Adding

8b

Do not use a calculator

1) Add these together

a)
$$\begin{array}{r} 173 \\ +\ 32 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 143 \\ +\ 51 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 153 \\ +\ 26 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 236 \\ +\ 12 \\ \hline \end{array}$$

e)
$$\begin{array}{r} 137 \\ +\ 9 \\ \hline \end{array}$$

f)
$$\begin{array}{r} 254 \\ +\ 76 \\ \hline \end{array}$$

g)
$$\begin{array}{r} 458 \\ +\ 57 \\ \hline \end{array}$$

h)
$$\begin{array}{r} 641 \\ +\ 59 \\ \hline \end{array}$$

i)
$$\begin{array}{r} 564 \\ +\ 68 \\ \hline \end{array}$$

j)
$$\begin{array}{r} 205 \\ +\ 90 \\ \hline \end{array}$$

k)
$$\begin{array}{r} 312 \\ +\ 78 \\ \hline \end{array}$$

l)
$$\begin{array}{r} 435 \\ +\ 96 \\ \hline \end{array}$$

m) 154 + 46 n) 436 +27 o) 457 + 86

p) 365 + 9 q) 349 + 538 r) 812 + 59

2) Add these together

a)
$$\begin{array}{r} 15 \\ 128 \\ +\ 3 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 16 \\ 1 \\ +\ 154 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 6 \\ 37 \\ +\ 476 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 34 \\ 4 \\ +\ 253 \\ \hline \end{array}$$

e)
$$\begin{array}{r} 1 \\ 35 \\ 25 \\ +\ 264 \\ \hline \end{array}$$

f)
$$\begin{array}{r} 345 \\ 22 \\ 35 \\ +\ 128 \\ \hline \end{array}$$

g)
$$\begin{array}{r} 4 \\ 27 \\ 237 \\ +\ 341 \\ \hline \end{array}$$

h)
$$\begin{array}{r} 4 \\ 263 \\ 45 \\ +\ 167 \\ \hline \end{array}$$

i)
$$\begin{array}{r} 246 \\ 48 \\ 237 \\ +\ 164 \\ \hline \end{array}$$

j)
$$\begin{array}{r} 174 \\ 238 \\ 346 \\ +\ 27 \\ \hline \end{array}$$

k)
$$\begin{array}{r} 314 \\ 56 \\ 142 \\ +\ 233 \\ \hline \end{array}$$

l)
$$\begin{array}{r} 583 \\ 54 \\ 271 \\ +\ 103 \\ \hline \end{array}$$

m) 5 + 19 + 164 n) 24 + 257 + 5 o) 37 + 476 + 23

Multiplying 1

8b

Do not use a calculator

1) Multiply these

a) 15×2 b) 12×3 c) 24×4 d) 32×5

e) 42×5 f) 32×9 g) 41×6 h) 62×8

i) 81×5 j) 33×9 k) 53×8 l) 51×7

m) 35×2 n) 46×3 o) 28×4 p) 52×5

q) 63×7 r) 52×8 s) 74×9 t) 69×7

2) Multiply these

a) 112×2 b) 125×4 c) 143×6 d) 204×7

e) 321×9 f) 317×7 g) 482×6 h) 642×5

i) 264×9 j) 481×6 k) 179×8 l) 739×4

m) 172×3 n) 283×9 o) 273×8 p) 634×5

q) 740×3 r) 579×6 s) 754×5 t) 264×9

Dividing 2

8b

Do not use a calculator

1) There are 124 chairs in the cafe. Each table in the cafe has 4 chairs around it. How many tables are in the cafe?

2) Ross has 121 plants to transfer into trays. Each tray will hold 8 plants.
   a) How many trays does he fill and how many plants are left over?
   b) How many more plants will he need to fill one more tray?

3) The school exam room will hold 108 people when full. There are 9 rows of desks. How many desks are there in each row?

4) A car park can hold 108 cars. There are 6 rows, each holding the same number of vehicles. How many can fit into each row?

5) Becky has £3 (or 300p) to spend on chocolate eggs. Each egg costs 9p. What is the most number of eggs she can buy? How much will she have left over?

