than'/'less than' and 'most/least' questions about an attribute
5 Comparing people	During this lesson learners will understand that people can be described by attributes. They will practise using attributes to describe images of people and the other learners in the class. The learners will collect data needed to organise people using attributes and create a pictogram to show this pictorially. Finally, learners will draw conclusions from their pictograms and share their findings.	To recognise that people can be described by attributes • I can choose a suitable attribute to compare people • I can collect the data I need • I can create a pictogram and draw conclusions from it

6 Presenting information	During this lesson learners will understand that there are other ways to present data than using tally charts and pictograms. They will use a pre-made tally chart to create a block diagram on their device. Learners will then share their data with a partner and discuss their findings. They will consider whether it is always OK to share data and when it is not OK. They will know that it is alright to say no if someone asks for their data, and how to report their concerns.	To explain that we can present information using a computer ● I can use a computer program to present information in different ways ● I can share what I have found out using a computer ● I can give simple examples of why information should not be shared

Progression

This unit progresses students' knowledge and understanding of grouping data. It builds on the Year 1 Data and Information unit where learners labelled objects and grouped them based on different properties. In Year 3 learners develop their understanding of attributes (properties) using branching databases to structure data according to different object attributes.

Please see the learning graph for this unit for more information about progression.

Curriculum links

National curriculum links

Computing

● 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

Notes and guidance: Pupils record, interpret, collate, organise and compare information (for example, using many-to-one correspondence in pictograms with simple ratios 2, 5, 10).

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)

Assessment

Formative assessment
- Assessment opportunities are detailed in each lesson plan. The learning objective and success criteria are introduced in the slide deck at the beginning of each lesson and then reviewed at the end. Learners are invited to assess how well they feel they have met the learning objective using thumbs up, thumbs sideways, or thumbs down.

Subject knowledge

This unit builds on prior learning from the Year 1 unit 'Grouping data'. Teachers should understand how tally charts and pictograms are created, and the benefits of organising data in those formats. These different formats allow data to be presented in different ways and will suit different purposes.. Teachers will need to understand how people, animals and objects can be described using different attributes.

Enhance your subject knowledge to teach this unit through the following training opportunities:

Online training courses
- [Raspberry Pi Foundation online training courses](#)

Face-to-face courses
- [National Centre for Computing Education face-to-face training courses](#)