

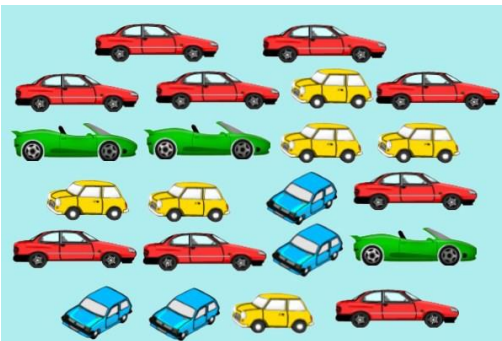
# Progression in Statistics

The following outlines a progressive journey for pupils in the area of maths involving interpreting, constructing and presenting data. Skills and concepts are usually taught within the maths lesson and then applied appropriately using real life contexts.

Progression

interpret and construct simple pictograms, tally charts, block diagrams and simple tables

STATISTICS



Look at the different coloured cars. Can you make a tally to show this information?

Use your tally to create a block graph/pictogram. What does one square/car represent?

Look at the tally information. What can you tell me about the zoo?

Complete the pictogram.

Hair colour		Number
Black	●●●●●	5
Blonde	●●●●●●●	7
Brown	●●●●●●●●	8
Ginger	●●●●	4

Use the tally chart to help you complete the pictogram.

Fruit	Tally	Fruit	Number
Banana		Banana	
Grapes		Grapes	
Pear		Pear	
Apple		Apple	

Complete the pictogram using the data given.

Name	Tally of goals scored	
Raj		
Mark		
Rose		
Anil		

Animals in the Zoo			
tiger	giraffe	elephant	monkey

Complete the tally chart.

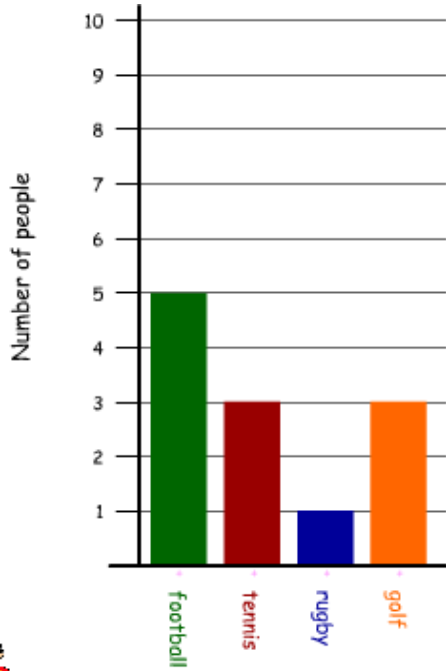
Favourite colour	Tally	Total
Blue		
Red		
Yellow		
Green		