6) A train is made up of an engine and a number of trucks. Each truck is 6 metres long. The total length of the trucks is 126 metres. How many trucks does the engine pull?

7) David places wooden blocks on top of each other for his younger sister. The thickness of each block is 5cm. How many blocks will he have built up when he has a tower 105cm high?

8) Socks are put into packs of 6 pairs. Simon can pack 1272 pairs of socks in 1 hour. How many packs is this?

9) Colin wants to save £210 in order to buy a TV. If he puts £6 each week into his bank, how many weeks will it take to save up the money?

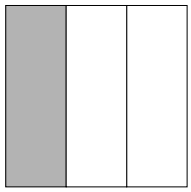
10) A driver loads her van with packages. Each package weighs 8kg. The maximum weight her van will hold is 754kg. What is the most number of packages she can load?

Equivalent Fractions 1

8b

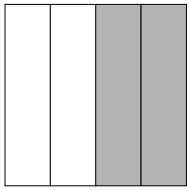
1) Which of these fractions are the same size as $\frac{1}{2}$?

a)



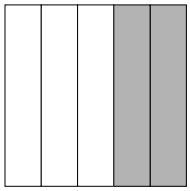
$\frac{1}{3}$

b)



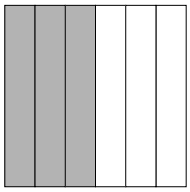
$\frac{2}{4}$

c)



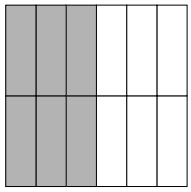
$\frac{2}{5}$

d)



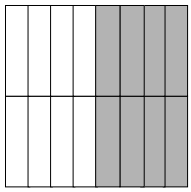
$\frac{3}{6}$

e)



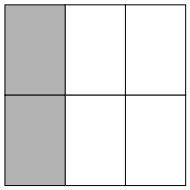
$\frac{6}{12}$

f)



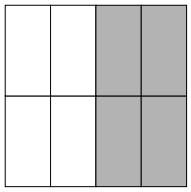
$\frac{8}{16}$

g)



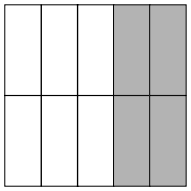
$\frac{2}{6}$

h)



$\frac{4}{8}$

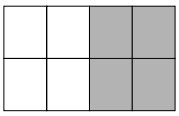
i)



$\frac{4}{10}$

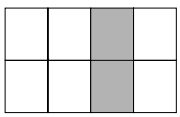
2) Which of these fractions are the same size as $\frac{1}{4}$?

a)



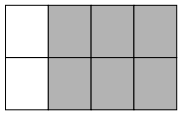
$\frac{4}{8}$

b)



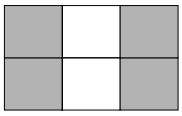
$\frac{2}{8}$

c)



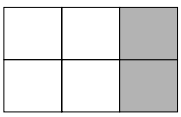
$\frac{6}{8}$

d)



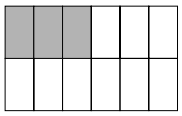
$\frac{4}{6}$

e)



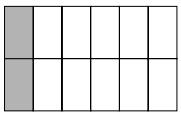
$\frac{2}{6}$

f)



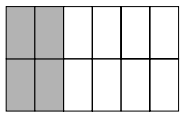
$\frac{3}{12}$

g)



$\frac{2}{12}$

h)

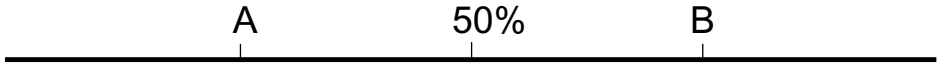


$\frac{4}{12}$

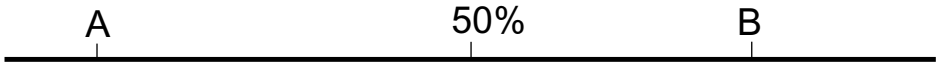
Percentages 1

8b

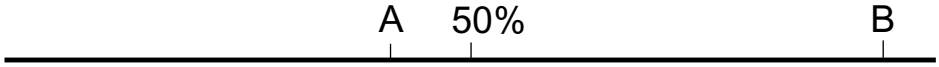
1) Starting from the left hand end, how far along the line are points A and B?



