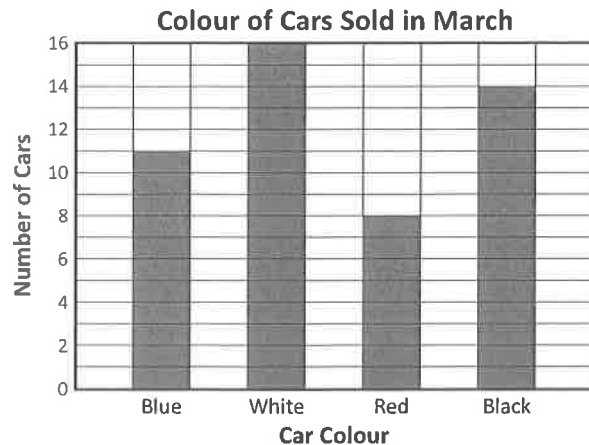


Types of graphs 1 – column graphs

We often use column graphs when we want to compare data. All column graphs have a title and each axis is labelled.

From this we can quickly see that 16 white cars were sold in March and that this was the most popular colour choice.



1 Answer the questions about this column graph:

- a Which city had the highest rainfall in October?

Rome

- b What was this city's rainfall?

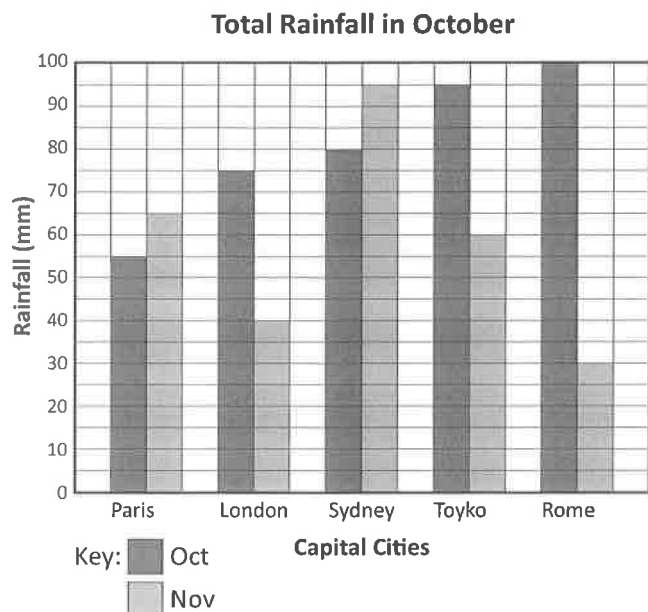
100 mm

- c Which cities had a rainfall between 70 mm and 90 mm?

London and Sydney

- d How many more millimetres of rain did Rome have than Paris?

45 mm



2 Below are the November figures for the same cities. Add them to the graph (above). Think first how best to do this:

Paris 65 mm London 40 mm Sydney 95 mm Tokyo 60 mm Rome 30 mm

- a Will you use the same colour columns?

No – add a key to show which column is which.

- b Will you need to change anything else on the graph?

Yes, the title to: Total Rainfall in October and November.

3 Write a problem using the new data for a partner to solve:

Answers will vary.

