UK Association for Accessible Formats UKAAF

G014

Describing images 2: Charts and graphs

Guidance from UKAAF

UK Association for Accessible Formats (UKAAF)

Because format quality matters

Why format quality matters

"When organisations send me information in formats that I can read myself it allows me to be independent, feel informed and appreciated - just like every other customer."
End-user

"Producing consistently high quality accessible formats helps us to maintain our reputation, to gain new customers and to retain existing ones."
Transcription agency

"We are committed to ensuring that our customers with print disabilities receive the same information, of the same quality, as everyone else."
Service provider

Who is this guidance for?

This guidance from the UK Association for Accessible Formats (UKAAF) is primarily aimed at those within education or the workplace who are providing images as part of course materials, their business or presentations. It will be particularly useful in helping to create effective descriptions for blind and partially sighted users. It should be used if materials being provided contain images, or have been adapted with the images removed.

The 'Describing images' series

This guidance is part of the 'Describing images' series. The series consists of five guidance documents. This second document (G014) explains in more detail how to describe different types of charts and graphs. If help is needed with describing a different type of image then the relevant guidance document should be referred to:

1. General principles (G013)
2. Charts and graphs (G014)
3. Maps, maths and tables (G015)
4. Photographs, illustrations and works of art (G016)
5. Accessible images (G017)

This guidance document includes information on:

- Which images to describe
- How much detail to include
- How to structure a description
- Templates to help you structure your own image descriptions
- How to describe different types of charts and graphs

These guidelines are appropriate for image descriptions in the following formats:

- Print
- Electronic files such as Microsoft Word documents or PDF
- Audio files (such as DAISY)
- Web pages
- E-books
- Presentations
- Accessible images

These guidelines have been updated in collaboration with the Open University (OU) and are an update of the 'Guidelines for describing visual teaching material' (2004). Additional content has been produced by Claire Jones, Assistant Development Officer, (RNIB Centre for Accessible Information) and Emir Forken, Programme Manager, (OU).

Disclaimer

This guidance may include references to external websites, services or products for which UKAAF accepts no responsibility. This information is given without any representation or endorsement of those websites, services or products.

Contents

1 Acknowledgements

Many thanks to the Open University (OU) for agreeing to release these valuable guidelines.

Special thanks to Mary Taylor (OU) to recognise her long-standing commitment to making learning materials accessible to blind and partially sighted students and additional thanks to Emir Forken (OU) and Jeff Bashton (OU) for their contributions, feedback and support.

Many thanks to the team in RNIB's Centre for Accessible Information, particularly Sarah Home for her support and guidance and Caroline Walker, Alan Waller and Martin Fuller for taking the time to source images for use in this guide. Also Mary Steiner and Andrew Homer for their comments and Sarah Morley Wilkins for overall support.

Thanks also to Alan Waller who has kindly allowed some of his paintings and illustrations to be used in these guidelines.

Thanks also to Paul R. Lynch (Visual Impairment Centre for Teaching and Research (VICTAR), University of Birmingham) for his help and support and Philip Jeffs (RNIB) for helping to source images from the RNIB photographic archives.

2 Introduction

By obtaining these guidelines you are demonstrating your commitment to helping people with a print disability to read your materials if they find reading standard print materials difficult or impossible.

This guidance concentrates specifically on materials suitable for blind and partially sighted people - such as large print, audio, braille and electronic file formats. However, others with a print

disability, for example with dyslexia or motor-difficulties, may also find such materials necessary.

The provision of accessible information is a key requirement of the Equality Act which service providers must follow, but good customer service and business practice includes communicating with your customers and staff in ways which meet their reading needs. By providing accessible format materials, you not only demonstrate your commitment to equality and inclusion, but also increase your reach and customer base. It therefore makes good business sense.

This guidance will help you and your organisation to incorporate good practice into your business and provide good quality accessible format materials in a timely and appropriate way.

3 About UKAAF

The UK Association for Accessible Formats (UKAAF) is the industry association whose mission is to set standards for accessible formats that meet end-user needs through:

- development, delivery and promotion of codes, standards, and best practice for the production and provision of accessible formats
- consultation and collaboration with transcribers, service providers and users of accessible formats.

Members of UKAAF include organisations and individuals with an interest in the provision of quality accessible formats, such as service providers, transcribers, educators, researchers, print services, publishers, and end-users.

Through its leadership and representation, standards-setting, and by fostering a spirit of cooperation between members, UKAAF ensures that the needs and requirements of end-users are

understood by service providers and transcribers to help improve the quality of accessible formats.

Please see the section on "Where to get further help" towards the end of this document for more information about the benefits of being a member of UKAAF.

4 Definition of print disability

A print-disabled person is anyone for whom a visual, cognitive, or physical disability hinders the ability to read print. This includes all visual impairments, dyslexia, and any physical disabilities that prevent the handling of a physical copy of a print publication. Source: Copyright Licensing Agency Print Disability Licensing Scheme, Guidelines for Licensees 2010.

5 Describing charts and graphs

The examples of images within this guidance are found frequently within business and education. For each type of image there is an introduction that explains the purpose of the image. The examples presented are images used from different contexts and levels of complexity.

Examples of different types of chart, graphs, photographs and illustrations are provided. The introduction to each section gives guidance specific to those types of image and explains the purpose of the images. These can be used to help describe the purpose of the image to a blind or partially sighted person as well as enabling a person who is writing a description to understand the purpose behind the images.

A number of images have originated from courses within the Open University. Some of the accompanying text has been included so that you can see how much information has been repeated or expanded upon within the description.

There are templates available to use as a guide. Within the templates suggested words or prompts have been included within curly brackets {}. Delete the curly brackets and use any parts that are relevant and edit and adapt parts that are not needed as appropriate.

The templates have been developed in order to help structure a description effectively. Incorporated within the template is a brief overview of the appearance of the image. If it is felt that the appearance of an image is not important, then only include parts that present the data.

Refer to the document 'Describing images 1: General principles' (G013) for general guidelines for describing images.

Reviewing the purpose of the image

When describing charts and graphs, review the purpose of the image; whether the appearance of the image needs to be described or if just the data needs to be presented.

If only the data needs to be presented then:

- Give the title of the image along with any figure or reference numbers.
- Give the data.
- Describe any patterns the chart or graph shows that will be apparent to a sighted reader.
- State if there is no pattern showing.

6 Line graphs

A line graph / chart is a method of showing how something changes over time or a relationship between quantities. It shows a trend in how a variable, such as temperature or volume of sales increase, decrease, remain constant, or fluctuate over time.

Terms used to discuss line graphs:

- **Axes** – horizontal and vertical or x and y: these are drawn at right angles to each other. They are also divided into units to measure changing values, for example; pounds, centimetres or degrees centigrade. There can be an arrowhead at the end of an axes line to show the value is increasing.
- **The origin** – where the axes intersect each other. In simple graphs this is usually the bottom left corner of the graph. For more complex graphs the horizontal and vertical axes can extend to show a negative value.
- **Data points** – these marks plot data.
- **The line** – this joins the plotted data points on the graph. More than one line can be used on a graph. The line demonstrates the pattern of the values and can be used to estimate data between the points. Lines can be solid or shown in dots or dashes and colours to differentiate.
- **The intercept** – where the line crosses the axes. For example, the y-intercept is the point where the line crosses the y axes.
- **The slope or gradient** – the steepness of the line. A positive gradient increases and slopes upwards and a negative gradient slopes downwards.
- **Grid** – there is often a grid that makes it easier to plot or read values.

6.1 Line graph template

[Start of description]

This line graph is titled {include title if there is one} and shows how {variable} changes / rises / falls with changes in {variable}. {omit this if it is obvious from the caption}. {The graph is difficult to read accurately so data readings are approximate}.

The x or horizontal axis is labelled {label} and is marked in units of {}, from {} to {}, at intervals / divisions of {}.

The y or vertical axis is labelled {label} and is marked in units of {}, from {} to {}, at intervals / divisions of {}.

(If axes have no scale or labels, say so, for example 'The axes have no scales marked.')

The line is {straight / curved / irregular} and starts at {describe position and describe movement}.

This {peak / trough / position} is labelled {}.

The general trend is {upwards / downwards}.

{If the context requires numerical values not given in the main text, read them. If the graph is hard to read accurately, say so.}

The data is summarised in the table {adjust and format the table as appropriate}:

{Include any additional information essential for example answering assignments}.

[End of description]

6.2 Line graph example: Volume and temperature

6.2.1 Exert from accompanying text

Figure 1: When the volumes of Table 7.1 are plotted against absolute temperature, the result is a straight line which, if extended downwards, goes through the origin. This is a sign that the volumes are proportional to the absolute temperatures. Note that the downward extension suggests that if the contraction observed between 200°C and 0°C continues, the gas volume will become zero at 0K (273°C).

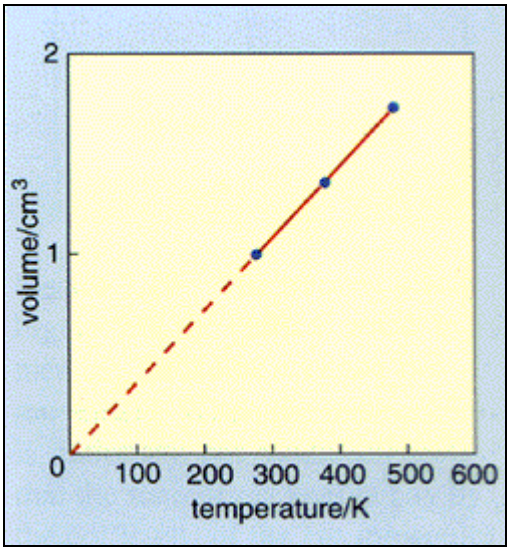

Figure 1: Temperature and column line graph

[Start of description]

This line graph shows how volume of gas rises in response to rise in temperature.

The horizontal axis is labelled 'Temperature / K' and is marked from 0 to 600 at intervals of 100K.

The vertical axis is labelled 'volume / cm^3,' and is marked from 0 to 2 at intervals of $1cm^3$.

There is no grid on the graph; the scale is too small for accurate readings but the three points marked can be deduced from the text and Table 7.1.

The line is straight, starts at the origin and rises at an angle. It is a dashed line to the point marked at temperature 273K, volume 1cm^3. The line is then solid, passing through the point marked at temperature 373K, volume 1.37cm^3, and continuing to rise to the point marked at temperature 473K, volume 1.73cm^3.

[End of description]

6.3 Line graph example: Historical trends

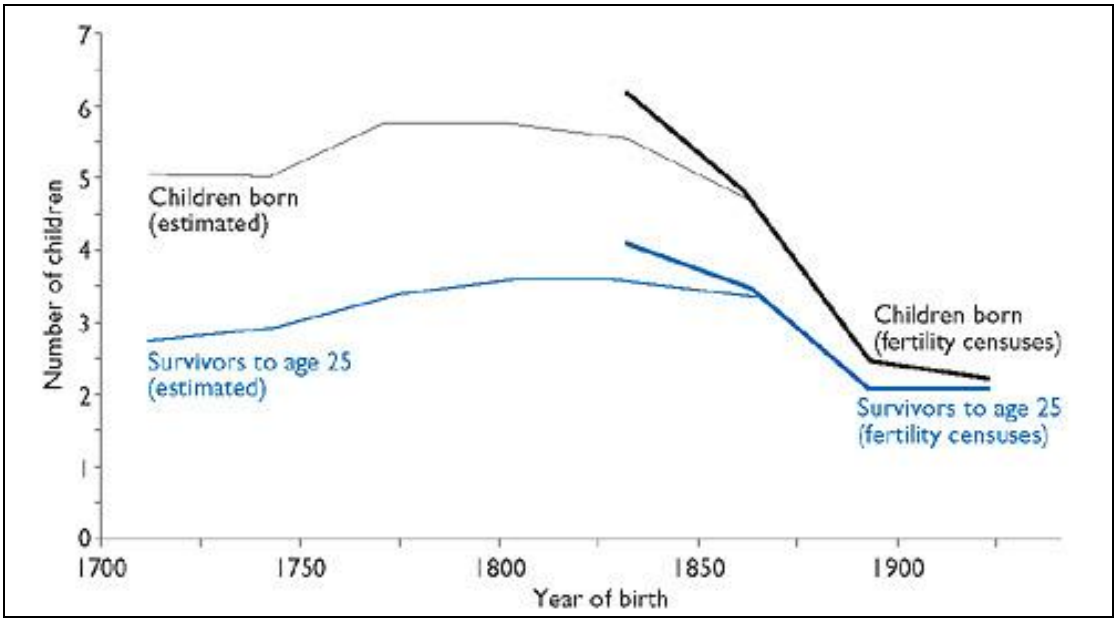

Figure 2: Historical trends in family size

[Start of description]

This line graph shows changes in family size from 1700 to 1925.

