



Year 4

Remote Learning

Maths Week 16 Statistics

Message

Hi Year 4 and welcome to your maths learning for this week. This week, we are completing our unit of work on Statistics. We will be looking at Venn diagrams, Line graphs, bar charts and pictograms. Look for video links to help take you through the lessons.

Before we start, here are some terrible statistics jokes to make you groan!

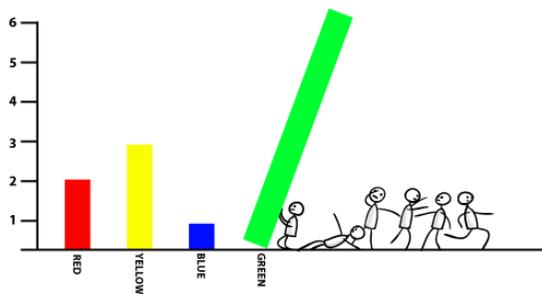
Joe: Hey, did you know that sheep like Statistics?

Glenn: Really? What sort?

Joe: Baaaa charts!

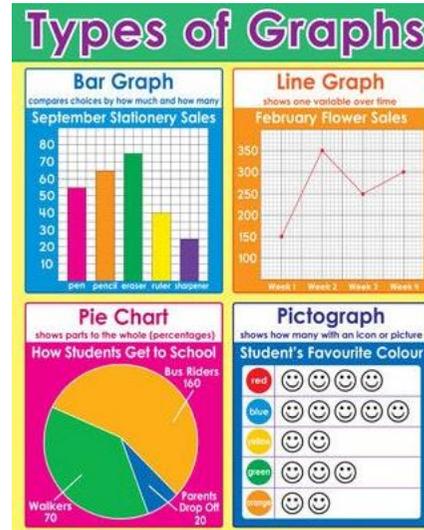
My Statistics teacher said I was just average. I told him that was just mean.

BAR CHART RELATED DEATHS 2009
NUMBER OF DEATHS BY BAR COLOR



Teaching – Statistics

Our main learning focus this week is ‘Statistics’. We will be learning how to interpret different graphs.



Our final lesson is based around assessment questions on statistics. These will give the children the experience of how to approach ‘test’ style questions.

Website Links

Data handling games:

<https://www.topmarks.co.uk/maths-games/7-11-years/data-handling>

Ways to visualise data:

<https://www.bbc.co.uk/bitesize/topics/z7rcwmn/articles/z8dp8mn>

BBC bitesize learning:

Data Handling in Football:

<https://www.bbc.co.uk/bitesize/articles/zsrq4j>

Lesson One – Quick Questions

Click [here](#) to watch the video tutorial for this lesson.

Decimal Times tables – Have a go at these times table questions with decimal numbers. They are like the regular times tables but ten times smaller!

$$3 \times 0.2 =$$

$$5 \times 0.1 =$$

$$0.3 \times 12 =$$

$$0.7 \times 8 =$$

$$6 \times 0.3 =$$

$$4 \times 0.2 =$$

$$8 \times 0.2 =$$

$$12 \times 0.7 =$$

$$9 \times 0.9 =$$

$$11 \times 0.4 =$$

$$9 \times 0.7 =$$

$$12 \times 1.2 =$$

Lesson One – Main Activity

Step One:

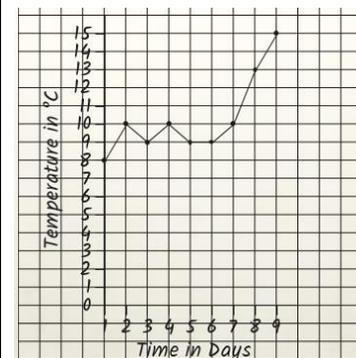
Record this data in a bar chart, choosing a different colour for each bar. The cities should be along the x axis at the bottom, and the temperature along the vertical y axis.

City	Highest Recorded Temperature °C
London	26
Edinburgh	23
Dublin	23
Cardiff	24
Paris	26
Rome	28

Below is the temperature of Crouch End over 9 days. **Create a line graph** to show this data.