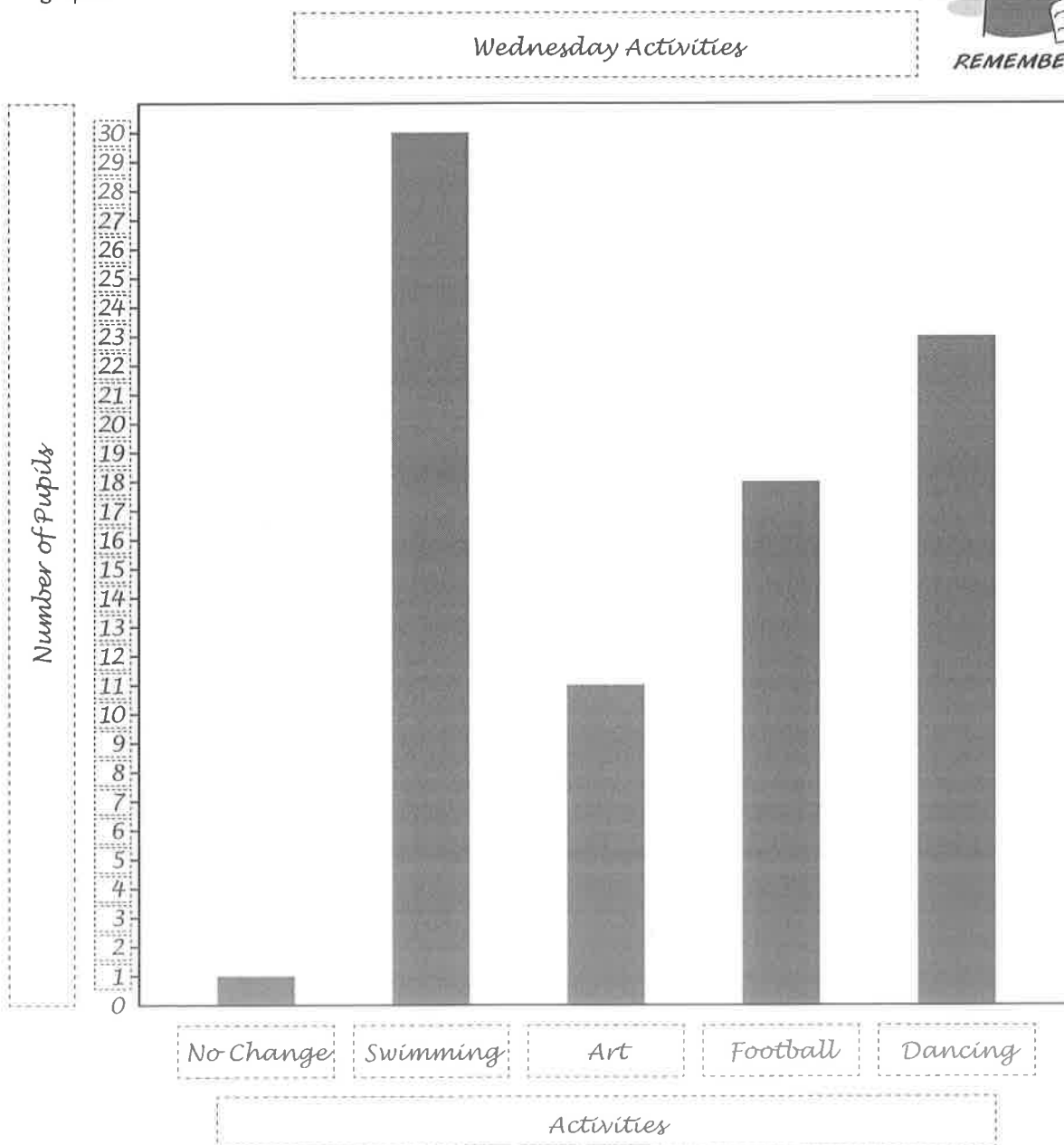
Types of graphs 1 – column graphs

- 4 The after school club kids are staging a mutiny. They are over watching the same DVDs and making popcorn every day and want to do something new and exciting on Wednesdays. This table shows the activities they'd prefer.

Activity	Number of Pupils
No change	1
Swimming	30
Art	11
Football	18
Dancing	23

- a Help them present a case to the head teacher by completing the column graph:

- ☐ Name your graph and both axes
- ☐ Label each column
- ☐ Select and label an appropriate scale

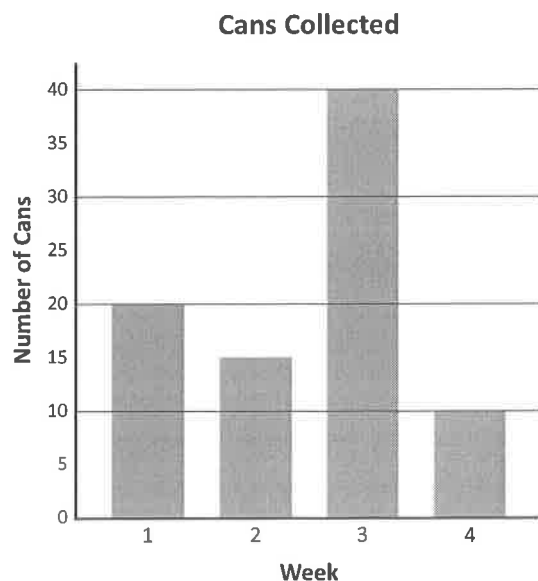


- b What are some key issues on the graph you'd point out? Work in a small team to come up with a solution. Pretend your teacher or another group is the head teacher and present your case.

Answers will vary.

Types of graphs 1 – column graphs

- 5 5D decide to run a recycling campaign and collect cans in and around the school. They recorded how many cans were collected each week and started constructing this column graph. In Week 3 they collected 40 cans and in Week 4 they collected 10 cans.



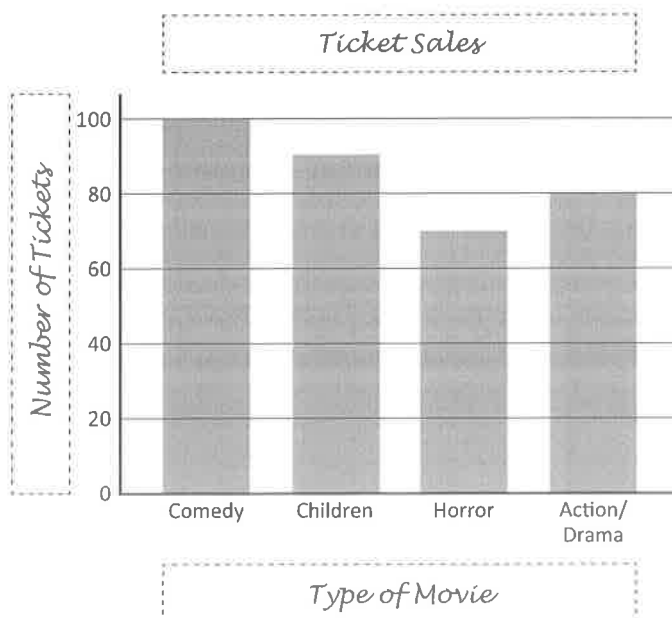
- a Add Week 3 and 4 data to the graph.
- b There was a soft drink special at the local store during one of the weeks. Which week do you think it was and why?

Week 3 because the most cans were collected.

- c How many cans were collected in all? 85
- d If each can is worth 5p, how much money did 5D make from the campaign? £4.25

- 6 The same information can be represented in different graphs.

- a Design a column graph to represent the data shown in this picture graph.



Type of Movie	Ticket Sales
Comedy	
Children	
Horror	
Action/Drama	

Key: = 20 tickets

- ☐ Name your graph
- ☐ Label both axes
- ☐ Select and label an appropriate scale
- ☐ Label each column



- b If you ran a cinema and wanted to plan your weekly movie schedule, which graph would you prefer? Which type of graph makes it easier to analyse and compare data?

Answers will vary.

Answers

1. What was the tragic event that prompted Dashrath Manjhi to spend so long carving a passageway through the mountain?

The death of his wife/his wife being unable to receive medical care before she died

2. What did other people initially think of Manjhi's project when he first started?

Accept either:

- **they thought that he had gone mad;**
- **they thought that he would die before he finished it.**

3. Look at the first two paragraphs. Find and copy a word which means 'remote or far away from other places, buildings or people'.

isolated

4. *'The labourer said that he never wanted anyone else to suffer the same fate as his wife.'* What does this suggest about Manjhi's character?

Accept reference to the following:

- **he was kind/caring/selfless;**
- **he didn't want others to suffer;**
- **he tried to find a positive outcome to the tragic event.**

5. What is meant by a 'state funeral' and what does this suggest about the way the government felt about Dashrath Manjhi's actions?

A state funeral is a special occasion reserved for special or important people.

This suggests that the government thought Dashrath was special or important and that they appreciated his work.

6. How do you think local people felt when the road through the mountain was finally completed?

Children's own responses which suggest that the villagers were happy/delighted/grateful/relieved. Award one further mark for explanation which refers to villagers having a shorter journey or being able to access schools, hospitals and/or jobs which they previously could not.