The horizontal axis is labelled 'Year of birth' and is marked in units of 100 years, from 1700 to 1900, with divisions at 25 years.

The y or vertical axis is labelled 'Number of children' and is marked in units from 1 to 7, with divisions of half units.

The chart shows no grid so dates given are estimated.

There are four lines on the graph. Two are lighter coloured lines; the top line is labelled 'Children born (estimated)', the lower is labelled 'Survivors to age 25 (estimated).' Two heavier coloured lines start at about 1830. The top line is labelled 'Children born (fertility census)' and the bottom line is labelled 'Survivors to age 25 (fertility census).'

Both the 'Children born' and 'Survivors to age 25' begin at about 1710. They both rise at first, then become level before dipping; with the gap between them starting to narrow from about 1860.

The line 'Children born' is level until 1745, showing a sharp rise to 1775 then levels out with a steady decline to 1845 and sharper decline to 1875 where it meets the heavier line 'children born (fertility census).'

In comparison, the line 'Survivors to age 25 (estimated)' shows a gradual rise to 1745; a slightly sharper increase in rise until 1775. It levels out at 1800 until 1845 with a slight decline to 1875 where it meets the line 'Survivors to age 25 (fertility census).'

The heavy lines both start at about 1840. The top line 'Children born (fertility census) shows a steep fall in 1870 (where it meets 'children born (estimated)'; then a steeper fall to 1890, with a steady decline past 1900.

In comparison, the darker line 'Survivors to age 25' shows a steadier decline to 1870; with a steeper drop to 1890 and levels out straight past 1900.

The estimated data is summarised in the following table at 25 year intervals.

Year	Children born (estimated)	Children born (census)	Survivors (estimated)	Survivors (census)
1725	5.0	2.8	-	-
1750	5.0	3.0	-	-
1775	6.6	3.2	-	-
1800	5.6	3.5	-	-
1825	5.5	3.5	-	-
1850	5.0	3.5	5.5	3.8
1875	-	-	3.9	2.8
1900	-	-	2.5	2.2
1925	-	-	2.4	2.3

[End of description]

6.4 Line graph example: Product sales

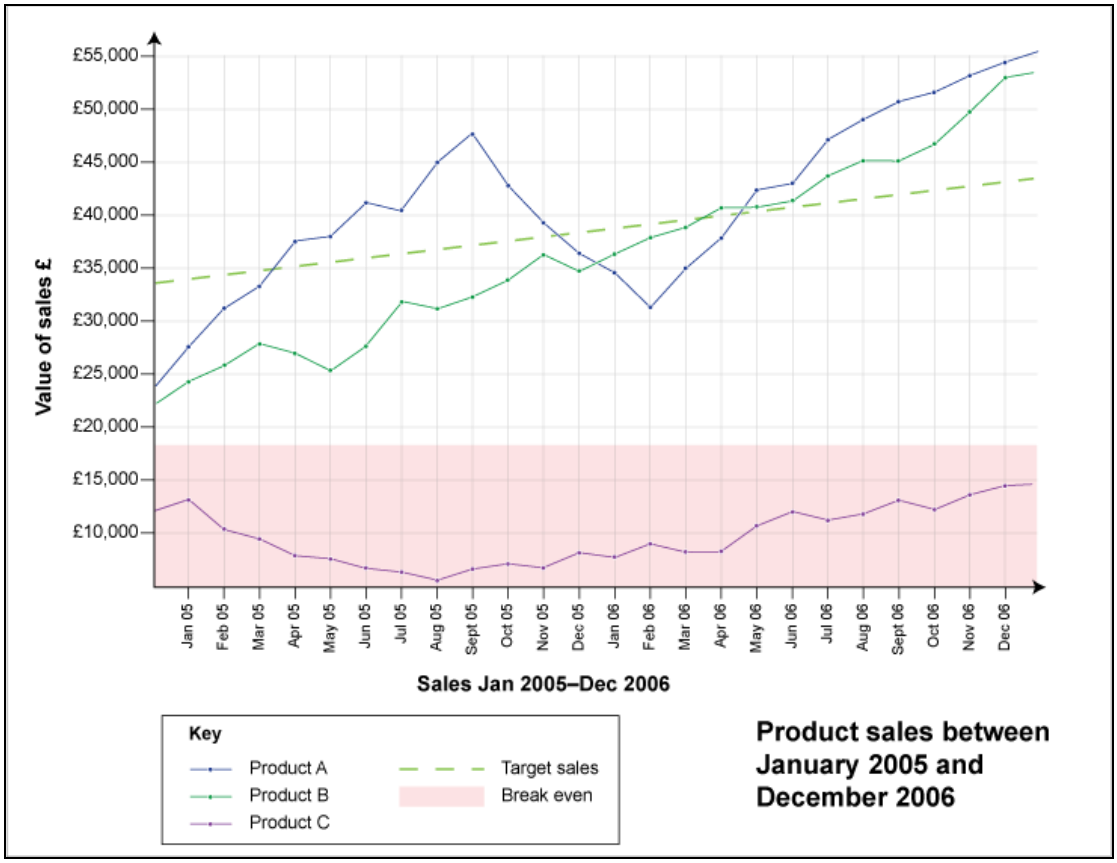

Figure 3: Product sales between January 2005 and December 2006

[Start of description]

This line graph shows how three product sales change over time. The graph is difficult to read accurately so data readings are approximate.

The x axis is labelled 'Sales Jan 2005–Dec 2006' and each month is marked. The y or vertical axis is labelled 'Volume of sales £' and is marked in pounds, from £10,000 to £55,000 at intervals of £5,000.

A section marking the break even point remains level at £18,000 across the chart. At £34,000 the target sales point is marked by a dashed line rising to just above £44,000 in December 06.

Product A shows an initial sharp rise in sales, with small fluctuations until September 05, reaching £47,500; where it drops sharply to £30,000 in Feb 06, and it rises sharply again to £53,000 in December 06. Product A rises above the target sales line in mid March 05 at £34,000; it falls below target sales at £36,000 in mid November 05 and rises above target sales during mid April 06 at £39,000.

Product B shows a more gradual rise in sales with minor falls. Product B rises above the target sales in mid March 06 at £38,000, and exceeds sales of product A between mid December 05 and Mid April 06.

Product C never rises above the break even point. It shows a steady decline in sales, then a gradual rise from August 05.

The data is summarised in the table:

Date	Target sales	Product A	Product B	Product C
Jan 05	£34,000	£27,000	£24,000	£13,500

Feb 05	£34,500	£31,000	£25,500	£10,100
Mar 05	£34,800	£34,000	£27,000	£9,500
Apr 05	£35,100	£37,500	£26,500	£8,000
May 05	£35,500	£37,800	£25,100	£7,900
Jun 05	£35,800	£41,000	£27,000	£7,000
Jul 05	£36,000	£40,800	£32,000	£6,500
Aug 05	£36,500	£45,000	£31,000	£6,000
Sept 05	£37,000	£47,500	£32,000	£7,000
Oct 05	£37,500	£42,500	£33.800	£7,900
Nov 05	£38,000	£39,000	£36.000	£7,000
Dec 05	£38,500	£36,500	£34.800	£8,100
Jan 06	£39,000	£34,800	£36,500	£8,000
Feb 06	£39,100	£31,000	£37,500	£9,000
Mar 06	£39,300	£35,000	£38.500	£8,100
Apr 06	£39,900	£37,800	£40,900	£8,100
May 06	£40,100	£42,000	£40,800	£10,900
Jun 06	£41,000	£42,500	£41,000	£12,100
Jul 06	£41,500	£47,400	£43,200	£11,500
Aug 06	£42,000	£49,000	£45,100	£12,000
Sept 06	£42,500	£50,500	£45,100	£13.500
Oct 06	£43,000	£52,000	£47,000	£12,500
Nov 06	£43,500	£54,000	£79,800	£14,000
Dec 06	£44,000	£54,800	£53,900	£14,900

[End of description]

7 Scatter graphs

Scatter graphs / diagrams are a useful way of conveying information about two sets of data; for example height and weight or time and speed.

The horizontal and vertical axes are used to plot points that are then used to see if there is a correlation or connection within the data. Plotted data values are shown as dots, crosses or other

small shapes. If there is a pattern, a line or shaded band may indicate a trend or best fit. The closer the data marks are to each other; the stronger the correlation. Data showing an upwards pattern is a positive correlation and data showing a downwards pattern is a negative correlation.

7.1 Scatter graph template

[Start of description]

This scatter graph is titled {} and shows how {} changes / varies with changes in {}.

The {x / horizontal} axis is labelled {label} and is marked in units of {}, from {} to {}, at intervals of {}.

The {y / vertical axis} is labelled {label} and is marked in units of {}, from {} to {}, at intervals of {}.

{If axes have no scale or labels, say so, for example, 'axes have no scales marked.'}

The points {show a general trend / do not show any pattern}.

The general trend is {upwards / downwards}.

The width of the scatter is approximately {}.

{If the context requires numerical values not given in the main text, read them. If the graph is hard to read accurately, say so.}

{Include any additional information essential, for example answering educational assessments.}

[End of description]

7.2 Scatter graph example: Growth of insects

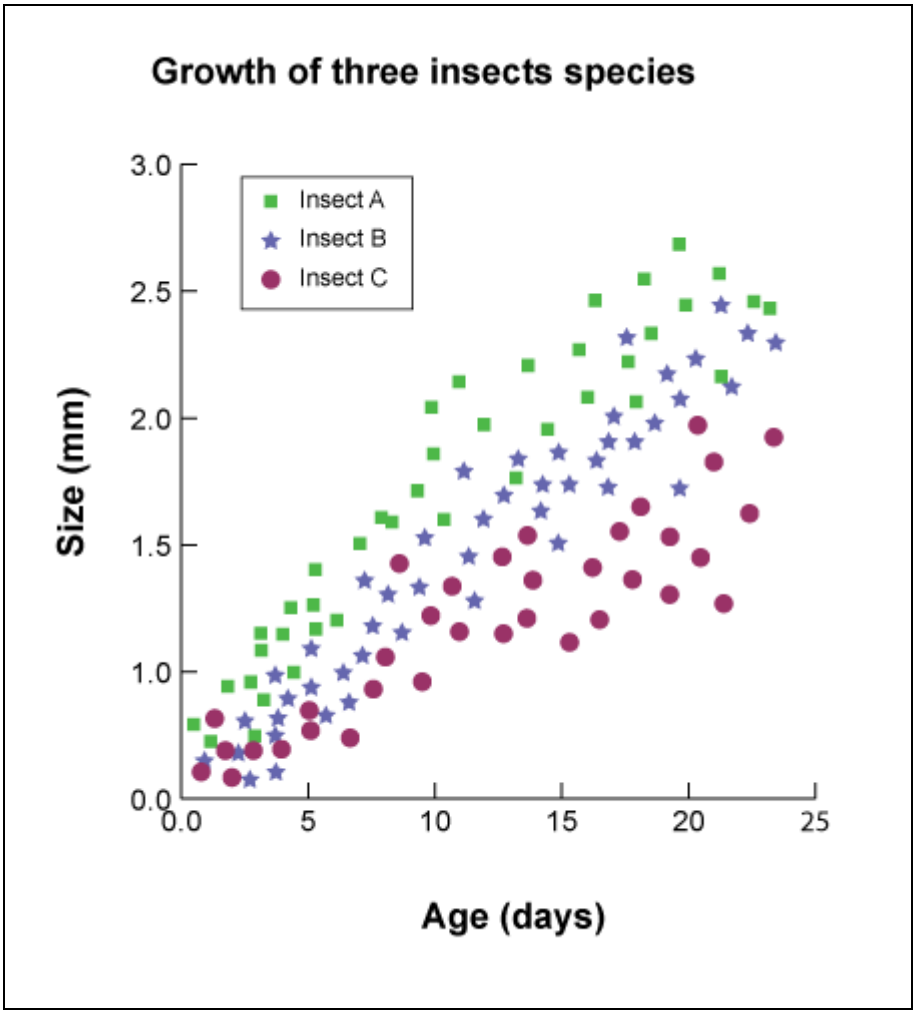

Figure 4: Growth of three insect species

[Start of description]

This scatter graph is titled Growth of three insect species and shows how their growth changes over time.

