

5

The animal shelter

Coverage

This unit is about understanding information that is presented in plans, lists, tables, charts and pictograms. This unit also includes tallying to record information, and presenting that information in different ways.

At this level learners are expected to understand how to use simple bar charts and pictograms. Learners should be expected to tally data and produce totals and tables from the tally. They should use data in tables to produce bar charts and pictograms to compare data.

Skills

HD1/E3.1 extract numerical information from lists, tables, diagrams and simple charts

HD1/E3.2 make numerical comparisons from bar charts and pictograms

HD1/E3.3 make observations and record numerical information using a tally

HD1/E3.4 organise and represent information in different ways so that it makes sense to others

Resources needed for effective teaching of this unit:

Demonstration	Group	Pair	Individual
Weather chart	Newspapers Magazines	Paper	Squared paper Highlighter pens Ruler Pencil

Reminder

In the 'Links' H mean Help, E means Extension and M means Mini-project.

Remember

Throughout the unit, be aware of the reading the needs of learners.

You may need to read out parts of the text.

Words **highlighted** in **bold** will need particular clarification.

Context

Discuss the scenario in a group.

Be aware that learners may not have pets or may be allergic to certain animals or birds.

Many will have seen *Animal Hospital* or vet programmes on the television.

Stimulus questions

- Does anyone have a pet? What sort of pet do they have?
- Does anyone have an unusual pet?
- Where did you get your pet? Did your pet come from a pet shop, breeder, animal rescue centre or somewhere else?
- Can you read information from plans, lists, tables and charts?
- Do you know how to record information?
- What maths skills do you think you might need to record and show information?

Pages 2, 3 and 4 What does it all mean?

Introduction to activity 1

- As a group activity, produce a plan of the room you are in – what needs to be put on the plan?
- Ask learners if they have ever used a plan or diagram.
- Discuss what the learners think a plan is – suggest that it is an outline of something viewed from above.
- As a group, discuss when you might use a plan or diagram.
- Learners may have a plan of their house or flat.

Activity 1

- Discuss and identify the widths and depths of the animal enclosures.
- Discuss and define space as the total size of an object.
- Work through the example. How do you find out the size of the small animal space from the plan?
- Learners could work in pairs – one to read the dimensions, one to record them.

Activity 2

- What do learners use lists for? Shopping lists, lists of things to do etc.
- Discuss how information is presented in a list e.g. price lists.

- Look at the animal shelter list – it is divided into sections. Each section has prices and information. Discuss the importance of being clear about the information that is to be extracted from the list.
- Discuss the meaning of maximum and minimum.
- Work through the example.
- Learners complete the activity individually or in pairs.

Activity 3

- Where do we see tables? Examples include timetables, oven temperature tables, wallpaper coverage tables etc.
- Tables have titles to tell us what they contain.
- Tables are made up of rows and columns. Identify the rows and columns.
- Discuss how to find information in tables – row first, then column.
- Work through the example.
- Learners complete the activity individually or in pairs.

LINKS: H1, H2

Page 5 How many dogs?

Activity 4

- Discuss what learners understand about bar charts.
- Discuss the title and labelling – they tell you what the chart is about.
- Discuss the key to the bars. Why is it needed?
- Remind them that the height of the bar shows how many.
- Ensure that learners understand most, least etc.
- Discuss how the bar chart helps to compare information about the types of dog.
- Work through the example on how to interpret the blue bar for pedigree dogs.
- Learners complete the activity individually or in pairs.

Pages 6 and 7

Are there more or less?

- Discuss why charts and pictograms are used to present information:
 - they give instant visual impact
 - they are easier to understand than tables of numbers.

Introduction to activity 5

This activity leads on from activity 4.

- Discuss what information is contained in the chart.
- How many types of animals are shown?
- How many months are shown?
- Discuss how the chart can be used to compare information about one type of animal over a period of three months.
- Discuss how the chart can be used to compare information about the three types of animals for one month.

Activity 5

- Work through the example and question 1 to ensure learners can interpret the bar chart.
- Learners complete the activity individually or in pairs.

Introduction to activity 6

This activity involves the use of pictograms to compare data.

- Discuss the fact that a pictogram is a way of showing information using symbols.
- Ask if anyone has seen pictograms in newspapers or magazines.
- Discuss the problems of reproducing a large number of symbols.
- Suggest that simple symbols are easier to reproduce. The same symbol must be used throughout.
- Symbols should be kept in vertical and horizontal lines.

Activity 6

- Discuss how to count the number of people – each symbol shows five people.
- Discuss what the part symbols stand for.

