## Home Learning: Mathematics

Summer I: Week 5 Monday $18^{\text {th }}$ May - Friday 22 ${ }^{\text {nd }}$ May 2020

Another one to rack your brains with!

Can you work out the value of '?!'
(hint: well, there are no hints

- you know how to solve these type of questions)

The answer (and working out) will be revealed next week.

Good luck.



What are the differences between these graphs? Create a mini-chart.


Graph A


Graph B


Question
Provide a description as to what each graph could be recording about.
Explain what is happening in each graph and why it may be the case.

## Question

I. Who consumed the most water by the end of the day? How do you know?
2. Who consumed the most amount of water by midday?
3. At what time was the water intake the same on Monday and Tuesday?
4. Between which times was the water intake the same on Tuesday?
5. Between which times was the greatest amount of water consumed on Monday and Tuesday? How do you know?
6. Roughly how much water was taken in at Ilam?

Question
What do you notice about this graph?
What is different about it and the previous two graphs?


## Extension

Write a short story about the water intake of this person throughout Monday and Tuesday.

Eva recorded the following facts about the graph.
A) On the $9^{\text {th }}$ July, the plant was about 9 cm tall.
B) Between the $1^{\text {th }}$ and $19^{\text {th }}$ July, the plant grew about 5 cm .
C) At the end of the month, the plant was twice as tall as it had been on the $13^{\text {th }}$

Can you spot and correct Eva's mistake(s)?

Eva has created a graph to track the growth of a plant in her house.


Extension
Eva's birthday is on the $16^{\text {th }}$ June.
How far has the plant grown from the beginning of the month to her birthday?

Write a story and 3 questions for each of the 3 graphs below.

## Hint

Provide three different storylines and make sure that each graph has good questions that can be answered by one of your family members.



Remember to show your working out!

## Tuesday $12^{\text {th }}$ May 2020

Subject of Focus: Multiply \& Divide Fractions

- Remember to have an ' $x$ ' and ' $y$ ' axis; make sure that you label each side with an appropriate name.
- Use a ruler and pencil; mistakes may be made.
- Look at examples in yesterday's lesson to see how to lay it out.
- Choose an appropriate scale for each axis (e.g. jumps of 5, 10 etc.)

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

Create a line graph to represent the information.

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

Top Tips for Drawing Graphs

- Remember to have an ' $x$ ' and ' $y$ ' axis; make sure that you label each side with an appropriate name.
- Use a ruler and pencil; mistakes may be made.
- Look at examples in yesterday's lesson to see how to lay it out.
- Choose an appropriate scale for each axis (e.g. jumps of 5, 10 etc.)

The table below shows the population in the UK and Australia from 1990 to 2015.

|  | 1990 | 1995 | 2000 |
| :---: | :---: | :---: | :---: |
| UK | $57,200,000$ | $58,000,000$ | $58,900,000$ |
| Australia | $17,000,000$ | $18,000,000$ | $19,000,000$ |
|  | 2005 | 2010 | 2015 |
| UK | $60,300,000$ | $63,300,000$ | $65,400,000$ |
| Australia | $20,200,000$ | $22,100,000$ | $23,800,000$ |

Create one line graph to represent the population in both countries. Create three questions to ask your friend about your completed graph.

## Question

Rosie and Jim were asked to complete the graph to showed that the car had stopped.

Their graphs are below.

Who has completed the graph correctly? Explain your reasoning.

This graph shows the distance that a car had travelled.



Rosie's Graph


## Questions

1. Create a line graph to represent the information, where the divisions along the $x$-axis are every two hours.
2. Create a second line graph where the divisions along the $x$-axis are every hour. 3. Compare your graphs. Which graph is more accurate?
3. Would a graph with divisions at each half hour be even more accurate?

Explain your reasoning.
This table shows the distance a lorry travelled during the day.

| Time | Distance in miles |
| :---: | :---: |
| 7.00 a.m. | 10 |
| 8.00 a.m. | 28 |
| 9.00 a.m. | 42 |
| $10.00 \mathrm{a} . \mathrm{m}$. | 58 |
| $11.00 \mathrm{a} . \mathrm{m}$. | 70 |
| $12.00 \mathrm{a} . \mathrm{m}$. | 95 |
| 1.00 p.m. | 95 |
| 2.00 p.m. | 118 |

I. What do you think this graph is about? Explain your answer.
2. Which time of the day is it more expensive to place an advertisement? Why do you think this?
3. How much is it to run an advert for 20 seconds during the daytime?
4. How much does it cost to run an advert for half a minute in the evening?
5. At what point does it cost the same to run an advert in the day-time and evening? How much does it cost and what are the lengths?
6. Create a line graph and continue the trend, predicting how much it would cost to run an advert for 40, 50 and 60 seconds


## Wednesday $13^{\text {th }}$ May 2020

Subject of Focus: Problem Solving with Line Graphs

Ron and Annie watched the same channel, but at different times. The graph shows the number of viewers at different times. Ron watched 'Chums' at 5 pm . Annie watched 'Countup' at 8 p.m.


