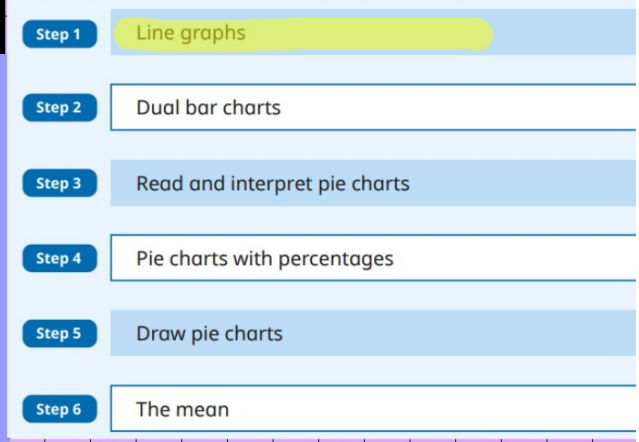
LI: to understand line graphs.

Underline your date and LI

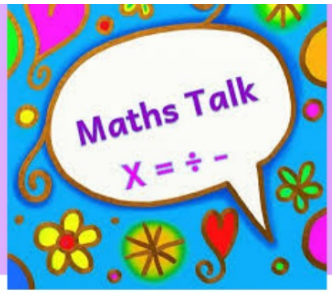
one digit per box

Our Learning Journey



Key vocabulary

count, tally, sort, vote, survey, questionnaire, data, database, graph, block graph, line graph, pictogram, represent, group, set list, chart, bar chart, bar line chart, pie chart, circle graph, tally chart, table, frequency table, label, title, axis, axes, diagram, most popular, most common, least popular, least common, mean, average, classify, outcome.

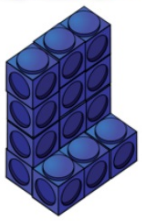


- How do you read information from a line graph?
- What does each axis represent?
- What is the smallest value in the data? What is the greatest?
- What intervals would be appropriate for this line graph?
- What does this line graph tell you?
- What does the direction of the line tell you about what happened?
- How can two sets of data be recorded on the same line graph?

Starter/Recap

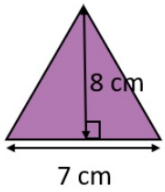
Flashback 4

Year 6 | Week 10 | Day 3

1) 

Volume = ☐ cubes

2) Area = ☐ cm^2



3) 25% of 840 = ☐

4) $\frac{6}{7} \div 2 =$ ☐

White Rose Maths

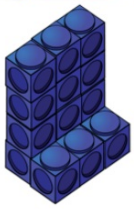
Challenge:

1. 10% of 240
2. $7^2 + 2^2$
3. 43,700 ÷ 100
4. $\frac{3}{8} + \frac{1}{4}$
5. 329,700 – 200
6. $\frac{1}{4} \times \frac{1}{2}$
7. Find the mean of the numbers 7, 3, 9, 5.

Starter/Recap

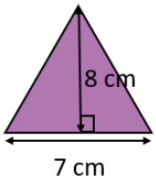
Flashback 4

Year 6 | Week 10 | Day 3

1) 

Volume = 15 cubes

2) Area = 28 cm^2



3) 25% of 840 = 210

4) $\frac{6}{7} \div 2 = \frac{3}{7}$

White Rose Maths

Challenge:

1. 10% of 240 = 24
2. $7^2 + 2^2 = 53$
3. 43,700 ÷ 100 = 437
4. $\frac{3}{8} + \frac{1}{4} = \frac{5}{8}$
5. 329,700 − 200 = 329,5(
6. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$
7. Find the mean of the numbers 7, 3, 9, 5. 6

Assessment

1) What is half of 9,000?

2) What is the sum of 31 and 79?

   What is the difference between 31 and 79?

3) What is the difference between 1,935 m and 2,936 m?

4) Complete the sequence

____ 14 ____ 26 ____

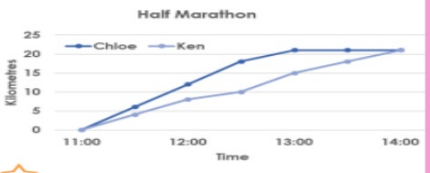
Challenge:

7a. Complete the table by giving an example of data that can be represented by each of the graphs or charts below.

Line Graph	
Bar Chart	

8a. True or false?

Both friends finished the half marathon (21km) by 1:30pm.

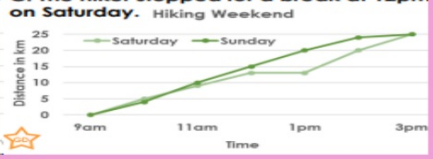


9a. According to the graph, which statements are correct?

A. On Sunday, the hiker walked quickest after 2pm.

B. The hiker had walked 5km by 10am on Saturday.

C. The hiker stopped for a break at 12pm on Saturday.



Assessment

1) What is half of 9,000? 4,500

2) What is the sum of 31 and 79? 110

   What is the difference between 31 and 79? 48

3) What is the difference between 1,935 m and 2,936 m? 1,001 m

4) Complete the sequence

   8 14 20 26 32

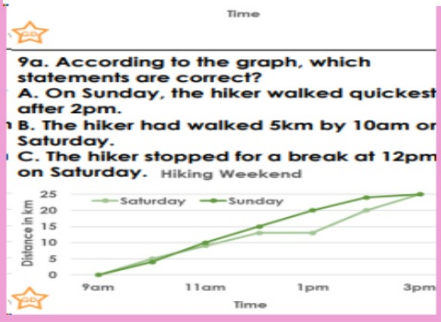
Challenge:

7a. Complete the table by giving an example of data that can be represented by each of the graphs or charts below.

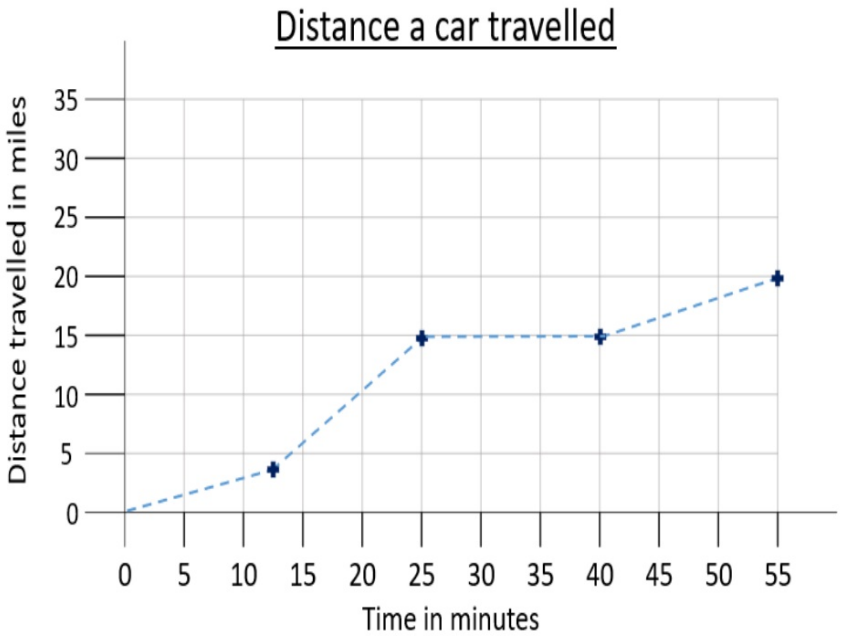
Line Graph	
Bar Chart	

8a. True or false?

7a. Various answers, for example:
Line graph = weight of a baby measured on the same day every month for a year.
Bar chart = number of children in class born on different days of the week.
8a. False as Ken still has 3km to run.
9a. B and C are correct.



I do



What do you know?

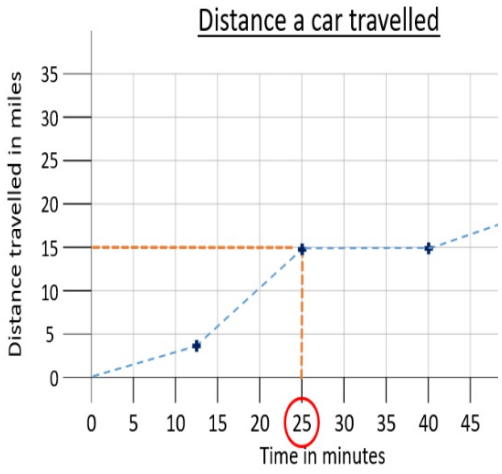
What can you find out?

Have a think

- How do you read information from a line graph?
- What does each axis represent?
- What is the smallest value in the data? What is the greatest?
- What intervals would be appropriate for this line graph?
- What does this line graph tell you?
- What does the direction of the line tell you about what happened?
- How can two sets of data be recorded on the same line graph?

Possible sentence stems

- The horizontal axis shows _____
  The vertical axis shows _____
- At _____, the graph reads _____
  At _____, the graph reads _____
  The difference between the two points is _____

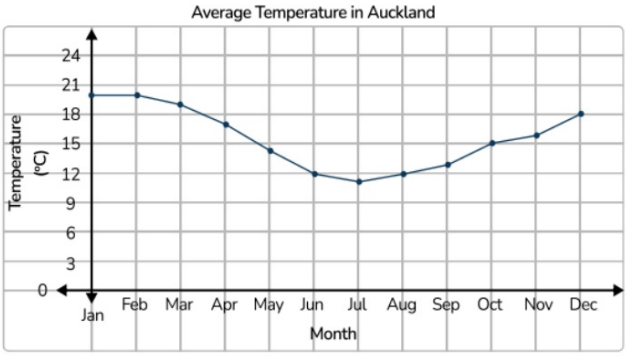


How far had the car travelled in 25 minutes?

The car travelled 15 miles in 25 minutes.

We do

1 True or false?



a The temperature in March is 19°C.

b The temperature in October is 3°C more than the temperature in September.

c The difference between the temperature in May and December is 4°C.

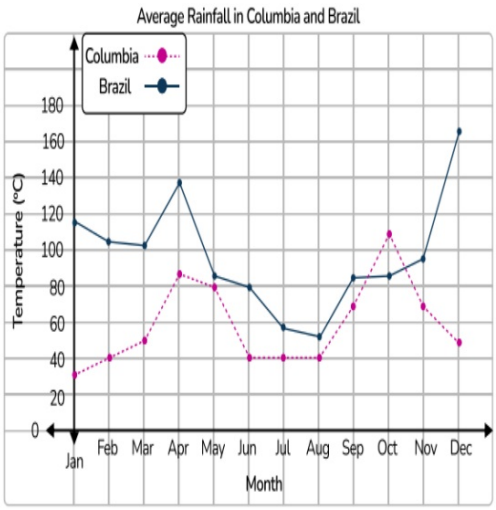
d The difference between the temperature in June and the temperature in October is 1°C.

e The temperature in July is half the temperature in January.

f The temperature in October was three quarters of the temperature in February.

Challenge

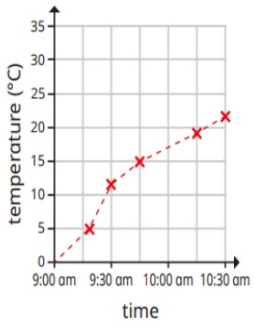
Write at least 6 true statements about this line graph.

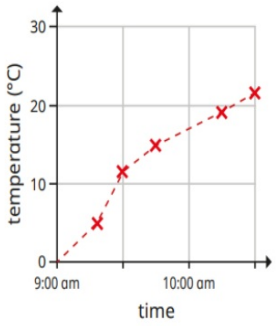


Task 1:

You do

- Discuss with a partner what is the same and what is different about the line graphs.



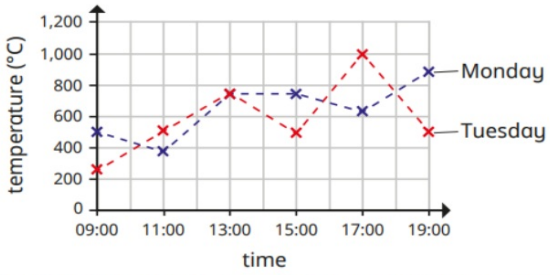


- What is the temperature at 9:45 am?
- At what time was the temperature approximately 12 °C?