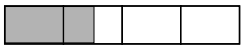
2) Starting from the left hand end, approximately how far along the line are points A and B?

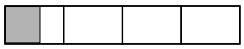


3) Starting from the left hand end, approximately how far along the line are points A and B?



4) Each of these rectangles has been cut into 4 equal parts. Use this to help you to estimate the percentage of the shape shaded in.

a) 

b) 

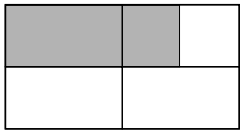
c) 

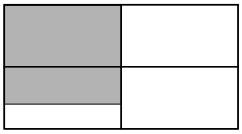
d) 

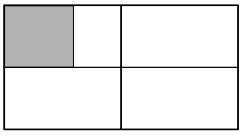
e) 

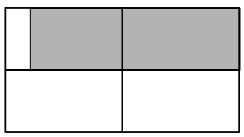
f) 

5) Approximately what percentage of these rectangles is shaded?

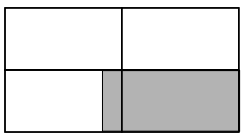
a) 

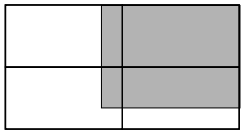
b) 

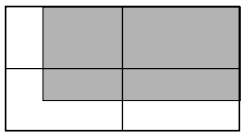
c) 

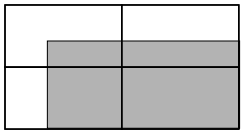
d) 

e) 

f) 

g) 

h) 

i) 

Money Problems 2

8b

1) Owen writes out a cheque for twenty two pounds and seventy pence. How did he write this amount in figures?

2) Ellie has to write a cheque. She writes the amount in words 'Four hundred and sixteen pounds and thirty seven pence'. Write down this amount in figures.

3) Jessica has £5.10. She has to buy 3 birthday cards. She spends the same amount of money on each card. How much does she spend on each card?

4) Nicole buys packets of fresh orange juice. They cost 55p each. How many can she buy with a £10 note, and how much money will be left over?

5) How many apples costing 22p each can be bought for £4? How much money will be left over?

6) Ranjit goes to town to buy some trainers. His bus fare is £2.70 and he buys a drink for 73p. His trainers cost £27.50.
If he leaves home with two £20 notes, how much change does he return with?

7) Elizabeth goes to the supermarket. She buys 2 loaves of bread costing 56p each, 3 tins of peas costing 37p each and a jar of coffee costing £1.63.
   a) What was the total cost of the items?
   b) In her purse she had two £2 coins, four £1 coins, five 20p coins, two 5p coins and three 1p coins. If she gave the correct money, which coins did she use?

Magic Squares

8b

This is a magic square

Each row adds up to 15

Each of the 2 diagonals add up to 15

Each of the columns add up to 15

6	7	2
1	5	9
8	3	4

This is another magic square

Each row adds up to 15

Each of the 2 diagonals add up to 15

Each of the columns add up to 15

Complete it

		4
1	5	9
		2

In this square each row adds up to 18

Each of the 2 diagonals add up to 18

Each of the columns add up to 18

Complete it

7	10	1
	6	

In this square each row adds up to 36

Each of the 2 diagonals add up to 36

Each of the columns add up to 36

Complete it

	12	
9		11

Tens, Hundreds and Whole Numbers

8b

1) Cabbages are planted in rows of 10.

a) A plot of ground has 150 cabbages on it. How many rows is this?
b) George buys 56 cabbages from a farmer for his greengrocer shop.
(i) How many complete rows does the farmer give him?
(ii) How many more cabbages does the farmer take from the next row?
(iii) How many cabbages are left in this row?
c) Hannah buys 83 cabbages. How many rows and how many single cabbages is she given?

