Year 1 – Grouping data

Unit introduction

This unit introduces learners to data and information. Labelling, grouping, and searching are important aspects of data and information. Searching is a common operation in many applications, and requires an understanding that to search data, it must have labels. This unit of work focuses on assigning data (images) with different labels in order to demonstrate how computers are able to group and present data.

Software and Hardware requirements

You will need digital devices for learners to interact with during this unit. Learners will be logging on to the computers, opening and saving documents. Additional support and time may be required to facilitate these steps, and consideration should be given as to this.

If you've adapted this unit to better suit your school, please share your adapted resources with fellow teachers in the STEM community. Alternatively, if this unit isn't quite right for your school, why not see if an adapted version which better suits has already been shared?

Overview of lessons

Lesson	Brief overview	Learning objectives
1 Label and match	Learners will begin to understand that objects have many different labels that can be used to put them into groups. They will name different objects and begin to experiment with placing them into different groups. Learners will also label a group of objects, and begin to understand that an object can fit into more than one group depending on the context.	To label objects • I can describe objects using labels • I can match objects to groups • I can identify the label for a group of objects
2 Group and count	Learners will begin to think about grouping objects based on what the objects are. They will demonstrate the ability to count a small number of objects before they group them, and will then begin to show that they can count groups of objects with the same label. Learners will also begin to learn that computers are not intelligent, and require input from humans to perform tasks.	To identify that objects can be counted • I can count objects • I can group objects • I can count a group of objects
3 Describe an object	Learners will begin to understand that objects can be described in many different ways. They will identify the properties of objects and begin to understand that properties can be used to group objects; for example, objects can be grouped by colour or size. Finally, learners will demonstrate their ability to find objects with similar properties and begin to understand the reason that we need to give labels to images on a computer.	To describe objects in different ways • I can describe an object • I can describe a property of an object • I can find objects with similar properties

4 Making different groups	Learners will classify objects based on their properties. They will group objects that have similar properties, and will be able to explain how they have grouped these. Learners will begin to group a number of the same objects in different ways, and will demonstrate their ability to count these different groups.	To count objects with the same properties • I can group similar objects • I can group objects in more than one way • I can count how many objects share a property
5 Comparing groups	Learners will choose how they want to group different objects by properties. They will begin to compare and describe groups of objects, then they will record the number of objects in each group.	To compare groups of objects • I can choose how to group objects • I can describe groups of objects • I can record how many objects are in a group
6 Answering questions	Learners will decide how to group objects to answer questions. They will compare their groups by thinking about how they are similar or different, and they will record what they find. They will then share what they have found with their peers.	To answer questions about groups of objects • I can decide how to group objects to answer a question • I can compare groups of objects • I can record and share what I have found

Subject knowledge and CPD opportunities

You will need to be aware that the term ‘object’ is used to describe anything that can be labelled with properties, eg animals, pencils, or trees. When talking about objects, they are named to make it easier for humans to know what other humans are talking about, eg ‘tree’. The name may change depending on context (sometimes ‘tree’ is enough, but sometimes ‘oak tree’ may be required), but it is always a property that an object can be labelled with. A label is a property used to describe an object, eg ‘green’. This is the data that is collected about the object.

You will need an understanding that computers are not intelligent. Although they may seem like they are able to complete tasks autonomously, they are using input from humans, for example, searching for images that have been labelled by a person, or ‘counting’ data that has been grouped by people.

Through the unit, teachers will need to be aware that:

- Computers can be used to group data for analysis. The analysis in this unit is limited to a simple count of the objects in a group. Grouping is revisited throughout the data and information units.
- The term 'property' to describe objects. A label is a property used to describe an object, eg 'green'. This is the data that is collected about the object.
- 'Data set' is a term used to describe a collection of related data.
- The link between grouping objects in the real world and grouping objects on a computer. To strengthen this link, the language of 'is…' and 'is not…' should be used wherever possible.
- Objects can be grouped by different properties, so there are multiple ways of grouping the same objects.

Continuing Professional Development

Enhance your subject knowledge to teach this unit through the following free CPD:

- Getting started in Year 1 – short course
- Introduction to primary computing remote or face to face

Teach primary computing certificate

To further enhance your subject knowledge, enrol on the teach primary computing certificate. This will support you to develop your knowledge and skills in primary computing and gain the confidence to teach great lessons, all whilst earning a nationally recognised certificate!

Progression

This unit will introduce learners to data and information. It will introduce learners to the concept of labelling and grouping objects based on their properties. Learners will develop their understanding that objects can be given labels, which is fundamental to their future learning concerning databases and spreadsheets. In addition, learners will begin to improve their ability to use dragging and dropping skills on a device. Following this unit, in year 2, learners will present data graphically in pictograms.

Common Misconceptions

Much of this unit will be familiar from pupils' mathematics and early years education. However, pupils may find grouping the images difficult if they consider them all as images rather than the objects they represent. If this is the case, you may want to use real objects when teaching parts of this unit, for example 2D shapes or small world toys.

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.

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.

Summative assessment

Please see the assessment rubric document for this unit. The rubric can be used to assess learning and highlights whether the pupil is approaching (emerging), achieving (expected), or exceeding the expectations in this unit.

Resources are updated regularly — please check that you are using the latest version.

Attribution statement