Task 2:

- The graph shows water consumption over two days.

  The water consumption was recorded every 2 hours.



- At what times was the recorded amount of water consumed on Monday and Tuesday the same?
- Was more water consumed at 5:00 pm on Monday or Tuesday?

  Approximately how much more?

Challenge

- The table shows the height a rocket reached between 0 and 60 seconds.

Time (seconds)	0	10	20	30	40	50	60
Height (metres)	0	8	15	25	37	50	70

Draw a line graph to represent the information.

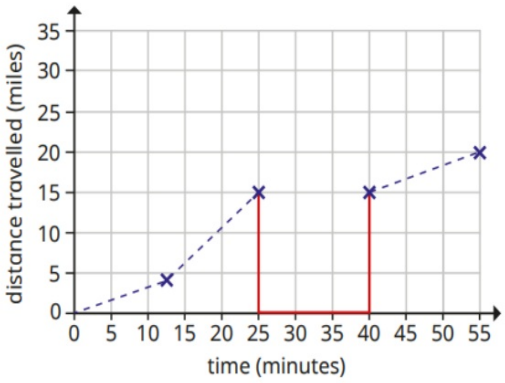
Task 3: We do **Reasoning** you do

Reasoning and problem solving

This graph shows the distance travelled by a car.

The car stops between 25 and 40 minutes.

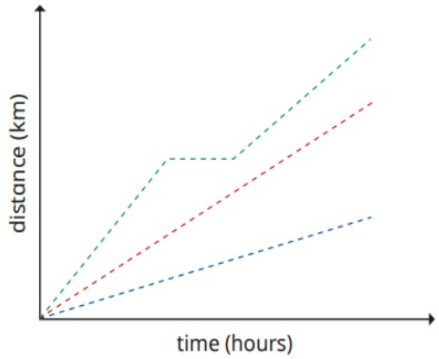
Tiny has added the red line to show the car stopped.



Do you agree with Tiny?

Explain your answer.

The graph shows some of Dr Lee's journeys.



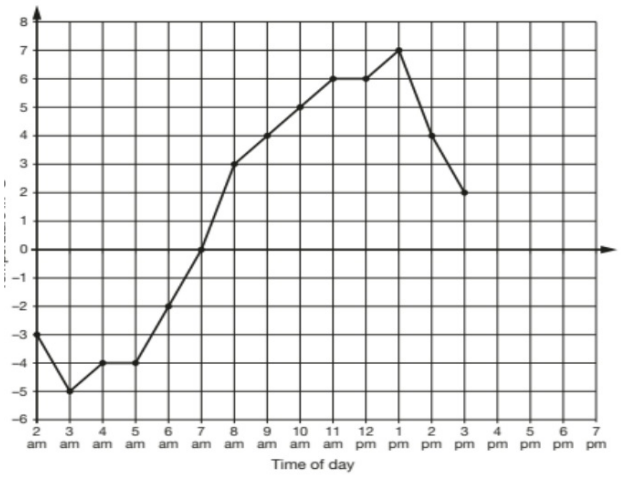
What is the same and what is different about the journeys?

What might have happened during the green journey?

Plenary:

We do

This graph shows the temperature in °C from 2 am to 3 pm on a cold day.



How many degrees **warmer** was it at 3 pm than at 3 am?

°C

At 6 pm the temperature was 4 degrees lower than at 3 pm.

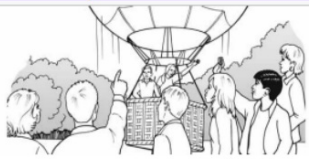
What was the temperature at 6 pm?

°C

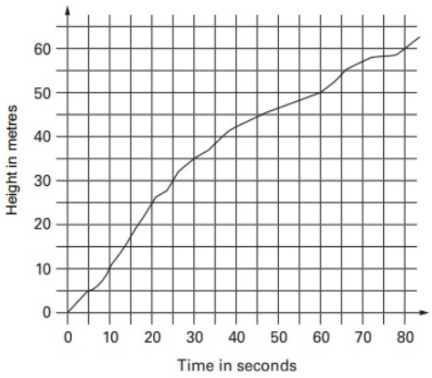
[2 marks]

you do

2 [2004]



This graph shows the height of a balloon at different times.



From the graph, find the height of the balloon at 50 seconds.

m

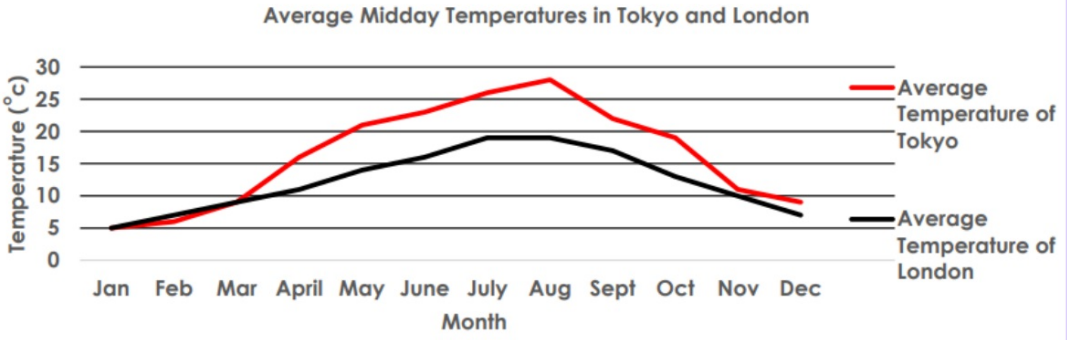
Use the graph to find how long it took the balloon to rise from 30 metres to 60 metres.

seconds

[2 ma

Reflection

1. Amy has plotted the average midday temperatures of 2 cities throughout the year on a line graph in order to compare them.



Discuss what questions you could ask using the graph above. Can you think of any questions that would be suitable for both lines?

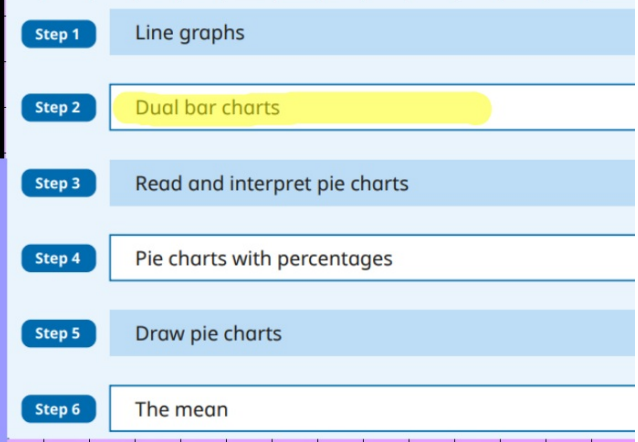
How would you go about solving this question?
What steps would you use?

LI: to understand dual bar charts.

one digit per box

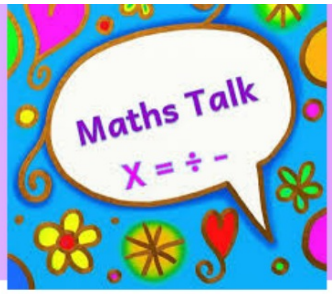
Underline your date and LI

Our Learning Journey



Key vocabulary

count, tally, sort, vote, survey, questionnaire, data, database, graph, block graph, line graph, pictogram, represent, group, set list, chart, bar chart, bar line chart, pie chart, circle graph, tally chart, table, frequency table, label, title, axis, axes, diagram, most popular, most common, least popular, least common, mean, average, classify, outcome.



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- How do you know which bar shows which information?
- What questions can be asked about this chart?
- What is the difference between _____ and _____?
- How much is _____ and _____ in total?

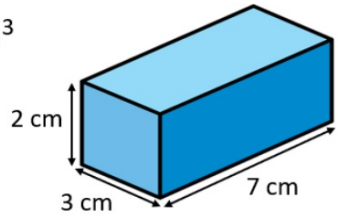
Starter/Recap

Flashback 4

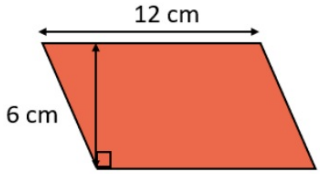
Year 6 | Week 10 | Day 4

White Rose MATHS

1) Volume = ☐ cm^3



2)



Area = ☐ cm^2

3) 30% of 450 = ☐

4) $\frac{5}{6}$ of £42 = ☐

Challenge:

1. 15% of 360
2. $(8^2 + 9^2) \div 5$
3. $356 \div 100$
4. $\frac{2}{5} + \frac{1}{4}$
5. 270,000 − 600
6. $\frac{1}{3} \times \frac{3}{5} = \frac{\square}{\square} = \frac{\square}{\square}$
7. Find the mean of the numbers 12, 15, 22, 15, 2

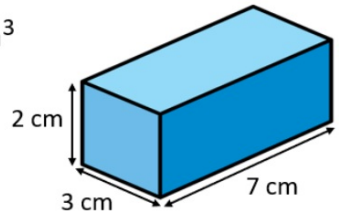
Starter/Recap

Flashback 4

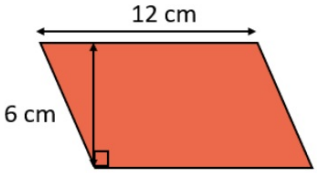
Year 6 | Week 10 | Day 4

White Rose MATHS

1) Volume = 42 cm^3



2)



Area = 72 cm^2

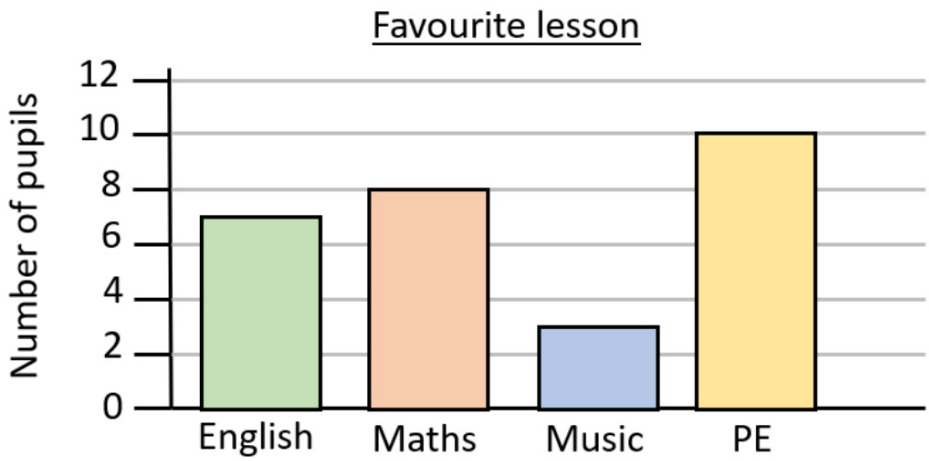
3) 30% of 450 = 135

4) $\frac{5}{6}$ of £42 = £35

Challenge:

1. 15% of 360 = 54
2. $(8^2 + 9^2) \div 5 = 29$
3. $356 \div 100 = 3.56$
4. $\frac{2}{5} + \frac{1}{4} = \frac{13}{20}$
5. 270,000 − 600 = 269
6. $\frac{1}{3} \times \frac{3}{5} = \frac{3}{15} = \frac{1}{5}$
7. Find the mean of the numbers 12, 15, 22, 15, 17

Assessment



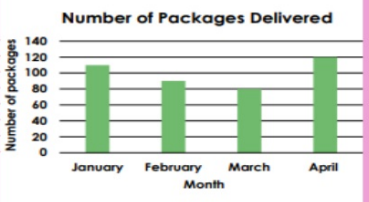
1) How many children voted English as their favourite?

2) How many more children chose PE than music?

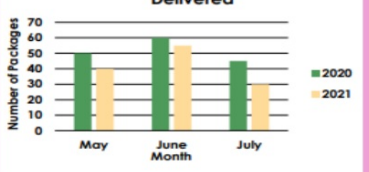
3) How many children voted altogether?