2) Scott has 126 marbles to share amongst himself and 9 friends. They each get the same number of marbles except for Jake who also gets the ones left over. How many marbles will Jake get?

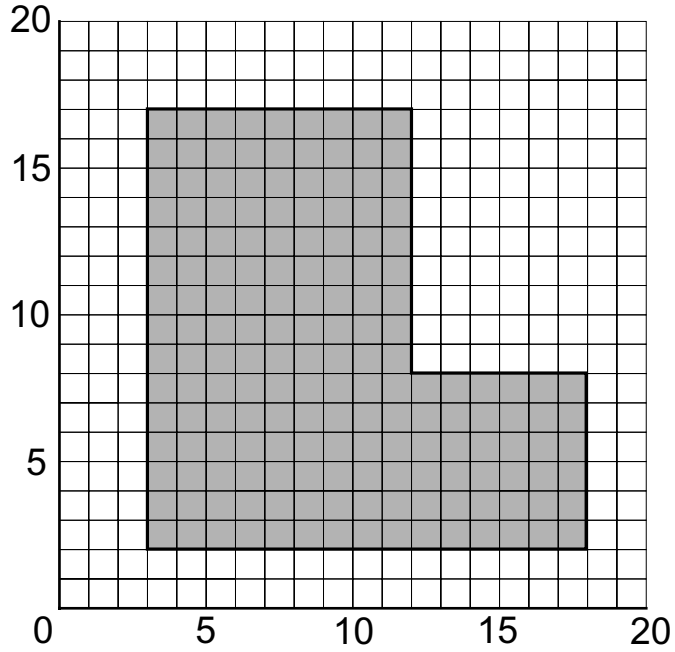
3) a) Which of these numbers is exactly divisible by 10?
33, 45, 75, 90, 1123, 150, 203, 478, 500, 560, 1230
b) How many will be left over when these quantities are shared equally between 10 people?
42, 44, 56, 89, 128, 243, 348, 642, 734, 830, 1247
c) Which of these numbers is exactly divisible by 100?
238, 432, 500, 743, 831, 910, 1152, 2400, 3640, 4300
d) How many will be left over when these quantities are shared equally between 100 people?
234, 456, 621, 745, 1845, 2384, 3629, 7436, 6423

4) The distance from Joel's town to Edinburgh is 140 miles. He sets off to Edinburgh by train.
a) How far has he gone when he has travelled $\frac{1}{10}$ of the journey?
b) How far has he gone when he has travelled $\frac{3}{10}$ of the journey?

Position

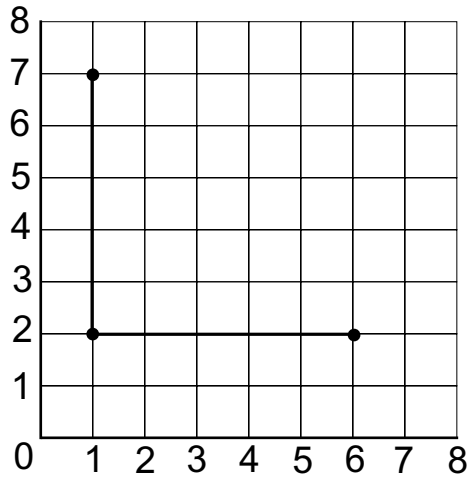
8b

1)



Write down the co-ordinates of the corners of this shape.

2)



Three corners of a square are marked on the diagram.

a) Write down their co-ordinates.

b) Complete the square.

