

Monday

Starter:

Using the following rules, how many ways can you make 70?

- Use a number from column A
- Use an operation from column B.
- Use number from column C.

A	B		C
0.7	×	÷	0.1
7			1
70			10
700			100
7,000			1,000

Can you find a path from 6 to 0.06?
You cannot make diagonal moves.

6	× 10	× 10	÷ 100
÷ 10	× 100	× 100	÷ 10
× 10	÷ 10	÷ 1,000	÷ 100
÷ 1,000	× 1,000	× 100	0.06

Is there more than one way?

Last week, we looked at finding one kind of average- the mean.

This week, we will look at finding other types of averages- the medium, mode and range.

Main activity:

The **range** is the spread of data. To find it, we subtract the lowest value from the highest value. Look at these sets of test scores from 2 different Maths groups. The tests were out of 20.

Group 1

20, 19, 15, 11, 18, 4, 3

$$20 - 3 = 17$$

$$\text{Range} = 17$$

Group 2

15, 13, 12, 11, 10

$$15 - 10 = 5$$

$$\text{Range} = 5$$

Group 1 has a far wider range of abilities. Their teacher will have to plan for kids who get the topic, kids who kind of get it, and kids who need lots of support.

Group 2's range is much smaller. No one has really mastered the concept and no one has really struggled. The teacher will have fewer different needs to meet.

Warm up with these. Find the range for each set of numbers:

a 22, 14, 17, 13, 2, 33

b 123, 148, 55, 89, 94, 131

c 4.5, 9.2, 10.7, 11.2

This table shows weekly rental prices for 3 bedroom houses in 2 suburbs:

Suburb 1	Suburb 2
£755 pw	£980 pw
£364 pw	£150 pw
£195 pw	£1,235 pw
£645 pw	£780 pw
£820 pw	£525 pw

What is the price range for suburb 1?

What is the price range for suburb 2?

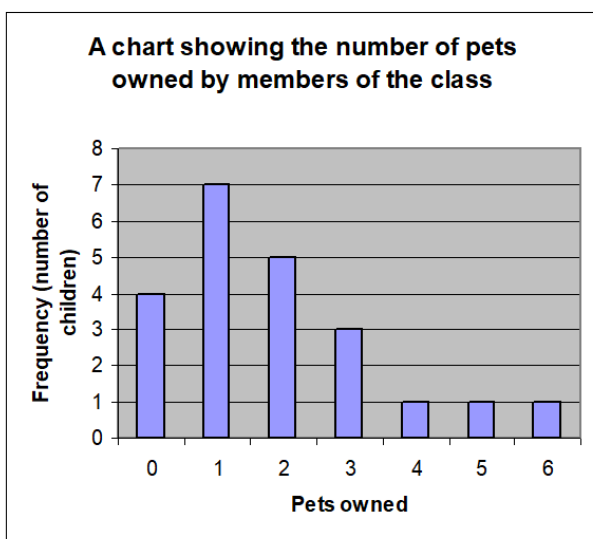
What do these ranges tell you about the types of houses in each of the two suburbs?

NAME	MATHS	ENGLISH	HISTORY	SCIENCE	GEOGRAPHY
Brian	67	59	72	66	71
Susan	53	61	55	68	63
Pamela	66	57	64	61	67
John	72	75	59	75	59
Peter	69	81	60	58	67
Jill	63	69	74	56	63

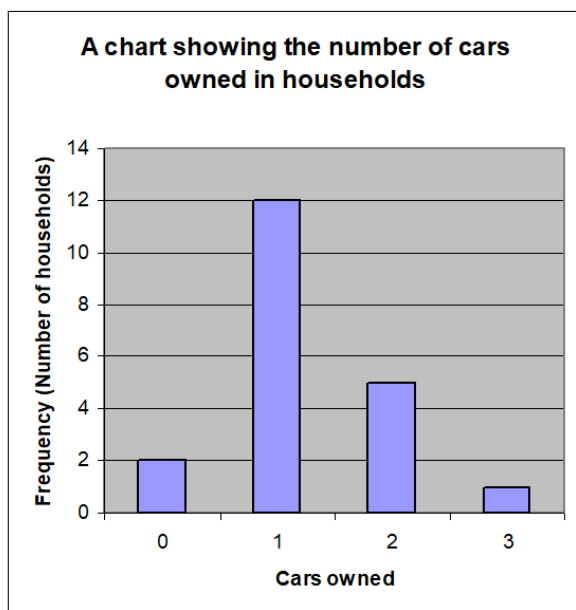
What is each child's range of scores across the five exams?