Challenge:

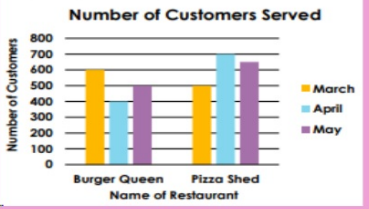
1b. How many packages were delivered in total?



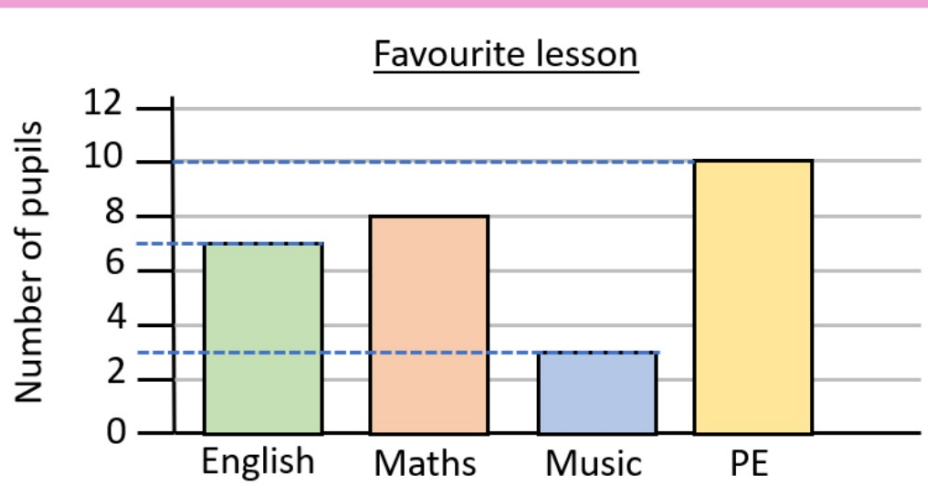
2b. Which month had the biggest difference between the number of packages delivered in both years?



3b. Which restaurant served the most customers in March?



Assessment



1) How many children voted English as their favourite?

7 children

2) How many more children chose PE than music?

$10 - 3$

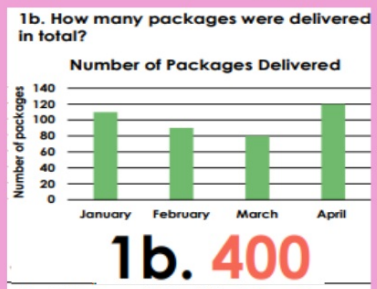
7 children

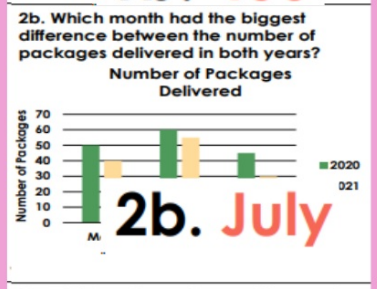
3) How many children voted altogether?

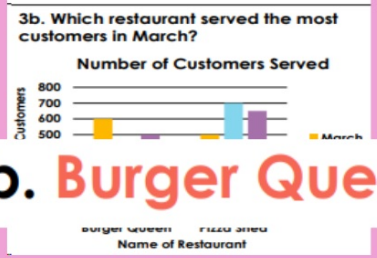
$7 + 8 + 3 + 10$

28 children

Challenge:



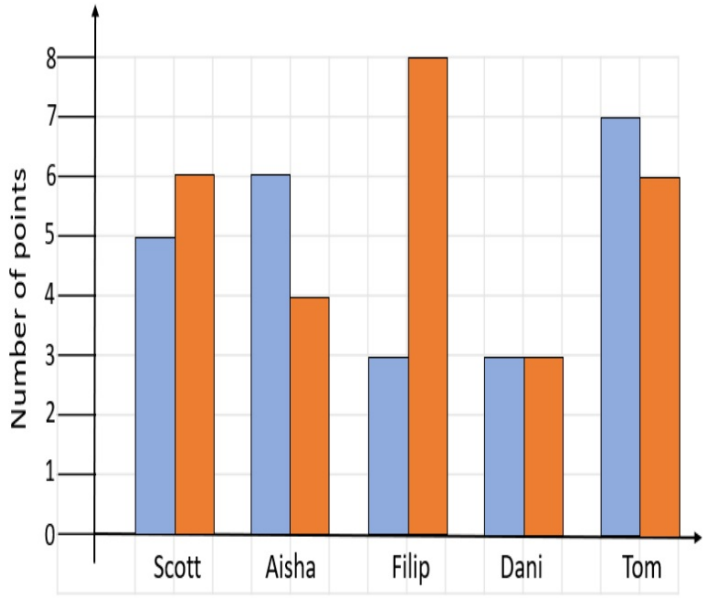




I do:

5 children play two games. Game 1 Game 2

Their scores for each game are recorded on the dual bar chart.



What do you know?

What can you find out?

Have a think

- How is a dual bar chart different from a single bar chart?
- What information does this dual bar chart give?
- What is different about what the two bars show?
- How do you know which bar shows which information?
- What questions can be asked about this chart?
- What is the difference between _____ and _____?
- How much is _____ and _____ in total?

Possible sentence stems

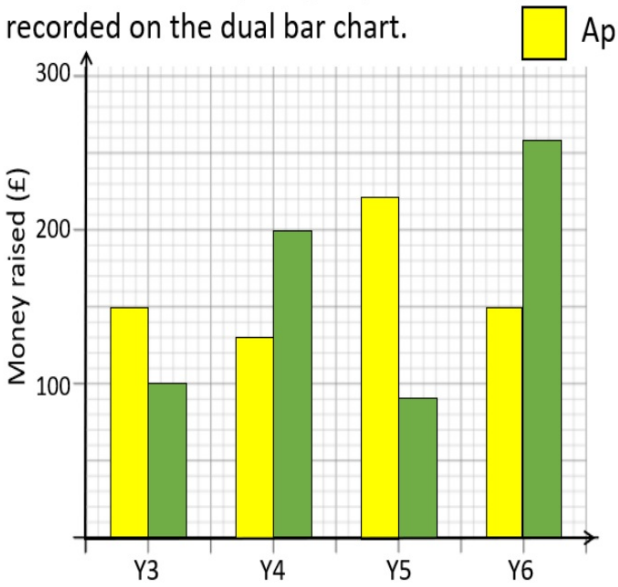
- The first bar represents _____
  The second bar represents _____
- The difference between _____ and _____ is _____
- The bar is closer to _____ than _____, so I estimate that the value is

We do:

Learning Intention: To understand dual bar charts

Years 3 to 6 are raising money for charity.

The amount each year group raised in April and May is recorded on the dual bar chart.



What do you know?

What can you find out?

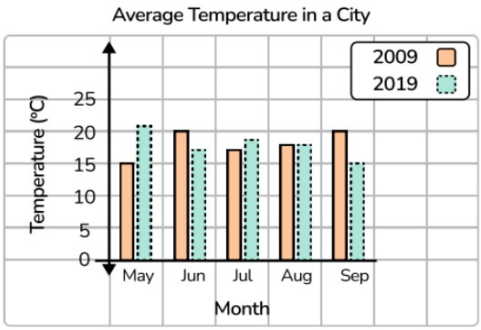
Have a think

We do:

Learning Intention: To understand dual bar charts

Challenge

Use the dual bar chart to answer the questions.



a In what month and year was the highest temperature?

b In what month and year was the lowest temperature?

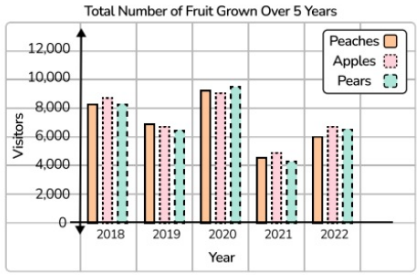
c What is the difference between the highest and lowest temperature?

d What is the difference between the temperatures in September?

e Which was the hottest and coolest month in 2009?

f Which was the hottest and coolest month in 2019?

3 This bar chart shows the number of fruit a farmer grew over 5 years.
Can you summarise what the bar chart tells you?
Write questions you could ask about the chart.
Swap your questions with a partner and answer them.



Task 1

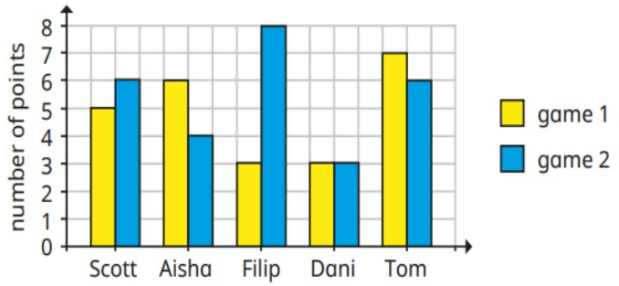
Learning Intention: To understand dual bar charts

Task 2

You do

- Five children play two games.

  Their scores for each game are recorded on a dual bar chart.

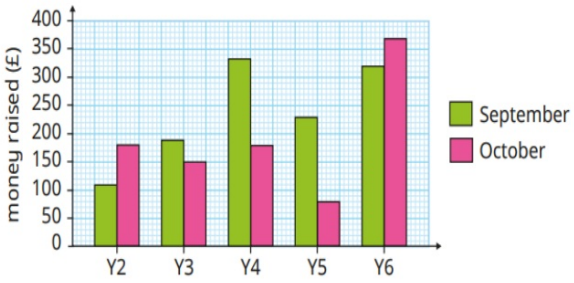


  - Who scored the most points in game 1?
  - Who scored the fewest points in game 2?
  - Who scored the most points altogether in both games?
  - How many children got a higher score on their second game?
  - Which child scored the same on their first and second games?
  - How many more points did Filip score on his second game than his first game?
  - What is the difference between the total points scored in games 1 and 2?

  What else can you find out?

- Years 2 to 6 are raising money for charity.

  The amount each year group raised in September and October is recorded in the dual bar chart.



  - How much money was raised in September?
    How much was raised in October?
  - Estimate how much more money Year 4 raised than Year 5 in October.
  - Which year group has raised the most money so far?
  - How much money was raised altogether in September and October?
  - How much money in total have all five classes raised so far?

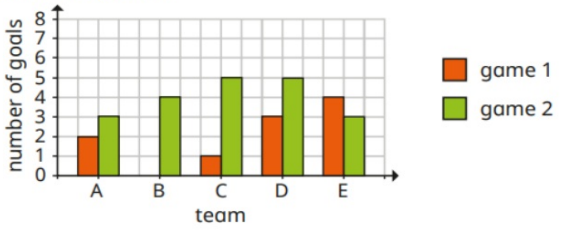
  What else can you find out?

Task 3: Learning Intention: To understand dual bar charts

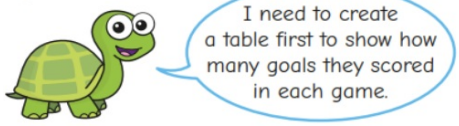
Reasoning We do You do:

Reasoning and problem solving

The bar chart shows the number of goals scored by some teams in two games.



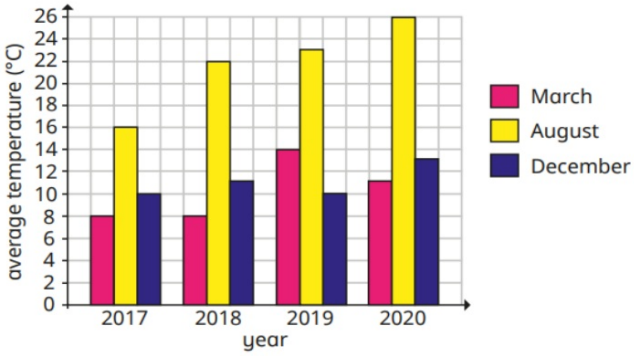
Tiny wants to work out whether each team scored more goals in game 1 or game 2



Do you agree with Tiny?

Explain your answer.

The bar chart shows the average temperature in a UK city.



Summarise what the chart tells you.