The x / horizontal axis are labelled 'Age (days)' and are marked in days from 0.0 at the origin to 25 days, at intervals of 5 days.

The y / vertical axis is labelled 'Size (mm)' and is marked from 0.0 at the origin to 3.0, at intervals of 0.5mm.

The points show that all insects increase gradually in size. The general trend shows that insect A grows the largest; insect C is the smallest, with insect B in-between.

The general trend is upwards.

The width of the scatter widens as the insects grow, showing more variation in size as the insects grow.

There are many points marked, so the data is hard to read accurately.

[End of description]

8 Pie charts

A pie chart is a way of presenting proportional data. It resembles a round pie viewed from above and divided into wedge-shaped slices, with points meeting at the centre of the pie. Each segment or slice shows its proportion to the whole pie and can be shown as percentages.

For example, suppose that the 200 staff of an organisation can be divided as follows:

- Number of Senior managers: 20 or 10%
- Number of Other managers: 30 or 15%
- Number of Administrative staff: 70 or 35%
- Number of Clerical staff: 80 or 40%
- Total number of staff: 200 or 100%

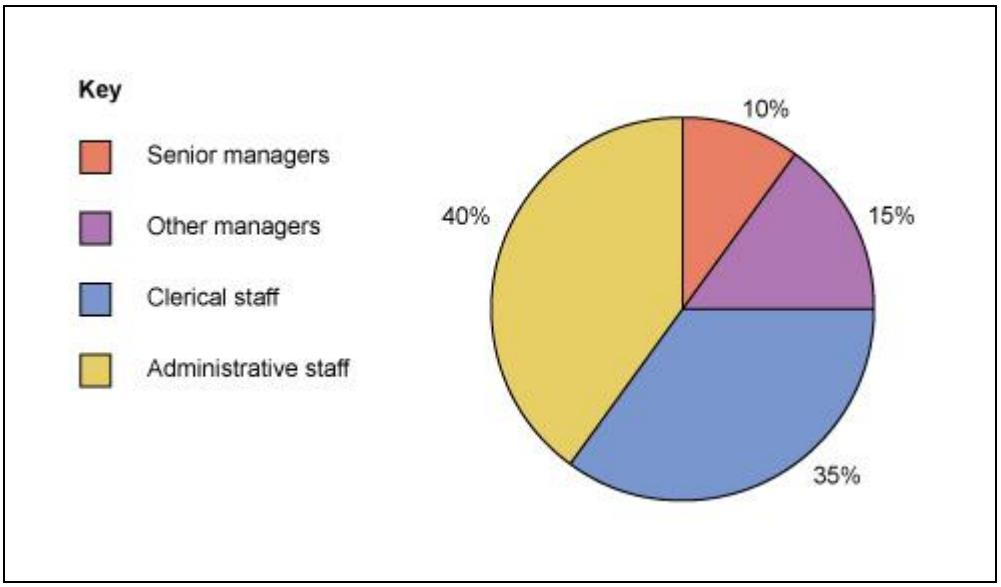

Figure 5: Example pie chart showing percentages of staff

The area of a segment or size of a slice of the pie chart corresponds to the proportion that the category occupies of the whole. The smallest slice is 'Senior managers', occupying 10% of the pie; the next largest is the segment marked 'Other managers' occupying 15 per cent of the whole pie, and so on.

Pie charts may be labelled on the slices, or the slices may be coloured and a key given. Some charts may have one or more segments pulled outwards from the centre to emphasise a point, leaving gaps between them. These are sometimes called exploded pie charts.

8.1 Pie chart template

[Start of description]

This pie chart is titled {} and shows the relative proportions of {} {omit this if it is obvious from the caption}.

The chart shows that {brief explanation of any trend or pattern if relevant}.

The data is given in the table {adjust and format the table as necessary}:

{Include any additional information essential, for example answering educational assessments.}

[End of description]

8.2 Pie chart example: Factory processes

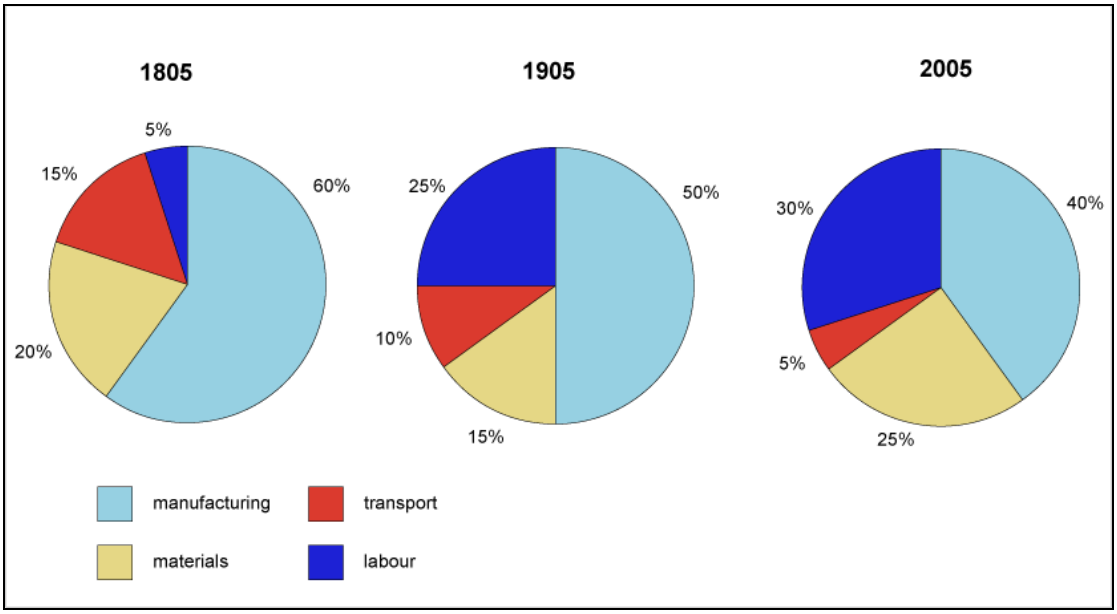

Figure 6: Three pie charts showing data for the factory processes of manufacturing; materials, transport and labour for 1805, 1905 and 2005

[Start of description]

For manufacturing, the three charts show a decline from 1805 to 2005. For labour there is an increase; for transport there is a decrease, for materials shows a decrease; then increase.

The data is given in the tables as follows:

Section	1805	1905	2005
Manufacturing	60%	50%	40%
Materials	20%	25%	30%
Transport	15%	15%	25%
Labour	5%	10%	5%

[End of description]

8.3 Pie chart example: Curriculum subjects

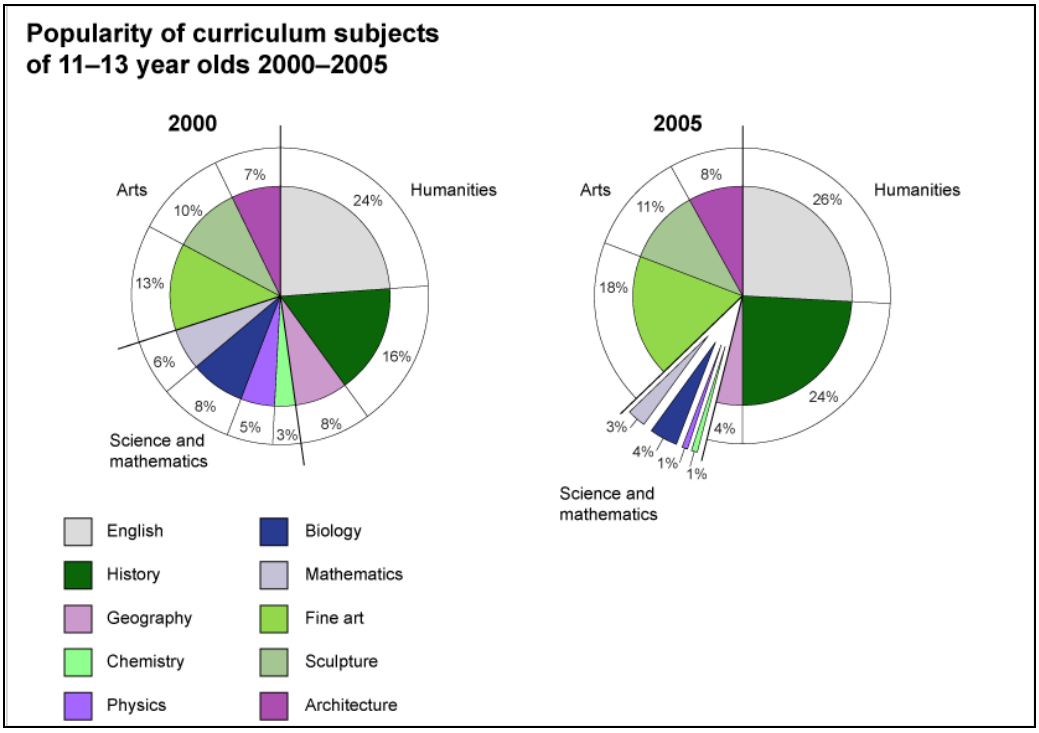

Figure 7: Two pie charts showing the popularity of curriculum subjects of 11–13 year olds between 2000–2005

[Start of description]

The two pie charts show in general that the arts and humanities have increased in popularity, whilst the sciences and maths have declined.

The figures are given in the table:

Subject	2000	2005
English	24%	26%
History	16%	24%
Geography	8%	4%
Chemistry	3%	1%
Physics	5%	1%
Biology	8%	4%
Mathematics	6%	3%

Fine art	13%	18%
Sculpture	10%	11%
Architecture	7%	8%

[End of description]

9 Bar charts

Bar charts are sometimes referred to as bar graphs or column charts. They are used to show the relative quantities of different categories or items. Each item can be considered as a standard width bar or rod of a particular length; the items are laid out in a row with one end resting either on a horizontal line, that is as columns, or against a vertical line, as rows.

The bars can be aligned at the top, bottom, left or right, but usually at the bottom or left.

The bars may be labelled or coloured with an identification key and the length of the bars may be shown by a scale marked on an axis.

More complex bar charts may have groups of items, for example columns split into multiple columns which show the values of same items over several years.

9.1 Bar chart template

[Start of description]

This bar chart is titled {}. It is {stacked horizontally / vertically / grouped} and shows {}.

The {vertical / horizontal} scale runs from {} to {} {units} and is marked at intervals of {}.

The bars from {left to right / top to bottom} are labelled {}.

