

Teacher planning sequence 1

Handout 1.5

<p>Lesson plan: ICT Date: Lesson 5 Class: 6 Time: 1 hour 15 minutes Activity: Modelling</p>	<p>Context/past experience Children completed Year 7 Modelling QCA Unit 5A – entering data into cells, formatting cells, basic formula – children have used spreadsheets in Year 6 for Literacy and Numeracy work</p>	<p>Cross-curricular links – Mathematics KS2 NC Ma2 4d Breadth of understanding: 1f exploring and using a variety of resources and materials, including ICT</p>							
<p>Resources: 1. Lesson 5 template 2. party.xls</p>	<p>Anticipated outcome: Children will have investigated a mathematical problem and used a spreadsheet to arrive at a solution.</p>	<p>Key vocabulary Spreadsheet Cell Formula Calculate Data Model</p>	<p>Assessment/staff Which children had understood? Who had grasped the task? What areas had they not grasped? Self-assessment If I did this activity again, what would I change? What went well? Why would I use ICT for this task? Traffic Lights Assessment</p>						
<p>Objectives/theme taken from medium-term plan Children learn to use a spreadsheet to explore a mathematical model. Children will be taught to use formulae in spreadsheets to answer 'What if...?' questions. They will explore how changes in a spreadsheet affect results and identify simple rules. Children will apply what they have learned in this unit when exploring mathematical and scientific models.</p>	<p>Introduction – whole class Remind the pupils of how we have developed a model, asked questions, and solved problems using modelling. Use party.xls. Suggested questions: What is the formula? How do we input it? What does the graph tell us? How do we create a graph? What is the number repeated? How do we copy cells?</p>	<p>Main Activity 25–30 minutes</p> <table border="1"> <tr> <th data-bbox="622 1025 662 1220">Lower core</th> <th data-bbox="622 851 662 1019">Core</th> <th data-bbox="622 481 662 840">Upper core</th> </tr> <tr> <td data-bbox="670 1025 1037 1220"> Explain to pupils that they are going to investigate using a spreadsheet model to find out the maximum area that can be included in a rectangular field of fixed perimeter. They need to set up the formula in a spreadsheet to carry out the investigation. Give children a template with the formula completed and use it to enter data to investigate the task. Pupils can share their solutions; allow them time to talk through the process. Identify how it was not just guessing the answer but using the model to try to work through the possible solutions. Draw out how a model allows us to run through predictions and develop patterns very quickly so that we can test theories and create hypotheses. LC ~ The pupils who need support may need some data already entered in columns A, B. UC ~ The more able pupils can use the template without the entered formula. </td> <td data-bbox="670 851 1037 1019"></td> <td data-bbox="670 481 1037 840"></td> </tr> </table>	Lower core	Core	Upper core	Explain to pupils that they are going to investigate using a spreadsheet model to find out the maximum area that can be included in a rectangular field of fixed perimeter. They need to set up the formula in a spreadsheet to carry out the investigation. Give children a template with the formula completed and use it to enter data to investigate the task. Pupils can share their solutions; allow them time to talk through the process. Identify how it was not just guessing the answer but using the model to try to work through the possible solutions. Draw out how a model allows us to run through predictions and develop patterns very quickly so that we can test theories and create hypotheses. LC ~ The pupils who need support may need some data already entered in columns A, B. UC ~ The more able pupils can use the template without the entered formula.			<p>Plenary 10–15 minutes Link to learning objectives Display examples of other areas of our lives where modelling is used.</p> <ul style="list-style-type: none"> • Traffic planning • Flight simulators • Computer adventure games • Driving simulators <p>Ask pupils why it is useful to use modelling in the above activities. Expect answers such as cost and safety.</p>
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<p>LINKS QCA Unit 5D In this unit children learn to enter numbers, labels and simple formulae into a spreadsheet and to use the data to calculate totals. Children will be introduced to spreadsheet software and will explore how changes in price and quantity can affect total cost. QCA Year 7 Unit 4 Developing ideas and making things happen 2. Pupils should be taught: a) to develop and explore information, solve problems and derive new information for particular purposes c) how to use ICT to test predictions and discover patterns and relationships, by exploring, evaluating and developing models and changing their rules and values</p>	<p>Further differentiation/inclusion SEN Provision Effective questioning can give support. Gifted and Talented (ICT/Maths) Children can be given perimeters that produce side length of non-whole numbers.</p>	<p>Common misconceptions/problems</p> <ul style="list-style-type: none"> • Strong links to mathematics – lower ability in mathematics may result in an inability to access the ICT 	<p>Assessment of learning Children who did not reach objectives: Children who could have gone further:</p>						