7. Look at the **Location Fact File**.

Which direction is Nepal from India? Circle **one**.

north

east

south

west

8. Look at the section **The Mountains of India.**

What are the positive and negative aspects of the mountains attracting tourists to the region?

Accept both: the positive effects of 'bringing money to the region from outside visitors'; the negative effects of 'damage or wear to the natural environment'.

9. Complete the information in this table about **The Mountains of India.**

The first row has been done for you.

Highest peak of the Kanchenjunga in number of feet	28,000
Total number of peaks on the Kanchenjunga mountain	5
Number of species of birds in the national park	500
Number of countries over which the Himalayas are spread	5

10. Explain why the mountains in the Great Himalayan Range are important to India as a country.

Acceptable points include:

- providing the source of rivers/the river Ganges
- attracting tourists for adventure sports or other activities
- influencing the climate/acting as a barrier against freezing winds
- forming a physical defence barrier against foreign invasion
- providing a habitat for plant and wildlife
- religious importance
- economic benefits

Year 5 Grammar: Adverbials for Linking Sentences and Paragraphs Answers

page 2. Anna Adverbial.

1. **Moments later**, a shooting star appeared **in the sky**.
2. Anna completed her difficult homework **at the kitchen table**.
3. **With a smile on his face**, Arturo held up the trophy.
4. Charlotte bought lots of new things **at the market**.
5. **In haste**, Jamelia completed her chores because she wanted to go out to play.
6. **Every Saturday**, Peter ate porridge for his breakfast.

page 3. Adverbial Sort.

Adverbials of place	Adverbials of time	Adverbials of number
in the park	as the sun set	once
nearby	at three o'clock	secondly
behind the tree	later that day	finally
outside	yesterday	lastly
under the table	tomorrow	next
in a cave		third
under the waves		

Year 5 Grammar: Adverbials for Linking Sentences and Paragraphs Answers

page 6. Missing Links 1 (Adverbials of Time).

Last year, a new lion was brought to the zoo to help increase their dwindling number. The lion's name was Terence. He had a regal face and a mighty mane of fur – he was sure to bring in many visitors to the zoo.

Before being seen by the public, Terence had to be kept away from large crowds (and even other lions) until he became familiar with his new surroundings. For a period of time, he was kept in an enclosure of his own, which wasn't visible to the public. The zookeepers kept a strict eye on him throughout this period to check that he was healthy and happy.

After a month, he was moved to a new enclosure next to the other lions in the zoo, which was also now visible to the public. In this enclosure, he had his own wooden platform to climb and peruse his surroundings. He would often sit, staring longingly at the lionesses on the other side of the fence that separated their two enclosures. Frequently, Terence and the lionesses would greet each other by the fence. They walked in tandem along their own sides of the fence and sniffed the air to catch each other's scent.

Soon, the zookeepers thought that Terence was ready to be introduced to the same enclosure as the lionesses. It was a nerve-racking day for them! Initially, they took out the female lions and let Terence in on his own to become familiar with his new surroundings. Then, the females entered the enclosure... the meeting with Terence and the lionesses was a huge success and they have been together ever since.

Now, Terence is a settled and happy lion, who enjoys being in his new enclosure with a pride to call his own.

Year 5 Grammar: Adverbials for Linking Sentences and Paragraphs Answers

page 7. Missing Links 2 (Adverbials of Place).

In the heart of the city, was a busy street filled with Saturday shoppers. It was a bleak and bitter day as a cold wind blew through the streets but many undeterred shoppers still braved the severe weather. It was close to Christmas and many of them needed to buy gifts for family and friends.

Below the glittering streetlights, a sea of colourful, woollen hats paraded as the people wearing them went from shop to shop searching for a bargain.

Outside a shop window, a man stood peering through the glass at the dazzling jewellery on display. Should he buy the silver brooch his wife wanted? It was on special offer so he decided to enter the building.

Nearby, a child stood gazing at the toys in a toy shop. He beckoned to his mum to take him inside and reluctantly she gave in to his request. With a smile on his face, he ran ahead to see what wonders he could choose for his Christmas present.

Everywhere, the sound of singing filled the air. A choir stood in the centre of the street performing a range of Christmas carols to cheer up the cold shoppers.

Year 5 Grammar: Adverbials for Linking Sentences and Paragraphs Answers

page 8. Missing Links 3 (Adverbials of Number).

After a busy day in the kitchen, the chef had lots to do before he could go home and rest!

Firstly, he must ensure that all the dirty pots from that evening's service were cleaned. He rinsed all the dishes in the sink before placing them in the dishwasher.

Secondly, he needed to check the stock he had available and see if he needed to buy anymore. He did this by checking the menu for the next day and then looking in the store cupboard and fridge to see if he had enough ingredients.

Next, he had to clean all the surfaces (ensuring they were free from germs) and sweep the floor. During a busy evening, lots of pieces of food and sauce can splash on the surfaces and on the floor. To maintain a high standard of food hygiene, he needed to clean these surfaces every evening to prevent germs and bacteria.

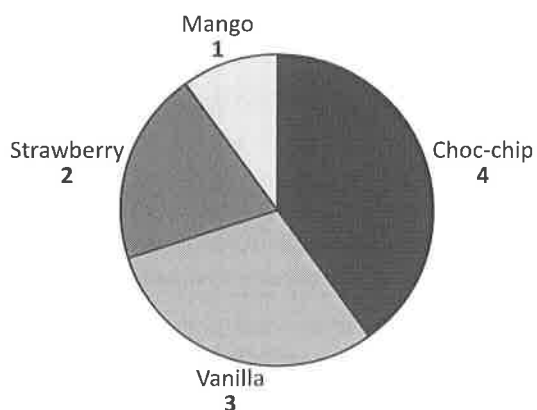
Finally, he could leave to go home and rest. As he was leaving, he must ensure all the doors were locked and put the alarm on to help protect the restaurant.

Types of graphs 2 – pie charts

A pie chart shows data as parts of a whole. The circle represents the total amount while the segments are the parts. When we compare the parts to the whole, we're looking at proportion. This is often written as a fraction.

This pie chart shows the favourite ice cream flavours of 10 people.