The chart shows that {main trends etc.}.

Reading values from the chart {}

{Include any additional information essential, for example answering educational assessments.}

[End of description]

9.2 Bar chart example: Total branch sales

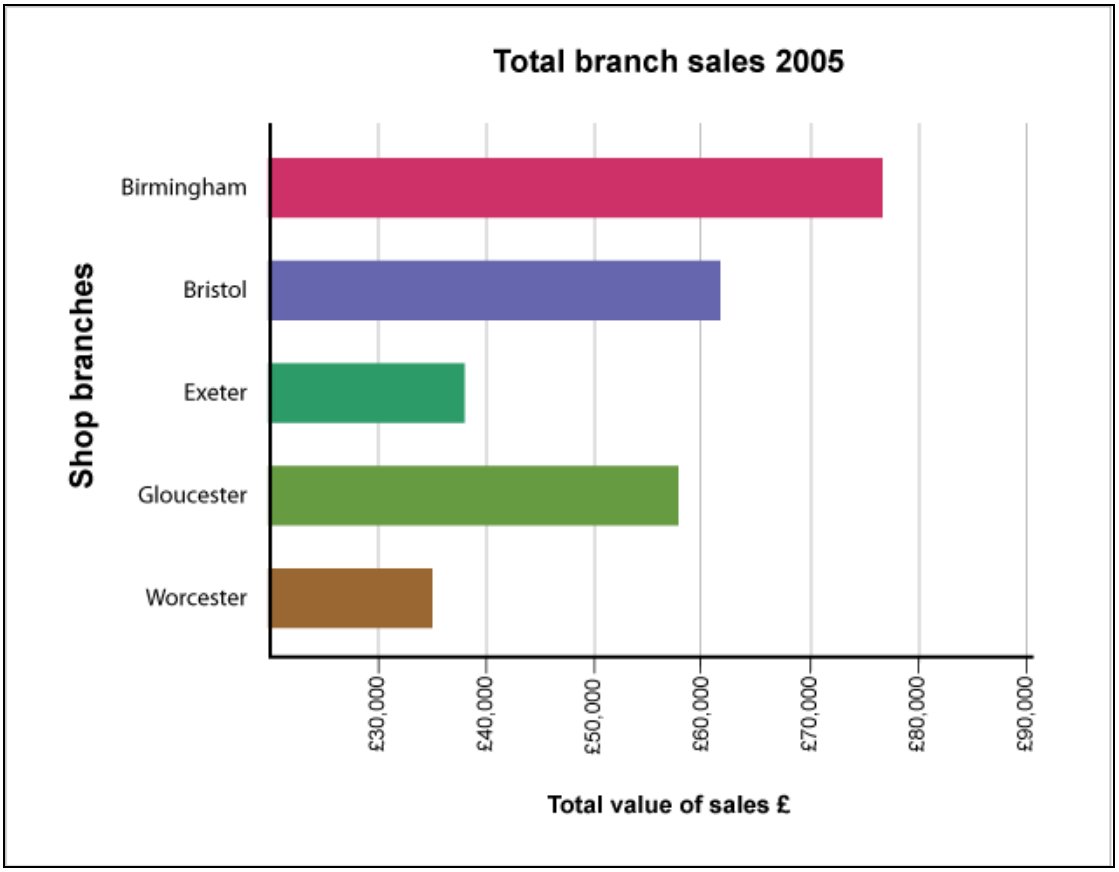

Figure 8: Bar chart of total branch sales 2005

[Start of description]

Figure 8 is a horizontal bar chart showing the total sales of five shop branches. The horizontal bars labels the shop branches by city; Birmingham; Bristol; Exeter; Gloucester and Worcester.

The horizontal scale is labelled in pounds from £30,000 to £90,000 and is marked in units of £10,000.

The chart shows approximate figures and an exact value cannot be given. The sales are summarised in the following list from the highest sales to the lowest:

- Birmingham = £77,000
- Bristol = £61.000
- Gloucester = £58,000
- Exeter = £38,000
- Worcester = £35,000

[End of description]

9.3 Bar chart example: Total product sales

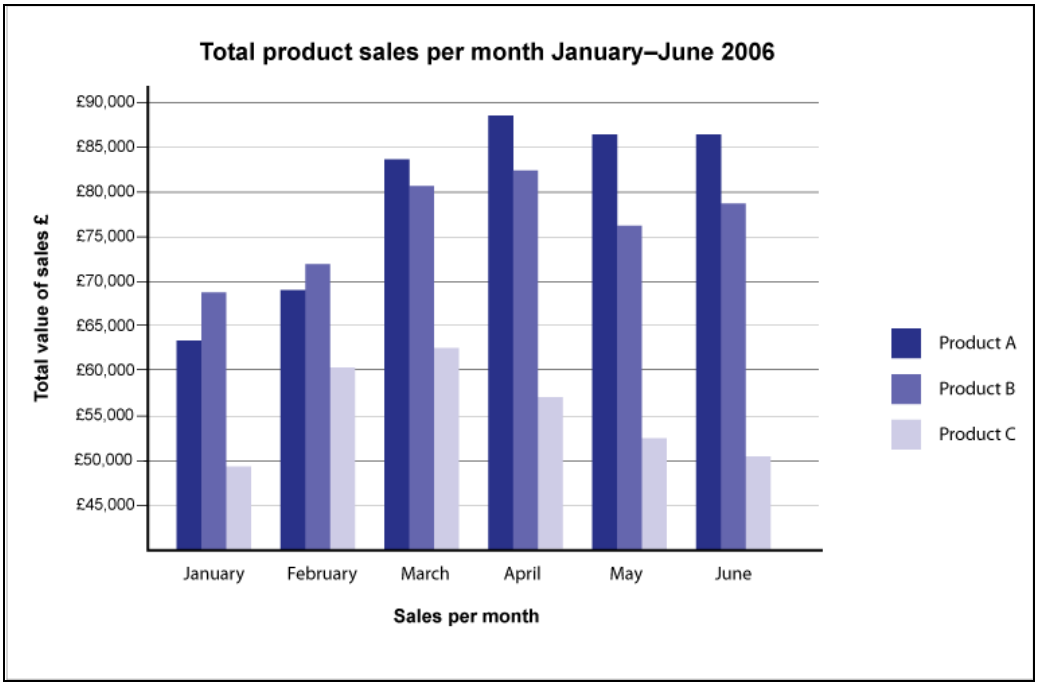

Figure 9: Bar chart showing total product sales per month January – June 2006

[Start of description]

Figure 9 is a vertically stacked bar chart showing total sales for three products between January and June 2006.

The vertical scale runs from £45,000 to £90,000 and is marked at intervals of £5,000. The bars from left to right are labelled monthly from January to June. Each month shows three bars; one bar for each product A, B and C.

The chart shows clearly that sales for each product rises, and then drops around March – April. The following table shows the approximate sales:

Month	Product A	Product B	Product C
January	£64,000	£69,000	£49,500
February	£69,000	£71,500	£60,000
March	£84,000	£81,000	£62,000
April	£87,000	£82,000	£57,000
May	£86,000	£76,000	£52,000
June	£86,000	£79,000	£50,500

[End of description]

10 Flow charts

A flow chart is a representation of steps in a process. They are often used to show manufacturing processes, business systems or software processes.

The chart is made up from different shaped boxes or symbols for different types of steps and they are joined by lines which may have arrowheads to show a direction of flow. The lines are usually drawn as vertical or horizontal, with right-angled bends if needed. The boxes and arrows may be labelled. Charts are usually arranged so that the process flows from top to bottom or from left to right on a page.

Different subject authors may use different symbols, some commonly used symbols are:

- a plain rectangle used for a simple step

- an oval or bar with rounded ends used for the start or end of a process, called a terminator
- a diamond shape used for a step requiring a decision or interaction at a point in a process which can continue in more than one way or branch
- a rectangle with a curved bottom edge representing a document
- a box with horizontal top and bottom edges but sloping parallel sides used to represent data
- a bar with only one round end representing a delay or pause
- a small circle representing a connection to another section of a chart.

A simple flow chart for making coffee might have a terminator symbol at the top labelled 'start' with a line joining it to a step beneath it labelled 'fill kettle.' The next step down would be 'switch on kettle,' followed by a step 'add powder to cup.' This would be followed by a delay symbol labelled 'wait for kettle to boil.' The next step would be 'make coffee,' followed by a terminator symbol.

For optional coffee with milk, a decision step would be added after 'make coffee,' the diamond would be labelled 'with milk?' with the option 'yes' marked on a line joining it to a step to the side labelled 'add milk' and an option labelled 'no' on a line which continues down to the terminator symbol. The step 'add milk' would have a line leading down then across to meet the line leading down to the terminator.

10.1 Flow chart template

[Start of description]

This flow chart is titled {} and shows the {process / flow / ...}.

{Optional list of symbols or explain symbols used}.

{Describe overall process and start and end points}.

{Describe simplest path first, if necessary define subsections and relation to each other, then details of sub-sections.}

{Include any additional information essential, for example answering educational assessments.}

[End of description]

10.2 Flow chart example: Job application process

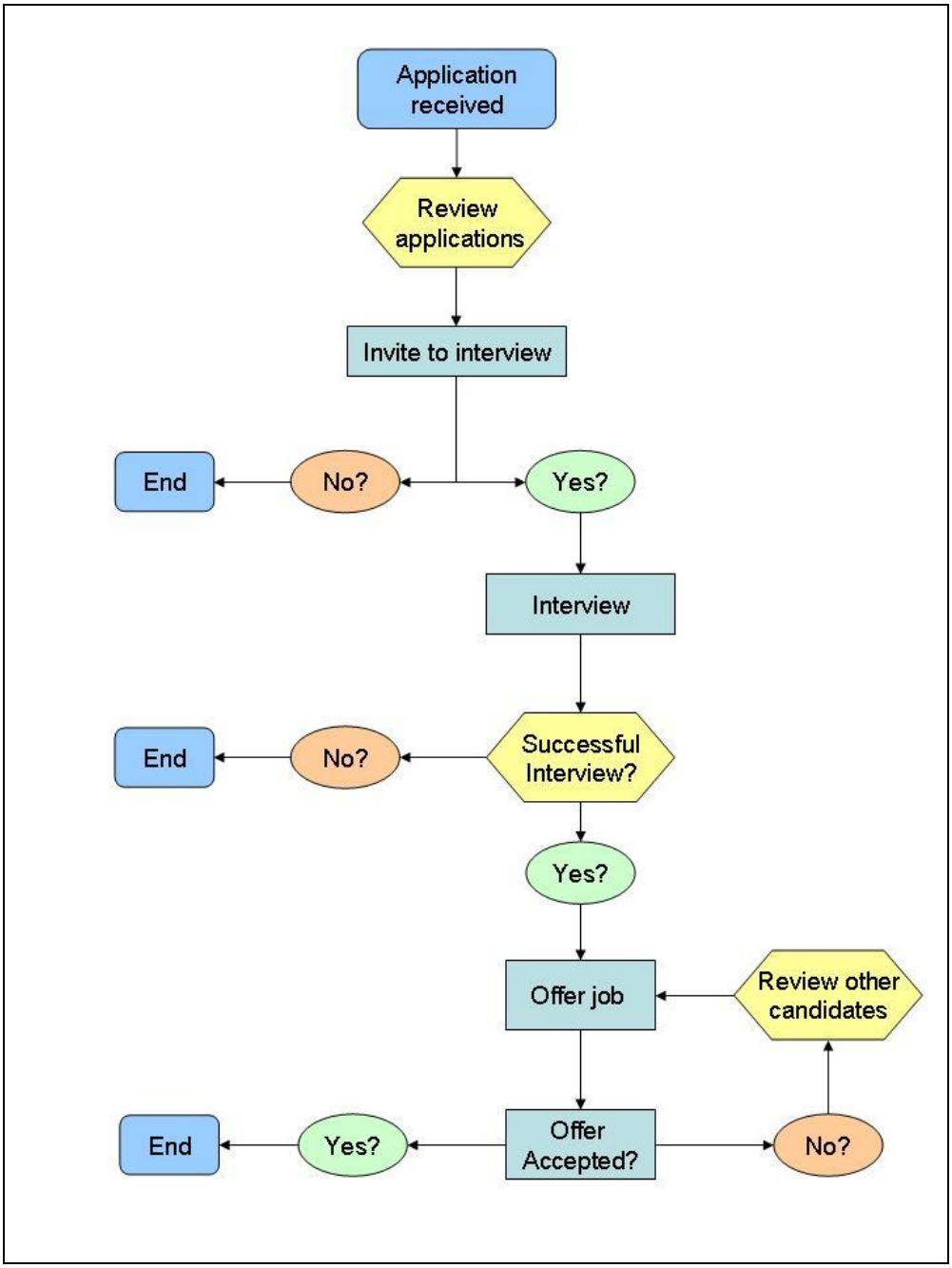

Figure 10: Flow chart of job application process

[Start of description]

Figure 10 shows the job application process for an organisation.