In which subject was the range of scores smallest?

In which subject was the range of scores biggest?



The range of pets owned by children is



The range of cars owned in households is

Tuesday

Starter:

Eva says,

When you divide by 10, 100 or 1,000 you just take away the zeros or move the decimal point.



Do you agree?
Explain why.

Main activity:

Another statistic we use to analyse data is the median. The median is the middle number when the data is put in order. Look at:

17 12 3 5 25 33 12 14 36 22 23 29 37

We reorder the numbers and count in from either end:

3 5 12 12 14 17 (22) 23 25 29 33 36 37

22 is the median or middle number. There are 6 numbers on either side of it.

Order these sets of numbers and find the median for each:

a 13, 7, 5, 8, 3, 2, 4

b 22, 6, 18, 4, 7, 23

c 4.5, 8.2, 3.6, 4.1, 2.3, 3.7, 7.3

d 45, 46, 47, 50, 59, 102

Note: If there is an odd number of numbers, then there will be one number in the middle of the set.

If there is an even number of numbers, then there will be two numbers in the middle. If this is the case, you should add these two numbers then divide by 2- this will tell you the value that is exactly halfway between these two numbers.

Tom Cruise	1.73 m
Katie Holmes	1.75 m
Will Smith	1.88 m
David Beckham	1.8 m
Kevin Rudd	1.79 m
Paris Hilton	1.73 m
Hugh Jackman	1.89 m
Nicole Kidman	1.81 m
Nicole Richie	1.55 m

a Put the players in order from shortest to tallest.

b Which player has the median height?

Album title	Number of songs featured
Please Please Me	14
With The Beatles	14
A Hard Day's Night	13
Beatles For Sale	12
Help	14
Rubber Soul	14
Revolver	14
Sgt. Pepper's Lonely Hearts Club Band	13
Magical Mystery Tour	11
The White Album	30
Yellow Submarine	15
Abbey Road	17
Let it Be	12

What is the median number of songs on a Beatles album?

There are 9 numbers in a set. The median is 9. What could the set of numbers be?

Mode:

Another statistic we use when analysing data is the **mode**. The mode is the number that occurs most frequently in a set. Look at:

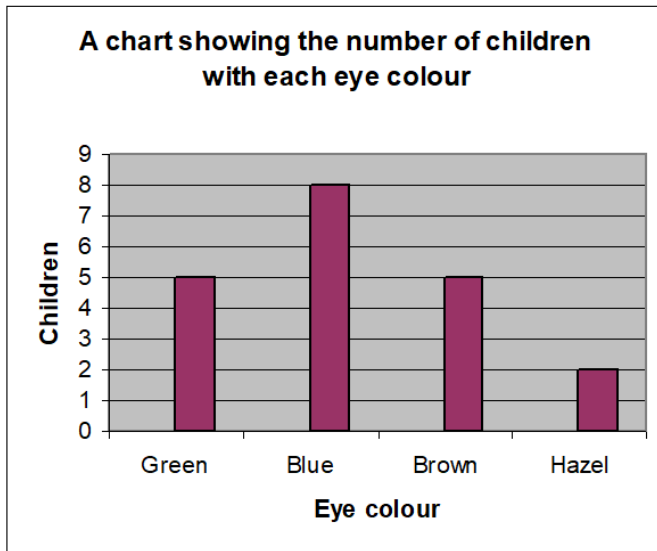
17 12 4 5 25 33 12 14 4 36 22 23 29 37 26 4 34

We can see, from looking at the data above, that the number 4 appears the most- this is therefore the mode. We can arrange the data in whichever way we like in order to help us find the mode. Some people like to use a tally chart.

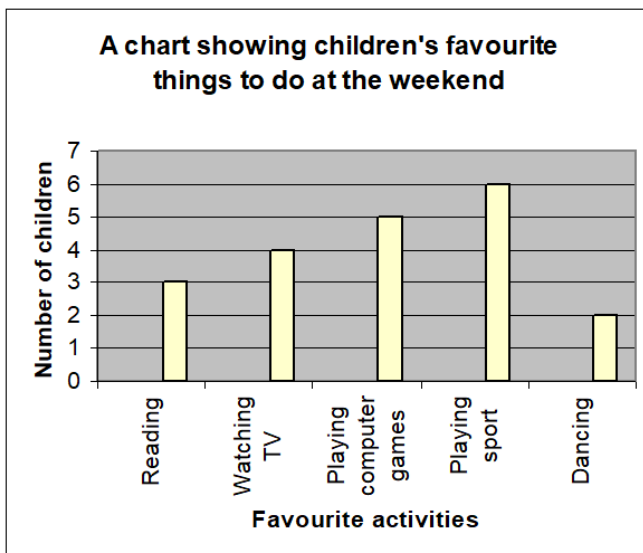
Wally is trying out for the Work Experience Boy Olympics. His favourite event is the Coffee Dash when he races to the local coffee shop and back for the morning espressos. Here are his times so far, rounded to the nearest minute:

12 min 11 min 13 min 9 min 8 min 14 min 16 min
 11 min 14 min 19 min 10 min 11 min 15 min 22 min
 17 min 23 min 22 min 12 min

Find the mode for the set of data above.



The mode for children's eye colour is _____



The mode for children's favourite thing to do at the weekend is _____

Wednesday

Starter:

- ▶ A jar of sweets weighs 1.213 kg.
How much would 4 jars weigh?



- ▶ Rosie is saving her pocket money. Her mum says,

“Whatever you save, I will give you five times the amount.”

If Rosie saves £2.23, how much will her mum give her?

If Rosie saves £7.76, how much will her mum give her? How much will she have altogether?

Main activity:

Find the mean, mode, median and range for each set of data below:

- 1) 6, 3, 1, 4, 6, 9, 6
- 2) £21, £26, £19, £18, £21
- 3) 7.3, 5.7, 8.2, 5.6, 1.4

Week	Money Raised
1	£15
2	£12
3	£9
4	£13
5	£59
6	£14
7	£11

Find the mean, mode, median and range for this set of data.

Type	Week 1	Week 2	Week 3	Week 4	TOTAL
Strawberry Kiss	155	150	125	146	
Mud Angel	207	185	167	193	
Vanilla Cream	25	95	33	143	
Blueberry Bubble	75	50	65	22	
TOTAL					

- 1) Complete the chart above. It shows the numbers of different flavours of cupcakes sold each week.
- 2) Find the mean number of cupcakes sold per week.
- 3) Find the range in the number of cupcakes sold across 4 weeks for each flavour.

For this next task you will need 2 reading books

- Open up a book and record the number of letters in each word for the first 20 words.
- For the number of letters per word find the mode, median, range and calculate the mean.
- Repeat for a different book and compare the results

Thursday

Starter:

Whitney says,



When you multiply a number with 2 decimal places by an integer, the answer will always have more than 2 decimal places.

Do you agree?
Explain why.

Fill in the blanks

$$\begin{array}{r} 3.45 \\ \times \quad \quad \quad \square \\ \hline 0.30 \\ \square.40 \\ 1\square.00 \\ \hline \square\square.\square\square \end{array}$$

Main activity:

For this activity you will need 2 dice

- Roll two dice and write the differences between each number of spots
- Do this 10 times
- Find the mode, median, range and calculate the mean

- Repeat the activity with 20 rolls, then 40.
- Do the mode, median, range and mean change?

Team	Played	Won	Drawn	Lost	For	Against	Points
Swansea	19	15	0	4	698	339	45
Cardiff	20	15	0	5	597	353	45
Llanelli	21	13	0	8	629	459	39
Bridgend	19	12	0	7	574	408	36
Newport	20	13	0	7	574	355	39
Glasgow Caledonians	20	11	0	9	607	534	33
Edinburgh Reivers	21	11	0	10	510	623	33
Neath	20	10	1	9	590	498	31
Pontypridd	21	9	0	12	591	511	27
Caerphilly	20	5	1	14	418	655	16
Ebbw Vale	21	5	0	16	395	705	15
Cross Keys	20	1	0	19	234	977	3

Find:

- 1) The mean number of games which were won.
- 2) The range in the number of points scored.
- 3) The mode for the number of points scored.
- 4) The mean number of points scored For
- 5) The range in the number of points Against.

Friday

Have a go at these averages problems from Nrich.

Range of Averages

Find the 4 numbers which have a mode of 12, a median of 14 and a range of 10.

<https://nrich.maths.org/13710>

Choose the Mean

Find 4 numbers which have a mean of 7, a median of 8 and a mode of 9.

<https://nrich.maths.org/12931>

The Average Age

The sum of the ages of 5 teachers is 190.

The mean age of the teachers is 10 years greater than the median age. The modal age is 5 years less than the median age. One of the teachers is 56 years old.

How old are the other teachers?

<https://nrich.maths.org/13751>