1) Use the bar model to help you find the answers to these questions.

I am up to page 127 in my 'Sweets and Treats' book. I need to read 96 more pages in order to be halfway through my book. How many pages does my book have altogether?

127	96
$\frac{1}{2}$ book =	

$\frac{1}{2}$ book = _____	$\frac{1}{2}$ book = _____
whole book = _____	

2) Here is a bar model to represent three unknown numbers.

A	
B	C

- When B and C are added together, they make A.
- B is twice the value of C.
- A is a number between 100 and 200.

Give three possible values for each of A, B and C.

3) Answer these problems in words by thinking about the key information in the question.

a) 168 parents watched the performance of a class play on Monday evening. On Tuesday evening, there were 29 fewer parents watching the performance. How many parents altogether watched the performances?

b) The school hall is normally able to seat 350 people. There are 10 rows of seats with 35 seats in each row. Tonight, it can only fit in 9 rows of seats. If all of the above parents came tonight, would there be any seats left over?

c) Megan, Sadie and Ola have a combined age of 81. The combined age of Megan and Sadie is 52. If Megan is 24, how old must Sadie and Ola be?

d) The 'Healthy Scrumptious Snacks' cafe has just opened. It is looking at how much money it made in sales of food and drinks in the first two months. It sold £9456 worth of food and £3567 worth of drinks in the first month. In the second month, it made £380 less from food sales and £650 less from drinks sales than in the first month. The cafe's target was to sell £26 500 worth of food and drinks in the first two months. How much more did they need to sell to meet their target?

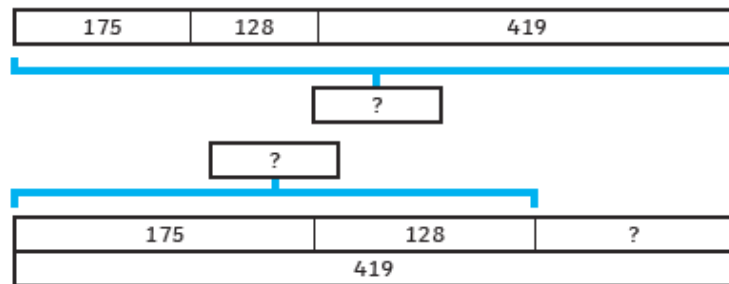**1)** Two children are discussing this word problem:

"Some people are on a train. 175 people get on the train at one stop. 128 more people get on at the next stop. There are now 419 people on the train. How many people were on the train at the start of the journey?"

> I think that my bar model represents the problem correctly.

Isaac

175	128	419

?

?

175	128	?
419		

Anna

> I disagree with Isaac and think my bar model represents the problem correctly.

Which child do you agree with? Explain your reasoning.

2) Three children record their calculations in order to show how they worked out this problem:

"I decide to buy my lunch from my local shop. One sandwich and a bottle of juice costs £2.26. If I were to buy one sandwich and two bottles of juice, it would cost £2.91. I decide that I will just buy a sandwich on its own. How much will the sandwich cost me?"
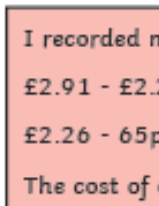
Megan

> I recorded this calculation to solve the problem:
>
> £2.91 ÷ 3 = 97p
>
> £2.26 - 97p = £1.29
>
> The cost of one sandwich is £1.29.

Lily

> I recorded my calculation like this:
>
> £2.91 - £2.26 = 65p
>
> £2.26 - 65p = £1.61
>
> The cost of one sandwich is £1.61.

Kuba

> This was my calculation:
>
> £2.26 ÷ 2 = £1.13
>
> £2.90 - £1.13 = £1.77
>
> The cost of one sandwich is £1.77.

Look carefully at each child's calculation. Explain which child you think has used the correct calculation and why.