The symbols used signify:

- Rectangles = actions

- Rounded rectangles = the beginning or end of a process
- Hexagons = team decisions
- Ovals = yes / no statements.

The process starts with ‘Application received' and there are four possible paths.

Path one:

- Start: application received
- Team decision = review applications
- Action = invite to interview
- If no, end of application.

Path two:

- Start: application received
- Team decision = review applications
- Action = invite to interview
- If yes, conduct interview
- Team decision = successful interview?
- If no, end of application.

Path three:

- Start: application received
- Team decision = review applications
- Action = invite to interview
- If yes, conduct interview
- Team decision = successful interview?
- If yes, offer job
- Action = offer accepted?
- If no, review other candidates

- Action = offer job
- Action = offer accepted?
- If no, chart continues cycle until yes is obtained
- Then end.

Path four:

- Start: Application received
- Team decision = review applications
- Action = invite to interview
- If yes, conduct interview
- Team decision = successful interview?
- If yes, offer job
- Action = offer accepted?
- If yes, end process.

[End of description]

10.3 Flow chart example: Team structure

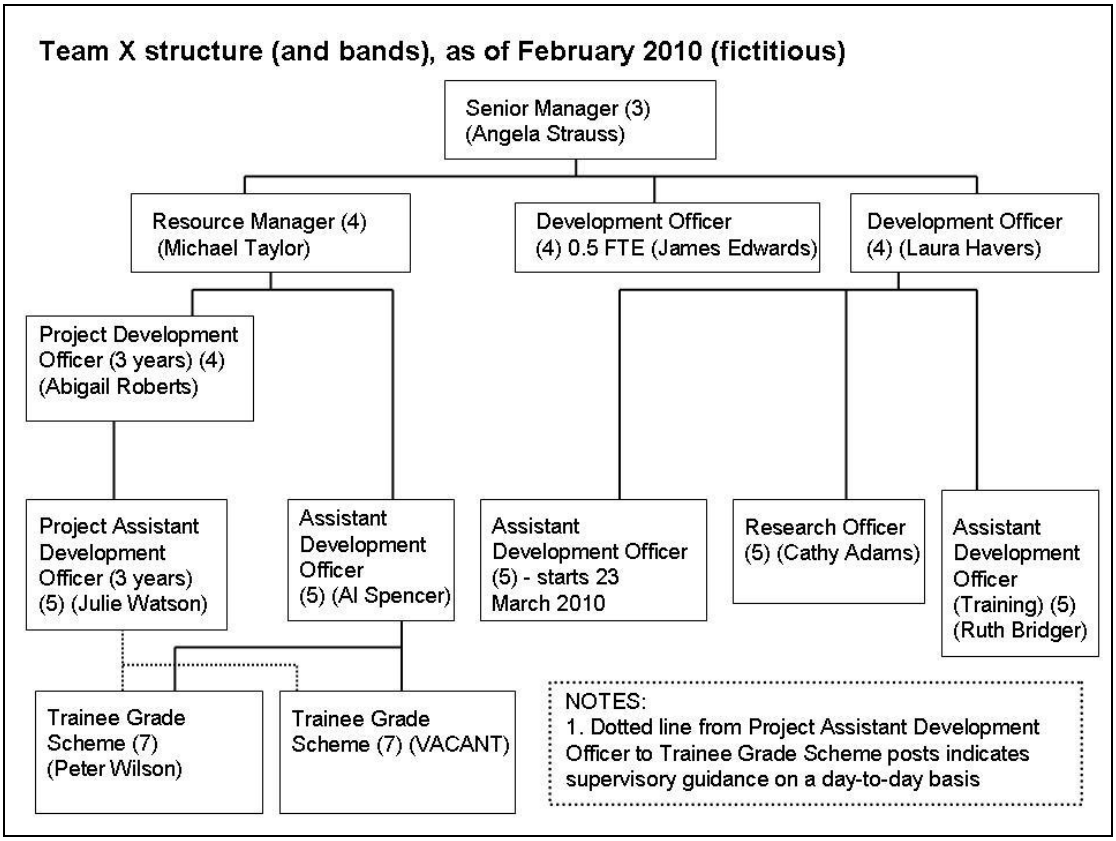

Figure 11: Flow chart of Team X structure (and bands), as of February 2010 (fictitious)

[Start of description]

- Senior Manager (Band 3): Angela Strauss

Reporting to Senior Manager (Band 3): Angela Strauss

- Resource Manager (Band 4): Michael Taylor
- Development Officer (0.5 FTE) (Band 4): James Edwards
- Development Officer (Band 4): Laura Havers

Reporting to Resource Manager (Band 4): Michael Taylor

- Project Development Officer (3 years) (Band 4): Abigail Roberts
- Assistant Development Officer (Band 5): Al Spencer

Reporting to Project Development Officer (3 years) (Band 4): Abigail Roberts

- Project Assistant Development Officer (3 years) (Band 5): Julie Watson

Reporting to Development Officer (Band 4): Laura Havers

- Research Officer (Band 5): Cathy Adams
- Assistant Development Officer (Training) (Band 5): Ruth Bridger

Reporting to Assistant Development Officer (Band 5): Al Spencer

- Trainee Grade Scheme (Band 7): Peter Wilson
- Trainee Grade Scheme (Band 7): Vacant

Notes:

Supervisory design guidance on a day-to-day between Project Assistant Development Officer to Trainee Grade Scheme posts.

[End of description]

11 Matrix charts

Matrix charts, also known as matrix diagrams, shows the relationship between different groups of information. It also gives information about the relationships between these groups.

11.1 Matrix template

[Start of description]

This figure is titled {title}.

This figure {write a brief description here if required.}

This figure is in the form of a two by two matrix meaning it has two rows and two columns formed by an x or horizontal axis and a y or vertical axis which cross at a central point.

The columns are labelled {label}, the left-hand column is labelled {label} and the right-hand column is labelled {label}.

The rows are labelled {label}, the top row is labelled {label} and the bottom row is labelled {label}.

Starting at the top {left / right} and moving in a clockwise direction the first quadrant {label and label} explain.

The next quadrant {label and label} {describe}.

The third quadrant {label and label} {describe}.

The final quadrant {label and label} {describe}.

[End of description]

11.2 Matrix example: Two by two matrix

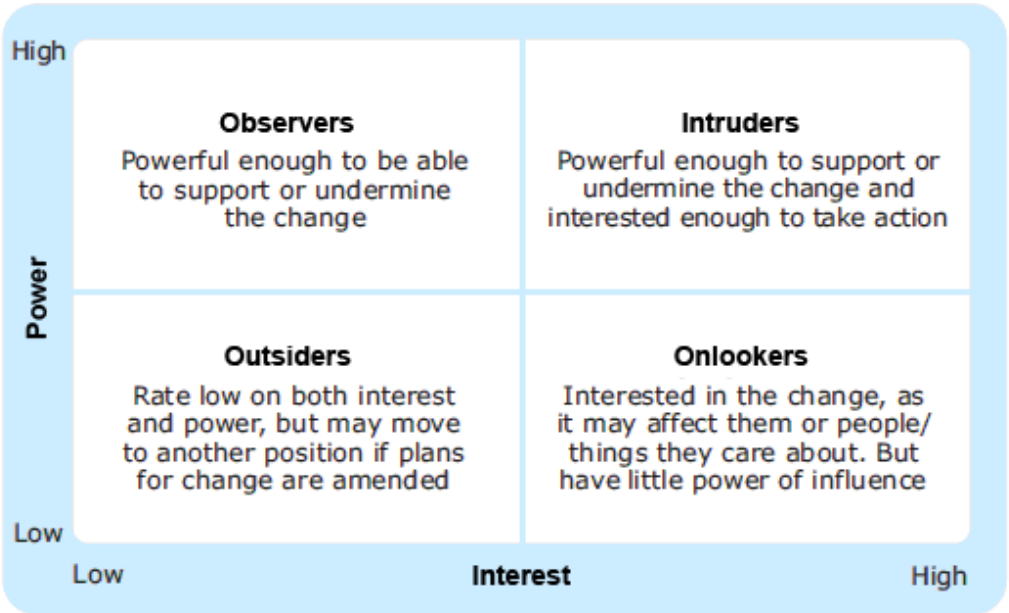

Figure 12: Power-versus-interest map

[Start of description]

This figure is titled figure 12: Power-versus-interest map.

This figure is in the form of a two by two matrix meaning it has two rows and two columns.

The columns are labelled interest; the left-hand column is labelled low power and the right-hand column is labelled high power.

The rows are labelled power; the top row is labelled high power and the bottom row is labelled low power.

Starting at the top right and moving in a clockwise direction the first quadrant is high power and high interest and is labelled intruders - Powerful enough to support or undermine the change and interested enough to take action.

The second quadrant is high power and low interest and is labelled onlookers – interested in the change, as it may affect them or people/things they case about. But have little power of influence.

The third quadrant is low power and low interest and is labelled outsiders – rate low on both interest and power, but may move to another position if plans for change are amended.

The final quadrant is high power and low interest and is labelled observers – powerful enough to be able to support or undermine the change.

[End of description]

12 Pyramid diagrams

Pyramid diagrams are used to show hierarchical relationships; it is made up of labelled horizontal sections. The diagram can be read from the top or bottom.

12.1 Pyramid diagram template

[Start of description]

This figure is titled {title}.

This figure {write a brief description here if required.}

This figure is represented as a pyramid with horizontal segments, the segments narrowing as the height increases. The pyramid has {number} segments.

The bottom segment is labelled {label}.

The next segment is labelled {label}.

{Etc.}

The top of the pyramid is labelled {label}.

