purple mash

Computing Scheme of Work

Unit 3.8 –

Graphing

Contents

Introduction

These two lessons use the Purple Mash 2Graph tool. There is an option to link Lesson 2 to a topic being studied in maths, science or another curriculum area.

Medium-term Plan

Lesson	Aims	Success Criteria
[1](#)	To enter data into a graph and answer questions.	• Pupils can set up a graph with a given number of fields. • Pupils can enter data for a graph. • Pupils can produce and share graphs made on the computer. • Extension: Pupils can select most appropriate style of graph for their data and explain their reasoning.
[2](#)	To solve an investigation and present the results in graphic form.	• Pupils have solved a maths investigation. • Pupils can present the results in a range of graphical formats. • Extension: Pupils will use the sorting option to make analysis of their data easier. • Extension: Pupils can select most appropriate style of graph for their data and explain their reasoning.

Lesson 1

Aims

- To enter data into a graph and answer questions.

Success criteria

- Pupils can set up a graph with a given number of fields.
- Pupils can enter data for a graph.
- Pupils can produce and share graphs made on the computer.
- Extension: Pupils can select most appropriate style of graph for their data and explain their reasoning.

Resources

Unless otherwise stated, all resources can be found on the main unit 3.8 page. From here, click on the icon to set a resource as a 2do for your class. Use the links below to preview the resources; right-click on the link and 'open in new tab' so you don't lose this page.

- Example graph – Favourite Colours. This should be set as a 2Do.

Activities

1. Share the learning objectives and success criteria with the pupils.

2. If appropriate, remind the pupils of their work using 2Count and 2Graph in Year 1 (Unit 1.4).

3. Show the pupils how to open 2Graph. Open the example graph 'Favourite Colours'.

4. With the pupils, show them:

- How to sort items alphabetically by clicking on the arrows.

- How to sort the numbers from smallest to largest, and vice versa.

- How to add/edit the title of the graph.

- How to change the block size from units of 1 to units of 2, 3 etc.

- How to add another row, e.g. if another child comes into the class and chooses 'Orange'

  as his favourite colour .

- How to select the different graph types using the top toolbar.

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5. Instruct the pupils to open the same graph on their own computers from the 2Dos. The pupils should then spend time editing the graph, as above.

6. Bring the class back together and collect class data on the board for pupils' favourite colours. Can pupils adapt the graph for their own class?

Extension:

Present pupils with the two data sets:

1) Ingredients in a food item
2) Customers in the newsagent.

Ask them to input the data and investigate which type of graph is the most effective at showing the data.

Item		Number	
8am		34	
9am		21	
10am		14	
11am		7	
12pm		19	
1pm		22	
2pm		4	
3pm		5	
4pm		16	

Item		Number	
apple and pear		25	
custard		23	
butter crumble		14	
pastry		38	

Can they explain the reasoning for the graph style they have chosen for each dataset?
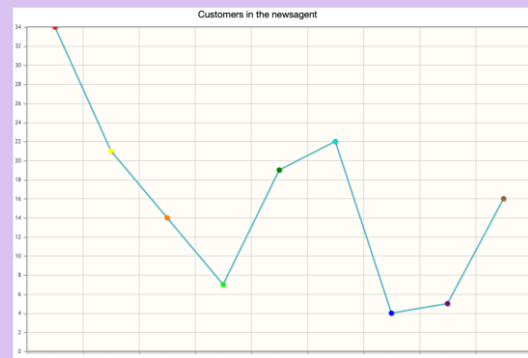
For example, a pie chart for the food shows each ingredient as a portion of the whole, and the line graph show the peak times for customers, and how it rises and falls during the day).

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Lesson 2

Aims

- To solve an investigation and present the results in graphic form.

Success criteria

- Pupils have solved a maths investigation.
- Pupils can present the results in a range of graphical formats.
- Pupils will use the sorting option to make analysis of their data easier.
- Pupils can select most appropriate style of graph for their data and explain their reasoning.