Y2  
Statistics

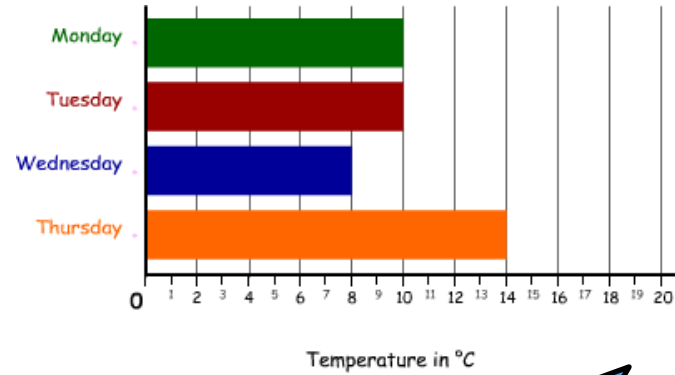
Progression

STATISTICS

ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity

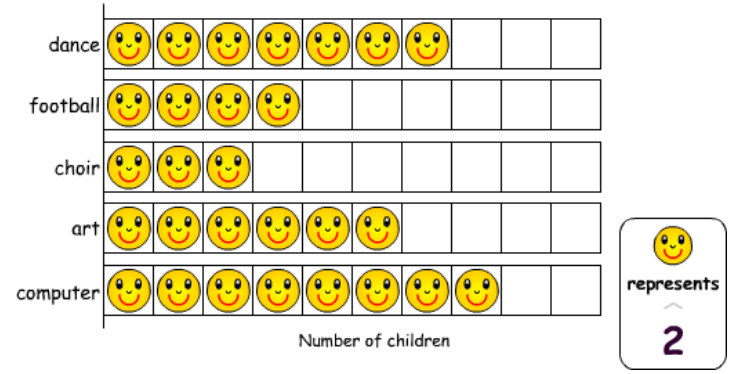


This bar chart shows people's favourite sport. Which is the most popular? How many likes rugby. Which two sports were equally popular?



Which was the hottest/coldest day? What was the highest temperature in the week?

Look at the pictogram which shows favourite clubs. How many liked art club? Which club got the most votes?







Y2  
Statistics

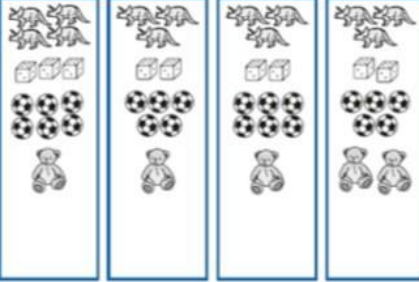
Progression

STATISTICS

ask and answer questions about to-talling and comparing categorical data

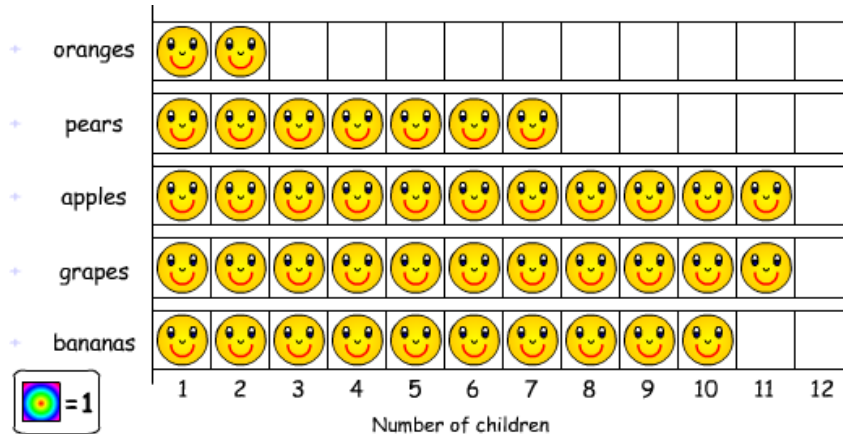
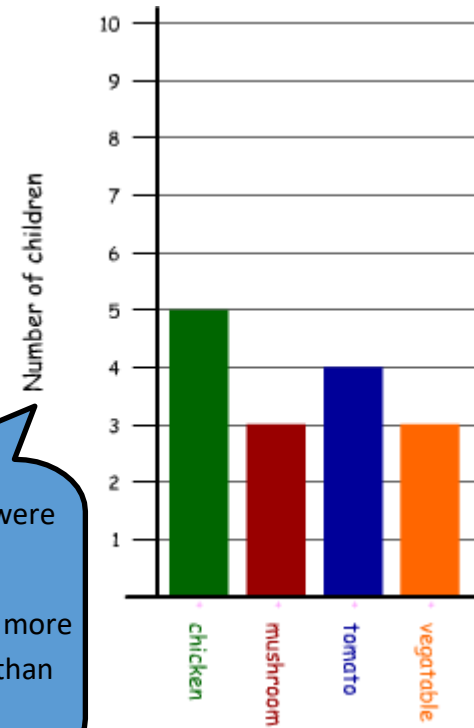
Ben makes a tally chart of his toys. Tick **one** box below that shows all of Ben's toys. Explain why the others are incorrect.

Toys in my box	Tally
	
	
	
	



Look at the tally and the different pictures of ben's toys. Which image of all Ben's toys is correct. Explain your answer.

Which flavour soups were equally popular?  
Challenge—how many more people liked chicken than mushroom?



How many children liked pears?  
Which fruit was least favourite?