Favourite ice cream flavours of 10 people

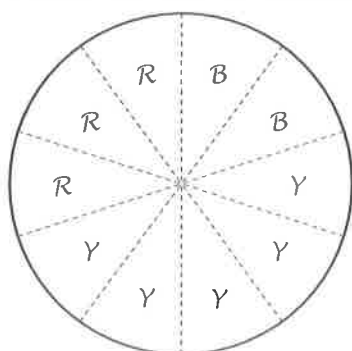


The table below summarises the information displayed on this graph.

Category	Amount	Fraction
Vanilla	3	$\frac{3}{10}$
Strawberry	2	$\frac{2}{10}$
Mango	1	$\frac{1}{10}$
Choc-chip	4	$\frac{4}{10}$
Total	10	$\frac{10}{10}$

- 1 Colour and label this pie chart according to the information in the table:

Favourite colours of 10 people



Category	Amount	Fraction
Red	3	$\frac{3}{10}$
Blue	2	$\frac{2}{10}$
Yellow	5	$\frac{5}{10}$
Total	10	$\frac{10}{10}$

- 2 A group of pupils was surveyed to find out what they spend their pocket money on. This pie chart shows the results. Circle True or False next to each statement.

- a More than half the pupils surveyed spent their money on a mobile phone.

True / False

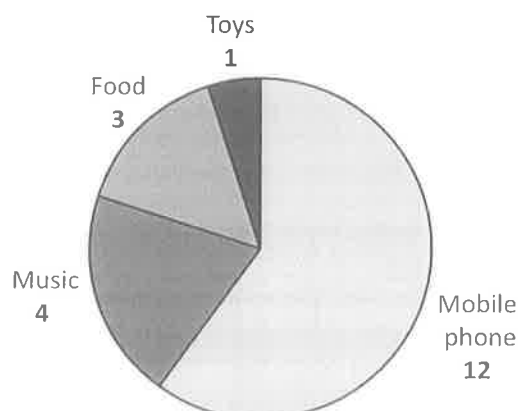
- b $\frac{4}{20}$ surveyed spent their money on food.

True / False

- c 20 pupils were surveyed in total.

True / False

What do pupils spend their pocket money on?

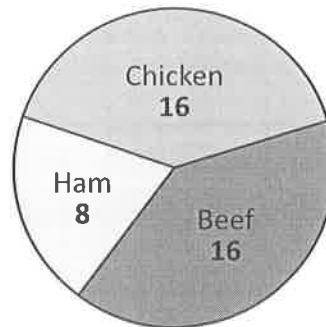


Types of graphs 2 – pie charts

- 3 5F and 5H were planning a pizza party and conducted a survey of favourite toppings. This pie chart shows the results.



Pizza Topping Survey



- a Complete the summary table if there are 40 pupils altogether.

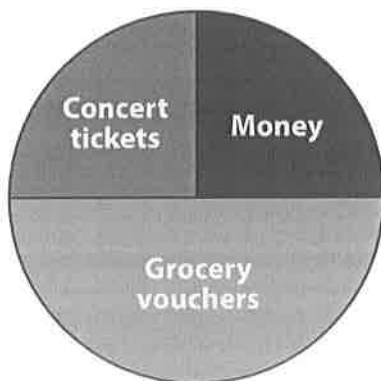
Category	Amount	Fraction
Chicken	16	$\frac{4}{10}$
Ham	8	$\frac{2}{10}$
Beef	16	$\frac{4}{10}$
Total	40	$\frac{10}{10}$

- b Their teacher said they could order 10 pizzas. How many of each flavour should they get?

Chicken Ham Beef

- 4 To boost ratings, Radio Non-Stop-Hits ran a promotion where they gave away prizes every hour. This pie chart shows the distribution of 60 prizes that they gave away.

Types of Prizes



- a How many of each prize were given out?

Concert tickets Grocery vouchers Money

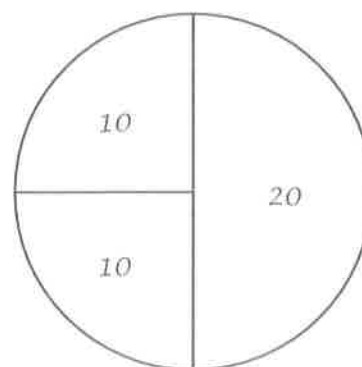
- b The radio station's accountant realised the pie chart was correctly divided but there'd been a miscalculation in the number of prizes given out. There'd actually been 25 money prizes given away. Calculate the actual amounts:

Concert tickets Grocery vouchers Money

- 5 The total amount that this graph is representing is 40. What could this be about? Give this pie chart a title and describe it by completing the table below:

Answers will vary.

Category	Amount	Fraction
-	10	$\frac{10}{40}$ or $\frac{1}{4}$
-	10	$\frac{10}{40}$ or $\frac{1}{4}$
-	20	$\frac{20}{40}$ or $\frac{1}{2}$
Total	40	$\frac{40}{40}$



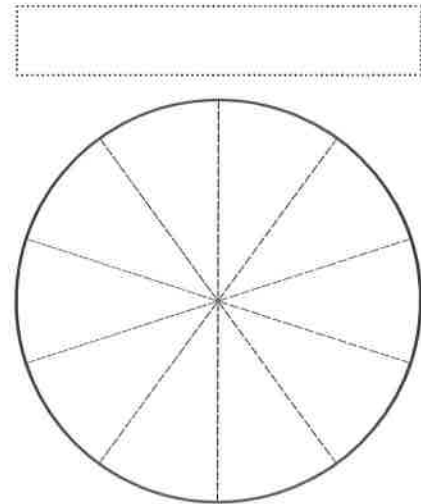
Proportions as shown.

Types of graphs 2 – pie charts

6 Create your own pie chart.

- Ask 10 pupils to choose which of these gaming consoles they like best.
- Use the table below to collect your data.
- Show the results on a clearly labelled pie chart.