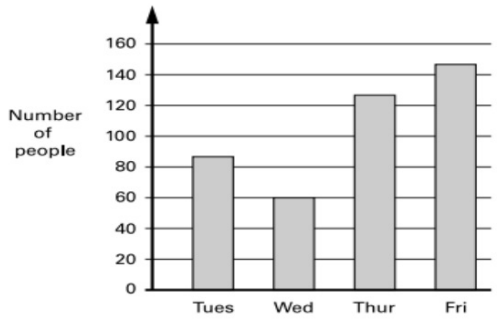
What questions could you ask a partner about this chart?

Plenary:

We do

4 This bar chart shows how many people went to a school play.

00]



Estimate the number of people who went there on **Thursday** and **Friday** altogether.

Each person paid **£2.25** for a ticket to get in.

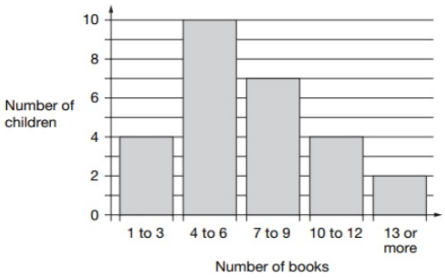
How much **ticket money** was collected on **Wednesday**?

Show your method

[2 marks]

You do

This chart shows the number of books some children read last month.



How many children altogether read **more than 9 books**?

7 children read 4 books.
1 child read 5 books.

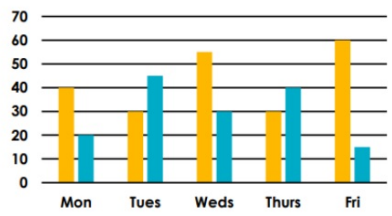
Lin says,

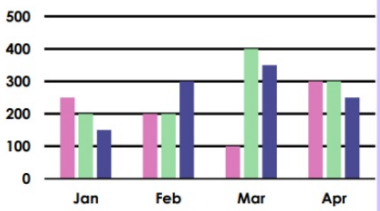
'That means 2 children read 6 books'.

Explain how she can work this out from the chart.

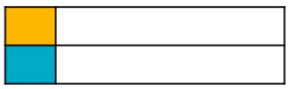
Reflection

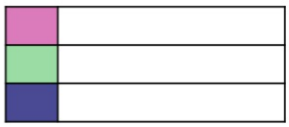
2. Using the chart titles given below, create a key for each chart.



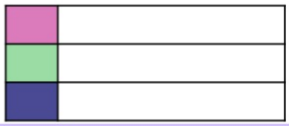


2a. Number of patients treated.





2b. Number of loaves of bread sold.



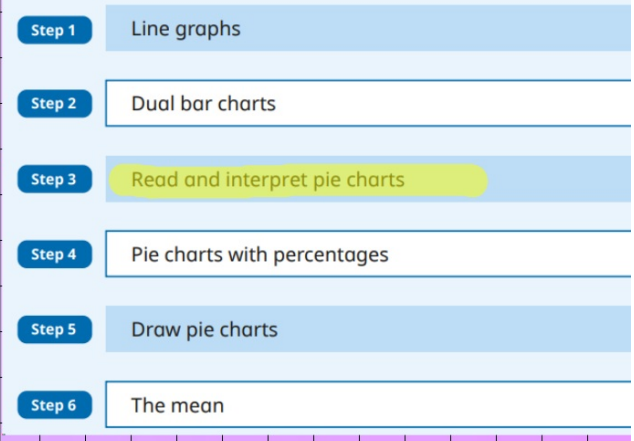
How would you go about solving this question?
What steps would you use?

LI: to read and in terpret pie charts.

one digit per box

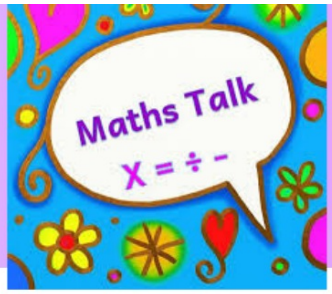
Underline your date and LI

Our Learning Journey



Key vocabulary

count, tally, sort, vote, survey, questionnaire, data, database, graph, block graph, line graph, pictogram, represent, group, set list, chart, bar chart, bar line chart, pie chart, circle graph, tally chart, table, frequency table, label, title, axis, axes, diagram, most popular, most common, least popular, least common, mean, average, classify, outcome.



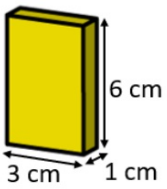
- What does the pie chart show?
- What does each section of the pie chart show?
- Which of the choices was the most popular? How do you know?
- If you know the total, how can you work out the value of one part?
- If you know the value of one part, how can you work out the total number?
- How is a pie chart different from a bar chart?

Starter/Recap

Flashback 4

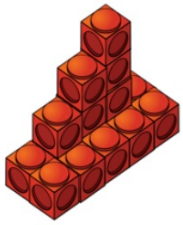
Year 6 | Week 10 | Day 5

White Rose MATHS

1) 

Volume = ☐ cm^3

2) Volume = ☐ cubes



3) 20% of ☐ = 5.4

4) 270 mm ◯ 27 cm

Challenge:

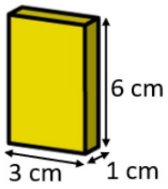
1. 67% of 190
2. $(7^2 + 5^2) \div 6$
3. ☐ $\div 100 = 48.59$
4. $\frac{5}{6} + \frac{2}{5} = \frac{\square}{\square}$
5. 200,000 − 20
6. $\frac{\square}{\square} \times \frac{\square}{\square} = \frac{8}{21}$
7. The mean of six 2-dig numbers is 13. What could the numbers b

Starter/Recap

Flashback 4

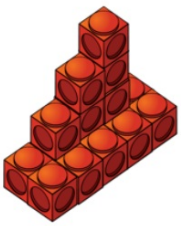
Year 6 | Week 10 | Day 5

White Rose MATHS

1) 

Volume = 18 cm^3

2) Volume = 16 cubes



3) 20% of 270 = 5.4

4) 270 mm (=) 27 cm

Challenge:

1. 67% of 190 = 127.3
2. $(7^2 + 5^2) \div 6 = 12.33$
3. 4,859.1 ÷ 100 = 48.591
4. $\frac{5}{6} + \frac{2}{5} = 1\frac{7}{30}$
5. 200,000 − 20 = 199,980
6. $\frac{2}{3} \times \frac{4}{7} = \frac{8}{21}$ *
7. The mean of six 2-digit numbers is 13. What could the numbers be?
   11, 15, 15, 14, 11, 12*

*Various answers, one example given

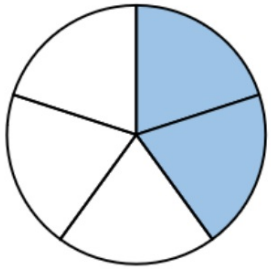
Assessment

1) Calculate $\frac{3}{8}$ of 56

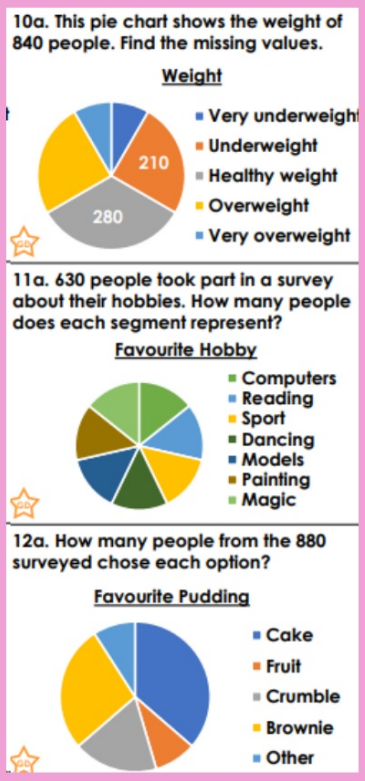
2) There are 30 children in Year 6
$\frac{3}{5}$ of them wear glasses.
How many children in Year 6 **do not** wear glasses?

3) What fraction of the circle is shaded?

What fraction is not shaded?



Challenge:



Assessment

1) Calculate $\frac{3}{8}$ of 56 $= 21$

$56 \div 8 = 7$ $\quad 7 \times 3$

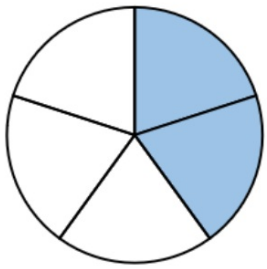
2) There are 30 children in Year 6

$\frac{3}{5}$ of them wear glasses.

How many children in Year 6 **do not** wear glasses? 12

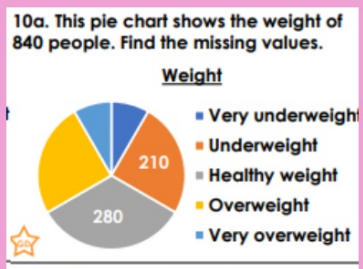
$\frac{2}{5}$ of 30 $\quad 30 \div 5 = 6$

3) What fraction of the circle is shaded? $\frac{2}{5}$



What fraction is not shaded? $\frac{3}{5}$

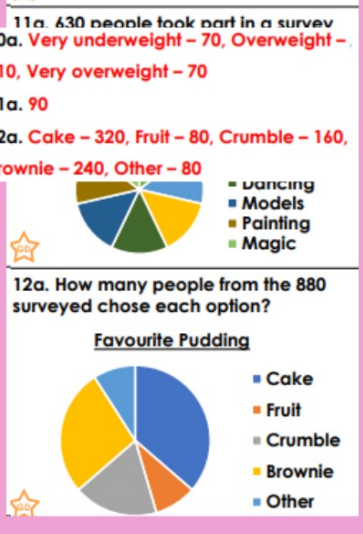
Challenge:



10a. Very underweight – 70, Overweight – 210, Very overweight – 70

11a. 90

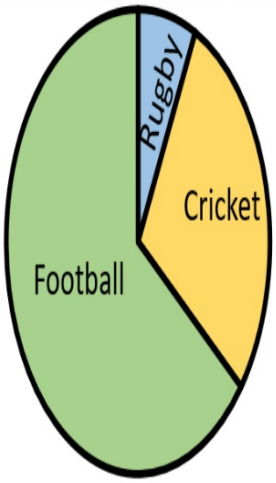
12a. Cake – 320, Fruit – 80, Crumble – 160, Brownie – 240, Other – 80



I do:

Some children were asked to name their favourite sport.

The results are shown in the pie chart.



Write **more** or **less** to complete the sentences.

_____ than half of the class have cricket as their favourite sport.

_____ than a quarter of the class have football as their favourite sport.

Have a think

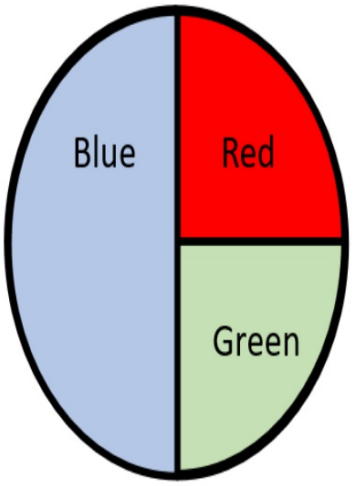
- What does the pie chart show?
- What does each section of the pie chart show?
- Which of the choices was the most popular? How do you know?
- If you know the total, how can you work out the value of one part?
- If you know the value of one part, how can you work out the total number?
- How is a pie chart different from a bar chart?

Possible sentence stems

- There are _____ equal parts altogether.
  The total is _____, so each equal part is worth _____
- One part is worth _____
  There are _____ equal parts altogether, so the total is equal to _____

We do:

Favourite colours



What fraction is red?

What fraction is green?

What fraction is blue?

Have a think

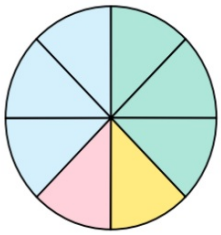
_____ times as many prefer blue compared to

_____ as many prefer green as they do blue.

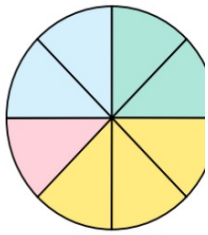
Challenge

The pie charts show the favourite fruits of children in two schools.