**Progression**

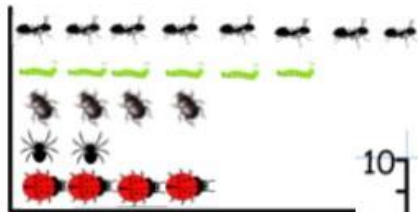
**STATISTICS**

interpret and present data using bar charts, pictograms and tables

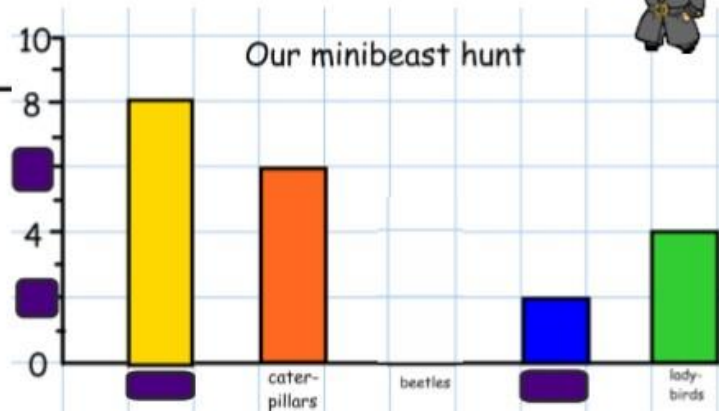
School meal	Tally	Total
Meat ball wrap 		
Chicken Korma Curry 		
Roast Pork and stuffing 		
Buttermilk chicken 		
Salmon fish cake 		

Collect information about people's favourite school dinner at Parkside using the tally table.

Now create a pictogram, bar chart from your information.



What is the missing information?

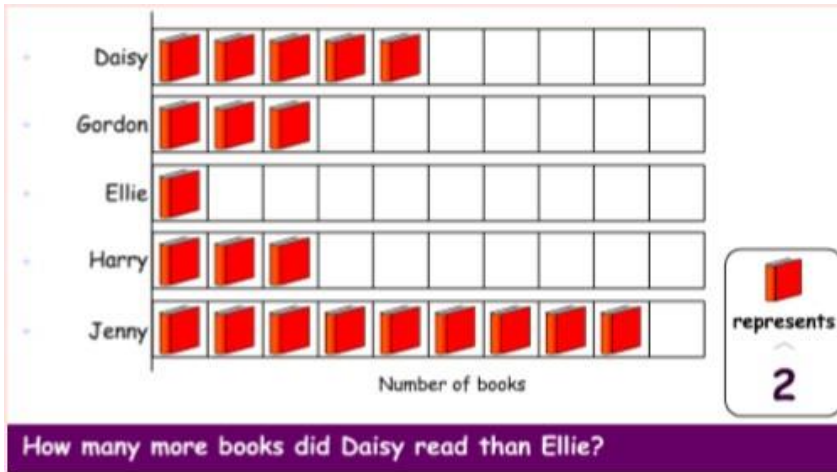


**Statistics**

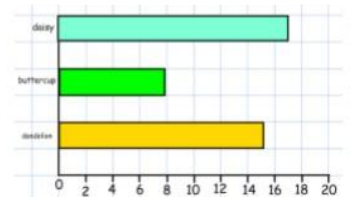
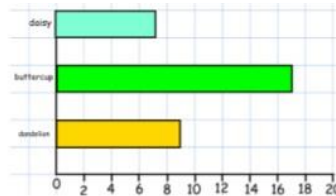
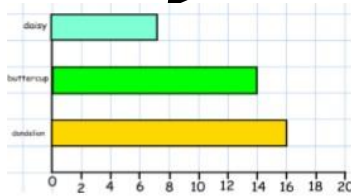
Progression

STATISTICS

Solve one step and two step questions e.g. 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.

