

Objectives

Links: QCA Unit 4D – Collecting and presenting information: questionnaires and pie charts.
QCA Unit 5D – Introduction to spreadsheets.

Aim: To develop the children's understanding of the relationship between their age and accidents.

To develop the children's ability to handle information and write for an audience.

ICT: To develop children's understanding of how a computer can be used to handle information.

How to use information generated by a computer to support an argument.

How to enter labels, numbers and simple formulas into a spreadsheet.

To create simple pie and bar charts.

Resources

- A word processor
- Download the writing frame files ICT41_argument1.doc (Resource Sheet 12) and ICT41_argument2.doc (Resource Sheet 13) – copy and paste it into the word processor you are using. Save the file and make it accessible to the children.
- A spreadsheet.
- Download the data ICT41_pedestrian_99.doc (Resource Sheet 14) and print a copy for each member of the class.
- Copies of *Arrive Alive – a highway code for young road users* available from DfT Free literature on 0870 1226 236.

ICT Vocabulary

- Spreadsheet
- Cell
- Data
- Row
- Chart
- Column
- Bar
- Active cell
- Pie
- Cell reference

Pupil Prior Knowledge

The children should have experienced using the computer to draw graphs.

Introduction

- This activity can be used in any year group from years 4 to 6 and is based on three lessons that explore the relationship between age and road accidents.
- In the first lesson the children are to use a spreadsheet to chart road accident and injury data that happen to young people aged 0-24 years.
- In the second lesson the children are going to use simple formula to explore the data.
- In the final lesson the children are to use writing frames to analyse their results and give their reasons why the accidents occur.

Aim:

- To make children aware of the correlation between age and pedestrian accidents.
- To introduce children to the use of a spreadsheet.
- To develop the children's skills in entering data and producing graphs.
- To develop pupils knowledge and understanding of the information handling process.

Lesson Introduction

- Explain to the children that they are going to do an investigation to see if there is a relationship between age and pedestrians having accidents.
- Discuss with the children what their views are e.g. 'do they think the younger you are the more likely you are to have an accident as a pedestrian? Why do they think pedestrians have accidents?'
- Set the question you want the children to answer e.g.
- What age are you most likely to have an accident as a pedestrian?
- Explain to do this investigation they are going to use a program called a spreadsheet on the computer.

ICT Introduction

Describe to the children the different parts of the spreadsheet:

COLUMNS: Go down the page and at the top of each column is a letter.

ROWS: Go across the page and at the start of each row is a number.

CELL: These are the rectangles created where the row and column meet.

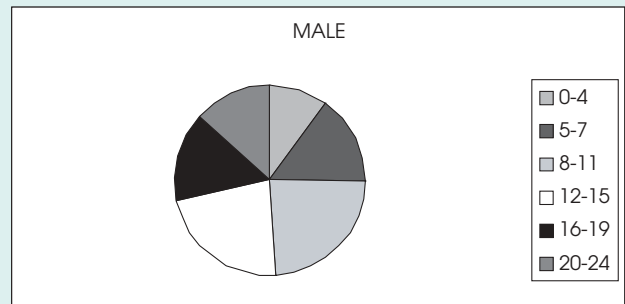
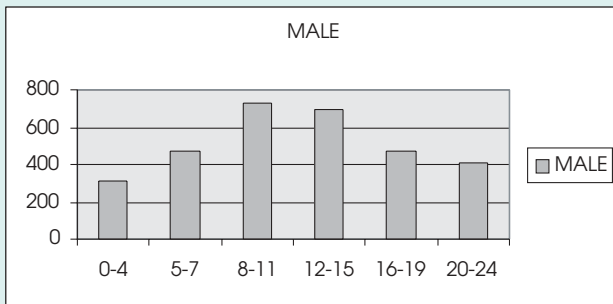
ACTIVE CELL: The cell that you enter data in. Identified by the thicker border around it.

CELL REFERENCE: The reference is made up of the column letter and the row number e.g. A1 is the cell in the top left corner.

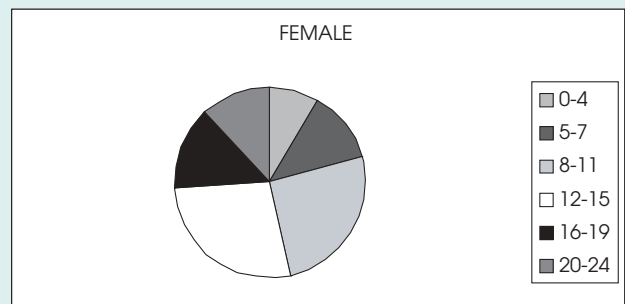
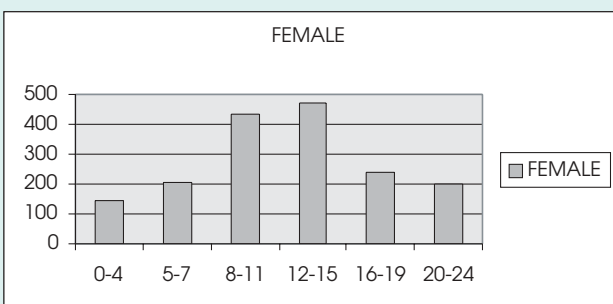
Demonstrate to the children how to enter the data by clicking in the cell to make it active and then typing in the data.

Activity

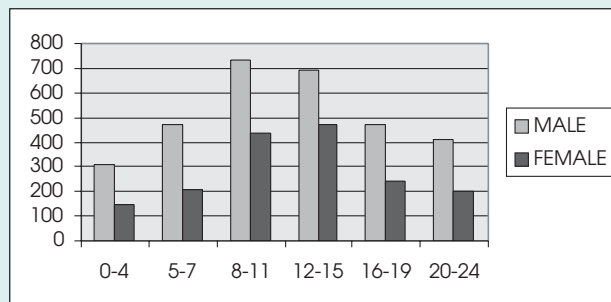
- Give each child a set of the data.
 - Starting in cell A1 have the children enter the data for the male accidents (Resource Sheet 14).
 - Have the children save and print the data.
 - Demonstrate to the children how to draw a graph.
- TIP:** In most spreadsheets you need to highlight the data before selecting the charting tool.
- Have the children produce and print a column and pie chart of the data.



- Discuss with the children their findings so far e.g. who is most likely to have an accident? Who is the least likely?
- Ask the children which of the charts was the best way of presenting the information. What were their strengths and weaknesses?
- Have the children predict if the findings will be the same for females.
- Using the data from Resource Sheet 14 have the children repeat the process (they will need a new sheet before they start):
 - Enter the data
 - Save and print the data
 - Create and print both a pie and column chart.



- Again discuss with the children their findings and which was the best chart to represent their findings.
- Using the data from Resource Sheet 14 have the children repeat the process of entering, saving and printing the data (they will need a new sheet before they start).
- Demonstrate to the children that this time they will need to select all the data from cell A1 to C7. Point out that as they are using two sets of data they will not be able to create a pie chart.
- Have the children create and print a column graph.



Plenary

- Discuss with the children what information they have gathered from the charts e.g. who is most likely to have an accident? Were their original ideas correct? Why do they think their age group is more likely to have an accident? Why are girls less likely to have an accident?
- Answer the original question posed:
 - What age are you most likely to have an accident as a pedestrian?