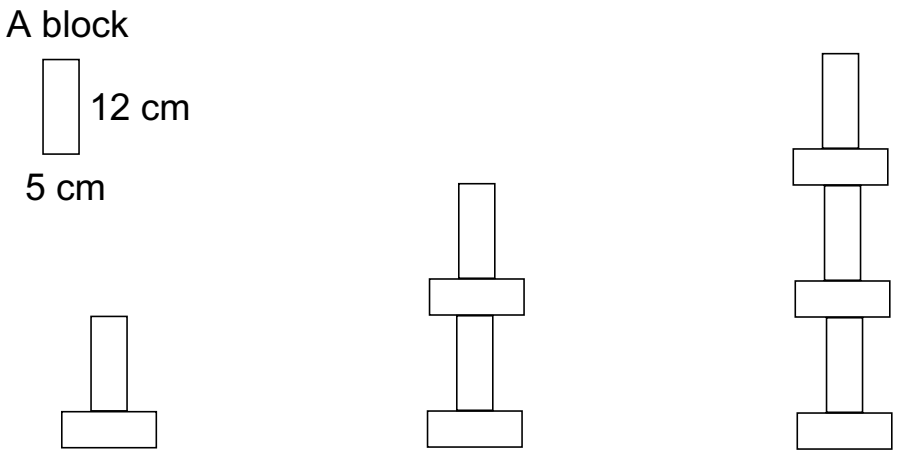
c) What are the co-ordinates of the fourth corner?

d) What are the co-ordinates of the centre of the square?

Number Patterns 2

8b

1) Daniel makes a tower from blocks. The blocks measure 12 centimetres high and 5 centimetres wide.

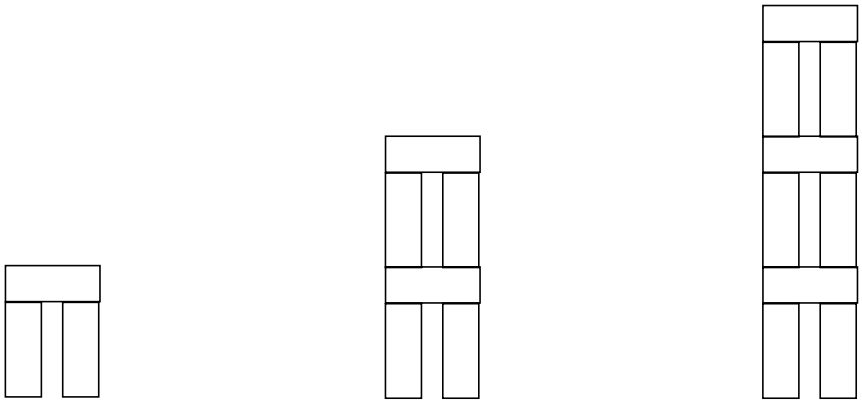


Tower 1 Tower 2 Tower 3

He begins by making tower 1.
Then he makes tower 2, and so on.

a) How many blocks will he need to make the 6th tower?
b) How many blocks will he need for tower 10?
c) How high will tower 10 be? How do you calculate the height?

2) Daniel makes a different tower with the same blocks. This design is more stable. He can make it higher than his first.



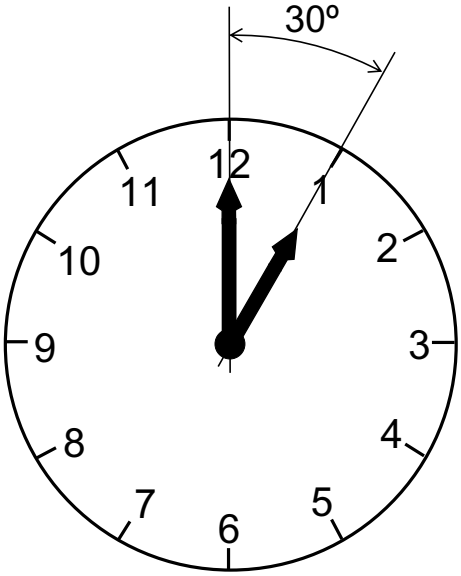
Tower 1 Tower 2 Tower 3

a) How high will tower 10 be? How do you calculate the height?
b) If he uses 60 blocks, how high will his tower be?

Angles on a Clock

8b

The diagram shows a clock face. The hands are pointing to 1 o'clock.