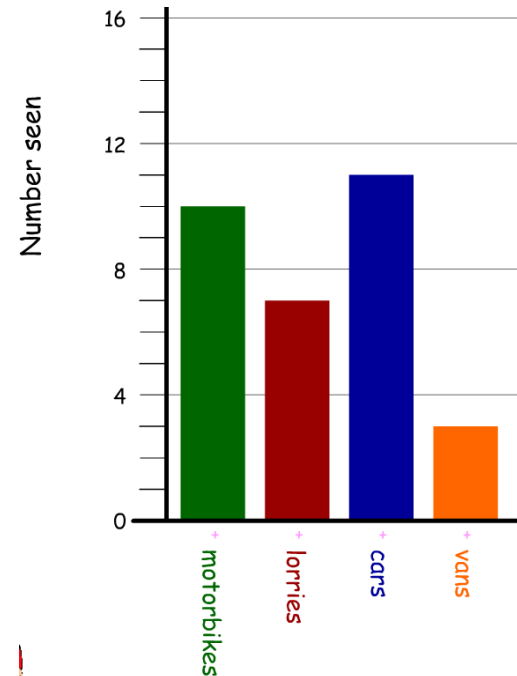


Which bar chart matches the statements? Can you explain your answer?



There are more dandelions than daisies.  
The number of daisies is 7  
There are 8 more buttercups than dandelions.

How many fewer lorries than cars?



Statistics

Progression

STATISTICS

Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs

Discrete Data | Continuous Data

Can you sort the types of data into continuous and discrete?

- Height
- The speed of cars
- Weight
- Favourite Colour
- Number of Taxis waiting at a station
- Best Subject
- Distance to another city
- Shoe Sizes
- Number of drinks in a machine
- Handspsans of people
- What pets you own
- Dress Sizes
- Volume of water in a glass

lemon	chocolate	strawberry	orange	vanilla
12	28	20	16	24

Make a pictogram to show favourite ice-creams from the table above.  
 Is = 3 ice-creams a good choice.  
 Why is = 4 ice-creams a better choice?



This data shows how many cakes were sold in a bakery. Choose a way to represent this data. Can you now show the data another way?

M	T	W	Th	F	Sa	Su
34	43	46	55	72	86	76

After planting your sunflower can you measure it each week. Now present this data using a bar chart.



Can you collate and present data to show how people travel to school?



Statistics

Progression

STATISTICS

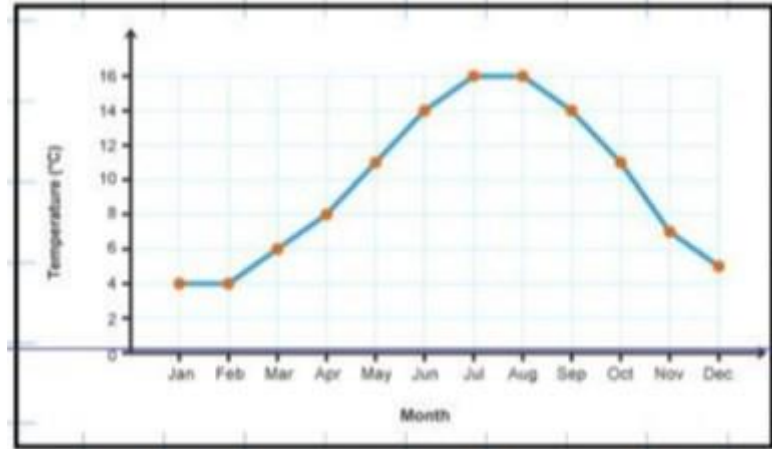
solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

				
lemon	chocolate	strawberry	orange	vanilla
12	28	20	16	24

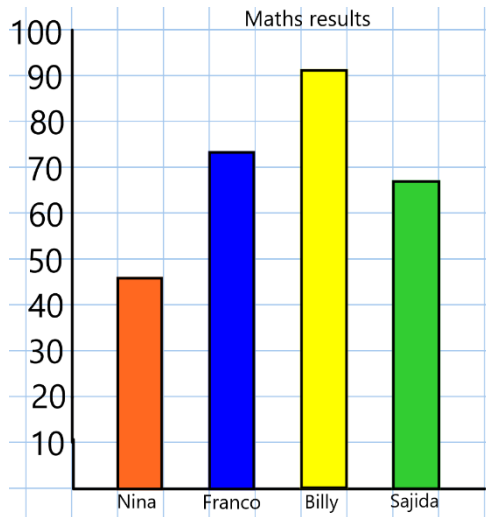
If all flavours were equally popular, how many children would like each?

