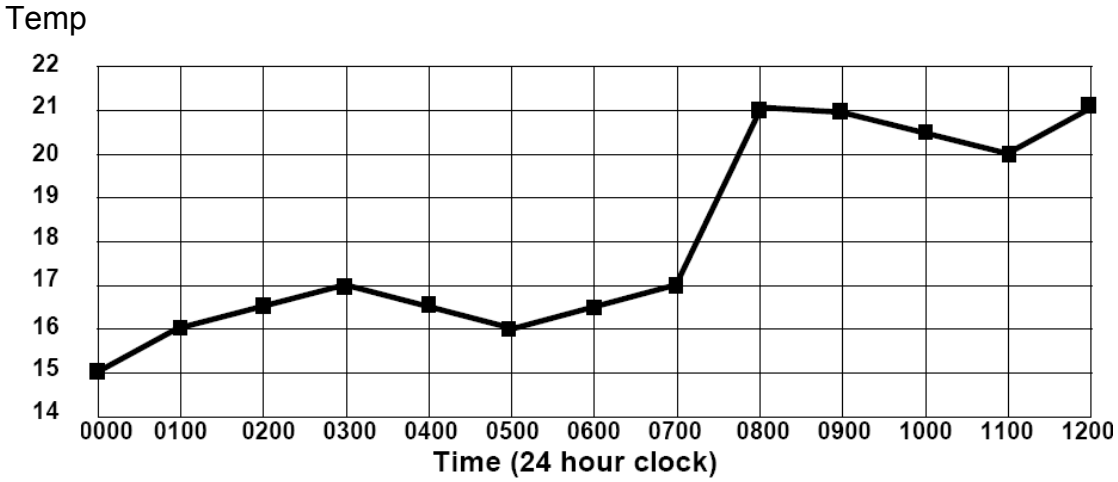
Monday

L.O. To read and interpret data presented in a line graph

Interpreting Line Graphs

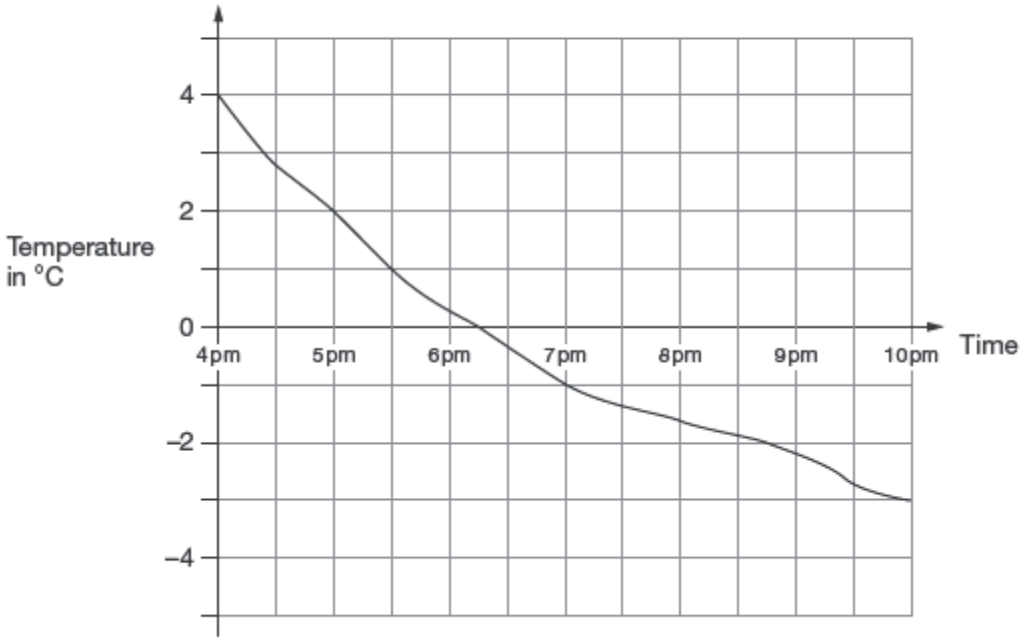


This graph shows the temperature in a room over twelve hours. Answer the questions below.

1) What was the lowest temperature recorded on the chart.
2) What was the temperature at 3 o'clock am?
3) What was the temperature at 11.00?
4) Which hour shows the biggest rise in temperature?
5) For how long was the temperature between 16 and 17 degrees?
6) Can you estimate the temperature at 07.30?
7) Can you estimate the temperature at 10.00?
8) Complete the table below using the line graph.

Time	Temperature
00.00	
01.00	
02.00	
03.00	
04.00	
05.00	
06.00	
07.00	
08.00	

17 This graph shows the outside temperature from 4pm to 10pm on a day in winter.



a) What was the lowest temperature recorded on the chart?

b) By how much did the temperature decrease in the first hour?

c) At what time did the temperature reach freezing point?

d) How far did the temperature drop between 4pm and 10pm?

e) Estimate the temperature at 7.30.

f) Estimate the time when the temperature was exactly -2.

g) For how long was the temperature below 0?

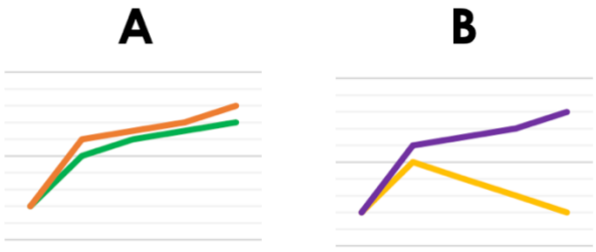
h) During which hour did the temperature fall by 2 degrees?

Extension

Draw a table to show the temperature at each hour.

Can you have a go at any of these questions?

4a. The health visitor is recording the height of twins during their first year. Which graph most likely shows her data? Explain how you know.



4a. Which of the following could you show on a line graph?

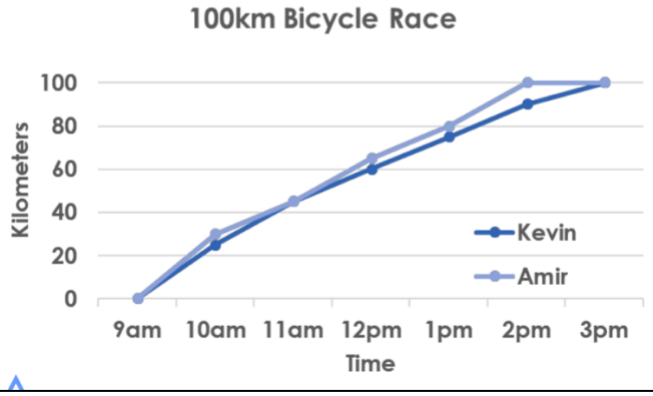
A. The titles of all the books read over a summer holiday.