Day	Temperature °C
1	8
2	10
3	9
4	10
5	9
6	9
7	10
8	13
9	15

This information continues over a sequence of time so we call it continuous.



To create the line graph, note the temperature on the left Y axis that runs vertically. Then write the time in days on the X axis which runs along the bottom. Plot in the points and then join them together by drawing a line (with a ruler) from day 1 through to day 9.

Apply it!

Step Two:

Once you have completed your two charts, it is time to answer some questions by interpreting the data!

European bar chart questions

1: What was the difference between the temperature in Paris and Dublin?

2: What was the range of temperatures from the lowest to the highest?

3: What is the average temperature? Add up all the six temperatures and the divide them by 6.

4: Madrid's temperature was measured as one and a half times as hot as London. What was its temperature?

5: The next year, Dublin's highest recorded temperature dropped by 14 degrees. What would it be?

Crouch End temperature questions

6: On Day 10, the temperature rises by another 7 degrees, what would it be?

7: From Day 3 onwards, how much has the temperature risen to day 9?

8: On what day did the temperature neither fall nor rise?

9: If the temperature on Day 12 is 27 degrees, by how much would it have changed from Day 9?

10: What day saw the biggest change in temperature?

Lesson 2: Quick Questions

Click [here](#) to watch the video tutorial for this lesson. Don't worry when Mr Goddard says it's lesson 3 – he meant to say lesson 2!

Quick fire Near Doubles

Here are twenty questions involving almost doubling but not quite, how will you solve them?

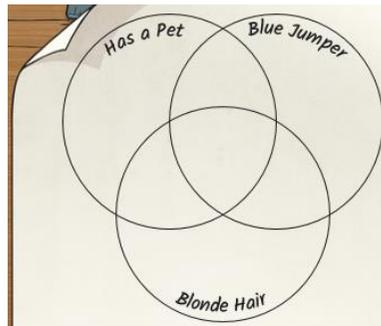
- $4 + 3 =$
- $11 + 12 =$
- $13 + 15 =$
- $21 + 22 =$
- $31 + 29 =$
- $43 + 45 =$
- $19 + 22 =$
- $51 + 48 =$
- $61 + 59 =$
- $23 + 24 =$
- $35 + 34 =$
- $98 + 102 =$
- $198 + 203 =$
- $73 + 69 =$
- $297 + 301 =$
- $103 + 105 =$
- $402 + 397 =$
- $3002 + 2998 =$
- $1.1 + 1.2 =$
- $1.8 + 2.1 =$

Main Activity

Name	Any Pets?	Colour of Jumper	Colour of Hair
Eli	yes	red	black
Dara	yes	red	brown
Kaylee	yes	red	blonde
Poppy	yes	blue	blonde
Klaudia	yes	blue	auburn
Lowri	no	blue	brown

Here is some information on a group of children in a class.

Can you put the children's names in this Venn diagram? Draw it out on paper.

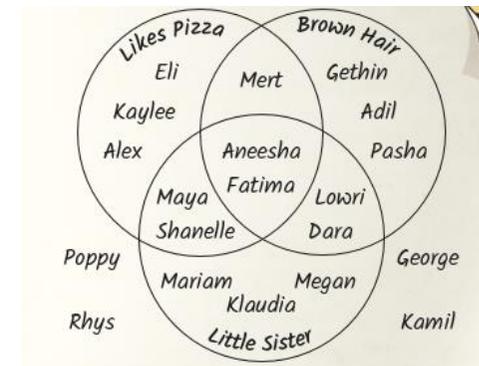


Next, draw a Carroll diagram to place these names inside. Here is a Carroll diagram with the titles already in place with one name already in the right place:

	Has a blue jumper	Does not have a blue jumper
Has pets		Eli
No pets		

Have a look at this Venn diagram.

There are 3 categories that 19 children have been sorted into: Likes pizza, has brown hair and has a little sister. Your task is to take this data and put it into a table of results.



Your table will have the names of the children in a column on the left. You will then have a column each for the three categories.

Here is an example of one completed row.

