

Lesson Plan: 'Shadow Graphs'

Year Group:	Unit:
Year 9 Term 3	Collecting and presenting information: questionnaires and pie charts
<p>Context: Children will learn how to create bar charts, pie charts and line graphs and will begin to understand the effectiveness of different charts.</p> <p>The example is used as part of an Earth and Space topic – looking at the changing length of shadows. This could be used as part of any activity that produces continuously changing information, such as temperatures.</p> <p>This lesson does not focus on the collection of data or the use of a questionnaire.</p>	
<p>Learning Objectives: Children should learn:</p> <ul style="list-style-type: none"> • Key idea: that different graphs are used for different purposes • Key idea: that line graphs are used to represent continuously changing data <p>Technique: to create bar charts, pie charts and line graphs</p> <p>Link to the Curriculum:</p> <ul style="list-style-type: none"> • 'Technological Knowledge' – Students design prototypes and evaluate them. 	
<p>Technical Vocabulary:</p> <ul style="list-style-type: none"> • Bar chart • Pie Chart • Line graph 	<p>Resources:</p> <ul style="list-style-type: none"> • Graphing package • Measuring equipment or science experiment results • Examples of different graphs
<p>Organisation of activity: As part of a previous science lesson, children should have collected data, such as the changing lengths of shadows. The children could discuss what would be the best way to present their findings to other people. The class could be shown different types of graphs and how to create the graphs using a graphing package. In pairs the children could enter the data into the graphing package and create and print out a bar chart, pie chart and line graph. The children should be reminded of the importance to enter the data correctly. Each pair could decide which is the most effective graph for the data. <i>See examples.</i></p>	
<p>Plenary: The class could be asked to comment on the results of their work. They could be asked which graph is the most effective at representing the data. The pie chart is not clear. The bar chart makes it look like the shadow 'jumped' from one length to the next. The line graph shows that the shadow's length changed smoothly. The children could ask each other questions about the data that can be answered using the graphs.</p>	
<p>Assessment: By the end of the session, most children will have entered their data into a graphing package and used the data to create bar charts, pie charts and line graphs (some children may need help). Through discussion it should become clear which children have progressed further and are able to choose the appropriate form of graph to represent their data.</p>	

time	shadow length
9:00	5
10:00	7
11:00	10
12:00	13
1:00	12
2:00	9
3:00	6