How many children were asked altogether?

What is the difference between the highest temperature and the lowest temperature?



Between which two months was the biggest increase in temperature?



Estimate each child's mark in the maths test.  
Nina aims to score 72 on her next test. How many more marks does she need?

Statistics

## Progression

## STATISTICS

Complete read and interpret information in tables, including timetables

What information will be found in the red and blue sections of the table?

	Play sports	Does not play sports	Total
Plays an instrument			
Does not play an instrument			
Total			

The table show points each country have scored so far. Which two countries have a combined total of 447 so far?

	Game 1	Game 2	Game 3	Total
England	173	119		
France	170	183		
Spain	57	98		
Total				

On the 6:50 bus how long does it take to get from Highway Rd to Westland Rd?

	Bus Timetable					
Highway Rd	06:50		07:25	08:45	09:10	09:45
Rain Rd	07:00	07:25	07:41	08:55	09:19	09:53
Coldcot Rd	07:11	07:41	07:51	09:04	09:28	10:02
Westland Rd	07:18	07:59	07:59	09:11	09:38	10:11
Bod Rd	07:29	08:12	08:09	09:16	09:47	10:16
Kingswell Rd	07:33	08:15	08:14	09:20	09:53	10:21
Long Rd	07:45	08:30	08:30		10:05	10:40

What questions can you write about this time-table?

	08:55-10		10:30-12		1:05-2:15
Mon	English	Break	Science	Lunch	History
Tue	Maths		PE		Geography
Wed	Art		Maths		English
Thu	English		Science		DT
Fri	Maths		Maths		PE

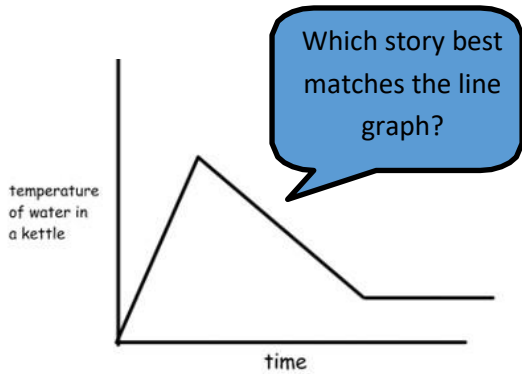
Katie says she can watch both Super Stars and Comedy Hour. Is this possible? Explain.

Entertainment		Catch Up	
10:50	Sing!	11:00	Live in The Park
11:30	Quiz Time	11:30	Pop and Crisps
12:00	Chums	12:10	Super Stars
12:45	Comedy Hour	13:00	In The Garden

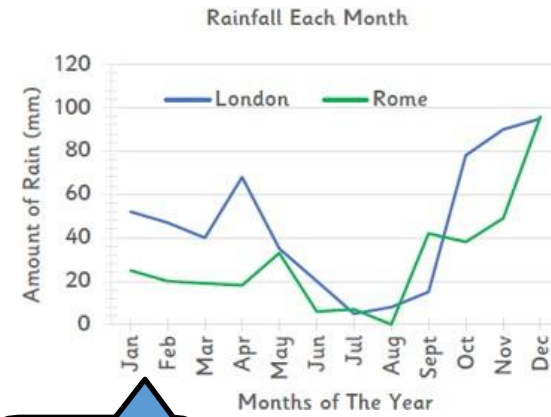
Progression

Solve comparison, sum and difference problems using information presented in a line graph

STATISTICS

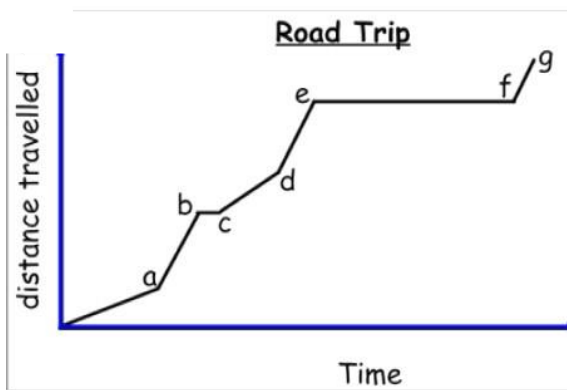


- A the water in the kettle is boiled slowly. It stays at the same boiling temperature, then cools slowly.
- B the kettle is filled with cold water from the tap. It is switched on to boil. It cools down gradually to the same temperature it started at
- B the kettle is filled with cold water from the tap. It is switched on to boil. It cools down gradually to room temperature.