[End of description]

12.2 Pyramid diagram example: Knowledge hierarchy

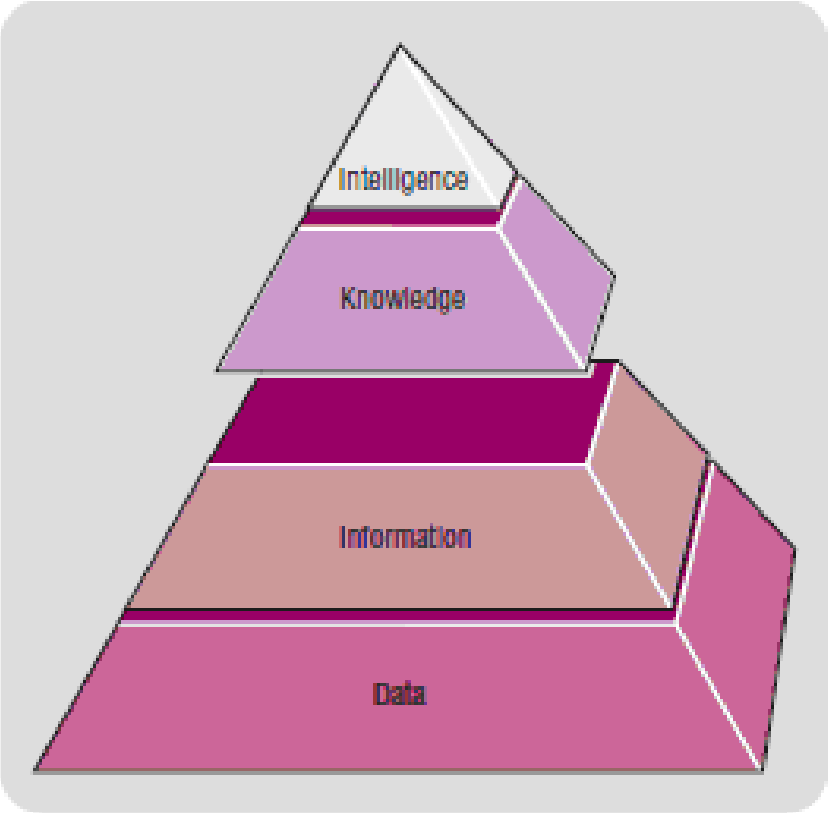

Figure 13: A knowledge hierarchy (Source: adapted from Skyme, 1998)

[Start of description]

This figure represents a knowledge hierarchy and is represented as a pyramid with four horizontal segments; the segments narrowing as the height increases. There is a larger gap between the two segments in the middle of the pyramid.

The pyramid has four segments. From bottom to top:

The bottom segment is labelled data.

The next segment is labelled information.

The next segment is labelled knowledge.

The top segment is labelled intelligence.

[End of description]

13 Cycle diagrams

Cycle diagrams could be treated as a particular case of a flow chart.

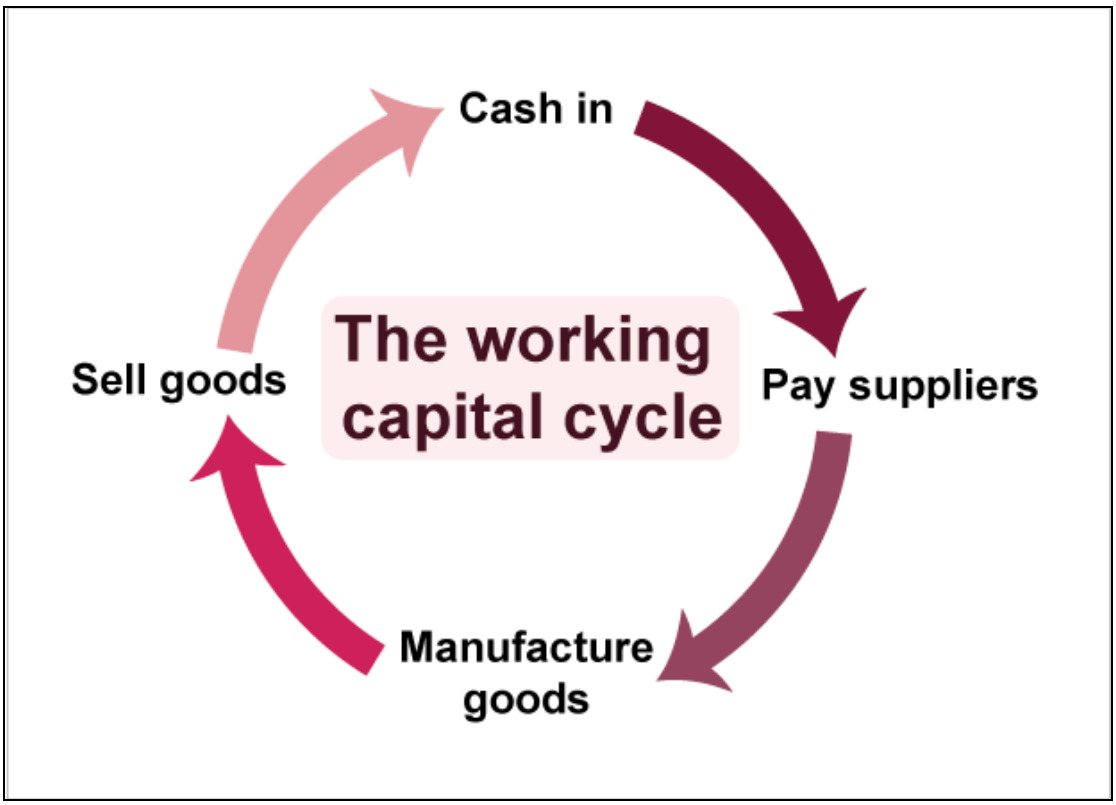

Figure 14: Cycle diagram of the working capital cycle

Cycle diagrams are used to summarise the stages in a process which is a cyclical or closed loop.

The process is shown as a circle; there are breaks in the circle, labelling each stage of the process, and an arrowhead on each section showing the direction of the process.

A simple example of a four stage cycle diagram is figure 14: the feedback loop showing how the working capital cycle works.

The loop is represented by a circle which is broken up by four labels at the top and bottom and left and right of the circle. The

four sections of the circle have arrowheads indicating a clockwise flow.

There are four stages in this diagram starting at the top with 'Cash in,' the next steps clockwise are 'Pay suppliers,' 'Manufacture goods,' and 'Sell goods' which completes the circle.

This type of diagram may include additional factors which relate to the process being indicated by arrows from labelled boxes outside the circle to the relevant stage.

13.1 Cycle diagram template

[Start of description]

This cycle diagram is titled and shows {...} as a {two / three / four} step cycle diagram.

Arrows indicate that the process flows {clockwise / anticlockwise}.

Starting at the {top / bottom / left / right}, the first step is labelled '{}' The connecting arrow is labelled '{}'

This is followed by {}.

The next step is {}.

This completes the circle.

Additional / side steps from {} to {} are {}.

{Include any additional information essential, for example answering educational assessments.}

[End of description]

14 Radial diagrams

Radial diagrams are organisational charts. Each item is related to a core item in the centre of the diagram. The chart can be read from inside out or outside in.

14.1 Radial diagram template

[Start of description]

This figure is titled {title}.

This is a radial diagram with a central point labelled {label}.

There are {number} {items} around this central point which link to the centre by {lines / arrows}.

Starting from the top and moving in a clockwise direction the items are {label}, {label}, {label}.{etc}.

[End of description]

14.2 Radial diagram example: Financial statement interest

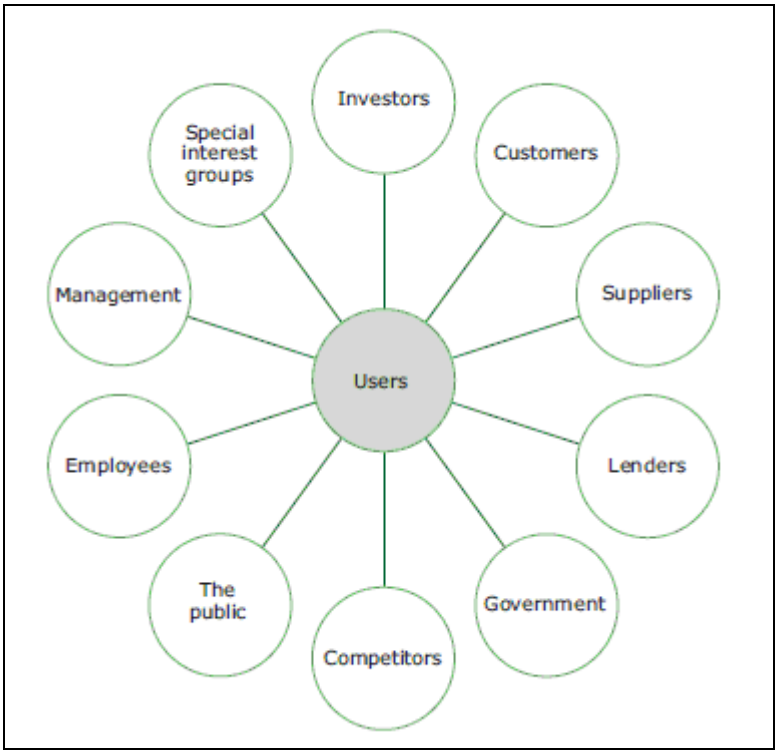

Figure 15: Different users and stakeholders with an interest in public company financial statements

[Start of description]

This image is titled 'Figure 15: Different users and stakeholders with an interest in public company financial statements.'

This is a radial diagram with a central point labelled users. There are ten stakeholders around this central point which link to the users.

Starting from the top and moving in a clockwise direction the stakeholders are investors, customers, suppliers, lenders, government, competitors, the public, employees, management and special interest groups.

[End of description]

15 Target diagrams

Target diagrams are used to show progress towards a goal. Each layer is a move towards the goal at the centre of the diagram. Target diagrams can be read from the inside out or outside in.

15.1 Target diagram template

[Start of description]

This figure is titled {title}.

This figure {write a brief description here if required.}

This figure consists of {number} concentric circles.

The centre is labelled {label}.

The middle ring is labelled {label}.

The outer ring is labelled {label}.

[End of description]

15.2 Target diagrams example: Manager's job

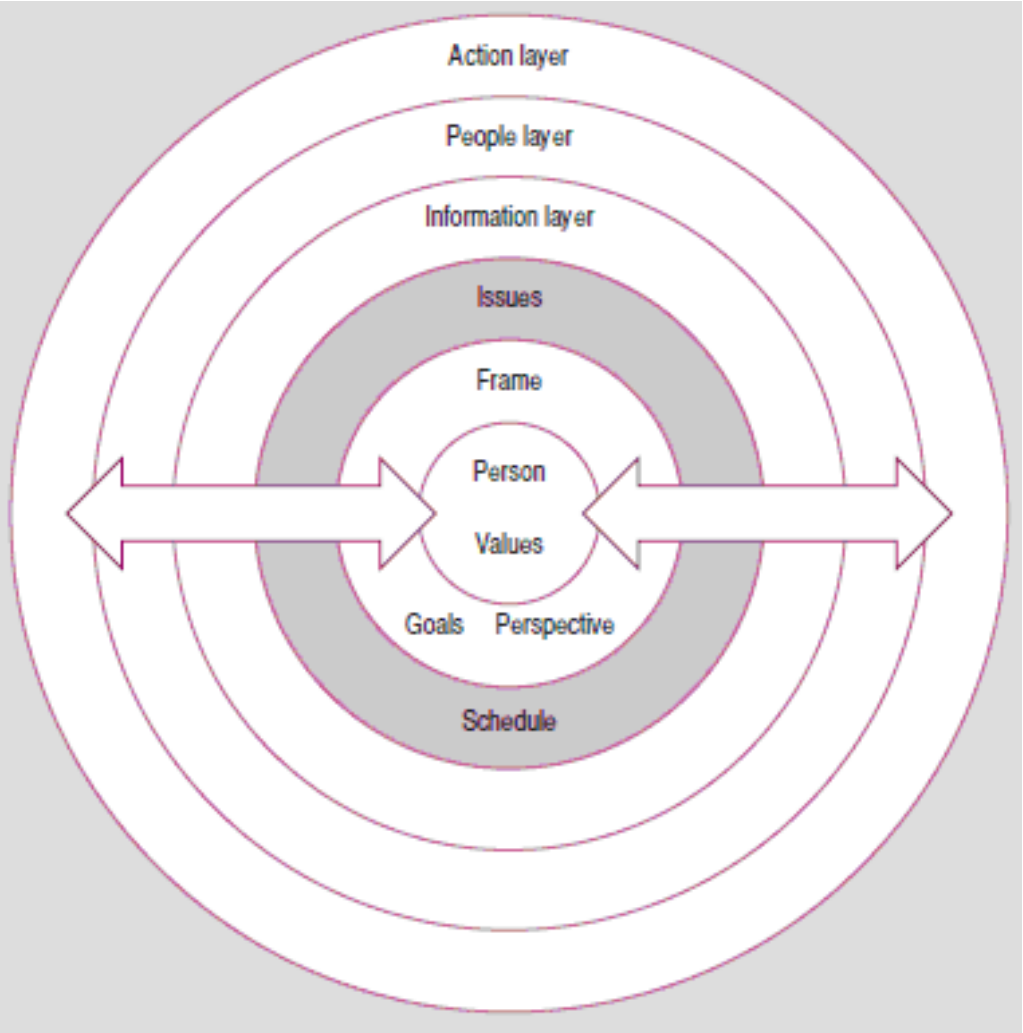

Figure 16: A model of the manager's 'rounded job' (based on Mintzberg, 1994)

[Start of description]

This image is titled figure 16: A model of the manager’s 'Rounded Job', based on Mintzberg (1994).

