



THE SKINNERS' SCHOOL

## CURRICULUM MAP – YEAR 7 ICT

### MODELLING AND PRESENTING NUMERICAL DATA

#### The Task

In this unit pupils will use spreadsheets to model simple situations. They will use basic spreadsheet functions to construct, explore and amend simple models and consider how to manipulate graphs and tables in order to present their findings effectively. This unit uses the example of a computer game shop. The lessons are designed for pupils working at Levels 4 and 5, with extension work for pupils working at higher levels.

#### Developing ideas and making things happen

##### Models and modelling

- Use software to investigate and amend a simple model by:
  - formatting and labelling data appropriately (e.g. formatting cells to display currency);
  - entering rules or formulae and checking their appropriateness and accurate working;
  - explaining the rules governing a model;
  - predicting the effects of changing variables or rules.
- Test whether a simple model operates satisfactorily.

##### Extension activities

- Investigate the more advanced features of spreadsheets such as 'goal seek', 'conditional formatting' and 'IF statements'.
  - possible sources for research  
<http://www.reviseict.co.uk/ks3/7.4>

### DATA HANDLING

#### The Task

In this unit pupils will consider how to collect relevant data to answer a question. They will design a file to handle the data and will check their entries for accuracy. Finally, they will use the database functions in a spreadsheet package, such as Microsoft Excel, to interrogate their data and consider the plausibility of the conclusions they have drawn. The lessons are designed for pupils working at Level 5, with extension work for pupils working at higher levels.

#### Finding things out

##### Using data and information sources

- Identify the purpose of an information source and whether it is likely to be biased.
- Identify what information is relevant to a task.
- Understand how someone using an information source could be misled by missing or inaccurate information.

##### Searching and selecting

- Narrow down a search to achieve more relevant results.

##### Organising and investigating

- In an investigation:
  - design and use an appropriate data handling structure to answer questions and draw conclusions;
  - design a questionnaire or data collection sheet to provide relevant data;
  - check data efficiently for errors;
  - investigate relationships between variables;
  - use software to represent data in simple graphs, charts or tables, justifying the choice of representation;
  - derive new information from data;
  - check whether conclusions are plausible;
  - review and amend the structure and its data to answer further questions.

##### Extension activities

- Investigate the more advanced features of databases such as 'switchboard' design, 'autoforms', 'autoreports' and 'wildcards' in queries.
  - possible sources for research  
<http://www.reviseict.co.uk/ks3/7.5>

## CONTROL AND MONITORING

### The Task

In this unit pupils will understand that technology is used to control many everyday events, such as the operation of traffic lights and the raising of car park barriers. Pupils use software to simulate a range of familiar scenarios and to develop and refine flowcharts for control programs. The efficiency of the programs is enhanced through loops and subroutines. The lessons are designed for pupils working at Level 5, with extension work for pupils working at higher levels.

### Developing ideas and making things happen

#### Analysing and automating processes

- Represent simple processes as diagrams, showing:
  - how a task can be broken down into smaller ones;
  - the sequence of operations, and any conditions or decisions that affect it;
  - the initial information needed.

#### Control and monitoring

- Implement a system to carry out a simple control task, including some that involve sensed physical data, by:
  - compiling sets of instructions, identifying those which can be grouped to form procedures or loops;
  - testing and refining the instructions.

#### Extension activities

- Investigate use of flow charts to control ICT systems
- possible sources for research  
<http://www.bbc.co.uk/schools/gcsebitesize/ict/measurecontrol/>

## PUBLIC INFORMATION SYSTEMS

### The Task

In this unit, pupils create a public information system. The system uses a spreadsheet to gather data from the Internet, to select and process the required data and to use text, tables and graphs to display the data. The focus for pupils is on understanding the three parts of a system – input, process and output – and the way that automating the processes leads to greater efficiency.

The ideas developed in the lesson could be applied to a variety of contexts. The lessons are designed for pupils working at Levels 5 and 6, with extension work for pupils working at higher levels.

### Finding things out

#### Organising and investigating

- In an investigation:
  - use software options and formats to store and present electronic material efficiently;
  - explore and interpret collected data in order to draw conclusions.

#### Exchanging and sharing information - Fitness for purpose

- Recognise how different media and presentation techniques convey similar content in ways that have different impacts.

#### Exchanging and sharing information

#### Refining and presenting information

- Plan and design presentations and publications, showing how account has been taken of:
  - audience expectations and needs;
  - the ICT and media facilities available.

### Developing ideas and making things happen

#### Analysing and automating processes

- Automate simple processes by:
  - creating templates;
  - creating simple software routines.

#### Extension activities

- Investigate use of flow charts to control ICT systems
- possible sources for research  
[http:// www.reviseict.co.uk/ks3/8.1](http://www.reviseict.co.uk/ks3/8.1)

## **PUBLISHING ON THE WEB**

### **The Task**

In this unit pupils use web technology to design and create a website. Groups of pupils design and implement a sequence of linked web pages. Over this series lessons, pupils should develop sufficient understanding of web technology to create and evaluate an efficient and effective website design. Pupils will begin to understand that web browsers display web pages in different ways and they should take account of this when they are creating their websites. The lessons are designed for pupils working at Level 6, with extension work for pupils working at higher levels.

### **Exchanging and sharing information**

#### **Fitness for purpose**

- Understand that an effective presentation or publication will address audience expectations and needs.
- Devise criteria to evaluate the effectiveness of own and others' publications and presentations, and use the criteria to make refinements.

#### **Refining and presenting information**

- Plan and design presentations and publications, showing how account has been taken of:
  - audience expectations and needs;
  - the ICT and media facilities available.
- Use a range of ICT tools efficiently to combine, refine and present information by:
  - extracting, combining and modifying relevant information for specific purposes;
  - structuring a publication or presentation.

#### **Communicating**

- Understand some of the technical issues involved in efficient electronic communications.
- Use ICT effectively to adapt material for publication to wider or remote audiences.

### **Developing ideas and making things happen**

#### **Analysing and automating processes**

- Automate simple processes by creating simple software routines.
- Consider the benefits and drawbacks of using ICT to automate processes.
- Represent simple design specifications as diagrams.

#### **Extension activities**

- Investigate use of flow charts to control ICT systems
- possible sources for research  
[http:// www.reviseict.co.uk/ks3/8.2](http://www.reviseict.co.uk/ks3/8.2)