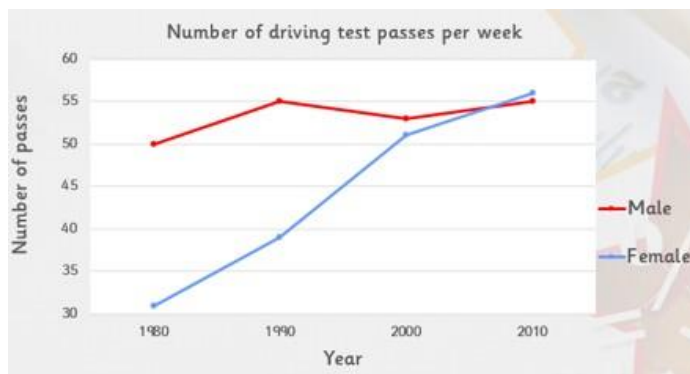
In which 3 months was the rainfall similar?

Estimate how many children completed the cycle race.

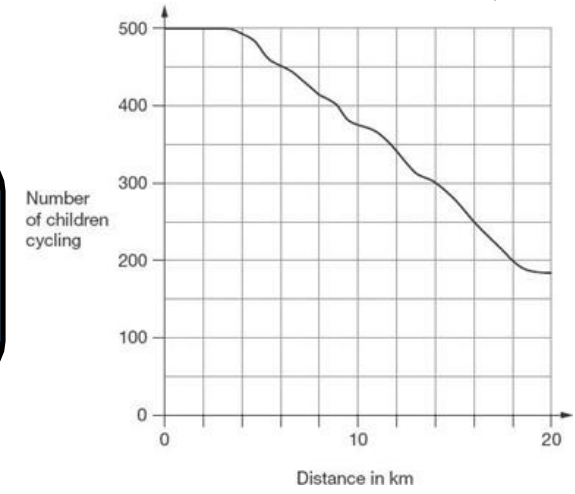


TRUE OR FALSE

- Look at the line graph about a long car journey. Decide whether the following statements are True or False.
- At point a, the car speeded up?
  - At point f the driver stopped for a few hours' sleep.
  - At point d, the car slowed down
  - At point d the car was only about a quarter of the way though the journey.



How many people passed their test in 1980?