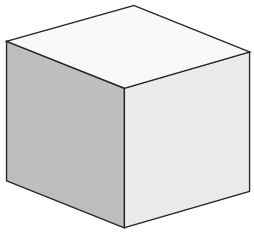
The angle between the hands is 30º.

a) What is the angle between the hands at 2 o'clock?
b) What is the angle between the hands at 3 o'clock?
c) What is the angle between the hands at 4 o'clock?
d) The time changes from 12 o'clock to 2 o'clock.
How many degrees does the hour hand (small hand) travel through?
e) What is the size of the angle between the hands at 6 o'clock?
f) What is the size of the angle between the hands at 7 o'clock?
g) How many degrees does the minute hand travel through between 1:00 and 1:20?
h) How many degrees does the minute hand travel through between 1:30 and 1:45?
i) How long does it take for the minute hand to travel 30^{o}?
j) How long does it take for the minute hand to travel 90^{o}?
k) How long does it take for the minute hand to travel 180^{o}?
l) How long does it take for the minute hand to travel 360^{o}?
m) The time is 3:35. What will be the time when the big hand has moved on 90º?

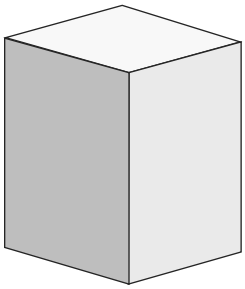
3 Dimensional Shapes 1

8b

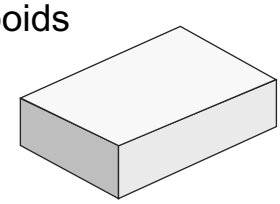
Here are the names of some 3 dimensional shapes.

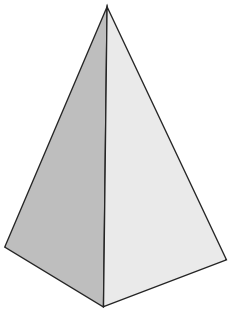


Cube

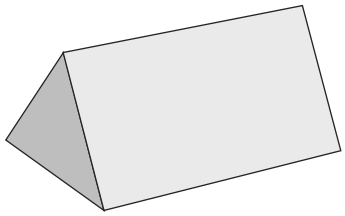


Cuboids





Pyramid

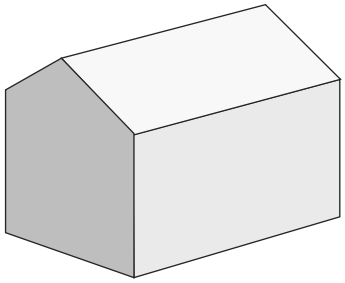


Triangular Prism

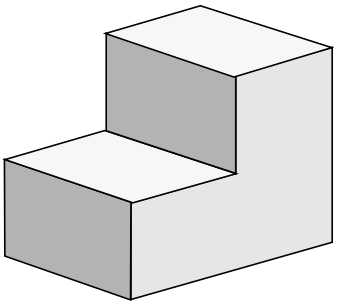
1) Finish off these statements
   a) A shoe box has the shape of a cuboid.
   b) The roof of a house has the shape of a ...
   c) An oxo has the shape of a ...
   d) A dice has the shape of a ...
   e) A carton of orange juice has the shape of a ...
   f) A church spire has the shape of a ...
   g) A book has the shape of a ...

2) Each of these have been made from two shapes.
   What shapes are they?

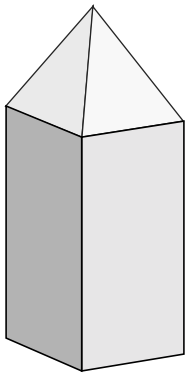
a)



b)