This figure develops a model of the manager’s 'rounded job'.

It consists of six concentric circles, which reading from the centre outwards are labelled as follows:

The centre is labelled 'person', 'values'.

The next circle is labelled 'goals', 'perspective', and 'frame'.

The next circle, further differentiated by being shaded, is labelled 'issues', 'schedule'.

The next circle is labelled 'information layer'.

The next circle is labelled 'people layer'.

The outer circle is labelled 'action layer'.

There are also two unlabelled double-ended arrows. These are placed horizontally and span the width of the diagram from the inner to outer circles.

[End of description.]

16 Schematic diagrams

Schematic diagrams are stylised representations of objects or situations, for example, drawings of laboratory equipment or geological layers. These diagrams sometimes use abstract symbols to demonstrate how major components connect to another to show a process. Any detail that is not relevant is not included.

It is difficult to provide a template, as these images are very diverse; general guidelines for describing images will apply; essentially stating the title if it has not been included in a caption; stating what the image is showing and then describing the detail as appropriate.

16.1 Schematic diagrams example: Water cycle

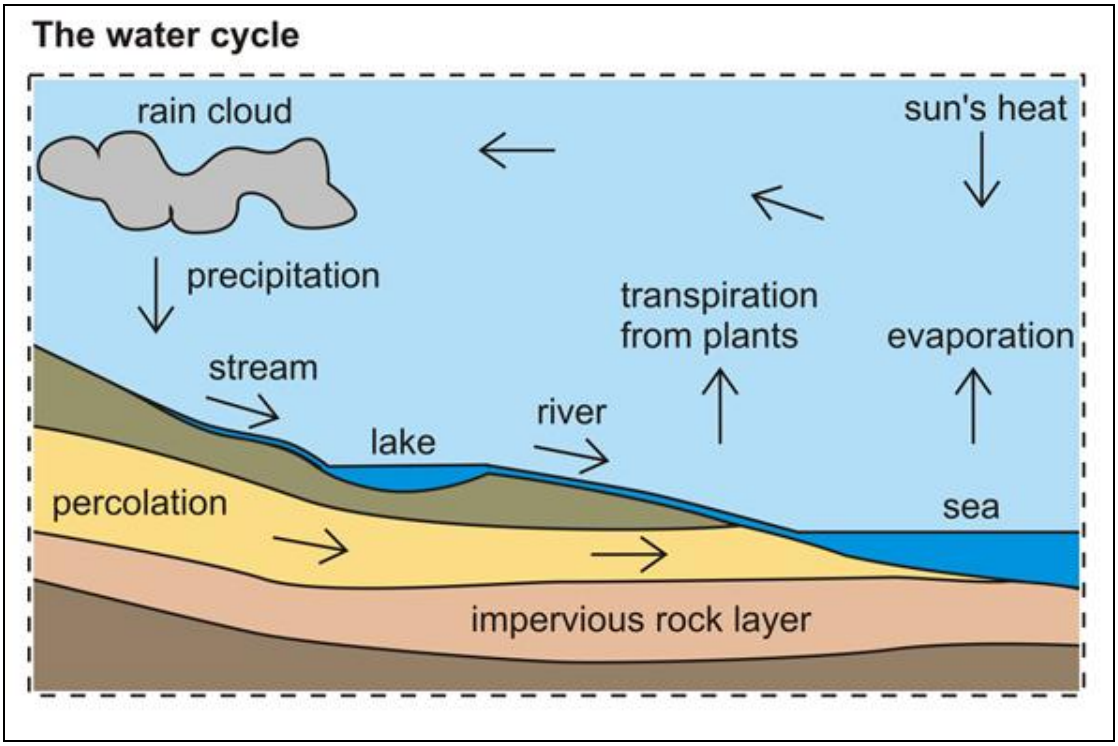

Figure 17: The water cycle

[Start of description]

Figure 17 shows the water cycle; the flow of water as it circulates from the sky to the land and back to the sky again.

The image shows the sky, a cross section through land, and the sea. There is a rain cloud in the sky; the land is steeped and the cross section shows four different layers of rock. The third rock layer down is labelled ‘impervious rock layer’. A stream flows down into a lake that then flows into the sea.

The diagram is labelled and arrows show the direction of the water flow. There are a number of processes that form the water cycle.

The first process is shown in an anticlockwise circle. Starting with the rain cloud in the top left corner of the image; an arrow labelled precipitation leads down to the stream, the lake; running to the

river; then the sea. An arrow labelled evaporation leads up from the sea and back to the rain cloud to complete the process.

An arrow labelled ‘sun’s heat’ points down to evaporation.

The second process shows water percolating into the land. Starting from the rain cloud, the arrow labelled precipitation leads down to the land. Beneath the stream, the second rock layer down is labelled percolation, which then leads into the sea. The cycle continues, with the arrow labelled ‘evaporation’ leading up from the sea and flowing back around to the rain cloud.

The third process shows transpiration from plants. Stating again with the rain cloud, down to precipitation, the water runs down the land. There is an arrow before the river meets the sea pointing up labelled ‘transpiration from plants.’ The flow then continues back to the rain cloud.

[End of description]

16.2 Schematic diagrams example: Synaptic transmission

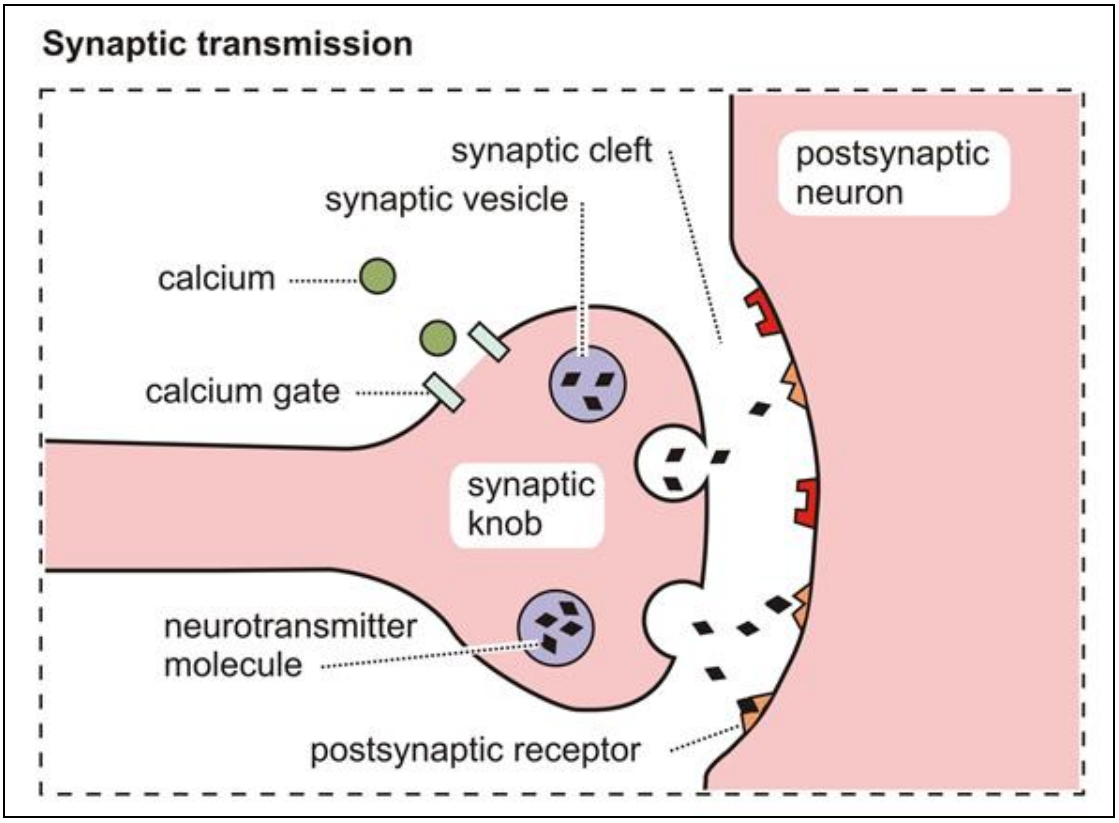

Figure 18: Synaptic transmission

[Start of description]

This diagram shows a cross section through a synaptic knob of a neuron, forming a synapse with another neuron and how neurotransmitter molecules are transmitted.

A small branch of an axon is on the left of the diagram, widening out at the end to form the synaptic knob. The postsynaptic neuron is on the right side of the page and has postsynaptic receptors along its side. Between the postsynaptic neuron and the synaptic knob is the space called the synaptic cleft.

On the top left of the synaptic knob is the calcium gate, above this are two calcium molecules which are travelling in through the gate. Inside the synaptic knob there are two synaptic vesicles, with

neurotransmitter molecules inside them. Two further synaptic vesicles have migrated to the right edge of the synaptic knob and burst. They are releasing their neurotransmitter molecules that are travelling across the synaptic cleft. They will lodge in the postsynaptic receptors.

[End of description]

17 Force-field diagrams

A force-field diagram shows the forces that are for and against a plan, proposal or situation. This can then be used to measure the pros and cons of a situation.

For example, within the context of planning and managing change, a force-field diagram shows the forces that are supportive of change (the driving forces) and the forces that are likely to be unhelpful or resistant (the restraining forces).

Figure 19 shows how a typical force-field diagram is laid out. The situation, plan or proposal is represented by a bar in the centre of the diagram. The forces for change are presented in one column, and the forces against in another column. Each force is presented in an arrow pointing towards the central proposal.

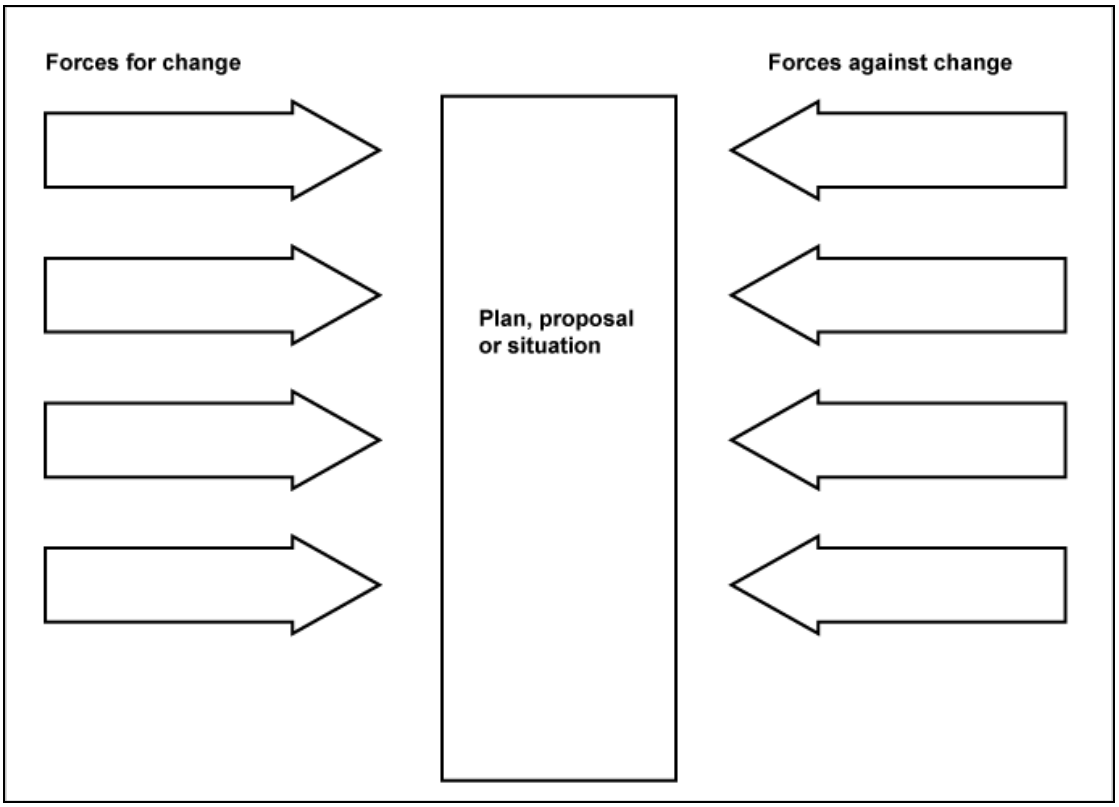

Figure 19: Example of a force-field analysis diagram

Some diagrams are drawn, with the situation as a vertical bar and the force arrows pushing from the left and right; others can be a horizontal bar with forces pushing from above and below.