# Y6 Statistics

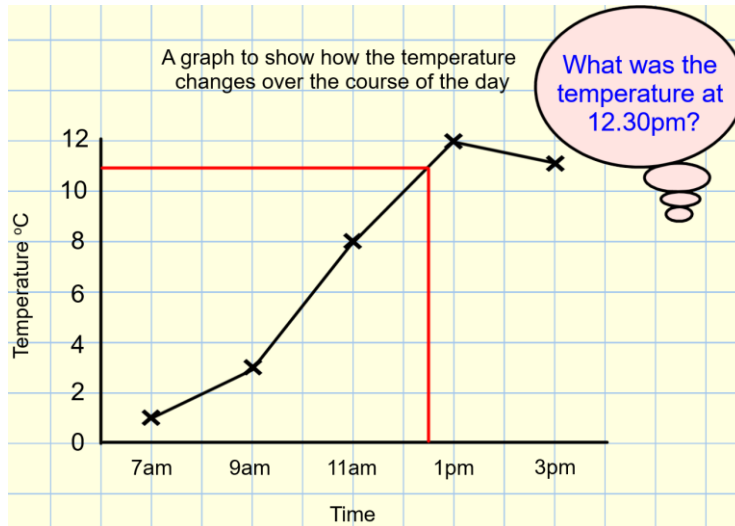
## Progression

## STATISTICS

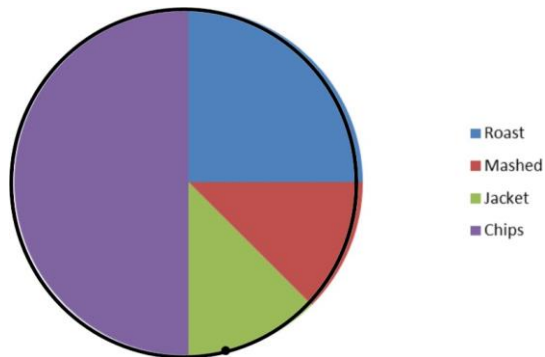
interpret and construct pie charts and line graphs and use these to solve problems

Time (hours)	0	1	2	3	4	5	6	7
Distance (km)	0	8	15	21	21	28	32	43

Use the data to create a line graph about Ben's cycle ride.



Explain why a pie chart might be better to show data than a table.



If 40 people took part in the survey, estimate how many liked each kind of potato.

- 96 people took part in this survey.

Our favourite pets

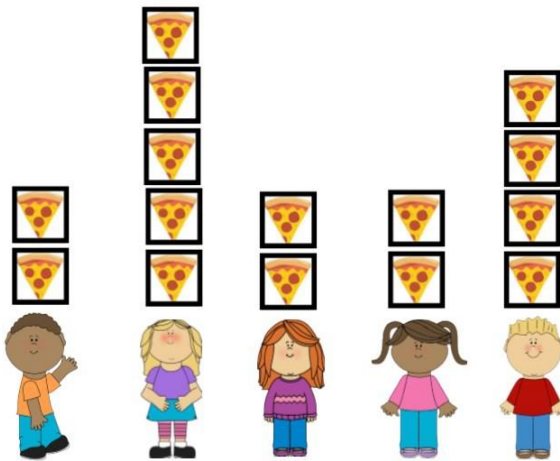
■ Dogs
■ Horses
■ Cats
■ Hamsters

How many people voted for cats?

$\frac{3}{8}$  of the people who voted for dogs were male. How many females voted for dogs?

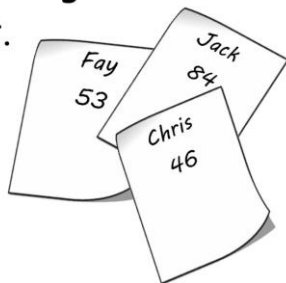
## Progression

calculate and interpret the mean as an average



What is the mean score? How would the mean score change if Chris got 58 marks? Can you see a different way of finding this answer?

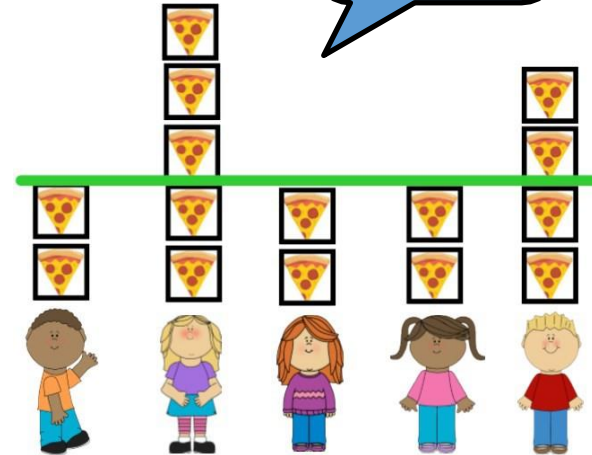
Fay, Jack and Chris scored the following marks in an English test.



## STATISTICS

Can you represent the pizzas using blocks? Now move some of the blocks so that everyone has the same number of pieces. This is called the mean.

The green line is the mean line. Could the mean line be higher than all of the bars? Explain.



Ella takes 4 tests in school. Her mean score for the 4 tests is 69 marks. What is her total score for the four tests?

How is this question different?

Challenge: If she scored the same mark on two of the tests, what possible scores could she have had?