B. How far two people can run in 2 hours.

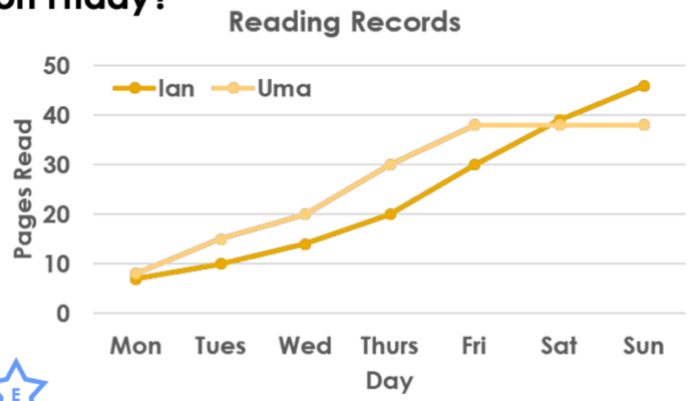
C. How the price of milk and butter has changed over 20 years.

5a. True or false?

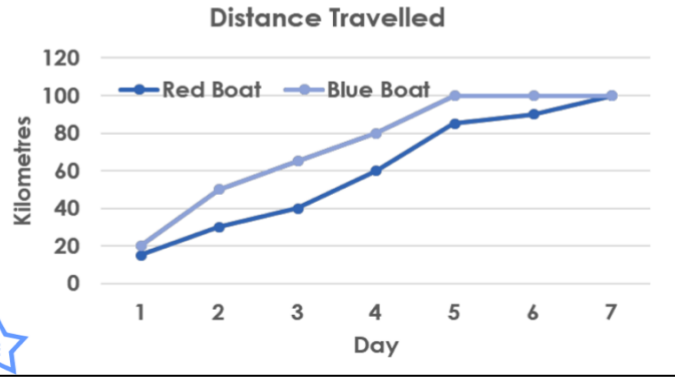
Kevin won the bicycle race.



6a. Every Friday, Ian and Uma's teacher gives a sticker for every multiple of 10 pages they read. Who received the most stickers this week? Who read the most pages in total? Why did Uma stop reading on Friday?



5a. Yulia and Naveed are interpreting a graph. Yulia says, "The blue boat reached their destination on Day 5." Naveed says, "The red boat travelled 100km between Day 6 and Day 7."
Who is correct? Explain.



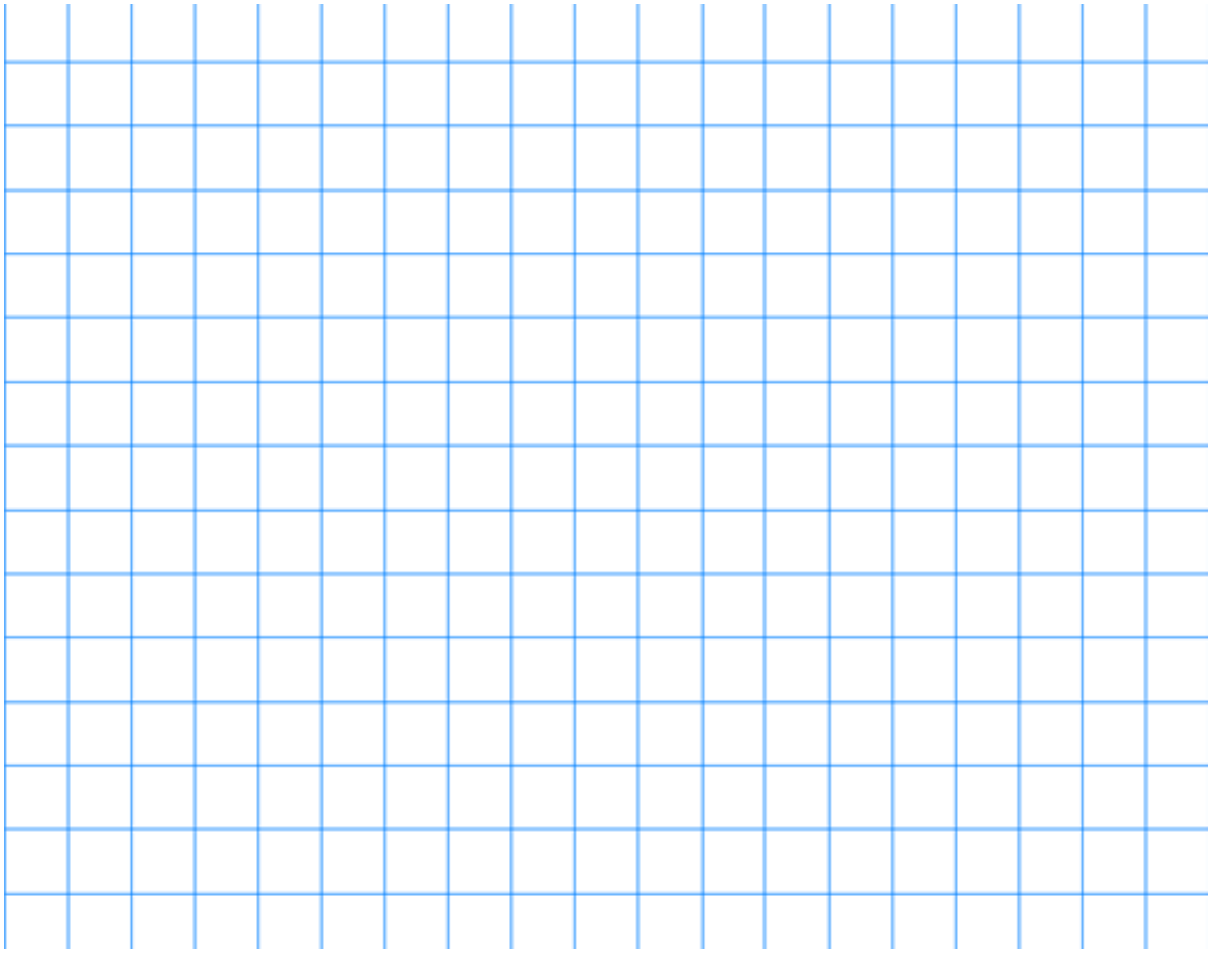
Tuesday

L.O. To draw and interpret line graphs

Average daily maximum temperature in London during the year:

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	4	5	7	9	12	16	18	17	15	11	8	5

Plot these points on the graph below:



1) Which was the warmest month? _____
2) Which was the coolest month? _____
3) What was the temperature in November? _____
4) In which month was the temperature 12°C? _____
5) What does the graph show about the temperature in London?