1) Halim has £25 in his Twinkl Tunes account to spend on music. He downloads 'Twinkl Chill' for £5.50 and 'Twinkl Pop' for £6.80. The next two albums, 'Twinkl Rocks' and 'Twinkl Moves' cost the same amount each. When he has finished downloading all four albums, he has £1.50 left in his account. How much did 'Twinkl Rocks' and 'Twinkl Moves' cost Halim each?

2) Halim decided to load £20 onto his 'Twinkl Tunes' account. The prices of some of the albums that Halim is interested in buying are shown below.

Winter album £4.05

Dance album £7.40

Energy album £6.65

Happiness album £4.35

Calm album £5.49

Summer album £6.80

Love album £4.19

Ambient album £7.50

a) What combination of three albums would leave him with the most money in his account? How much would he be left with?

b) Which three albums would leave him with the least amount of money? How much would he be left with?

c) What is the maximum number of albums he could buy with his £20? How much money would he be left with?

d) Give different combinations of albums that Halim could buy with the following amounts of money. Remember to state how much money would be left in his account each time.
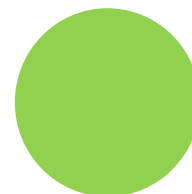
£10	£13	£15

ANSWERS

1)

127	96

$\frac{1}{2}$ book = 223

$\frac{1}{2}$ book = 223	$\frac{1}{2}$ book = 223

whole book = 446

223 is halfway through the book. I need to double 223 to find the number of pages the book has altogether.

223 × 2 = 446 pages

2) Multiple answers possible, including:

A = 120/150/180/123

B = 80/100/120/82

C = 40/50/60/41

3)
a) Number of parents at Tuesday's performance is 168 - 29 = 139
168 + 139 = 307 parents altogether

b) Yes, there would be 8 seats left over.
350 - 35 = 315
315 - 307 = 8 seats left

c) 81 – 52 = Ola's age
Ola = 29
81 – (24 + 29) = Sadie's age
Sadie = 28

d) Month 1: £9456 + £3567 = £13 023
Month 2 food: £9456 - £380 = £9076
Month 2 drinks: £3567 - £650 = £2917
Month 2 total: £9076 + £2917 = £11 993
Month 1 and 2 total: £13 023 + £11 993 = £25 016
£26 500 - £25 016 = £1484 more needed to meet their target.

1) Anna has correctly modelled the problem. Her bar model shows that we could represent the problem by adding together 175 and 128 to give 303. Then we could find the difference between 303 and 419 to give the final answer of 116. Isaac is incorrect as his model has the total number of people on the train on the same bar as the number of people who get on at the first and second stops. If he adds all these numbers together, this will not show him how many people were on the train at the start.

2) Lily is correct. She has started by working out the price of just one bottle of juice. She finds the difference between the prices of a sandwich and one bottle of juice and a sandwich and two bottles of juice. Now she knows a bottle of juice costs 65p. She now only needs to take this price away from the total cost of a sandwich and one bottle of juice. This will give the cost of a sandwich on its own.

1) £25 – £1.50 = £23.50

£5.50 + £6.80 = £12.30

£23.50 – £12.30 = £11.20

£11.20 ÷ 2 = £5.60

'Twinkl Rocks' and 'Twinkl Moves' cost £5.60 each.

2) a) Halim could buy the Winter, Happiness and Love albums for £12.59. This would leave him with £7.41

b) Ambient, Summer and Calm albums for £19.79, which would leave him with 21p.

c) Halim could buy four albums (Winter, Love, Happiness and Calm for £18.08. This would leave him with £1.92).

d) £10
Answers will vary but might include: Winter album and Love album = £8.24 and £1.76 left over

£13
Answers will vary but might include: Winter album, Love album and Happiness album = £12.59 and £0.41 left over or Energy album and Calm album = £12.14 and £0.86 left over.

£15
Answers will vary but might include: Ambient album and Summer album = £14.30 and £0.70 left over