Favourite Fruit - Park School
(200 Children)



Favourite Fruit - Grove Sc
(320 Children)



a What fraction of the children at Park School voted for blueberr

b What fraction of the children at Grove School voted for blueber

c How many more children voted for blueberry at Grove School t School?

d How many children voted for banana at Park School?

e How many children voted for apple at Grove School?

f Write two questions of your own about the pie charts.

Task 1

You do

Task 2:

- Some children in a class were asked to name their favourite sport.

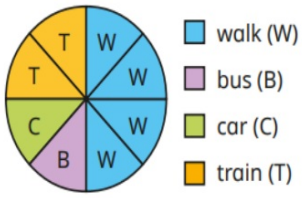
  The results are shown in the pie chart.

  Write **more** or **less** to complete the sentences.

  - _____ than half of the class have cricket as their favourite sport.
  - _____ than a quarter of the class have football as their favourite sport.

  Discuss with a partner what other sentences you can write about the information in the pie chart.

- The pie chart shows how 600 children travel to school.

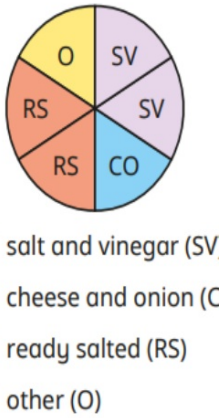


- Mo asked 180 people to name their favourite flavour of crisps.

  The results are shown in the pie chart.

  - How many people chose ready salted?
  - How many people chose a flavour other than salt and vinegar?
  - How many more people chose salt and vinegar than cheese and onion?

  What other questions can you ask?



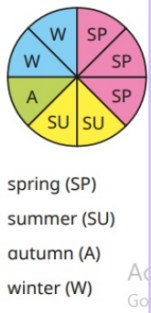
Challenge

- In a survey, people were asked to name their favourite season of the year.

  The results are shown in the pie chart.

  48 people said that summer was their favourite season.

  - How many people took part in the survey?
  - How many people said that spring was their favourite season?



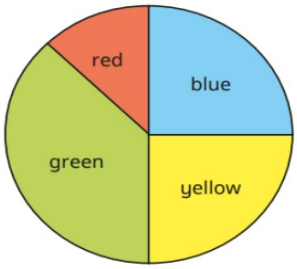
Task 3: We do

You do

Reasoning and problem solving

200 people were asked to name their favourite colour.

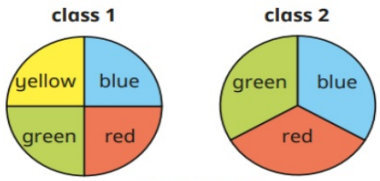
The pie chart shows the results.

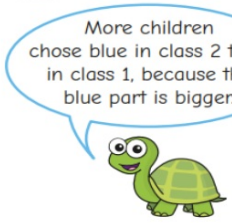


Approximately how many more people chose green as their favourite colour than chose red?

How did you work it out?

The pie charts show the favourite colours of the children in two classes.



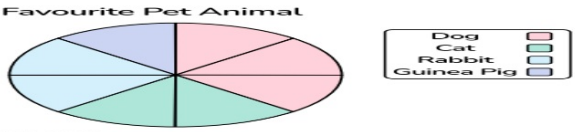


Do you agree with Tiny?

Explain your answer.

Challen

The pie chart shows the favourite pet of children in Year 6.



45 children voted for dog.

a How many children voted in total?

b How many children voted for cat?

c How many children voted for rabbit?

d How many children voted for guinea pigs?

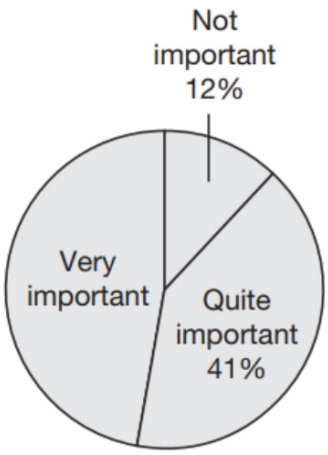
e If $\frac{2}{3}$ of the people who voted for rabbit were girls, how many boys voted for rabbit?

Plenary:

1,200 pupils were asked this question:

How important is it to have a break when using a screen?

This chart shows the results.



How many pupils answered 'Very important'?

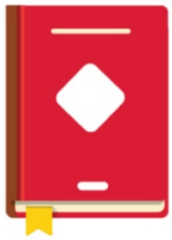
pupils

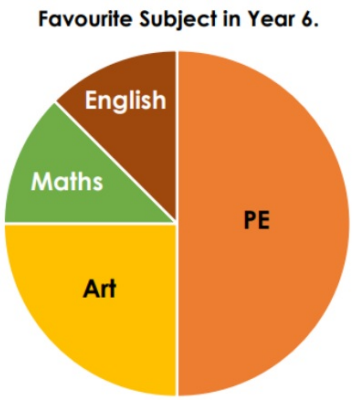
1 mark

Reflection

1. Below is a pie chart that shows the favourite subjects of two year 6 classes together. The two classes have between 40 and 60 children in them in total.

Using the information above, explore the different possible number of children in each section of the pie chart below.





How would you go about solving this question?

What steps would you use?

LI: to understand pie charts with percentages

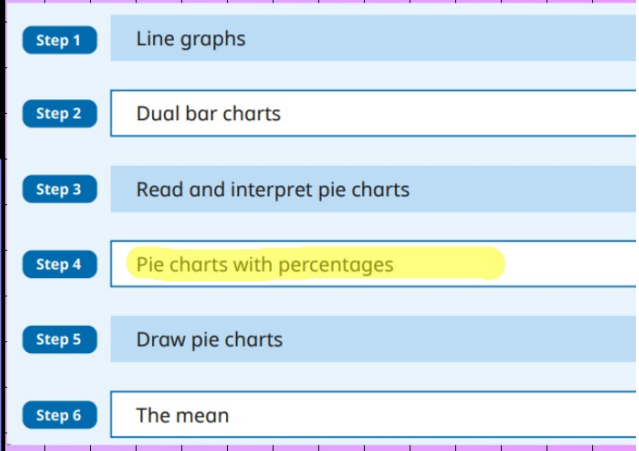
one digit per box

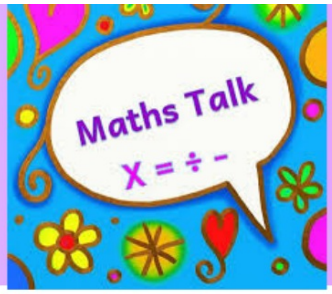
Underline your date and LI

Key vocabulary

count, tally, sort, vote, survey, questionnaire, data, database, graph, block graph, line graph, pictogram, represent, group, set list, chart, bar chart, bar line chart, pie chart, circle graph, tally chart, table, frequency table, label, title, axis, axes, diagram, most popular, most common, least popular, least common, mean, average, classify, outcome.

Our Learning Journey





- What percentage does the whole pie chart represent?
- What percentage does half/quarter of the pie chart represent?
- What percentages of an amount can you work out easily?
- How do you work out 10% of an amount? How does this help you to work out other percentages?
- If you know 10%/20%/25%, how can you work out the total?

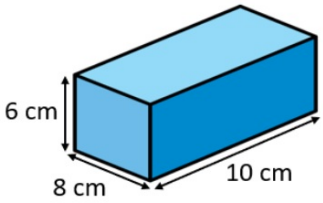
Starter/Recap

Flashback 4

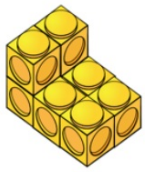
Year 6 | Week 11 | Day 1

White Rose MATHS

1) Volume = ☐ cm^3



2) The volume of the structure is _____ yellow cubes.



3) 70% of ☐ = 245

4) Round £483,217 to the nearest £100,000

Challenge:

1. 3,012 x 13
2. 8.42 ÷ 2
3. 74,312 + 199
4. $\frac{1}{4}$ as a decimal
5. $\frac{2}{7}$ x 3
6. Simplify $\frac{6}{8}$
7. 3.2 x 2

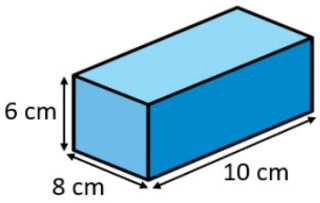
Starter/Recap

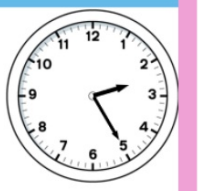
Flashback 4

Year 6 | Week 11 | Day 1

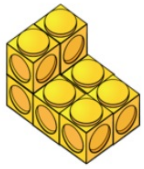
White Rose MATHS

1) Volume = 480 cm^3





2) The volume of the structure is eight yellow cubes.



3) 70% of 350 = 245

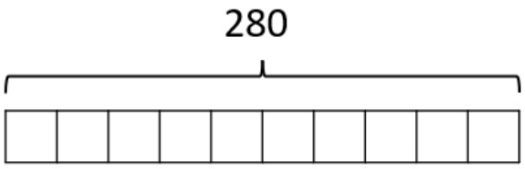
4) Round £483,217 to the nearest £100,000 £500,000

Challenge:

1. 3,012 x 13 = 39,156
2. 8.42 ÷ 2 = 4.21
3. 74,312 + 199 = 74,511
4. $\frac{1}{4}$ as a decimal = 0
5. $\frac{2}{7}$ x 3 = $\frac{6}{7}$
6. Simplify $\frac{6}{8}$ = $\frac{3}{4}$
7. 3.2 x 2 = 6.4

Assessment

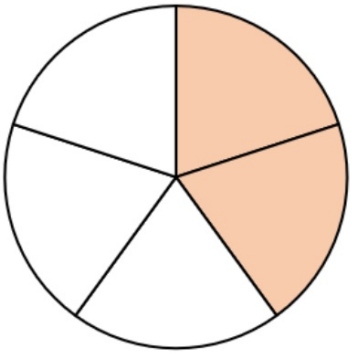
1) 10% of 280 =



2) 30% of 280 =

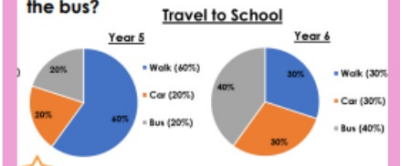
3) What fraction of the circle is shaded?

4) What percentage of the circle is shaded?

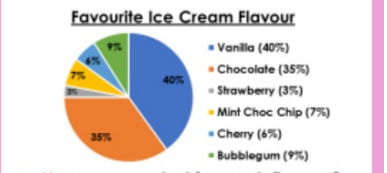


Challenge:

10b. 50 children in Year 5 and 50 in Year 6 were asked how they get to school. How many more children walk than get the bus?

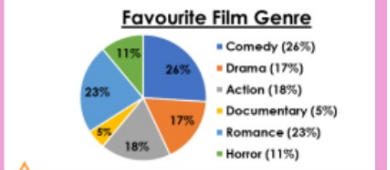


11b. 1,000 people voted for their favourite ice cream flavour. Here are the results:



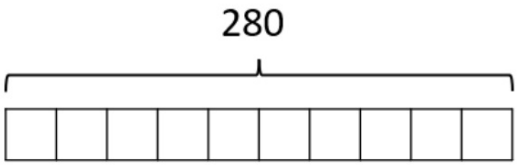
How many voted for each flavour?

12b. If 10 people chose documentary, how many chose comedy?



Assessment

1) 10% of 280 = 28

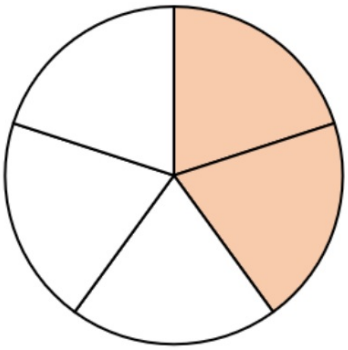


2) 30% of 280 = 84

3) What fraction of the circle is shaded? $\frac{2}{5}$

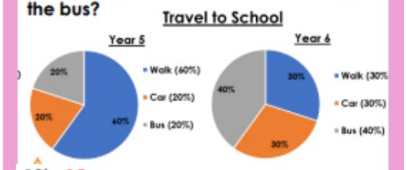
4) What percentage of the circle is shaded? 40%

100% ÷ 5 = 20%



Challenge:

10b. 50 children in Year 5 and 50 in Year 6 were asked how they get to school. How many more children walk than get the bus?