_____

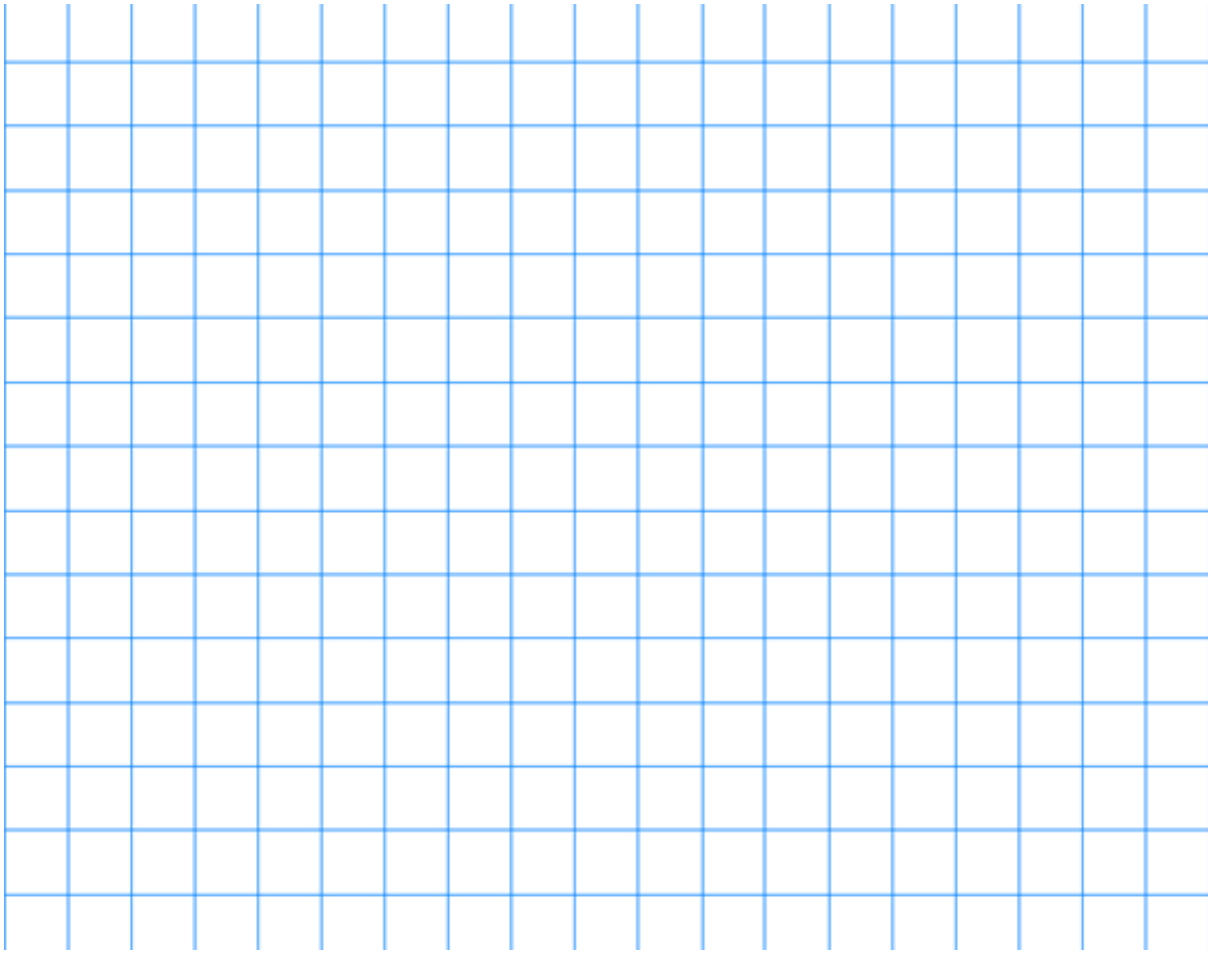
_____

L.O. To draw and interpret line graphs - Extension

The estimated temperature in London between 04:00 and 19:00 on 20 June 2011

Time	04:00	06:00	08:00	10:00	12:00	14:00	16:00	18:00	20:00	22:00
Temp (°C)	8	10	12	14	15	16	17	16	14	12

Plot these points on the graph below:



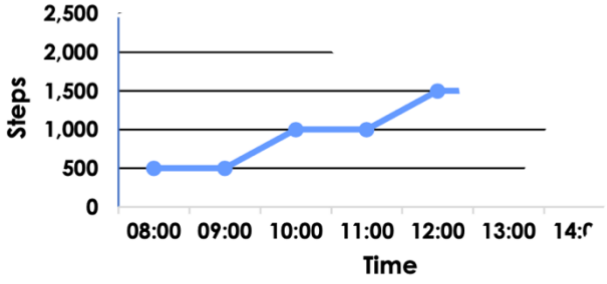
1) At what time will it be warmest? _____
2) At what time will it be coolest? _____
3) What do you estimate the temperature to be at 09:00? _____
4) What do you estimate the temperature to be at 19:00? _____
5) What does the graph show about the temperature on this day?

_____

_____

Can you have a go at any of these questions?

4a. Part of this line graph is missing.
It should show from 08:00 to 17:00.

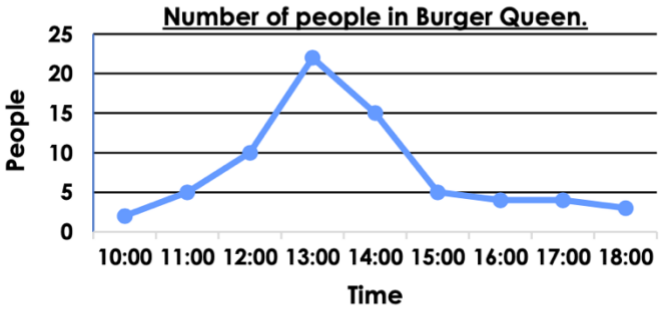


If the graph continued in the same way, how many steps would have been completed by 16:00?
Draw the completed line graph.

E

PS

5b. The line graph shows the number of people in a Burger Queen over 8 hours.