Name	Likes Pizza	Has brown hair	Has a little sister
Mr Shiel	Yes	Yes	No

Use squared paper to draw out the table. Try to be precise when you draw the lines for rows and columns. Using a ruler will help!

Lesson 3 – Quick Questions

Click [here](#) to watch the video tutorial for this lesson.

Have a look at this table of Roman Numerals:

Roman Numerals			
Can you count by only using letters?			
I	1	XXX	30
II	2	XL	40
III	3	L	50
IV	4	LX	60
V	5	LXX	70
VI	6	LXXX	80
VII	7	XC	90
VIII	8	C	100
IX	9	D	500
X	10	M	1,000
XX	20	MD	1,500

What are these numbers:

1. MD _____

2. MCD _____

3. XXXIV _____

4. CXVI _____

5. DCLX _____

6. CXIII _____

CD + DC = _____

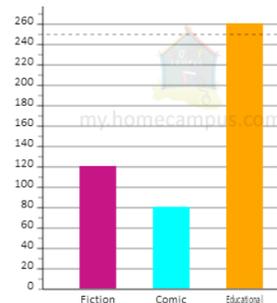
VI + IV = _____

XI + IX = _____

A Sock to the System!

How many socks are in your house? You probably have some for yourself, your family and carers might even have some socks they like to wear. But how many are there in your home and how would you classify them? Plain colours? Stripy? Odd? Smelly?

Now is the time to analyse your family socks and make some graphs.



First off, let's make a **bar chart** of how many socks people in your family have. Count the socks that belong to people in your home and then call up other people and find out how many socks they have. Add Mr Shiel into your chart – he has 14 pairs of socks!

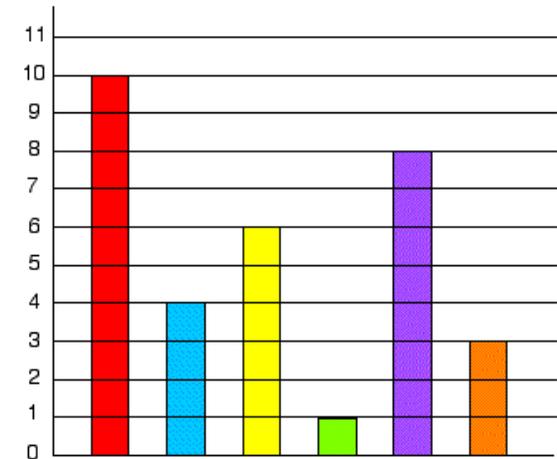
Now let's analyse your own socks. How would you classify them? Create a frequency chart which details the types of socks you might have. Below is an example few rows from Mr Shiel's sock collection.

Plain Red	II
Holey	IIII
Patterned	II
Odd	I

How will you classify your socks?

The Pet Graph

Tim's class collected information about all their pets. They have six different kinds of pets between them. This is the bar chart they are making to show how many of each pet the class has altogether.



The children have not yet put in the animal names under each column. Can you do this for them using the information below?

- There are two less cats than dogs.
- Only one child has a parrot at home.
- The number of fish added to the number of gerbils is equal to the number of dogs.
- There are twice as many fish as hamsters.
- There is half the number of gerbils as there is cats.

Lesson Four – Quick Questions

Click [here](#) to watch the video tutorial for this lesson.

Here are some quick arithmetic questions to get your brain going.

$$301 + 100 =$$
$$456 - 200 =$$
$$2009 - 1010 =$$

$$43 \times 2 =$$
$$25 \times 3 =$$
$$41 \times 4 =$$

$$96 \div 8 =$$
$$660 \div 3 =$$
$$84 \div 4 =$$

$$6.2 + 4.8 =$$
$$5.3 - 3.2 =$$
$$7.9 - 4.7 =$$

$$12 \times 2 \times 2 =$$
$$7 \times 2 \times 4 =$$
$$8 \times 3 \times 4 =$$

Main Activity

Today we are reading timetables and answering questions based on those timetables. Here is a bus timetable.

Mill Road	0726		0842
High Street	0729	0803	
Pitsmoor Road	0759	0833	
Fulwood	0845	0919	0946

1: If I get on the bus at Mill Road at 07:26am, what time will I get to Fulwood?