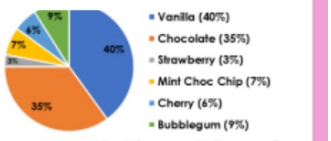


10b. 15

11b. Vanilla – 400, Chocolate – 350, Strawberry – 30, Mint Choc Chip – 70, Cherry – 60, Bubblegum – 90

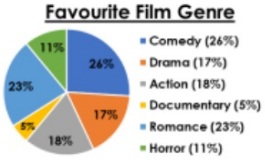
ourite
lts:

12b. 52



How many voted for each flavour?

12b. If 10 people chose documentary, how many chose comedy?



I do

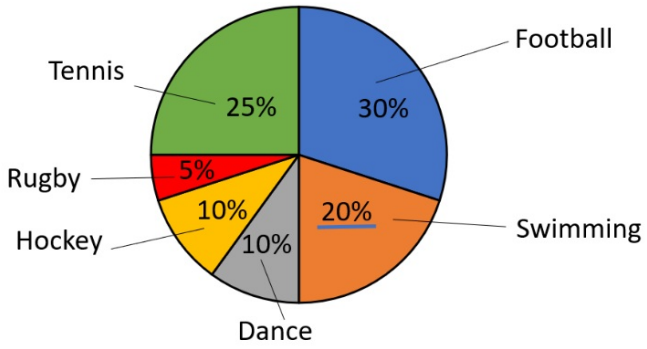
- What percentage does the whole pie chart represent?
- What percentage does half/quarter of the pie chart represent?
- What percentages of an amount can you work out easily?
- How do you work out 10% of an amount? How does this help you to work out other percentages?
- If you know 10%/20%/25%, how can you work out the total?

Possible sentence stems

- If _____% is worth _____, then I can multiply/divide it by_____ to find _____%.
- If the total is _____, then the part representing _____% is worth _____
- If the part representing _____% is worth _____, then the total is _____

White Rose MATHS

80 children were asked to choose their favourite sport from six options.

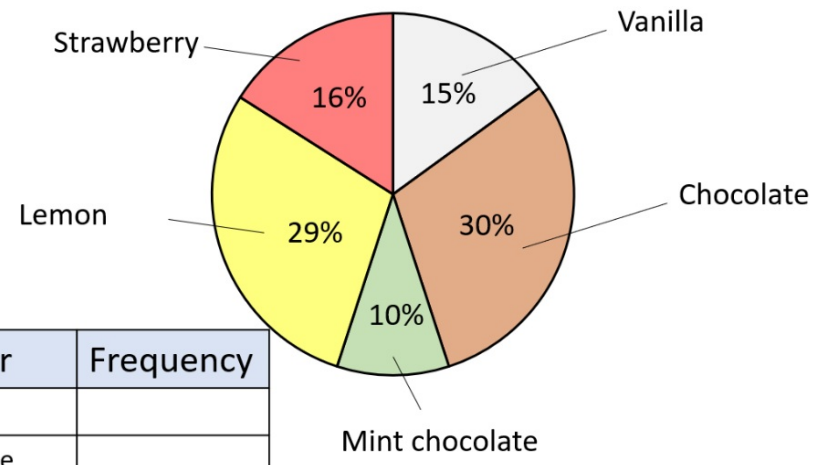


How many children chose swimming?

20% of 80

We do

400 children were asked to vote for their favourite ice cream flavours.



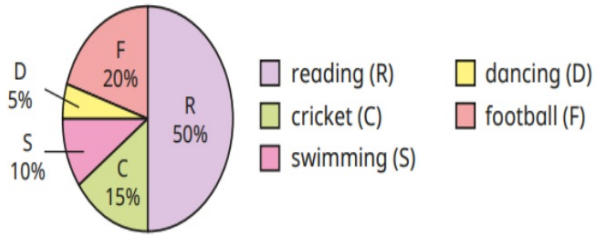
Flavour	Frequency
Vanilla	
Chocolate	
Mint Choc	40
Lemon	
Strawberry	

You do

Task 1

- 200 children in Key Stage 2 chose an after-school activity.

  The pie chart shows the results.



  - How many children chose each activity?
  - How many more children chose football than dancing?

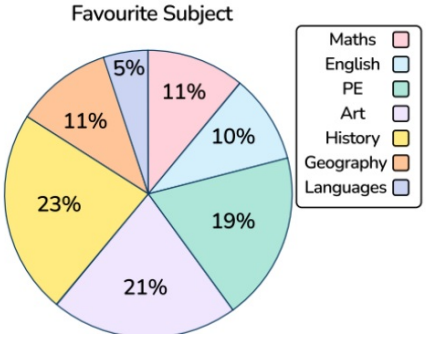
Challenge

Children at Grove School were asked to vote for their favourite subject in school.

15 children voted for languages.

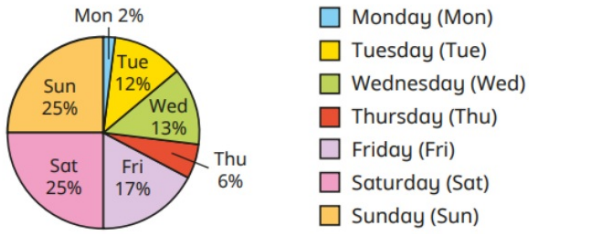
a How many children voted for each subject?

b How many children voted in total?



Task 2

- 1,200 people were asked to name their favourite day of the week.

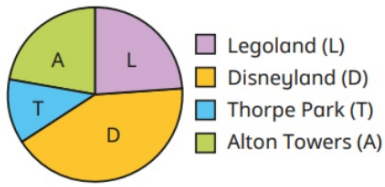


  Use the pie chart to create a table showing how many people chose each day of the week.

- 50 people were asked to name their favourite destination.

  The results were recorded in this table and a pie chart was drawn.

Destination	People
Legoland	12
Disneyland	21
Thorpe Park	6
Alton Towers	11



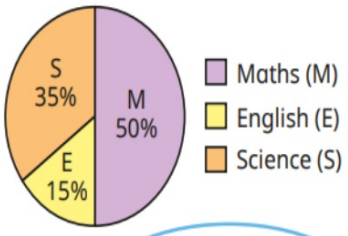
  Use the table to help you write the percentages on the pie chart.

Reasoning - WE DO

120 boys and 100 girls were asked to name their favourite subject.

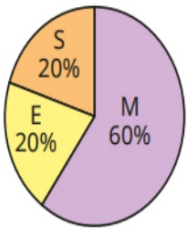
The results are shown in the pie charts.

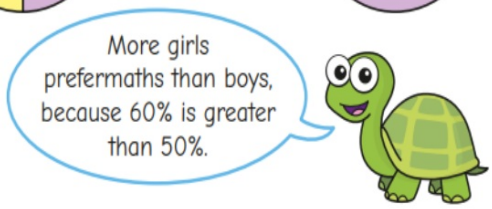
boys' favourite subjects



Maths (M)
English (E)
Science (S)

girls' favourite subjects





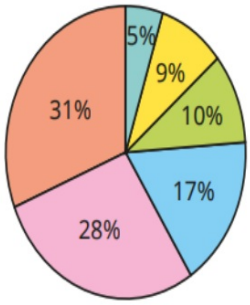
Do you agree with Tiny?

Explain your answer.

YOU DO

The pie chart shows the results of a survey about how many siblings people have.

15 people in the survey have no siblings.



no siblings
1 sibling
2 siblings
3 siblings
4 siblings
5 siblings

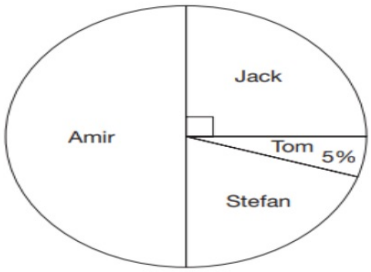
Draw a table to show how many people each sector of the pie chart represents.

How many people took part in the survey?

Plenary - WE DO

40 children predicted who would win the boys' race at sports day.

This pie chart shows their predictions.



What percentage of the children predicted that Stefan would win?

%

10 children predicted the winner of the race **correctly**.

Who won the race? _____

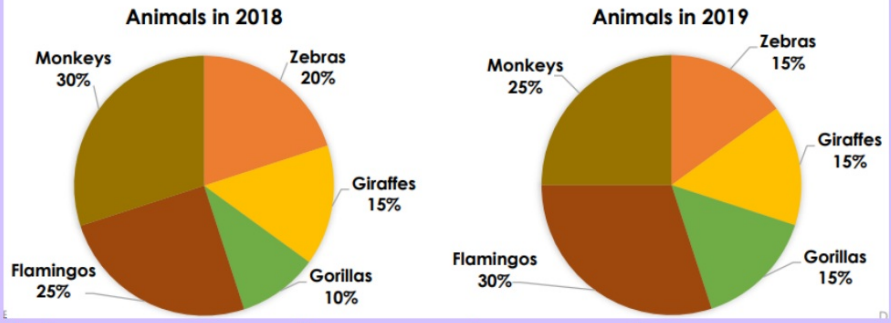
Explain how you know.

Reflection

1. A safari park counted the total number of animals they had in 2018. They converted their data into a pie chart.

There were 18 gorillas in the safari park in 2018. Investigate how many of each type of animal there were in 2019.

The total number of animals stay the same each year.



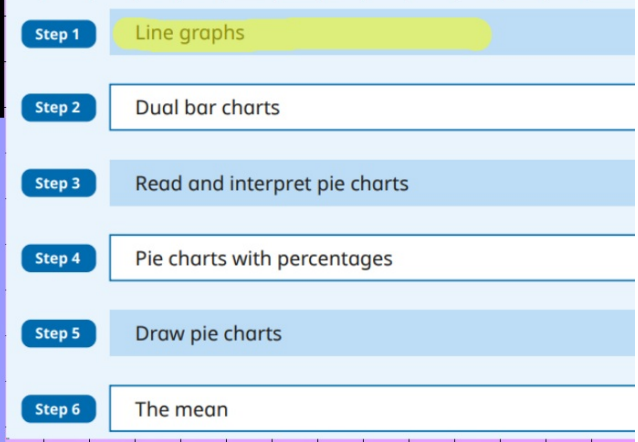
How would you go about solving this question?
What steps would you use?

LI: to draw pie charts.

one digit per box

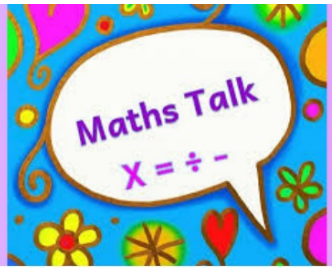
Underline your date and LI

Our Learning Journey



Key vocabulary

count, tally, sort, vote, survey, questionnaire, data, database, graph, block graph, line graph, pictogram, represent, group, set list, chart, bar chart, bar line chart, pie chart, circle graph, tally chart, table, frequency table, label, title, axis, axes, diagram, most popular, most common, least popular, least common, mean, average, classify, outcome.



- What percentage does the whole pie chart represent?
- How can I show _____% of a pie chart?
- How many degrees are there in a full turn?
- If there are _____ in total and a part is _____, what fraction is the part of the whole?
- How can you work out the percentage/angle that represents each sector?
- How do you use a protractor? How do you know which scale to use?

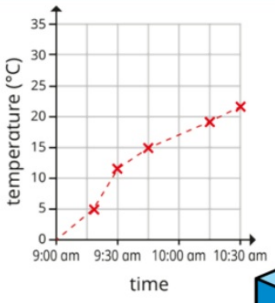
Starter/Recap

Flashback 4

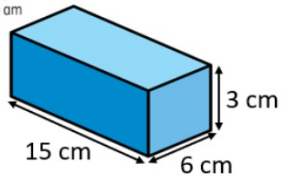
Year 6 | Week 11 | Day 2

White Rose MATHS

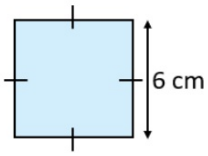
1) When was the temperature the warmest?