Gaming Console	Tally	Amount
Wii		
Xbox 360		
Playstation 3		
Nintendo Game Cube		



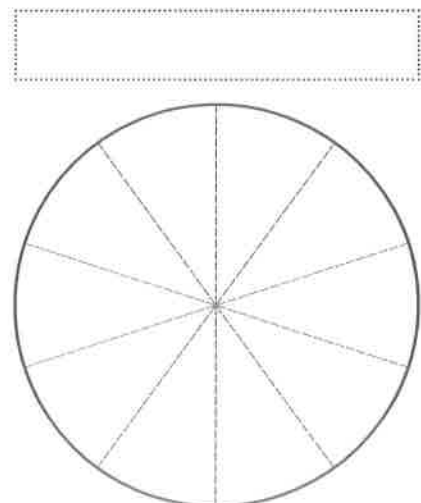
- What fraction of the group surveyed chose Wii?

Answers will vary.

7 Survey 10 children on the topic of favourites. You can ask about favourite foods, TV shows, music or whatever you like.

- Write the topic at the top of the first column.
- Write 4 options to choose from underneath.
- Record your results in the frequency table below.
- Transfer the data from the frequency table to the pie chart.
- Label all sections correctly.

	Tally	Amount



- Write a statement about what your pie chart shows:

Answers will vary.



Name: _____ Class: _____

Read the text and answer the questions.

Joshua gripped the arm-rests; his knuckles were white and his palms were sweating. As the plane turned onto the runway and the engines roared in acceleration, Joshua turned to his mum. She smiled reassuringly at her son. "Don't worry, you'll know what to expect next time."

As the plane lifted off the ground, Joshua's stomach lifted too. He looked out of the window and saw the ground moving further and further away. The plane flew into the clouds and all of a sudden, the sights below disappeared into a haze of mist. A new feeling filled Joshua. He was shuffling in his seat, checking out the in-flight magazine and opening and shutting the folding table on the chair in front of him. The flight attendant stopped at their row of seats.

"I hope you are feeling OK?" she asked. "The weather forecast is hot and sunny when we arrive, perfect for swimming in the sea."

Before he could answer, an angry head popped up from the row in front and looked straight at Joshua.

"I've been trying to sleep, and I am being disturbed by the constant jolts in my back. This is not how I wanted to start my week!"

Joshua looked at his mum with wide eyes.

"We are very sorry," replied his mum, "we didn't mean to disturb you." At this the gentleman turned round, mumbling under his breath.

"This is going to be a long flight."

The flight attendant winked at Joshua, who immediately felt relieved, and then she carried on down the aisle of the plane. Joshua looked out of the window again, to where the clouds had dispersed and sighed at the sight below him.

1 Which parts of the text imply that Joshua is scared?

a, c

- a** Joshua gripped the arm-rests; his knuckles were white and his palms were sweating.
- b** Joshua looked at his mum with wide eyes.
- c** ...the engines roared in acceleration, Joshua turned to his mum.
- d** As the plane lifted off the ground, Joshua's stomach lifted too.



Name: _____ Class: _____

- 2** Which part of the text implies that Joshua's feelings are changing to excitement?

a

- a** A new feeling filled Joshua.
- b** "I hope you are feeling OK?"
- c** The flight attendant winked at Joshua, who immediately felt relieved...
- d** Joshua looked at his mum with wide eyes...

- 3** Which part of the text implies that this is Joshua's first trip on a plane?

d

- a** He was shuffling in his seat...
- b** Joshua gripped the arm-rests, his knuckles were white and his palms were sweating.
- c** "I hope you are feeling OK?"
- d** "Don't worry, now you'll know what to expect next time."

- 4** Which part of the text implies they are going on holiday?

b

- a** The plane flew into the clouds and all of a sudden, the sights below disappeared into a haze of mist.
- b** "The weather forecast is hot and sunny when we arrive, perfect for swimming in the sea."
- c** "...we didn't mean to disturb you."
- d** "This is going to be a long flight".

- 5** Which word in the text implies Joshua's mum is kind?

a

- a** reassuringly
- b** mumbling
- c** sorry
- d** disturb



Name: _____ Class: _____

6 What is implied, when the angry passenger says “This is going to be a long flight?”

c

- a** The destination was a long way away.
- b** The passenger hadn’t realised how long the flight was.
- c** It was going to feel like a long time because he was being disturbed and couldn’t sleep.
- d** He was travelling on a long plane.

7 Joshua looked at his mum with wide eyes. What does this imply?

c

- a** Joshua’s eyes were wide apart.
- b** Joshua’s mum was far away, so he had to look for her with his eyes wide apart.
- c** Joshua was worried about the angry passenger’s reaction.
- d** Joshua wasn’t bothered about the passenger’s reaction.

8 Why do you think the flight attendant winked at Joshua?

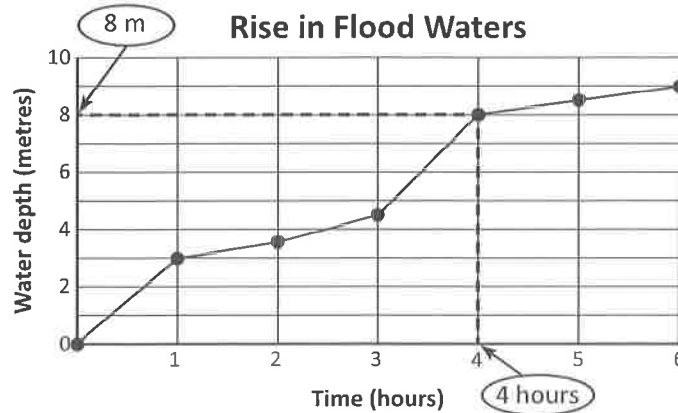
b

- a** She winked at Joshua to encourage him to keep disturbing the passenger.
- b** She winked at Joshua to reassure him.
- c** She winked at Joshua because she was cross with him.
- d** She winked because her eye was sore.