The arrows may have varying thickness or lengths representing the relative strength of the forces; or a score can be assigned to each force indicating their strength.

17.1 Force-field analysis template

[Start of description]

This diagram is titled {} and shows the forces acting for and against {plan / situation / decision}.

The situation bar is {horizontal / vertical} and is labelled {}.

There are {number} arrows pushing {for / against} {something} {down / to the right}, from {left to right / top to bottom} these are {...}, {...}.

{describe relative sizes}.

There are {number} arrows pushing {for / against} {something} {up / to the left}, from {left to right / top to bottom} these are {...}, {...}.

{describe relative sizes or values allocated to forces}.

{describe any features which stand out visually - strongest forces, uneven numbers etc}.

{Include any additional information essential, for example answering educational assessments.}

[End of description]

17.2 Force-field analysis example: Decision process

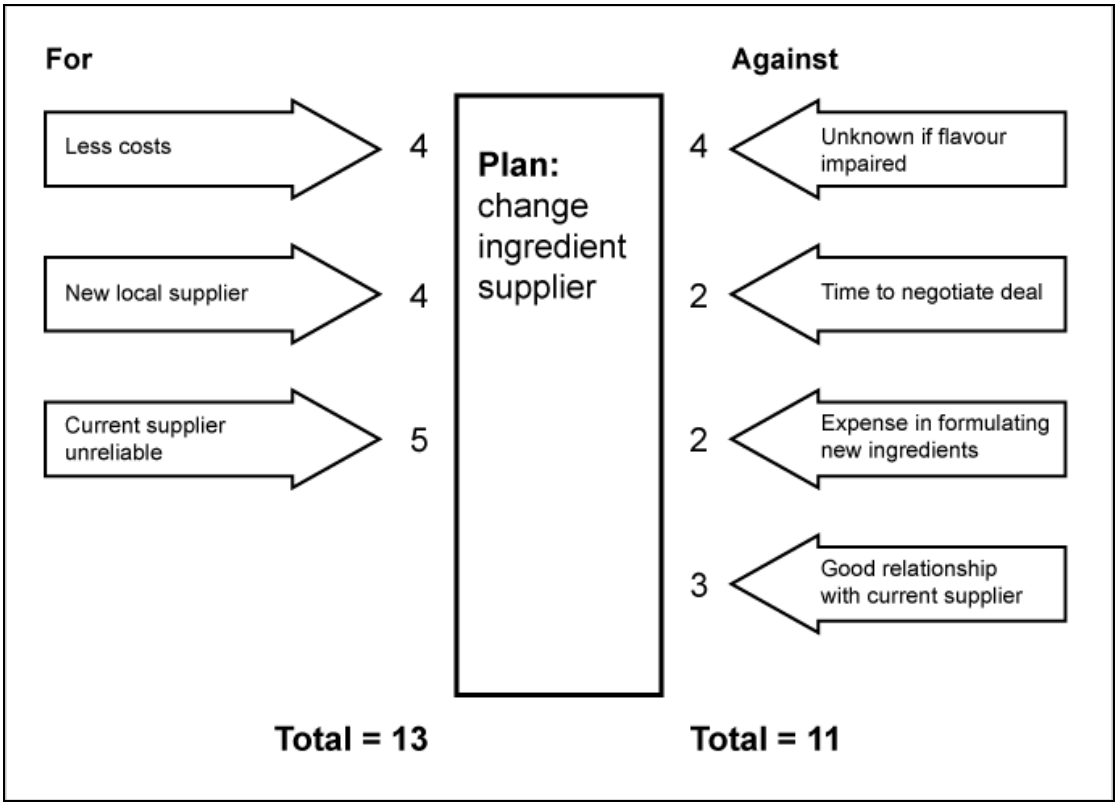

Figure 20: A force-field diagram showing a decision process - whether to change ingredient supplier

[Start of description]

This diagram shows the forces acting for and against changing ingredient supplier.

The situation bar is vertical and is labelled ‘Plan: change ingredient supplier.’

There are three arrows pushing for change from the left. These are:

- Less costs – score of 4
- New local supplier – score of 4
- Current supplier unreliable – score of 5

There are four arrows pushing against change, from the right. These are:

- Unknown if flavour impaired – score of 4
- Time to negotiate deal – score of 2
- Expense in formulating new ingredients – score of 2
- Good relationship with current supplier – score of 3

The total score of forces for change is 13. The total score of forces against change is 11. There are more forces against change than for, though the overall score for change is higher.

[Start of description]

18 Venn diagrams

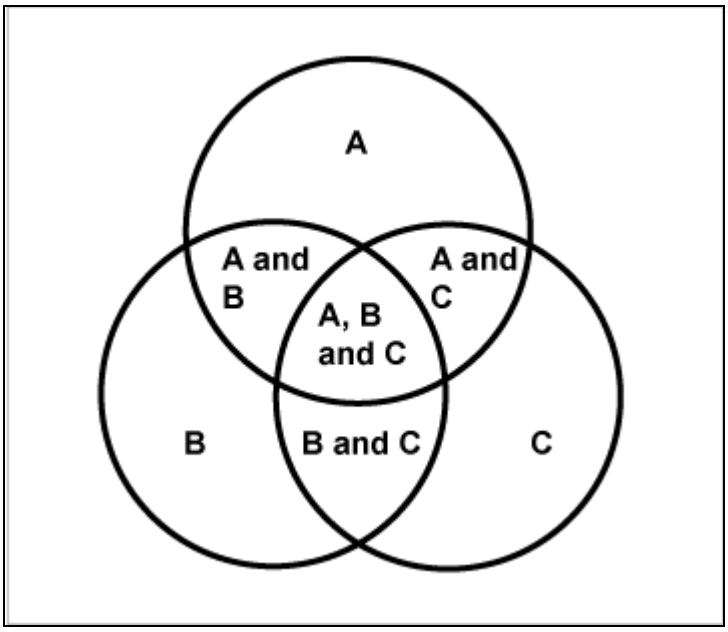

Figure 21: An example Venn diagram

Venn diagrams are used to show how properties of objects can be grouped by different or shared properties.

In a simple example, at least two, but usually three, circles are used to define sets of objects. The circles are often all the same size.

As Figure 21 shows, the circles are typically arranged as a triangle; pushed together so that each overlaps the other two, with a central area where all three intersect. The example image shows how three circles labelled A, B and C are overlapped; and how the overlapped sections are grouped together.

The circles can represent physical objects; mathematical groupings, concepts in social science and so on.

18.1 Venn diagram template

[Start of description]

This diagram is titled {} and shows the {relationship between / grouping / analysis of}.

There are three overlapping circles arranged in a regular triangle, clockwise from the top they are labelled '...', '...' and '...' There are three areas where two circles overlap, these are {unlabelled / labelled '...', '...' and '...' The area in the centre where all three overlap is {also unlabelled / labelled '...'}.

{If none of the circles is labelled, designate them A, B and C to simplify references to their contents}.

Starting from the top and moving clockwise, the areas contain the following {words / concepts / numbers / objects}:

A – {list objects}

A and B – {list objects}

B – {list objects}

B and C – {list objects}

C – {list objects}

C and A – {list objects}

A, B and C – {list objects}

{Add any other information in the diagram}.

[End of description]

18.2 Venn diagrams example: Animals in Africa

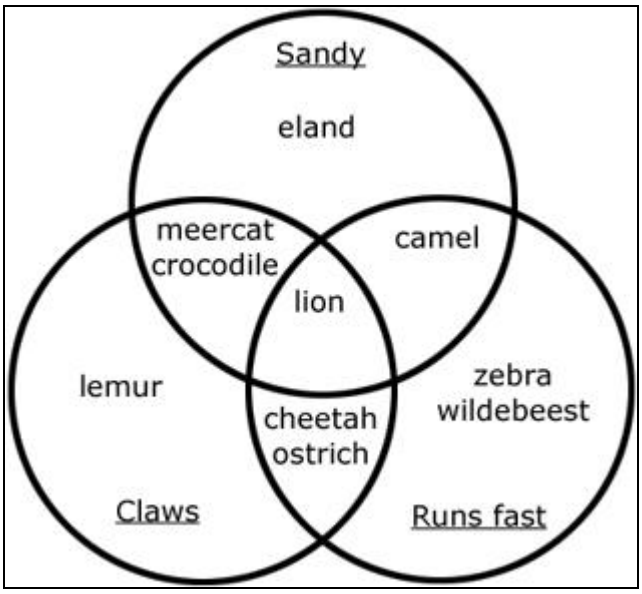

Figure 22: Venn diagram showing animals in Africa

[Start of description]

Figure 22 is a Venn diagram showing groups of animals found in Africa. They have been grouped according to whether they are: sandy in colour; have claws; run fast, or show a combination of these.

The animals listed are:

- Sandy – eland
- Sandy and runs fast – camel
- Runs fast – zebra and wildebeest
- Runs fast and claws – cheetah, ostrich
- Claws – lemur

- Sandy and claws – meercat and crocodile
- In the centre, Sandy, claws and runs fast – lion
- [End of description]

19 Where to get further help

UKAAF assists businesses and organisations by advising how to meet the needs of customers and clients with print disabilities; providing guidance on how to source and provide quality accessible formats like large print, audio, braille, electronic file formats and Easy Read; and helping you to understand your responsibilities as a service provider.

Through our website and magazine, members will also gain access to:

- findings from public consultations and end-user research
- research and innovation in accessible formats
- information on suppliers of transcription services
- guidance and advice on standards for accessible formats
- opportunities to review and help to develop standards and guidance.

In addition to supporting service providers and transcribers, UKAAF also represents people with print disabilities. We believe that because format quality matters, end-users should have genuine input into the development of standards for accessible information. By collecting and sharing users' views with service providers and transcribers we can help them to deliver a quality service which meets users' needs.

UKAAF has a User Advisory Group (UAG) so we can include blind and partially sighted people and others with print disabilities in ongoing research and consultation on key accessible format issues.

There are many benefits of being a member of UKAAF, not least to demonstrate your commitment to quality accessible formats. For more information visit us at www.ukaaf.org.

20 Your feedback is welcome

We would welcome your views on this guidance, any suggestions for additions, or case studies of how this guidance has helped you. You might like to share your experience in an article in our magazine 'Format Matters'.

You can phone, email or write to us - our details are at the back, or use the feedback form on our website www.ukaaf.org.

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