2) Volume of the cuboid = ☐ cm^3



3) Area of the square = ☐ cm^2



4) $(8 + 4) \times 5 =$ ☐

Challenge:

1. 1,724 x 26
2. 8.76 ÷ 4
3. 76,908 + 1,998
4. $\frac{4}{5}$ as a decimal
5. $\frac{3}{4}$ x 7
6. Simplify $\frac{24}{36}$
7. ☐ ÷ 2 = 8.25

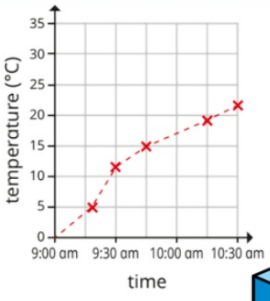
Starter/Recap

Flashback 4

Year 6 | Week 11 | Day 2

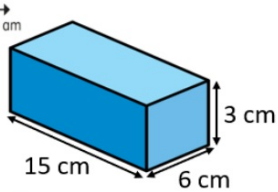
White Rose MATHS

1) When was the temperature the warmest?

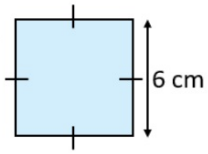


10:30 am

2) Volume of the cuboid = 270 cm^3



3) Area of the square = 36 cm^2



4) $(8 + 4) \times 5 =$ 60

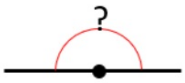
Challenge:

1. 1,724 x 26 = 44,824
2. 8.76 ÷ 4 = 2.19
3. 76,908 + 1,998 = 78,906
4. $\frac{4}{5}$ as a decimal = 0.8
5. $\frac{3}{4} \times 7 = \frac{21}{4} = 5\frac{1}{4}$
6. Simplify $\frac{24}{36} = \frac{2}{3}$
7. 16.5 ÷ 2 = 8.25

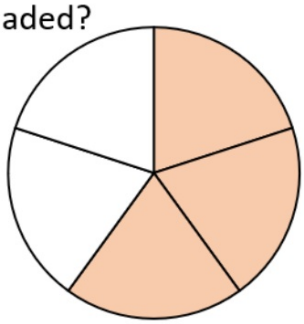
Assessment

1) How many degrees are in a right angle?

2) What do angles on a straight line add up to?



3) What percentage of the circle is shaded?



4) What percentage of the circle is not shaded?

Challenge:

7a. Fill in the missing information.

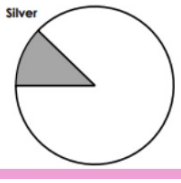
Favourite dog breeds of Year 6		
Breed	Number	Degrees
Golden Retriever	18	72°
Border Collie	25	
Rottweiler		16°
Huskie		44°
Jack Russel	9	
Spaniel		
Total		

8a. Use a protractor to construct a pie chart using the following degrees.

41°
56°
81°
19°
□°

9a. Complete the table. Use the data in the table to construct a pie chart.

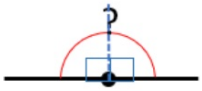
Colour of Cars in a School Car Park					
Red	Blue	Black	Silver	Green	White
28	21		11	6	
°	°	°	44°	°	20°



Assessment

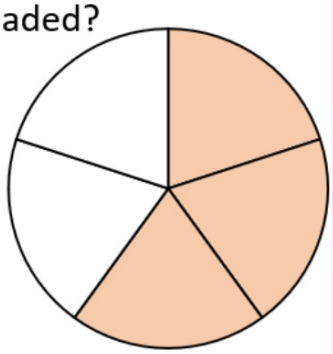
1) How many degrees are in a right angle? 90°

2) What do angles on a straight line add up to? 180°



3) What percentage of the circle is shaded?

60%



4) What percentage of the circle is not shaded? 40%

Challenge:

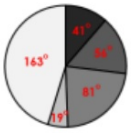
7a. Fill in the missing information.

Favourite dog breeds of Year 6		
Breed	Number	Degrees
Golden Retriever	18	72°

7a.

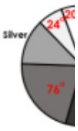
Favourite dog breeds of Year 6		
Breed	Number	Degrees
Golden Retriever	18	72°
Border Collie	25	100°
Rottweiler	4	16°
Huskie	11	44°
Jack Russel	9	36°
Spaniel	23	92°
Total	90	360°

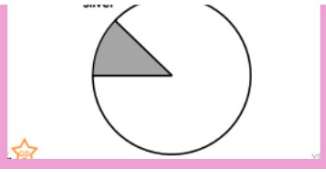
8a.



9a.

Colour of cars in a school car park					
Red	Blue	Black	Silver	Green	White
28	21	19	11	6	5
112°	84°	76°	44°	24°	20°





I do

0 cars drove past a school one morning.

he table shows the colour of the cars.

omplete the table and show the information on a pie chart.

Colour	Number	Fraction of total	% of total
Red	5		
Blue	5		
Green	10		

Key questions

- What percentage does the whole pie chart represent?
- How can I show _____% of a pie chart?
- How many degrees are there in a full turn?
- If there are _____ in total and a part is _____, what fraction is the part of the whole?
- How can you work out the percentage/angle that represents each sector?
- How do you use a protractor? How do you know which scale to use?

Possible sentence stems

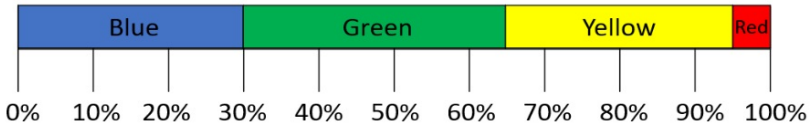
- The fraction/percentage of _____ is _____
- The whole pie chart is _____°

  This represents _____ items of data.

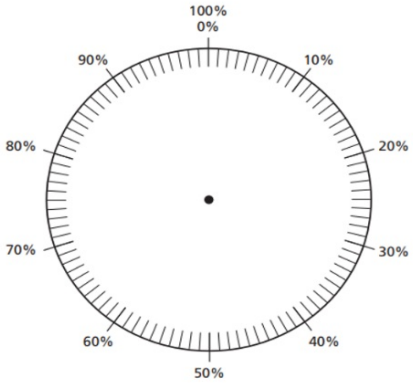
  Each item of data is represented by _____ ÷ _____ = _____°

We do

Children were asked to vote for their favourite colour.



Complete the pie chart to represent the data.



Task 1:

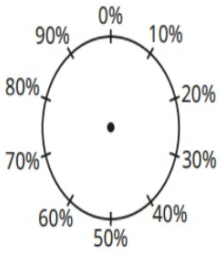
You do

- 100 people were asked to name their favourite ice cream.

  The table shows the results.

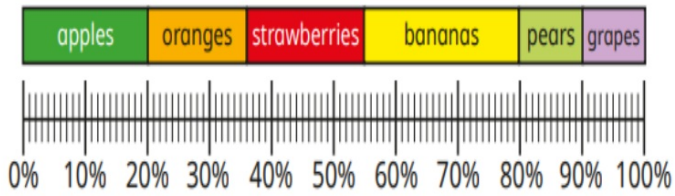
  Use the information to draw a pie chart.

Flavour	Number	Fraction of total	% of total
Chocolate	10	$\frac{1}{10}$	10%
Vanilla	30		
Strawberry	20		
Mint	40		



Task 2:

- Draw a pie chart using the data shown in the percentage bar model.



What is the same and what is different about the two diagrams?

Challenge

- The table shows how 36 children travel to school.

Type of transport	Number of children	Angle
Car	12	12 × 10 = 120°
Bike	7	
Walk	8	
Bus	5	
Scooter	4	
Total	**36**	**360°**

Complete the table.

Use a protractor to help you draw a pie chart to show the data.

Task 3:

We do **Reasoning**

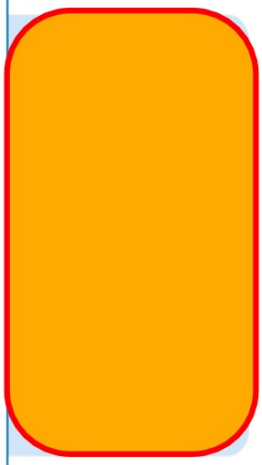
you do

osie asked the children in Year 6
› name their favourite sport.

he table shows the results.

omplete the table and draw a pie chart
› show the information.

Sport	Total	Angle
Football	10	
Tennis	18	
Rugby		_____ × 6 = 90°
Swimming	6	6 × 6 = 36°
Cricket		_____ × 6 = 42°
Golf	4	4 × 6 = 24°
Total	**60**	**360°**

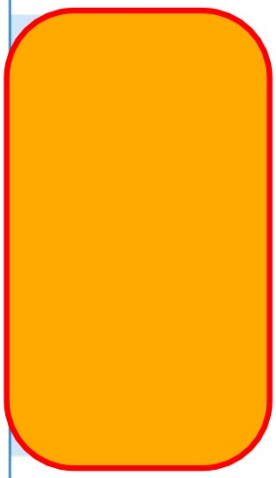


The owner of a restaurant is working out which Sunday dinner is most popular.

Complete the table and draw a pie chart to show the information.

Dinner	Total	Angle
Chicken	2	
Pork	8	
Lamb	6	
Beef	20	180°
Vegetarian	4	
Total		

Write some questions about your pie chart for a partner to answer.

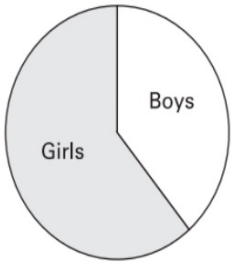


Plenary:

We do

Sarah makes a pie chart to show the proportion of boys and girls in her class.

	Number in class	Size of angle on pie chart
Boys	14	144°
Girls	21	216°



The next day another **boy** joins Sarah's class.

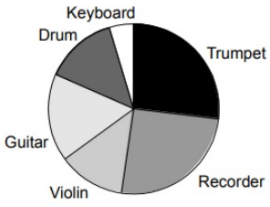
She makes a new pie chart.

Calculate the angle for **boys** on the new pie chart.

you do

The Year 6 children in a school were asked to choose a musical instrument.

This is a pie chart of their choices.



Estimate what **fraction** of the children chose a **drum**.

There are **80** children in Year 6.

Estimate the number of children who chose a **violin**.

Explain how you decided.

Reflection

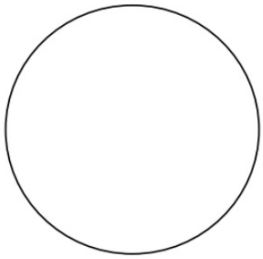
2. Seventy-two children choose their favourite model of mobile phone.

Using the table and pie chart template below to help you, explore different ways that the children could have voted and fill in the table below.

Convert this information into draw a pie chart.

Phone Model	Rule	Number of votes	Degrees
ePhone	Multiple of 5		
Tomsung	Greater than 20		
Hawaii	Multiple of 4 and 6		
Phony	Prime number		
Hokia	Square number		
Other	Odd number		

Children's Favourite Model of Mobile Phone



How would you go about solving this question?

What steps would you use?

LI: to understand the mean.

one digit per box

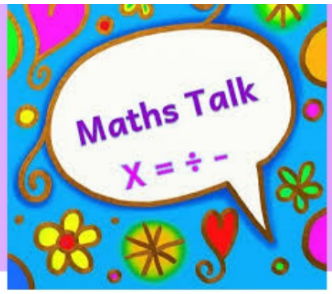
Underline your date and LI

Our Learning Journey

Step 1	Line graphs
Step 2	Dual bar charts
Step 3	Read and interpret pie charts
Step 4	Pie charts with percentages
Step 5	Draw pie charts
Step 6	The mean

Key vocabulary

count, tally, sort, vote, survey, questionnaire, data, database, graph, block graph, line graph, pictogram, represent, group, set list, chart, bar chart, bar line chart, pie chart, circle graph, tally chart, table, frequency table, label, title, axis, axes, diagram, most popular, most common, least popular, least common, mean, average, classify, outcome.