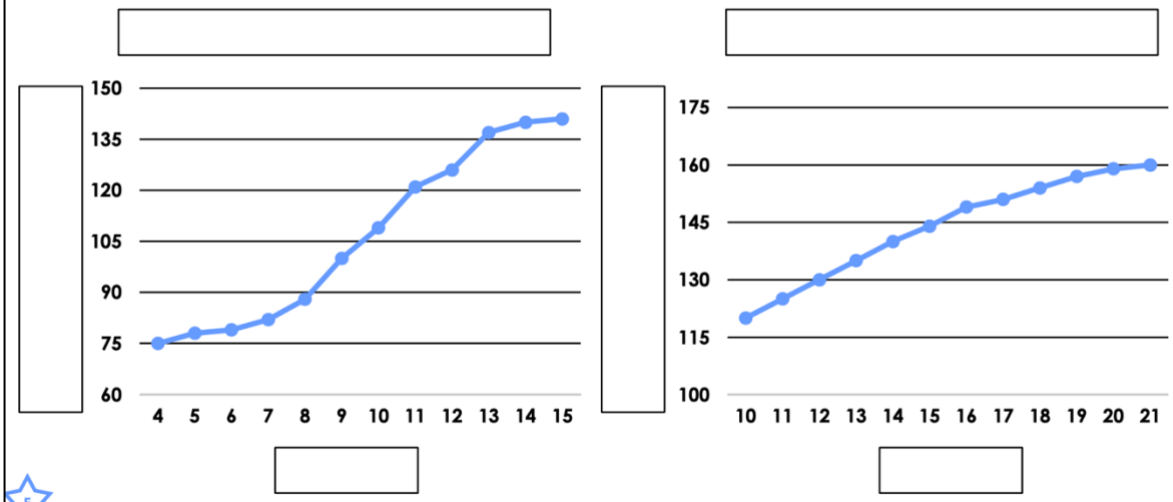


What time are the most people in Burger Queen?
Explain your reasoning.

E

R

5a. The line graphs below show how tall Jordan and Ellie grew over 11 years in cm. Ellie is 6 years older than Jordan. Fill in the missing axes and titles.

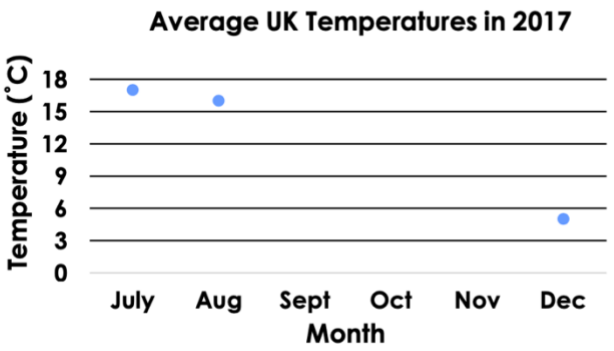


E

VF

4a. The table and line graph show the average UK temperatures for the last 6 months of 2017. Plot the missing information on the line graph and table below.

Month	Temperature (°C)
July	
August	
	14
	10
November	7
December	



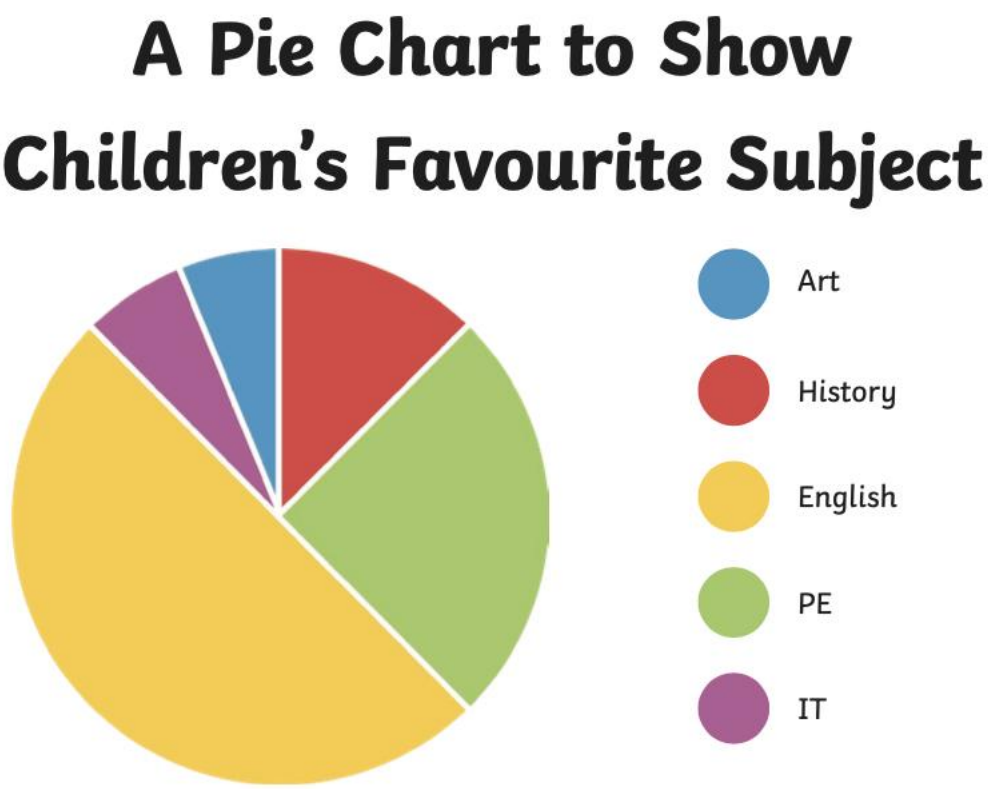
E

VF

Wednesday

L.O. To read and interpret data presented in a pie chart

Interpreting Pie Charts



This pie chart represents 80 children.

1. How many children chose Art as their favourite subject? _____
2. How many children chose History as their favourite subject? _____
3. How many children chose English as their favourite subject? _____
4. How many children chose PE as their favourite subject? _____
5. What definite conclusions can we make from this data? _____
6. Now imagine that there were 128 children asked. The pie chart is exactly the same. How many children would choose:

   a) Art

   b) History

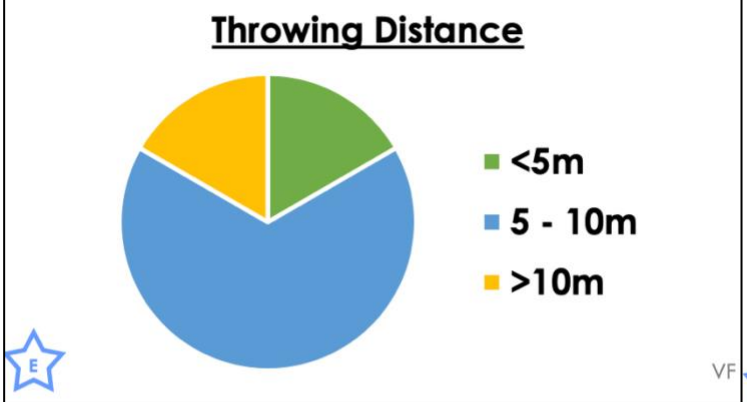
   c) English

   d) PE

   e) IT

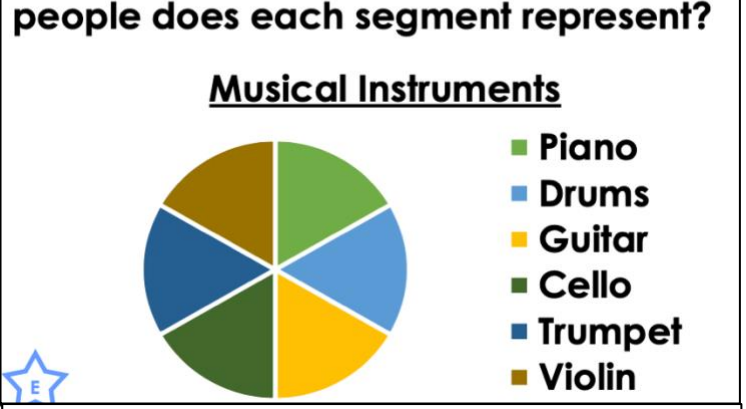
Section 2:

5a. What fraction of the pie chart represents people who threw <5m?

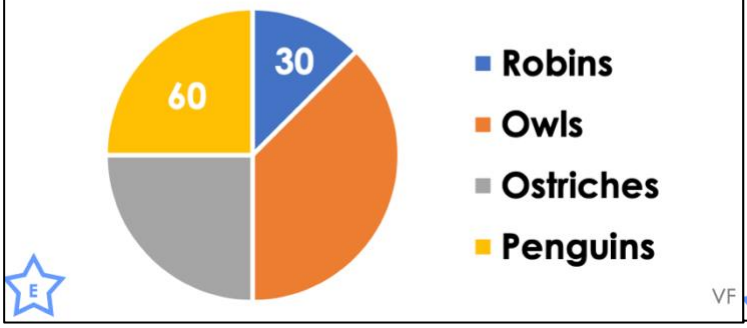


VF

7a. 720 people took part in a survey about playing instruments. How many people does each segment represent?

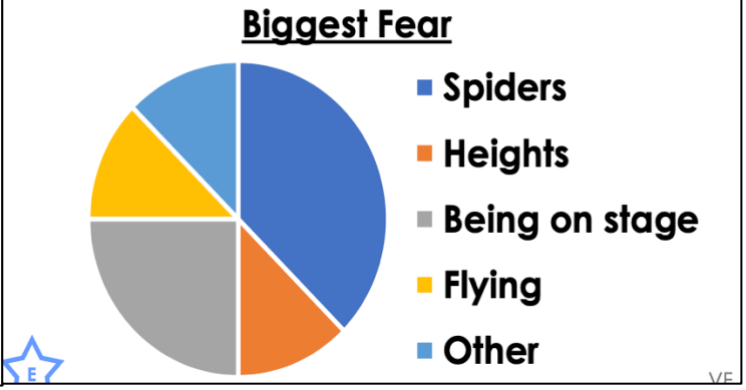


6a. The pie chart shows the votes of 240 people. Find the missing values.



VF

8b. How many people from the 320 surveyed chose each option?

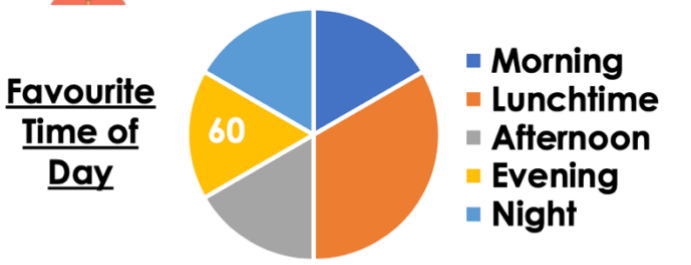


VF

Section 3:

4a. Phil says,

I do not have enough information to work out the total number of votes.



Is he correct? Prove it.

R

5a. Fiona has forgotten what fraction of the pie chart should be given to 'Italian'. Can you work out the fraction from the information below?

Nationality of Hotel Guests	
French	100
Spanish	100
Italian	?
German	50
Total	**300 people**

Thursday

L.O: To read and interpret data presented in a pie chart.

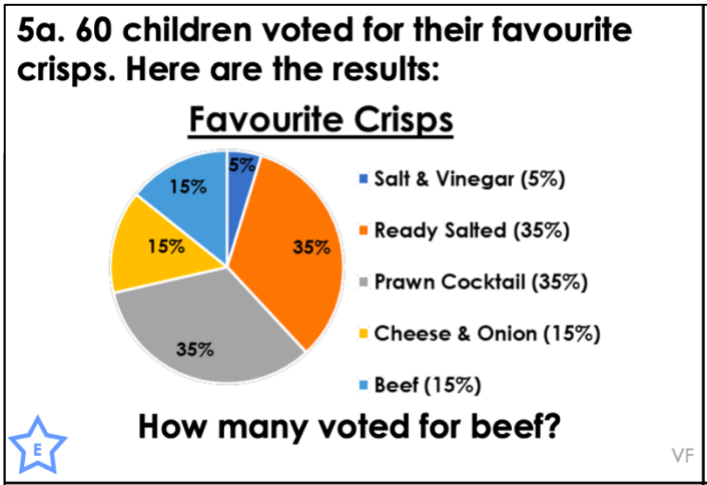
Before you have a go at completing the questions today, it is really important that you can remember how to find percentages of different amounts. Please have a go at completing the first set of questions:

Find 25% of:
a) 60
b) 84
c) 56
d) 168

Find 10% of:
a) 70
b) 150
c) 690
d) 125

Find 5% of:
a) 20
b) 140
c) 280
d) 360

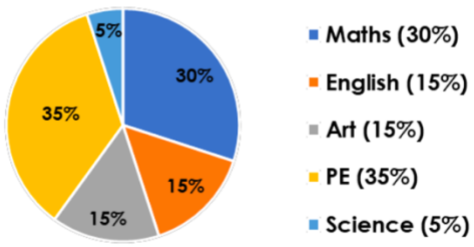
5a. 60 children voted for their favourite crisps. Here are the results:



How many voted for beef?