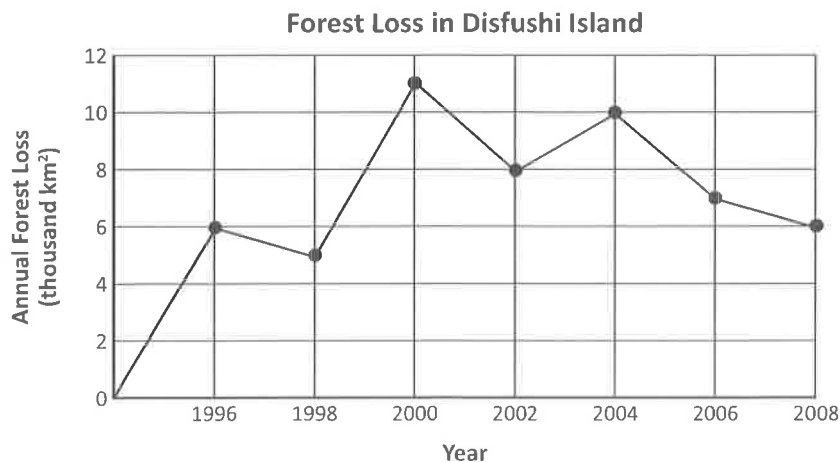
Types of graphs 3 – reading line graphs

Line graphs show how something changes over time in relation to something else. In this topic, we'll look at different examples of line graphs. Look at the line graph below. See how the more time passed, the higher the water got?

In which hour was the water 8 metres deep? Look below for how we read this information:



1 Look carefully at this line graph and answer the questions:



- How many square kilometres of forest was lost in 1996?
- How many square kilometres of forest was lost in 2000?
- In which year were 7 000 square kilometres of forest lost?
- How much more forest was lost in 2000 than in 2008?
- Use the graph to estimate the forest loss in 1999.
- Use the graph to estimate the forest loss in 2003.

6 000 km²

11 000 km²

2006

5 000 km²

8 000 km²

9 000 km²

Types of graphs 3 – reading line graphs

- 2** Polly and her friend Molly were practising reading a thermometer for homework. They boiled water in a kettle and then took turns measuring the temperature every minute as it cooled down. To make this more interesting, they made it a guessing game.

Look at the graph and answer the questions to see how they went:

- a Polly guessed that after 1 minute the temperature would be 46°C . Was she right?

No

- b Molly guessed that after 2 minutes the temperature would be 34°C . Was she right?

No

Look closely at the graph they made showing the temperature of the water in the kettle.

- c What is the value of each small division on the temperature axis?

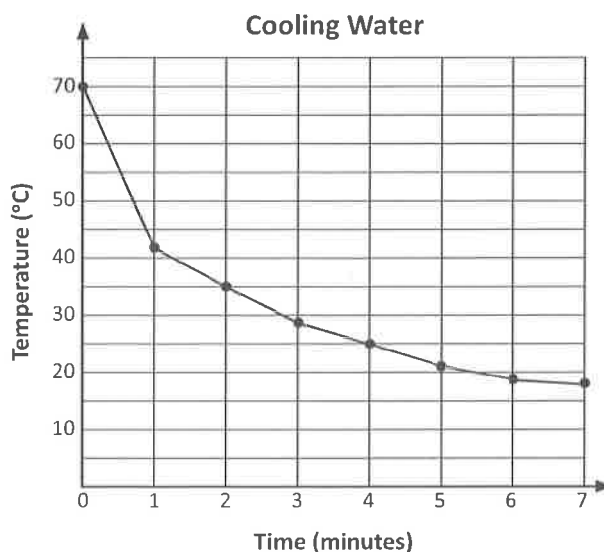
5°C

- d By how much did the water cool down between 2 minutes and 4 minutes?

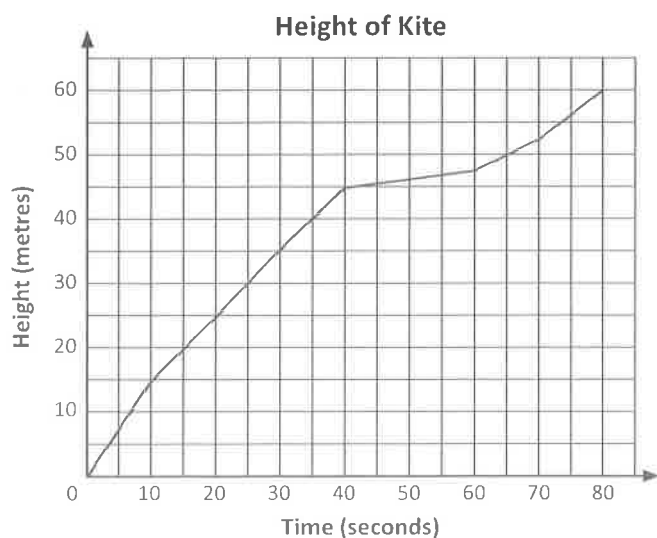
10°C

- e How long did the water take to cool to 19°C ?

6 mins



- 3** This graph shows a kite's height at different times. Answer the questions below:



- a What was the kite's height at 65 seconds?

50 metres

- b How long did the kite take to rise from 25 metres to 40 metres?

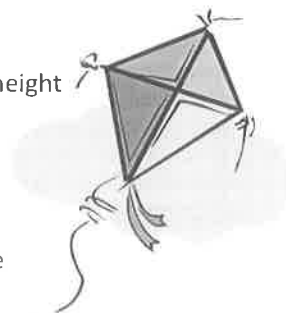
15 seconds

- c Estimate the height of the kite at 1 minute.

$47/48$ metres

- d If the kite continued to rise, how high do you think it would be after 90 seconds?

70 metres



Types of graphs 3 – travel graphs

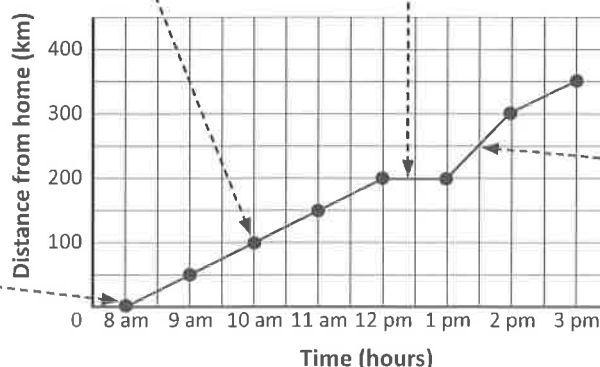
A travel graph is a type of line graph that shows the distance travelled and the time taken to travel that distance. We can tell a lot about a journey just by the shape of a line.

