

Functional Skills Maths

Level 1

Collect and record discrete data and organise and represent information in different ways

v1.0

Functional Skills Maths:

Level 1

Skill Standard:

11

Coverage and Range:

Extract and interpret information from tables, diagrams, charts and graphs.

- Understand that title, labels and key provide information.
- Know how to read a scale on an axis.
- Know how to use a simple scale such as 1cm to 1m, 20mm to 1m, for example to find distances on a map.
- Know how to obtain information, from tables such as a timetable or pricelist, charts such as a pictogram, simple pie chart or bar chart, single line graphs, diagrams such as a map, workshop drawing or plan.¹

¹ QCA Functional Skills guidance: amplification of the standards June 2008 QCA/08/3700

Explain the Skill

Record Data in a Tally Chart

A tally chart is a simple way of recording information. Tally marks keep a count of the data being collected. When constructing a tally chart, the fifth tally mark goes across the other four to make a group of five. This makes it easier to count the total.

Twenty people at a cinema were asked which type of film they had come to watch. These are the results:

Action	Comedy	Drama	Horror	Science fiction
Action	Action	Drama	Drama	Comedy
Science Fiction	Drama	Action	Horror	Drama
Comedy	Comedy	Drama	Action	Science fiction

To be able to represent this data, you need to organise it in a tally chart.

Film type	Amount
Action	###
Comedy	
Drama	###
Science Fiction	
Horror	

Practise the Skill

- 1) 30 people are going for a meal to celebrate Ben's 40th birthday. Ben asks them to choose what they would like to eat.

Here are their replies:

Turkey	Salmon	Gammon	Gammon	Turkey	Turkey
Gammon	Turkey	Turkey	Pasta	Steak	Gammon
Salmon	Salmon	Gammon	Steak	Salmon	Steak
Pasta	Turkey	Gammon	Salmon	Turkey	Turkey
Steak	Gammon	Steak	Turkey	Gammon	Pasta

- a) Put this information into a tally chart.

Type of meal	Tally
Turkey	
Gammon	
Salmon	
Pasta	
Steak	

- b) Complete the frequency column.

Type of meal	Frequency
Turkey	
Gammon	
Salmon	
Pasta	
Steak	

- 2) Jordan is thinking of changing his mobile phone provider. He asks people at work which provider they use.

Here are the results.

Mobile Phone Provider	Tally
A	
B	
C	
D	
E	

How many people did Jordan ask in total?

- 3) Jordan is organising an activity day for his work colleagues and asks what activities they prefer.

These are their responses.

Football	Squash	Gym	Aerobics
Aerobics	Football	Football	Swimming
Yoga	Aerobics	Gym	Football
Squash	Gym	Gym	Squash
Gym	Gym	Squash	Swimming

- a) Put this information in a tally chart and complete the frequency column.

Type of meal	Tally	Frequency
Aerobics		
Gym		
Football		
Squash		
Swimming		
Yoga		

- b) Using the information from Jordan's findings, which activity should Jordan choose to organise? Circle your answer.

Football Aerobics Yoga Squash Gym Swimming

Explain the Skill

Record Data in a Pictogram

A pictogram shows information by using pictures or symbols.

A pictogram should always have a key to show what the picture or symbol represents.





The table shows the number of tunes downloaded by a family onto their mobile phones.


Jack	Jill	Peter	Paul
12	20	15	19



This symbol is used to represent 4 tunes.

The pictogram below represents the information from the table.

Name	Number of tunes downloaded
Jack	
Jill	
Peter	
Paul	

Key:  = 4 tunes downloaded

Practise the Skill

- 1) This table shows the number of minutes each member of a family use on their mobile phones.

Name	Number of mins
Jack	20
Jill	95
Peter	45
Paul	10

Draw a pictogram to represent this data.

Use a symbol (maybe like ) to represent 20 minutes.

Discuss your answers with your tutor.

- 2) The table below shows the number of emails Anna receives at work Monday to Friday.

Number of emails received:

Monday	32
Tuesday	20
Wednesday	24
Thursday	34
Friday	30

- a) Draw your own pictogram to represent this information.

Use a symbol (maybe like ) to represent 8 emails.

Discuss your answers with your tutor.