VF

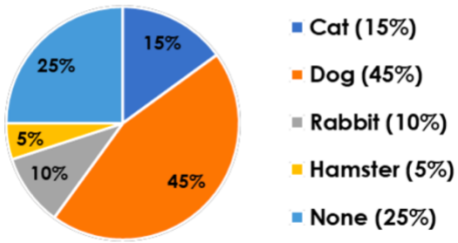
5b. 120 children voted for their favourite lesson. Here are the results:



How many voted for PE?

VF

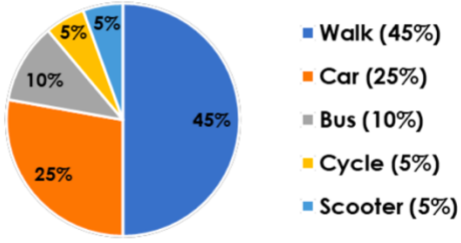
6a. 200 children were asked what pet they have. Here are the results:



How many more children have dogs than cats?

VF

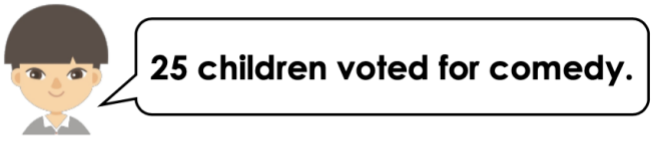
6b. 180 children were asked how they get to school. Here are the results:



How many more children walk than use a scooter?

VF

5. 120 children voted for their favourite type of TV programme. Who is correct?



25 children voted for comedy.

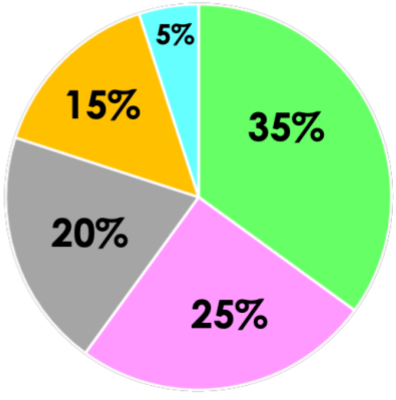
Cheng

42 children voted for sports.

Nadia

Types of TV programme

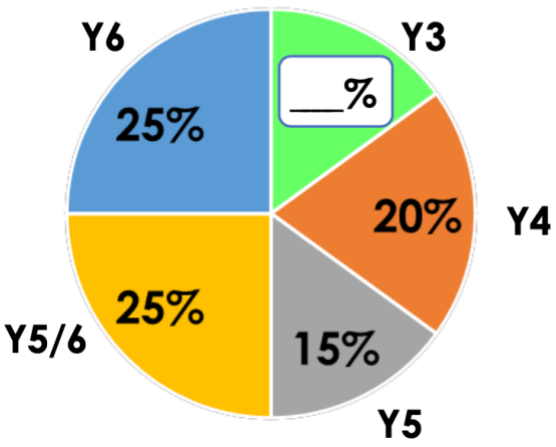
- Sports 35%
- Drama 25%
- Comedy 20%
- Talk Shows 15%
- News 5%



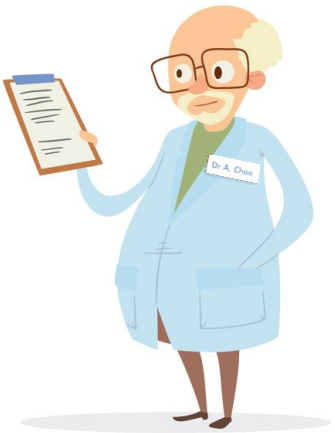
VF
HW/Ext

6. There are 180 pupils in Key Stage 2. Fill in the missing percentage and work out how many children are in Year 3.

Number of pupils in Year 3 = _____



Friday

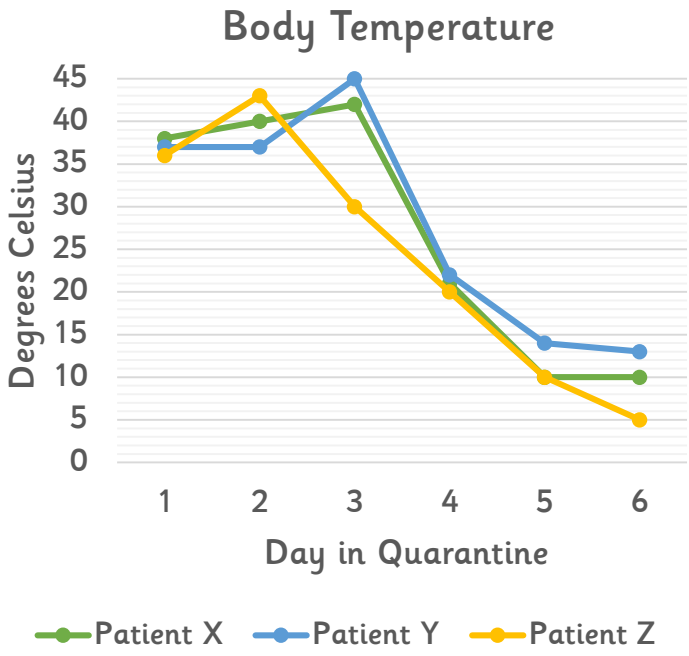


You work amongst some of the greatest scientists in the world at the internationally renowned Sneezums Research Centre of Pathogenic Virology.

The team, led by Dr A. Choo, study viruses that cause ill effects on the population, and create cures to save lives. The team have been hard at work creating an effective vaccine to cure a horrible virus that causes a zombie-like state. You must help Dr Choo and his team complete the research notes and finish developing the vaccine before the virus takes over the country.

Day 6

The three affected patients are in quarantine. Their symptoms are worsening at an extremely alarming rate. It remains to be seen what the ultimate effects of this virus will be. We are hard at work developing a vaccination but at present there is not much we can do other than continue to monitor symptoms and examine the samples we have taken.



1a. What symptom has Dr Choo measured in this graph?

1b. What are the lowest and highest temperatures recorded?

1c. When did each patient start to show a decrease in body temperature?