Between 8 am and 12 pm, it travels 200 km. This is 50 km per hour.

Here we see the car stops for one hour. We know this because it stays at 200 km from home between 12 pm and 1 pm. This tells us it's not moving.

Journey of a Car

This car leaves home at 8 am for a holiday.



Between 1 pm and 2 pm, the car travels at 100 km per hour.

1 This travel graph shows the journey of the Henderson family on a driving holiday.

a What time did they leave home?

8 am

b How long was their first rest stop?

1 hour

c How far had they travelled by 10 am?

100 km

d At what speed were they travelling between 3 pm and 5 pm?

75 km/hr

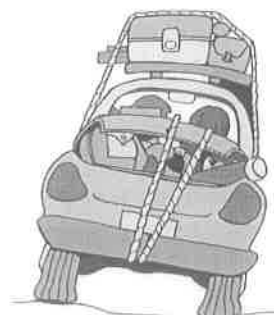
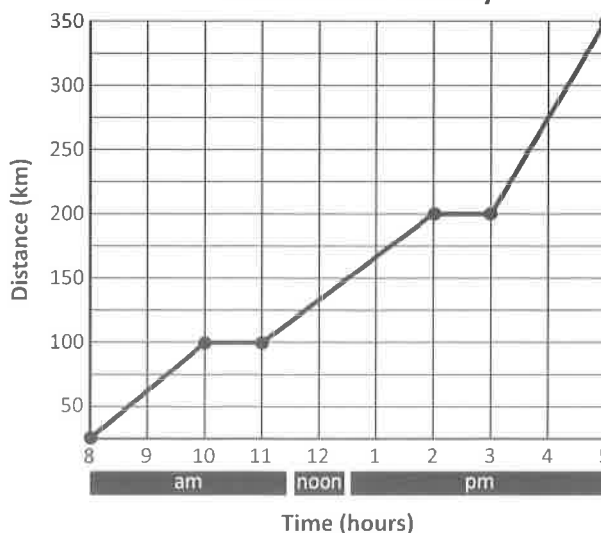
e What could they have been doing at 2.30 pm?

Having lunch or taking a break.

f How long was the journey, excluding rest stops?

7 hours

The Henderson Holiday



Types of graphs 3 – travel graphs

2 Look carefully at this journey of a cyclist and fill in the blanks.

a I started training at 5 am.

b I met a friend for breakfast at 6 am.

I continued again at 7 am.

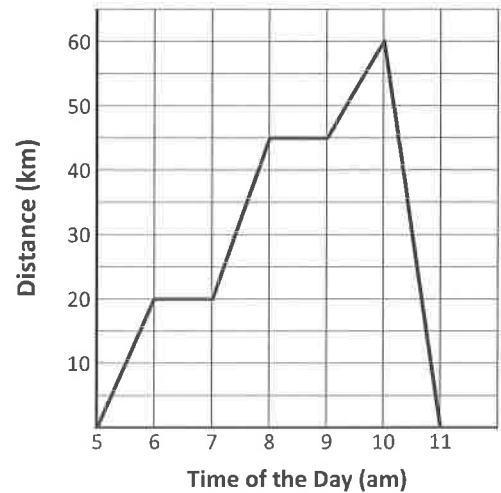
c By 8 am I had cycled 45 km.

d Due to a flat tyre, I had to stop again at 8 am.

e I turned around to cycle all the way home at 10 am.

f I got home at 11 am and had a nice long bubble bath.

Julie's Cycling Training

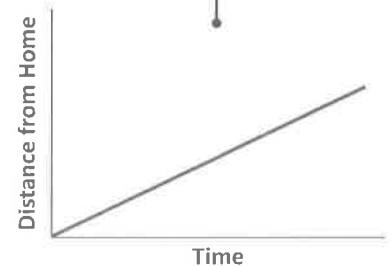
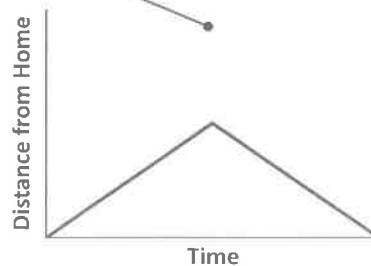
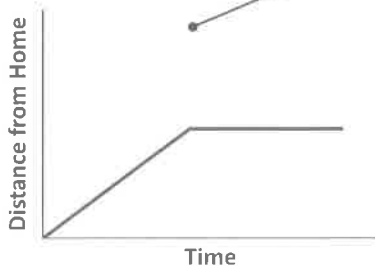


3 Connect each travel graph to the matching statement with a line.

I was on my way to school when I felt sick, so I turned around and went home again.

On the way to the shops we stopped to get petrol.

We travelled at the same speed, not stopping until we got there.