## Question

1. What was the difference between the number of viewers at the start of each programme?
2. What was the difference in the number of viewers between 6pm and 8pm?
3. Which time had twice as many viewers as 6 pm?
4. Why do you think there was a sharp rise in the number of viewers from 7 pm to 8 pm ?
5. Which programme do you think had the most viewers? Explain your reasoning.

Two families were travelling to Bridlington for their holidays. They set off at the same time but arrived at different times.

## Question

1. What time did 'Family $A$ ' arrive?
2. How many km had each family travelled at $8: 45 \mathrm{am}$ ?
3. Which family stopped midway through their journey? How do you know?

- How much further had they left to travel?
- Why do you think they had to stop? Give a sensible reason.

4. How many miles did Family A travel for between 9:30am and 10:30am?


Here is a line graph

Task
Create your own short story for this graph and create a few questions

- remember to label the axis with appropriate names
- create a short narrative behind what the graph is showing
- develop questions about the results from the graph using your story


The graph below shows some of Mr Woolley's journeys.

## Question

I. What is the same and what is different about each of these journeys?
2. What might have happened during the green journey?
3. Which mode of transport do you think he would have taken for each journey? Explain your reasoning using the graph.
4. Mr Woolley has said that he has taken an Uber for the journey marked as red. Do you think that it is a feasible mode of transport for what is shown in the diagram? Explain your reasoning.


Here is a line graph of the temperature being recorded

## Question

1. Estimate the temperature at $3: 15 \mathrm{pm}$
2. Estimate the time when the temperature was at its highest.
3. How much did the temperature change from 2 pm to 2:30pm?
4. What could this line graph have been recording?
5. Estimate the time when the temperature was at its lowest.
Extension: Continue the line graph and predict how the temperature would change over the rest of the day. Take into account how the weather may change over the course of the day.



This pie chart represents the children that attend St Chad's Primary School.

It is a survey to see how children come to school.

There are 600 in total

## Question

1. How many children walk to school?
2. How many children cycle to school?
3. How many children use the train?
4. How many children use the car?

## Extension:

Half of the children whom walk to school now use a scooter.


How many children is this?

Classes in Year 2 and Year 5 were asked what their favourite drink was.

Here are the results:

Year 5: 96 pupils



## Question

1. What fraction of pupils in Year 5 chose Fizzeraid?
2. How many children in Year 2 chose Rolla Cola?
3. How many more children chose Vomto than Rolla Cola in Year 2?

## Question

4. How many children chose each drink collectively?

In a survey people were asked what their favourite season of the year was.

The results are shown in the pie chart below.

If 48 people voted for summer, how many people took part in the survey?

## Extension

I. How many children voted for each of the other seasons specifically?

Our favourite time of year


In a survey about 'our favourite pets', 96 people participated in it.

## Question

1. How many people voted for cats?
2. $3 / 8$ of the people who voted for dogs were male. How many females voted for dogs?

## Extension

5/6 of the people who voted for horses were female.
How many males voted for horses?

What other information can you gather from the pie chart?

Our favourite pets



150 children voted for their favourite ice cream flavours. Here are their results:

## Question

1. How many people voted for vanilla?
2. How many more people voted for chocolate than mint chocolate chip?
3. How many people chose chocolate, banana and vanilla altogether?

Favourite Ice Cream Flavours


## Extension

There are 200 pupils in Key Stage 2 who chose their favourite hobbies. Here are their results:

## Question.

I. How many pupils chose each hobby?


## Extension

15 people in this survey have no siblings.

Use this information to work out how many people took part in the survey altogether.

## Question

I. Work out how many people represent each segment of the pie chart.

## Extension

1. Represent the information in a table.


120 boys and 100 girls were asked which was their favourite subject.
Here are the results:

Boys Favourite Subjects


Girls Favourite Subjects


Jack says:


Do you agree? Explain why.

Remember to explain your reasoning and show your working out to prove.