- How can you calculate the total number of _____?
- What operation do you use to share equally?
- How can you use the total to calculate the mean?
- Why would you want to find the mean of a set of data?
- For what sets of data would it be useful to calculate the mean?
- How can you use the mean to work out missing information?

Starter/Recap

Flashback 4

Year 6 | Week 11 | Day 3

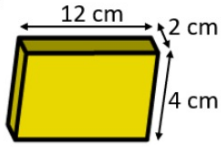
White Rose MATHS

1) Which graph shows the faster journey?

A Distance

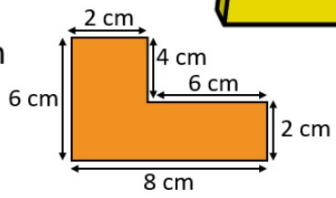
B Distance

2) Volume of the cuboid = ☐ cm^3



3) Perimeter = ☐ cm

Area = ☐ cm^2



4) $\frac{3}{4} - \frac{1}{6} =$ ☐

Challenge:

1. 2,879 x 38
2. 5.95 ÷ 7
3. ☐ + 2,995 = 78,027
4. $\frac{3}{8}$ as a decimal
5. $\frac{7}{8}$ x 4
6. $\frac{8}{9} = \frac{\square}{\square}$
7. 2.475 x ☐ = ☐

Starter/Recap

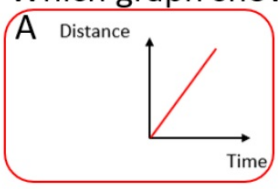
Flashback 4

Year 6 | Week 11 | Day 3

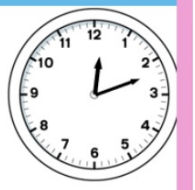
White Rose MATHS

1) Which graph shows the faster journey?

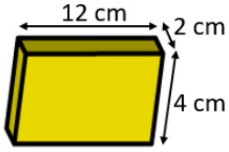
A



B

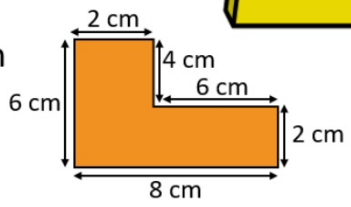


2) Volume of the cuboid = 96 cm^3



3) Perimeter = 28 cm

Area = 24 cm^2



4) $\frac{3}{4} - \frac{1}{6} = \frac{7}{12}$

Challenge:

1. 2,879 x 38 = 109,402
2. 5.95 ÷ 7 = 0.85
3. 75,032 + 2,995 = 78,027
4. $\frac{3}{8}$ as a decimal = 0.375
5. $\frac{7}{8} \times 4 = \frac{28}{8} = 3\frac{4}{8} = 3\frac{1}{2}$
6. $\frac{8}{9} = \frac{16}{18}$*
7. 2.475 x 2 = 4.95*

*Various answers, one example given.

Assessment

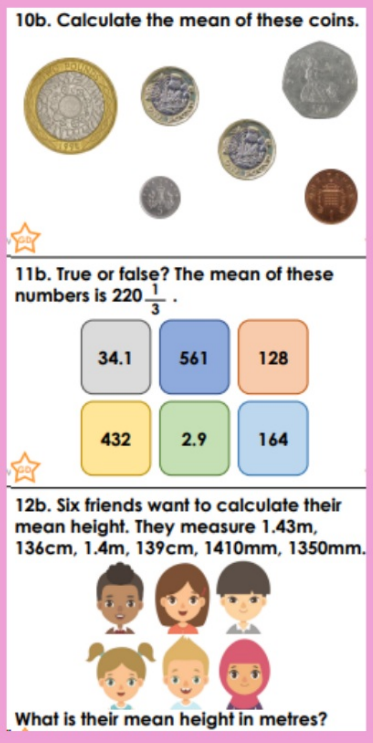
1) Calculate the total
   $6 + 12 + 3 + 8 + 7$

2) Calculate the total
   $18 + 4 + 11 + 16 + 1$

3) Eva has 4 sweets, Mo has 9 sweets and Dora has 8 sweets. How many sweets do they have in total?

4) Find the sum of these numbers
   19, 26, 14, 11

Challenge:



Assessment

1) Calculate the total

$6 + 12 + 3 + 8 + 7$ 36

20 10

2) Calculate the total

$18 + 4 + 11 + 16 + 1$ 50

30 20

3) Eva has 4 sweets, Mo has 9 sweets and Dora has 8 sweets. How many sweets do they have in total?

$4 + 9 + 8$ 21 sweets

4) Find the sum of these numbers

19, 26, 14, 11 70

Challenge:

I do:

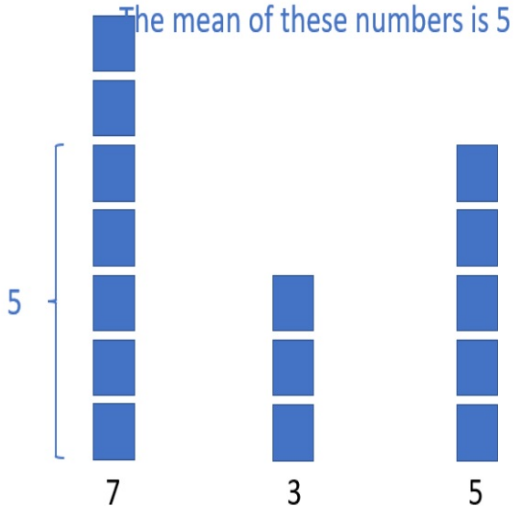
Learning Intention: To calculate the mean

The mean = the average of a set of numbers.

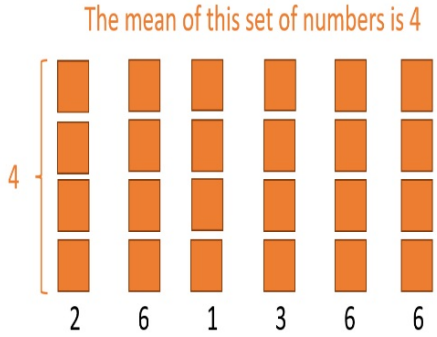
7 + 3 + 5 = 15

15 ÷ 3 = 5

Mean = 5



2 6 1 3 6 6 = 24

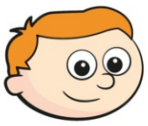


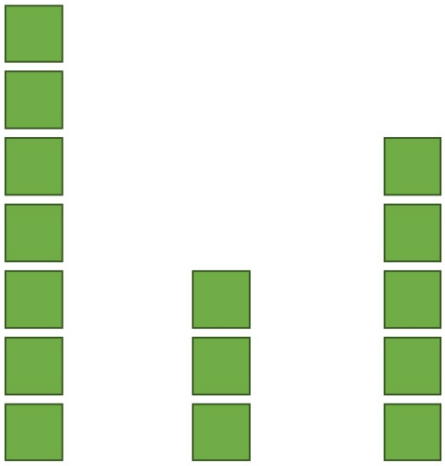
We do:

Learning Intention: To calculate the mean

Ron's mean score was 6

What did he score on his fourth test?





We do:

Learning Intention: To calculate the mean

Challenge

Find the mean of the counters.

a

b

c

d

Find the mean of these numbers.

a 5, 8, 9, 2, 11

b 9, 5, 10, 8, 4, 1, 2, 8, 2, 1

c 124, 70, 19, 53, 36, 87, 10

d £12.50, £14.00, £30, £17.55

e 40, 45, 50, 45, 50, 45

f 32, 125, 98, 57, 43

g The mean of a set of four numbers is 10. What could the four nu
be?

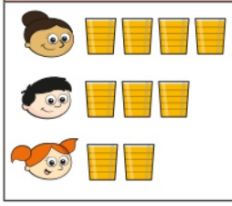
Learning Intention: To calculate the mean

Task 1

You do

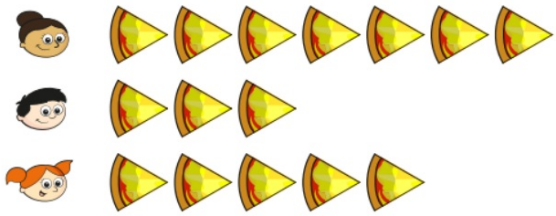
- Three children each drink some glasses of juice.

  The table shows a method to find the mean number of glasses of juice that each child had to drink.

Number of glasses per child	Total number of glasses	If each child had the same number of glasses
		

  How does the table show that the mean number of glasses that each child had is 3?

- Work out the mean number of slices of pizza eaten by each child.



Task 2

- Here are the number of runs Jack scored in seven cricket matches.

  134, 60, 17, 63, 38, 84, 10

  Calculate the mean number of runs Jack scored in a match.

- The amount of money raised for charity by five children is shown in the table.

Child	Amount raised
Aisha	£24.55
Sam	£29.60
Tommy	£40
Filip	£21.20
Scott	£19.65

  What is the mean amount of money raised by the children?

Challenge

- Calculate the mean of the numbers.

0.145 | 0.05 | 0.28 | 0.205

Task 3:

Learning Intention: To calculate the mean

Reasoning

We do

You do:

The mean number of goals scored in six football matches was 4

Use this information to work out how many goals were scored in the 6th match.

Match	Number of goals
1	8
2	4
3	6
4	2
5	1
6	

Rosie takes 5 spelling tests.

Her mean score is 7

What scores might Rosie have got in each spelling test?

Compare answers with a partner

- Mum is 48 years old.
- Scott is 4 years older than James.
- James is 7 years older than Esme.

The average age of pairs of family members are shown.

Mum, Dad — mean age of 50

Scott, James — mean age of 13

Anna, Esme — mean age of 6

Work out the age of each member of the family.

Work out the mean age of the whole family.

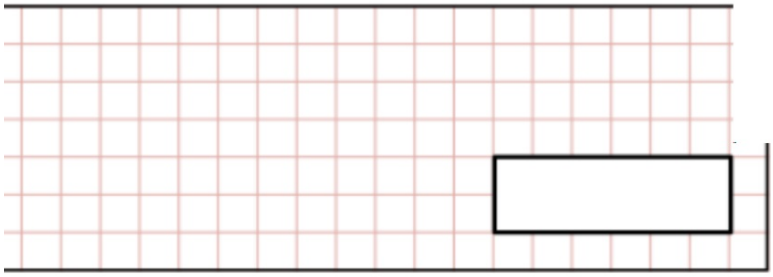
Plenary:

We do

ven children measured their heights.

Children	Height (cm)
Stefan	144
Lara	136
Olivia	142
Chen	143
Maria	152
Dev	148
Sarah	150

hat is the mean height of the children?



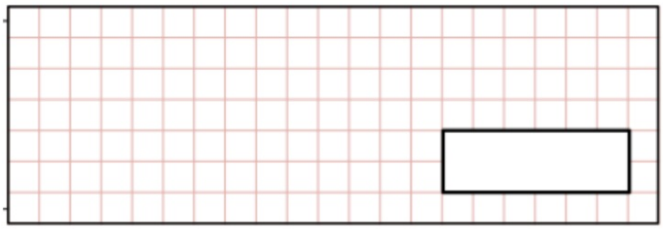
[2 marks]

You do

Three numbers have a mean of 13

Two of the numbers are 8 and 12

What is the other number?



[2

The **mean** of three numbers is **5**

One of these numbers is 2

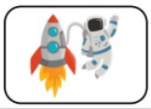
What could the other numbers be?

Write them on the cards below.

Reflection

2. Matt wants to trade in 5 video games so that the mean value of each game is £5.60.

These are the games that he could trade in from his collection:



SpaceCraft
Value: £4.55

Schoolnite
Value: £5.25

Super Dario
Value: £6.35

Rocket Racing
Value: £6.35

Sugar Rush
Value: £4.55

The Legend of Helga
Value: £6.55

Pyro the Dragon
Value: £5.30

Monic the Racoon
Value: £5.30

Explore the combinations of games that he could trade in.

Is it possible to get the same mean value for each game by only trading in 4 games?

How would you go about solving this question?
What steps would you use?