- b) Last week Anna received 168 emails. How many more or less emails did she receive this week? Circle your answer

_____ More / Less

Explain the Skill

Record Data in a Bar Chart

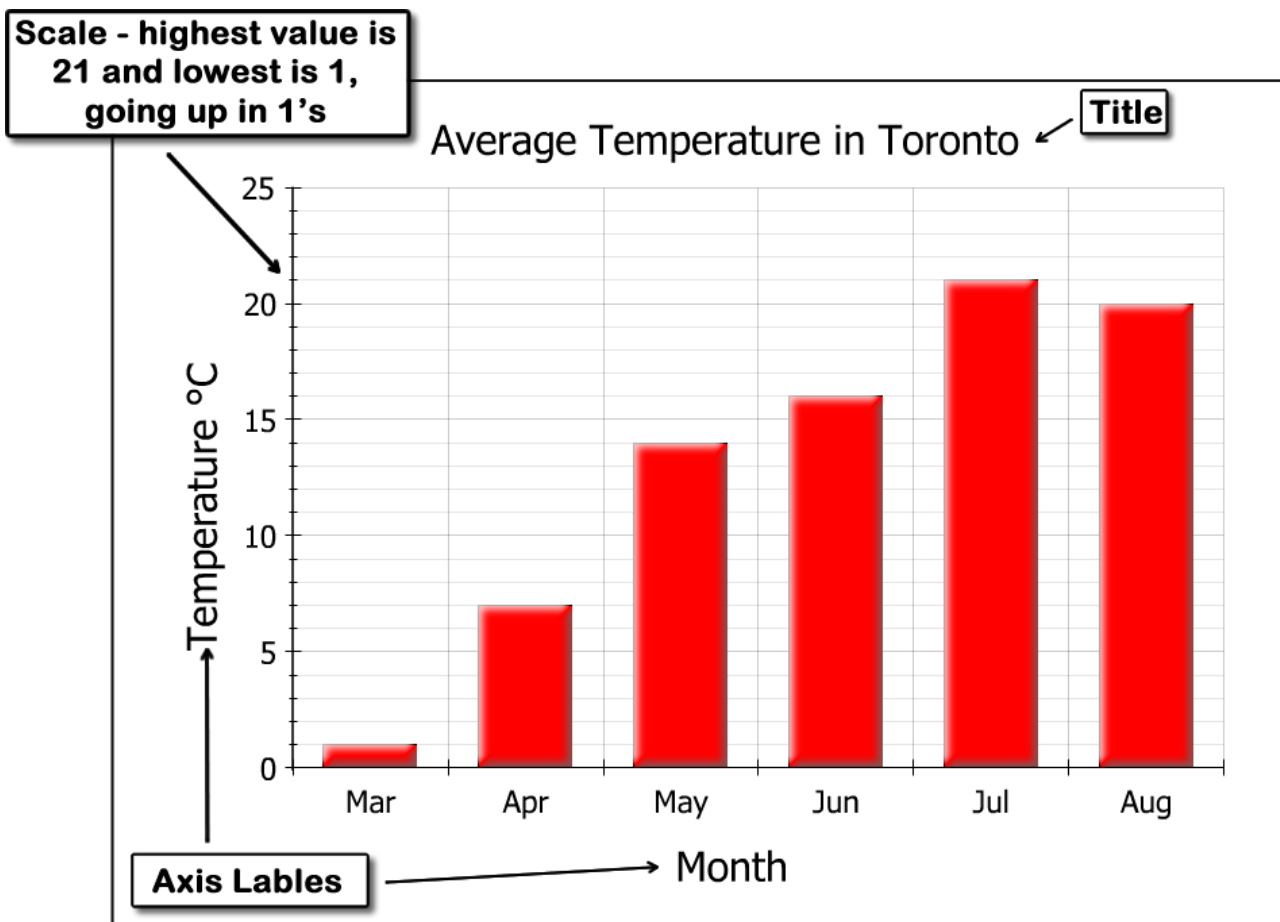
Bar charts display data using vertical or horizontal bars. A bar chart must have a title and both axes must have a label. There should be gaps between the bars and the bars should be the same width.

The scale you chose on the axis should be sensible and easy to read.

These are the average temperatures in Toronto for 6 months.

Month	March	April	May	June	July	August
Temp (°C)	1	7	14	16	21	20

The vertical bar chart below represents the information in the table.



Practise the Skill

- 1) Shelley runs a small ironing business and the table shows the number of different items she irons a day.

Trousers	Shirts	Skirts	Dresses	Bedding	Other
11	31	6	5	7	4

Draw a vertical bar chart to represent this data.

Discuss your answers with your tutor.

- 2) Shelley gets some new customers and asks a friend to help her.

The table below shows the number of items they ironed in a month.

Trousers	Shirts	Skirts	Dresses	Bedding	Other
330	595	175	150	185	125

Draw a vertical bar chart to represent this data.

Discuss your answers with your tutor.