Reading

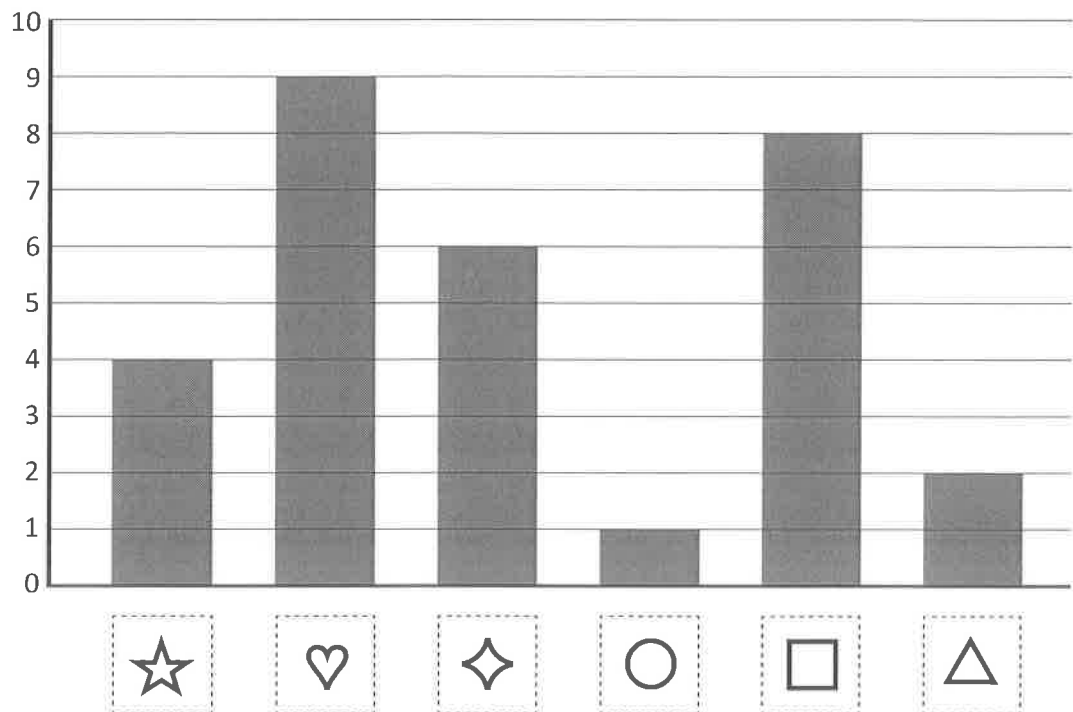
Ed city

No rhyme or reason
answers

What
to do

Follow the clues to correctly label each column with the appropriate symbol:

5N's Preferred Holiday Activities



Four times as many kids would rather go to the beach than go to an art gallery.



A holiday at Wet 'n' Wild is the most preferred option.



There are 3 times as many shoppers than there are art gallery attenders.



Five fewer people like camping than Wet 'n' Wild.



Half the number of people who like camping prefer to visit art galleries.



Poor Mr N will be hill walking alone it seems. He'll probably get over it.





Many crimes are solved by analysing paperwork. Detectives spend countless hours sifting through data. It can be one tiny fact that breaks a case open.



Read this next part very carefully. A bank was robbed during the month of May. Since it was the bank with all your savings, you have a vested interest in tracking down the offender.

An informant has told you that the crime was committed on the thief's birthday. They treated themselves to a shopping spree with your money! Apparently they crept in during a busy weekday and quietly cracked a safe.

The next three pages contain data about criminals in your area. Use the information to identify the thief and get your money back. You'll need to flick between graphs and clues to crack the case.

CLUE 1

MAY						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24 31	25	26	27	28	29	30

CLUE 2

Birthdays of Local Criminals

	EG										
	FF		SK	HC				MH			
	NK		EW	PJ		BJ	LM	CW			
DC	MC	BT	FC	BB		EK	DK	LL	RB		SM
J	F	M	A	M	J	J	A	S	O	N	D

More clues on page 25.

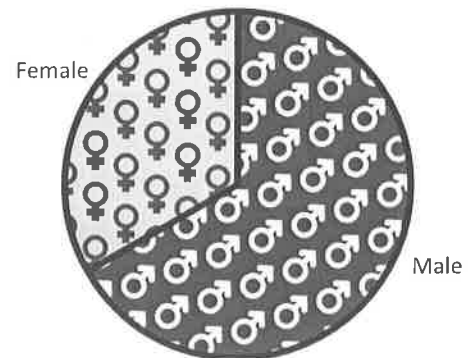
CLUE 3

Birthdates by Gender

Males	Females
04.01.75	11.02.85
23.02.86	14.02.78
17.02.66	03.03.80
02.04.73	13.05.84
04.04.75	07.07.77
24.04.67	17.10.78
10.05.81	31.10.87
23.05.82	
18.07.81	
09.08.67	
18.08.63	
26.09.66	
13.10.72	
24.12.65	

CLUE 4

Gender Breakdown of Local Criminals



CLUE 5

Known Crims

Sam McNab	Earl Wyatt
Master Criminal	Frannie Fingers
Bobette Trimbole	Emma Getaway
Ned Kelly	Shifty Keys
Dan Kelly	Betty Balaclava
Ellen Kelly	Ron Biggs
Pretty-boy Jones	Buster Jones
Harry Cracker	Luke Moran
Mata Hari	Dan Cuffme
Light-fingered Larry	Carla Williams
Fred Capone	

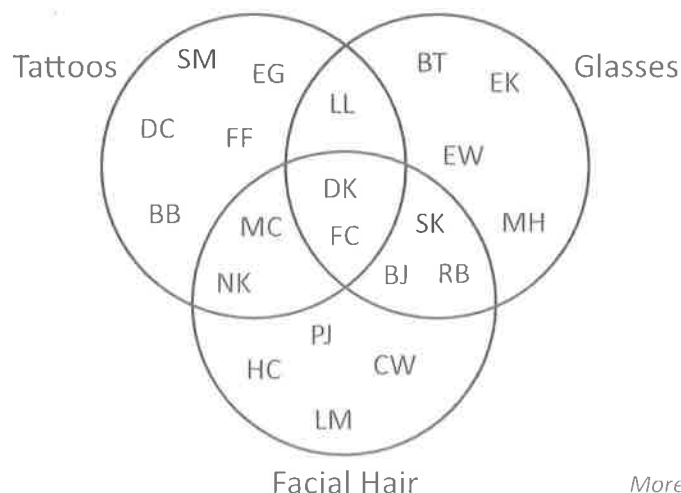
You should know who the criminal is by now!
Use the following data to find out more about them.



DISCOVER

CLUE 6

Distinguishing Features



More clues on page 26.

CLUE 7

Hair Colour

SM	DC	BB	EK	EW	FF	MH	DK	FC	CW	BJ	PJ	HC
BT		LL			RB	MC	NK	LM	SK	EG		
black		blonde			brown						red	

CLUE 8

Height of Known Criminals

	CW	PJ		
	BJ	EG	NK	LM
FF	FC	RB	MC	HC
EK	MH	DC	EW	DK
SM	BB	BT	SK	LL
150–59 cm	160–169 cm	170–179 cm	180–189 cm	190–199 cm
Height				

Whodunnit? Give a name and a detailed description to the police superintendent:

Betty Balaclava

Date of birth: 13.05.84

Tattoos

Blonde hair

160–169 cm tall



What to
do next

Create a WANTED poster for the guilty party.

Answers will vary.