Day 11

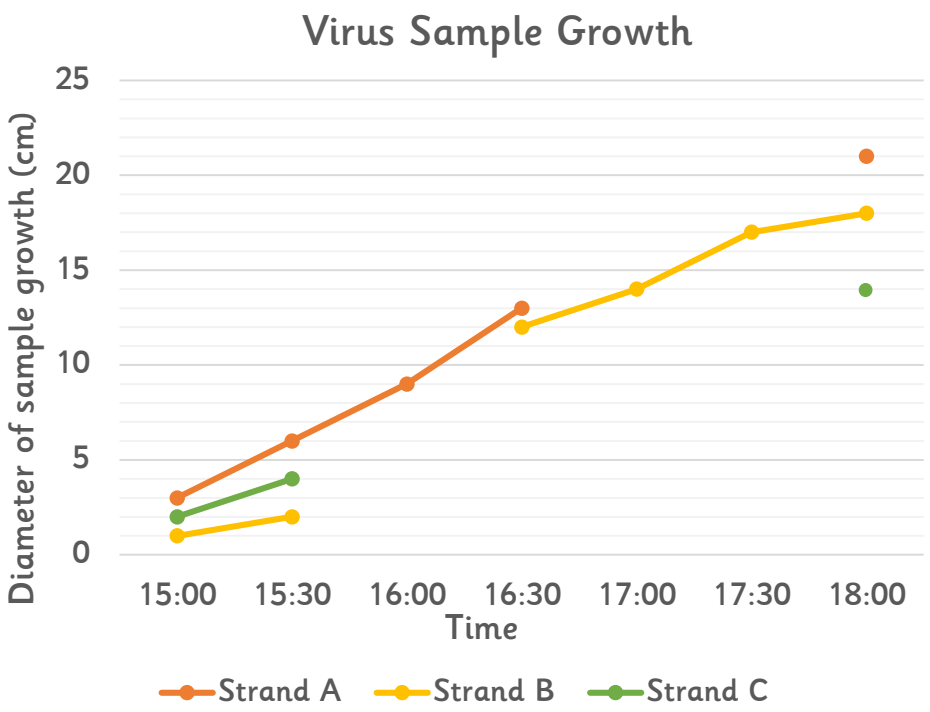
While monitoring the viruses in their petri dishes, I have noticed something extraordinary – they are growing at an incredible rate! Unfortunately, so are the number of patients; whatever this is, it is remarkably contagious. These findings will aide us greatly in developing the vaccination, and not a moment too soon – our quarantine ward here at the lab is already nearly full!

2. Complete the graph to show the following:

Strand A showed no change between 5pm and 6pm.

Strand B showed the greatest change between 4pm and 4:30pm, after a 30 minute plateau.

Strand C increased steadily between 3pm and 6pm.



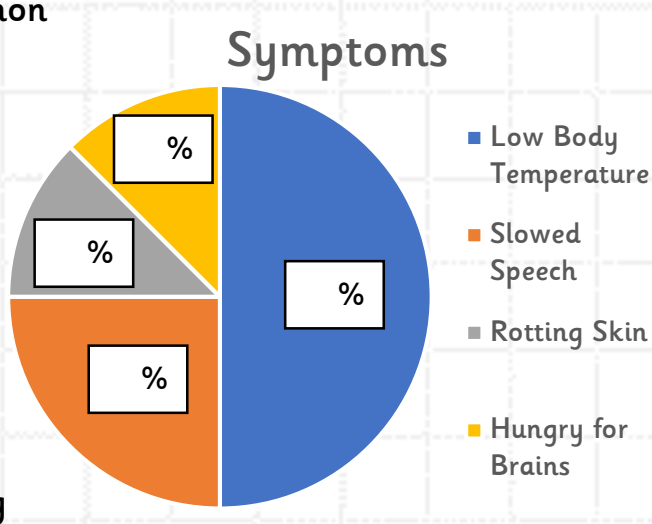
Day 17

The health of all 200 of our quarantined subjects continues to decline dramatically. We have been tracking the four most common symptoms in hopes of finding a clue to the cure, but have had no luck yet!

3a. How many people have reported each symptom on the pie chart?

3b. Which symptoms are the most and least reported?

4. What percentage of subjects are showing each of the symptoms? Fill in the values on the pie chart.

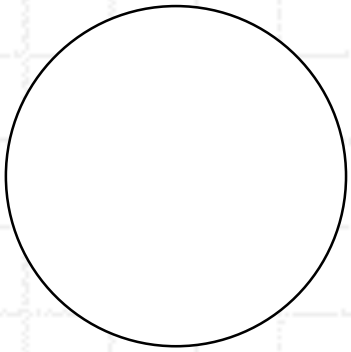


Day 24

Quarantine is now filled to capacity. Unfortunately, most of our patients seem to be on the cusp of the advanced stages of infection. We have been testing the trial vaccines as quickly as possible, and are seeing some promising results!

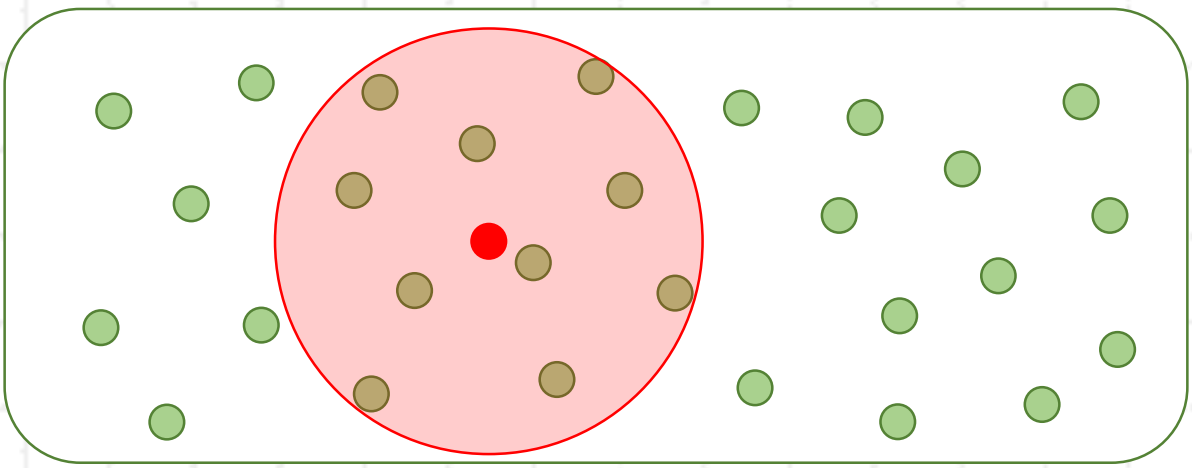
5. Work out the missing information and create a pie chart using the data in the table. Add a title and key to the chart.

Vaccine Strand	Positive test results	Convert to degrees
1	15	15 x 4 = 60°
2		
3		___ x 4 = 40°
4	40	
5		___ x 4 = 20°
Total		___ x 4 = 360°



Day 26

Breakthrough! One of the lab assistants accidentally dropped a vial of the promising Vaccine #4 while walking through the quarantine ward. Symptoms began improving almost immediately on nearby patients! This has been a very hopeful day, indeed!



This is a representation of the room in the quarantine ward. Each green circle represents 5 patients. The red circle shows where the vial was dropped. The radius of the drop zone is 4.6 metres.