LINKS: M4

Pages 8 and 9

Tally!

Introduction to activity 7

- Ask learners how they count large numbers of items.
- Do they use their fingers?
- Ask learners how cricket umpires keep track of the number of balls bowled in an over? (Passing six marbles from one pocket to another is one method.)

Activity 7

- Discuss the way the information is presented. Is it easy to understand?
- Ask learners how they might tackle the problem.
- Introduce the idea of tallying.
- Show how the entries have been made in the table so far.
- Discuss how the learners can work in pairs to complete this activity.
- Discuss how the learners will count up the tallies.
- Introduce the idea of frequency.
- Discuss how to check that no item has been missed, by ticking off each item as it is used and by adding up the total at the bottom of the tally column.

Activity 8

- Discuss the numbers that need to be entered in the 'number of cats' column.
- Advise learners to cross out or tick the numbers once they have been used.
- Learners complete the activity individually.

LINKS: H3, E1, M1

Pages 10 and 11

A picture is worth a thousand words

Introduction to activity 9

- The results of the survey are given in a list. Is this easy to read?

Activity 9

- Talk about the table.
- Ask learners what the title tells us.
- Look at the row headings.
- Work through the completed column – 1 dog, 3 owners – to see what information goes in each row.
- Ask learners to complete the table individually or as a group.

Introduction to activities 10 and 11

- Do learners find tables easy to understand?
- Would a bar chart or pictogram be easier to understand? Why?
- Discuss the fact that charts have an immediate visual impact.
- Is it easier to see the figures values?

Activity 10

- Suggest learners look back at activity 5 (page 6) for a reminder on how to present a bar chart. Discuss the features.
- What is the highest number of owners? Discuss how to use this number to determine the scale of the vertical axis.
- Discuss the need to leave spaces between the bars when the items are separate.
- Remind learners to make all the bars the same width.
- Discuss the need for a title and for labels on the axes and at the base of each bar.

Activity 11

- Discuss where learners have seen pictograms.
- Discuss the problem of finding simple symbols.
- If the learners have access to computers, introduce the idea of using clipart.

- Remind learners that symbols should be in lines vertically and horizontally.
- Discuss the symbol for 5 and the part-symbol for 1, 2, 3 and 4; extend to larger numbers.
- Learners complete the activity individually.

Activity 12

- Decide whether you want learners to use a bar chart or a pictogram, or whether to give an open choice.
- Go through the salient points, looking at previous examples.
- Learners to complete the activity individually.

LINKS: H3, E2, E3, M2, M4

Pages 12 and 13

Help

H1

- Show learners how a ruler or other straight edge can be used to read across information in a table.

H2

- Learners work individually or in pairs.
- Discuss length and width and how this information is found on the plan.

H3

- Suggest that one learner reads the numbers and checks them off while the other completes the tally.
- Remind learners to cross off or tick each number as it is counted and to use the 'five-bar gate' to make it easier when they come to work out the totals.
- Make sure the learners understand how to draw a bar chart.
- Talk about the types of symbol that the learners could use in the pictogram.

Page 14

Extension

E1

- Ask learners to work in pairs for questions 1 and 2.
- Suggest learners use squared paper for pictograms and charts.
- Discuss how the learners will produce the bar chart.
- Remind learners to think about the scale.

E2

- Learners work individually or in pairs.
- Ensure learners have access newspapers and magazines – the tabloids are a good source of charts and diagrams.

E3

- Where ICT facilities are available, learners can explore:
 - using clipart for pictograms
 - using a spreadsheet program to produce bar charts.

Page 15

Mini-projects

M1

- A survey could be carried out as a group activity in class or individually amongst friends and relations.
- Discuss how the learners will collect the information.
- When information has been collected, discuss how the learners will record the information.

M2

- This mini-project can be carried out as a group activity.
- Learners will need access to newspapers and magazines.
- Discuss how the information is presented.
- Note what tables and charts are used.
- Learners report on their findings.

M3

- This mini-project can be carried out in pairs.
- Ask learners how they would find out where the nearest animal rescue centre is.
- Look in the *Yellow Pages* or the local directory under 'vets'.

M4

- This mini-project can be carried out in pairs or groups.
- Suggest some topics and suitable questions.
- Discuss recording results (tally or table?).
- Discuss entering the results in a table or as a diagram.

Check it

Use these questions to assess how the learners have coped with the skills in this unit. Ask learners to indicate the areas in which they would like help.

How am I doing?

Learners should complete this individually or with teacher support.