Resources

Unless otherwise stated, all resources can be found on the main unit 3.8 page. From here, click on the icon to set a resource as a 2do for your class. Use the links below to preview the resources; right-click on the link and 'open in new tab' so you don't lose this page.

- It would be useful to set up a class 2Blog for pupils to share their investigations (see 2Blog user guide).
- Alternatively, the file My Investigation could be used to record their investigation and insert an image of their graph. This can be set as a 2Do.

Activities

This lesson could be linked to work being undertaken in Maths or Science. The aim is for the pupils to have some data they can use to input into a graph. If there are no suitable links to Maths or Science, then there are some ideas for investigations in the lesson plan below.

1. Share the learning objectives and success criteria with the pupils. Recap the learning from the last lesson.

2. Explain that the pupils will be undertaking an investigation and then inputting the results into a graph. If there are no appropriate curriculum links:

   - Roll some dice 30 times (link to Maths)
   - Consider the favourite fruits in the class (link to healthy eating)
   - Consider how the pupils travel to school (link to Walk to School Week)

- Consider what time pupils go to bed (link to PSHE).

3. The pupils should devise a way to collect the data, do the investigation and then plot their results on a graph. They need to remember to:

    - Choose the appropriate block size
    - Include an informative title
    - Record and enter all data correctly.

4. The pupils can then save the graphs in their folder.

5. The pupils can then share their graphs on a class display board or a class 2Blog. In their blog post, they should explain how they went about their investigation. They should also comment on what the results show and whether there were any surprising outcomes. If you are not using a blog, pupils could download their graph as an image and then insert it into the My Investigation document.

Extension:

Pupils should investigate sorting the data in their graph using the sort features for easier analysis, before either editing their class blog post or their My Investigation document, explaining why they chose a particular style of graph to represent the data they collected.

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Assessment Guidance

The unit overview for Year 3 contains details of national curricula mapped to the Purple Mash Units. The following information is an exemplar of what a child at an expected level would be able to demonstrate when completing this unit with additional exemplars to demonstrate how this would vary for a child with emerging or exceeding achievements.

Assessment Guidance	
Emerging	With support throughout, pupils use 2Graph to enter a simple data range on a limited number of fields. Pupils can then present their data as a simple bar chart (Unit 3.8 Lesson 1. Point 4). In a small, supported group, pupils will complete an investigation of an everyday event, linked, where possible to the curriculum (Unit 3.8 Lesson 2. Point 2).
Expected	Pupils use 2Graph to enter data on a given number of fields and then present their data as a graph (Unit 3.8 Lesson 1. Point 4). Pupils can select the most appropriate graph format to present their data. Independently, pupils can apply their graphical knowledge to an investigation of an everyday event, linked, where possible to the curriculum (Unit 3.8 Lesson 2. Point 2). Furthermore, pupils present their graph by sharing it on a class blog (Unit 3.8 Lesson 2. Point 5). Most pupils can set up a graph within 2Graph with a given number of fields, enter data and manipulate the presentation of it using: Sort, block size, additional rows and editing of labels (Unit 3.8. Lesson 1 Point 4). They can create further digital content within the context of the data they have collected by importing it into a pre-made writing template (Unit 3.8. Lesson 2 Point 5). Most pupils can present information in a range of graphical formats which includes attention to detail regarding appropriate labelling and block sizing (Unit 3.8. Lesson 2 Point 3). Pupils can use 2Graph to enter collected data and represent it using an appropriate graph type. They can sort data using sort features for easier analysis (Unit 3.8 Lesson 1) and can share their graphs with other pupils via 2Blog, appropriately commenting on their results e.g. from a maths investigation, particularly any surprising results (Unit 3.8 Lesson 2 Point 5).
Exceeding	Pupils demonstrating greater depth will select the most appropriate graph format to present their data and explain their reasoning behind this (Unit 3.8 Lesson 1. Point 4). They will experiment with different types of charts and determine the most suitable. They will also explore the ways of presenting data so that it can be graphically represented.