6a. What is the diameter of the area reached by the vaccine?

6b. How many people showed improvement after the accident?

Day 28

News of our work has spread like wildfire – every single quarantined patient has been given the vaccine and has shown a full recovery. There do not appear to be any lasting effects from the virus – a truly incredible effort from the team!

The next step is to design mobile vaccination stations to supply the rest of the country with the vaccine.

7a. Fill in the missing information.

	North County	South County	East County	West County	Mean:
Capital cities	122,532	119,593	124,005	121,687	
Surrounding towns	19,882	39,528	53,385	74,667	
Rural communities	6,747	4,332	8,100	7,667	
Mean:					

Dr A. Choo must use these averages to determine roughly how many people, equipment and vaccines he will need to send in order to serve each area. The laboratory has been given a budget to create three different sized stations.

7b. Which set of averages from the table would be most useful in designing the mobile vaccination stations? Why?

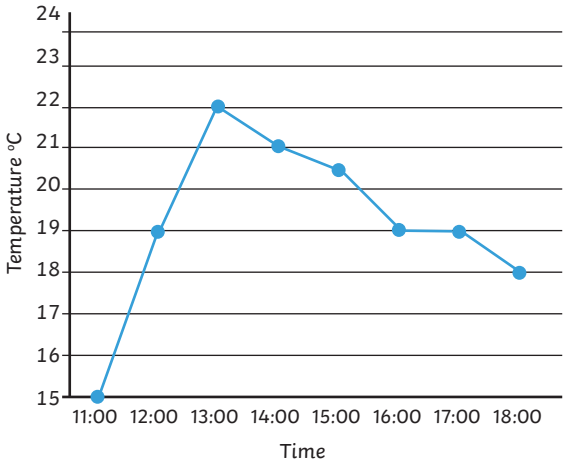
7c. Using the table, how many people does each size of mobile vaccination station need to prepare to cater to?

Dr Choo and the Sneezums Laboratory team thanks you for your contribution to such a brilliant breakthrough. The country is safe from a potential disaster thanks to the vaccine you helped develop with your careful calculations!

Challenge

UKS2 Statistics Challenge Cards

1. A Line Graph Showing the Temperature of a Day in August



a) What was the temperature at 17:00?

b) What time was the highest temperature recorded?

c) At which times was the temperature less than 19°C?

d) What was the difference in temperature between the lowest and highest temperature?

2. Here is a table showing the favourite drink flavours of the children in key stage 2.

Flavour	Boys	Girls	Total
Orange		15	30
Blackcurrant	12	6	
Apple	17	5	
Pineapple	6		
Strawberry		9	
	54	46	100

a) Using the information in the table, fill in the missing boxes.

b) How many more boys like apple than girls?

c) What percentage of children prefer orange?

d) Which was the least favourite flavour?

3. Here is a bus timetable.

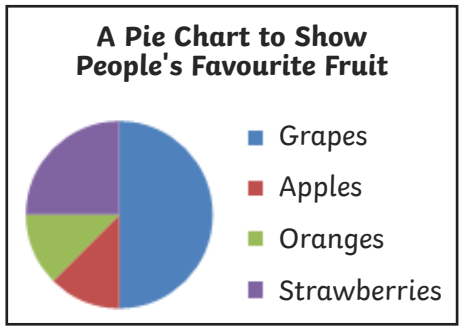
	School	Park	Shops	Market	Beach	Pool
Mon	07:45	08:10	08:27	08:39	09:45	10:14
Tues	07:44	08:11	08:28	08:40	09:44	10:13
Wed	07:45	08:10	08:27	08:39	09:45	10:14
Thurs	07:44	08:11	08:29	08:40	09:44	10:05
Fri	07:45	08:10	08:27	08:39	09:45	10:14
Sat and Sun	10:45	11:10	11:27	11:39	12:45	1:14

a) How long does it take to get from the school to the market on a Monday?

b) John arrives at the beach at 09:45 on Wednesday. What time did he get on the bus at the park?

c) On which morning is it quicker to get from the shops to the pool?

4. 32 people were asked to name their favourite fruit. This pie chart shows their responses:



a) What percentage of people said that strawberries were their favourite fruit?

b) How many people said that grapes were their favourite fruit?

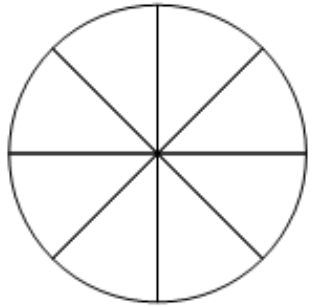
c) How many more people chose strawberries as their favourite fruit compared to oranges?

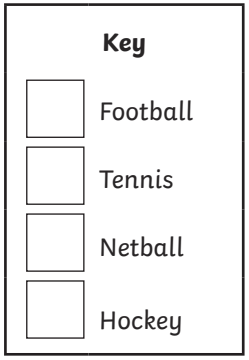
d) The school tuck shop wants to add more fruit to their menu. They use this pie chart to help then decide what fruit to sell. They already sell grapes. Should they add apples, strawberries or oranges to their menu?

UKS2 Statistics Challenge Cards

5. 48 children were asked to name their favourite sport.

Sport	Number of children
Football	12
Tennis	24
Netball	6
Hockey	6





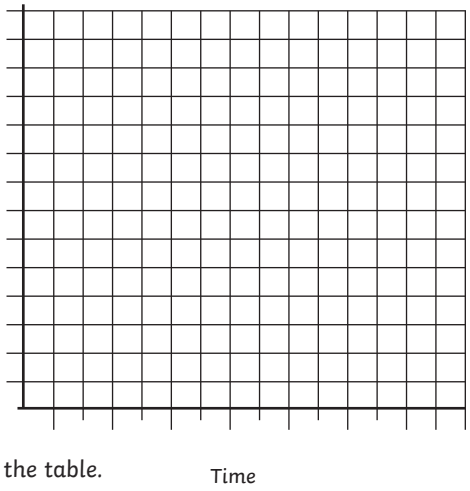
a) Record the information in a pie chart.

b) What percentage of children gave the answer tennis as their favourite sport?

UKS2 Statistics Challenge Cards

6. On Sunday, Zara measures the temperature in her garden at each hour. This chart shows the information she collected.

Day	Temperature
09:00	12 °C
10:00	10 °C
11:00	9 °C
12:00	8 °C
13:00	13 °C
14:00	11 °C
15:00	14 °C



a) Plot a line graph showing the information in the table.
b) Using the graph estimate the temperature at 13:30.