Explain the Skill

Record Data in a Line Graph

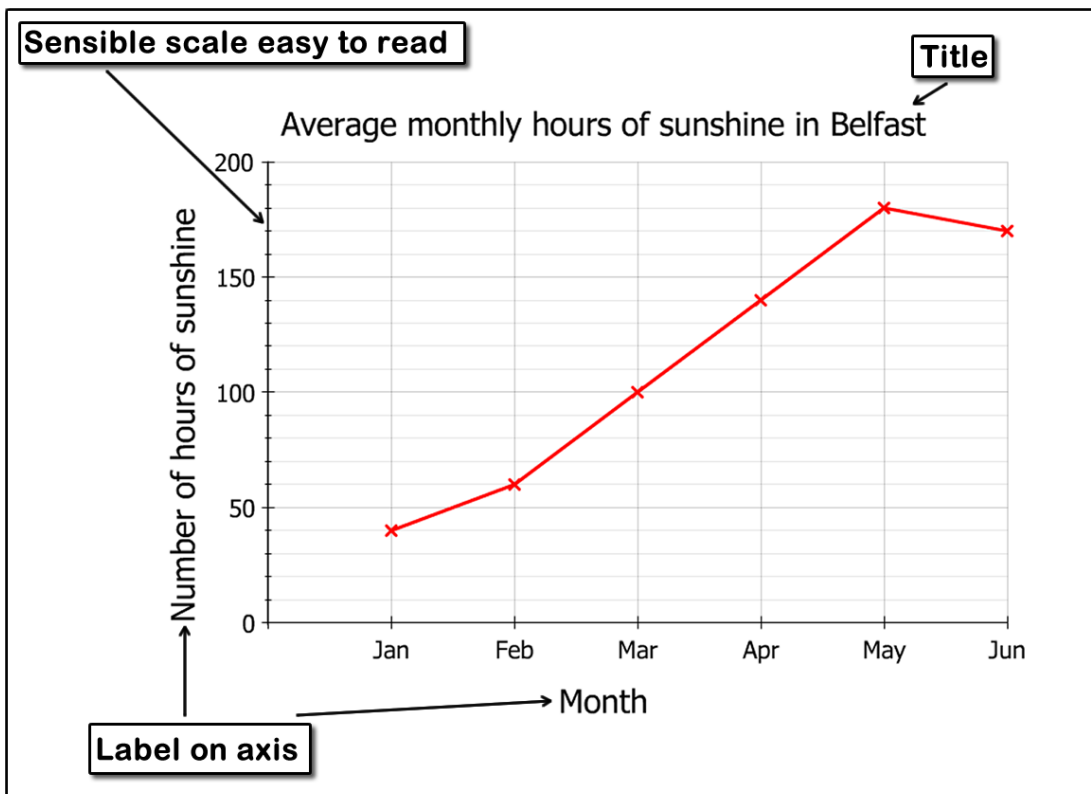
Line graphs are a visual representation of a set of values in which points are connected by a line. They are used to show how something changes over a period of time.

A line graph must have a title and labels on both axes. Remember to use a scale that is sensible and easy to read.

The table shows the average monthly hours of sunshine in Belfast over a year.

January	February	March	April	May	June
40	60	100	140	180	170

Draw a line graph to represent this information.



Apply the Skill

1) Bobbi works as a receptionist at a doctors' surgery.

One morning she keeps a record of the different illnesses patients come to the surgery with.

Back pain	Flu	Infection	Rash	Sprain
Rash	Back pain	Flu	Flu	Infection
Flu	Back pain	Flu	Sprain	Back pain
Infection	Flu	Flu	Back pain	Flu
Flu	Infection	Sprain	Flu	Rash

a) Organise this information into a tally chart.

Discuss your answers with your tutor.

b) What illness was the most common that morning?

2) The table shows the number of cancelled appointments Monday to Friday.

Monday	Tuesday	Wednesday	Thursday	Friday
11	9	7	5	10

a) Draw a pictogram to represent this information.

Discuss your answers with your tutor.

- b) How many more cancelled appointments were there on Monday than on Thursday?

- c) How many cancelled appointments were there in total?

- 3) This table shows the number of appointments made at the surgery that week.

Monday	Tuesday	Wednesday	Thursday	Friday
120	80	70	80	90

- a) Draw a vertical bar chart to represent this information.

Discuss your answers with your tutor.

- b) On which day should there be more staff at the surgery to manage appointments?

Circle your answer.

Monday Tuesday Wednesday Thursday Friday

- c) On which days were there the same number of appointments?

Circle your answer.

Monday Tuesday Wednesday Thursday Friday

d) How many more appointments were there on Monday than on Wednesday?

4) One of the nurses visits one of the patients daily.

The table shows the patient's temperature for a week.

Day	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Temp (°C)	41	40	40.5	39.5	39	38	37.5

a) Draw a line graph to represent this information.

Discuss your answers with your tutor.

a) What happened to the patient's temperature between days 2 and 3?

Circle your answers.

- | | |
|-----------|----------|
| Increased | by 0.5°C |
| Decreased | by 1°C |
| | by 1.5°C |
| | by 2°C |