2: If I arrive at Fulwood at 09:19am, what time did I get on the bus from High Street?

3: How long is the journey from Pitsmoor road to Fulwood?

4: It takes me 15 minutes to walk from my home to the bus stop on the High Street. What time is the latest I can leave home to get to the bus stop for the 8:03am bus?

5: How long is the journey from Mill Road all the way to Fulwood on the earliest bus?

6: The express service from Mill Road at 8:42am is much quicker as it has fewer stops. How much quicker is it than the first bus on the timetable?

Train Times

Destination	Journey A	Journey B	Journey C
London	10:17	11:37	16:43
Derby	12:12		18:08
Sheffield	12:38	13:08	18:27
York	13:16	13:58	19:14
Newcastle	14:06	14:34	
Duration			3 hours and 5 minutes

Journey B takes 1 hour and 16 minutes to get from London to Derby. What time do you arrive at Derby?

2. Journey C takes a total of 3 hours and 5 minutes. What time does it arrive at Newcastle?

3. How long do journeys A and B take from London to Newcastle? What is the difference in time?

4. You need to be at York for an appointment at 14:30. Which is the best journey to take? How much spare time will you have in York before your appointment?

5. You arrive at Sheffield train station at 16:50. How long do you have to wait for the next train to Newcastle?

6. How many stations does the 11:37 train stop at before it reaches York?

Lesson Five – Assessment Questions

Click [here](#) to watch the video tutorial for this lesson.

Here is a pictogram showing how many apples were sold by a fruit shop in a week. 1 picture of an Apple represents 4 apples sold.

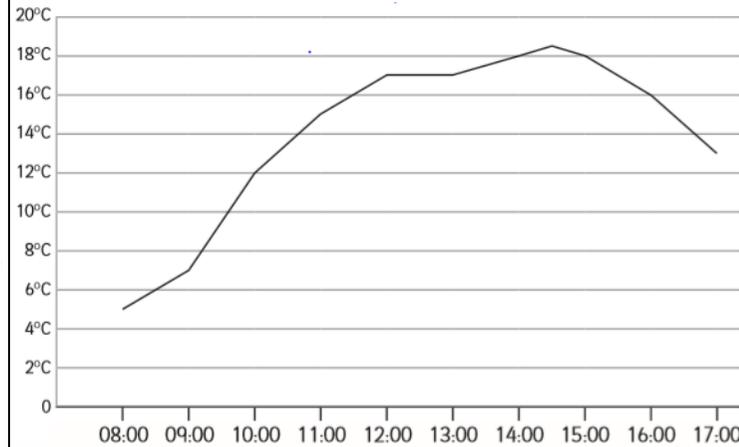
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

 = 4 apples

- How many apples were sold on Tuesday?
- True or False? More apples were sold on Monday and Tuesday than the rest of the week combined.
- True or False? The difference between Thursday and Friday is 6 apples.
- What is the total amount of apples sold in this week?
- The following week, the fruit shop manages to double the amount of fruit sold compared to the previous week. If you combine those amounts, how much is that in 2 weeks?

Lesson Five – Assessment Questions

This line graph shows the temperature of the playground at school on a single day.



- At what time was the temperature at 10 degrees?
- Between what times did the temperature remain the same?
- What was the temperature at 15:30?
- What was the temperature at 8:00am?
- What was the different in temperature between 8:00am and 15:30am?

Lesson Five – Assessment questions

Here is a chart of Year 4 children's favourite ice cream flavours. Using the information available, fill out the rest of the chart.

	Boys	Girls	Total
Vanilla	2		11
Strawberry	10	7	
Chocolate	4	2	
Mint		9	
Toffee	4		
Total	22	28	50

Once you have completed the table, try to answer these questions:

- Is it true that more people like chocolate and strawberry than the rest of the flavours combined?
- What is the range from the smallest total to the largest total?
- When they ran this survey with Year 5, twice as many children said chocolate. When they ran this survey with year 6, 4 more children than Year 4 said chocolate. How many children in Years 4, 5 and 6 said chocolate was their favourite?