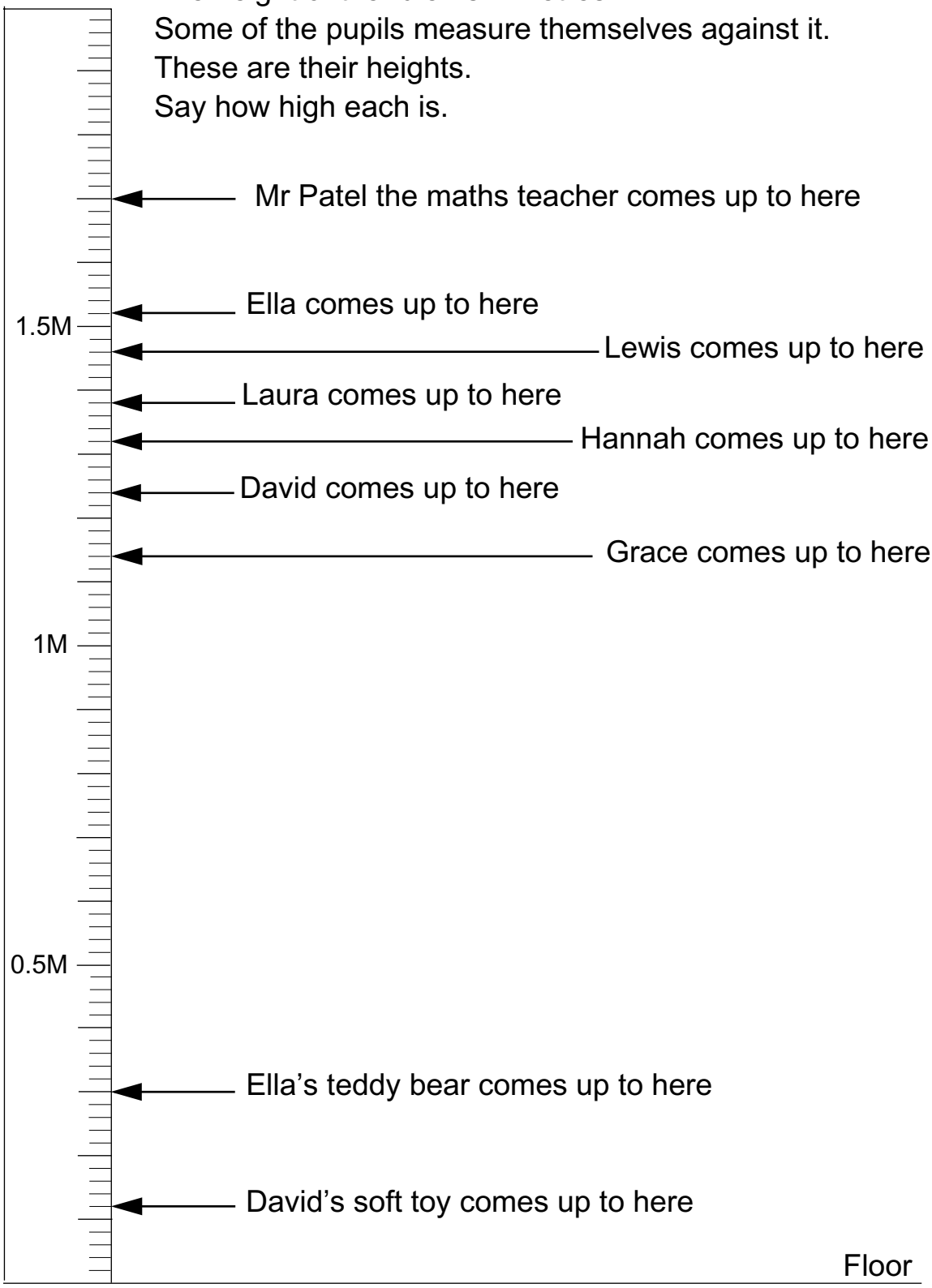
c)



Measuring Lengths 1

8b

In the corner of the maths classroom is a ruler.
It stands with one end on the classroom floor.
The height of the ruler is 2 metres.
Some of the pupils measure themselves against it.
These are their heights.
Say how high each is.



Calendar

8b

The calendar for the last four months of a year is shown below.

September

S		2	9	16	23	30
M		3	10	17	24	
T		4	11	18	25	
W		5	12	19	26	
T		6	13	20	27	
F		7	14	21	28	
S	1	8	15	22	29	

October

S		7	14	21	28
M	1	8	15	22	29
T	2	9	16	23	30
W	3	10	17	24	31
T	4	11	18	25	
F	5	12	19	26	
S	6	13	20	27	

November

S		4	11	18	25
M		5	12	19	26
T		6	13	20	27
W		7	14	21	28
T	1	8	15	22	29
F	2	9	16	23	30
S	3	10	17	24	

December

S		2	9	16	23	30
M		3	10	17	24	31
T		4	11	18	25	
W		5	12	19	26	
T		6	13	20	27	
F		7	14	21	28	
S	1	8	15	22	29	

Use this calendar to answer these questions

a) On what day of the week is November 21st?

b) What date comes before November 1st?

c) How many days are there in December?

d) How many Thursdays are there in November?

e) How many Fridays are there in September?

f) What is the 4th day after September 22nd?

g) What is the date of the 3rd Tuesday in October?

h) What is the 3rd day after October 30th?

i) How many days are there from September 22nd to October 5th?

j) On what day of the week is December 25th?

k) On what day of the week is January 1st of the next year?

l) On what day of the week was August 25th?

Using Information

8b

1) Mr Patel takes his family on holiday to France. He travels by car from London. Each night they stay at a camp site.This is how far they travel each day.

Monday 294 kilometres
Tuesday 248 kilometres
Wednesday 214 kilometres
Thursday 208 kilometres

a) What was the total length of their journey?
b) How far from London had they travelled by the end of the 2nd day?
c) They stopped at a motorway service centre for lunch.
Mr Patel said they had driven 642 kilometres from London.
On which day was this?

2) The TV listings for part of an evening are shown below.

6:00 News
6:25 Weather
6:30 Local News
7:00 Film
8:40 News Headlines
8:45 Football highlights
10:05 Cartoon
10:20 History programme
11:10 Late Night News

Use the table to answer these questions.
a) For how long did the football highlights last?
b) For how long did the history programme last?
c) If the Late Night News lasted 25 minutes at what time did it finish?
d) The programme before the News at 6 o'clock lasted for 1 hour and 15 minutes. At what time did it begin?
e) The football runs 25 minutes longer than it should.
This makes the rest of the evenings programmes 25 minutes late.
Write down the times when the rest of the programmes begin.

Describing Data

8b

1) a) Complete this frequency chart for these measurements.

6, 3, 7, 3, 3, 4, 4, 5, 4, 5, 5, 6, 6, 5, 6, 7
6, 5, 6, 7, 4, 7, 6, 7, 4, 7, 6, 7, 6, 5, 6, 7

Measurement	Tally	Frequency
3		
4		
5		
6		
7		

b) What is the mode of the measurements?
c) What is the range of the measurements?

2) a) Arrange these numbers into order of size, starting with the smallest.

18, 21, 18, 19, 20, 18, 17, 17, 20, 20
19, 19, 17, 19, 18, 18, 17, 19, 20, 18

Look at your list of numbers and answer these questions.
b) What is the range of the numbers?
c) What is the mode of the numbers?

3) On a bag of biscuits it says that it contains 28 biscuits.
At the factory where they are made the bags are checked for the number inside.
They open 20 bags and count the biscuits.
These are the results they get.

29, 28, 29, 28, 30, 29, 29, 28, 30, 28
28, 29, 28, 28, 29, 30, 30, 28, 29, 28

a) Draw a tally chart of the data.
b) What is the modal number of biscuits in a bag?
c) What is the range of the number of biscuits in a bag?
d) Are they correct in saying that their bags contain 28 biscuits?
Explain your answer.

Probability

8b

1) In this question, use one of these words in each answer.
Impossible, unlikely, equally likely, likely, certain.
A pack of cards has the numbers 1 to 50 written on them.
Mia shuffles the cards. She then turns over the top card.

What is the likelihood that:

a) The card has 46 on it.
b) The card has 106 on it.
c) The card has a number less than 26 on it.
d) The card has a number greater than 45 on it.
e) The number on the card is less than 51.

2) Holly has a bag containing black and white beads.
There are 4 black beads in the bag.
She cannot see into the bag but she can take the beads out.

a) The chances of her getting a white or black bead are equally likely.
How many white beads are in the bag?
b) Holly adds a black bead to the bag.
What coloured bead is now more likely to be drawn?
c) Holly adds a white bead to the bag.
How many white beads are now in the bag?
d) How many beads are in the bag?
e) She shakes up the bag. She takes a bead from the bag.
What colour bead is she more likely to get?