$0.125 + 2\ (0.375) + 0.625 = 1.5$

$1.5 + 0.5 = 2$ cakes.

One possible approach...

Ava had twice the number of cakes and half the number of friends.

Ava	Julia
0.25	3.75
0.50	3.5
0.75	3.25

etc.

3 cakes $\div$ 4 = $\frac{3}{4}$

$\frac{3}{4}$ = 0.75 of a cake.

3 cakes $\div$ 4 = $\frac{3}{4}$

$\frac{3}{4}$ = 0.75 of a cake.

0.75 + 0.75 = 1.5 cakes.

3 cakes $\div$ 4 = $\frac{3}{4}$

$\frac{3}{4}$ = 0.75 of a cake.

0.75 + 0.75 = 1.5 cakes.

Yes she is correct each friend will get $\frac{4}{6}$ or $\frac{2}{3}$ of a cake.

4 x 6 = 24

24 $\div$ 6 = 4

CARD 6

Four apples cost 72 pence.

Jasmin went to the shop and bought 6 apples. She pays with a £2 coin. How much change did she get?

Jasmin went to the shop with a five pound note to buy some fruit.
She came back with £3.20 change.
How much money did Jasmin spend?

What if...

...there is now a special offer on apples?

After buying 6 apples with her £2 coin Jasmin is given her change using at least 4 different coins but no more than 6 coins in total?
Which coins was she given?
How many different combinations can you find?

Four apples cost 72 pence.
Jasmin went to the shop and bought 6 apples.
She pays with a £2 coin.
How much change did she get?
Carrier bags cost 12p each.
How many can she buy with her change?

Four apples cost 72 pence.
Jasmin went to the shop and bought 6 apples.
Carrier bags cost 12p each.
How many carrier bags can she buy with her change?

2 bananas cost 28p.
Jasmin thinks, with her £2 coin she can buy the same amount of bananas as apples with her change.
Is she correct?
Explain how you know.

What if...
Less straight forward
Finding all possibilities
Explain
Instructions left out
More steps
Simple
Decimals money short x – times tables

£5.00 – £3.20 = £1.80

One possible approach...

Apples cost £1.32 for a pack of 4.
Buy 3 packets for the price of 2.

How much more money would Jasmine need to buy 3 packets?

e.g.

50p 20p 20p 2p
50p 20p 10p 10p 2p
50p 20p 10p 5p 5p 2p

4 apples cost = 72p
2 apples cost = 36p
6 apples cost = 108p = £1.08
£2.00 – £1.08 = 92p change.

Jasmin has 92 pence left.

She can buy 7 carrier bags at 12p each.

Yes, Jasmin has 92 pence left.

She can buy 7 carrier bags at 12p each.

She is correct.

With 92p change
2 bananas = 28p
1 banana = 14p
6 bananas = 84p
6 x 14 and she will still have 8p left from her change.

CARD 7

At the farm, Harrison planted onions 6 in a row.

He planted 24 rows. How many onions did he plant?

Harrison harvested 153 cauliflowers.
He planted 9 rows at the start of the season.
How many cauliflowers were in each row?

What if...

...the number of onions planted altered?

Harrison decided to plant some seeds.
He plants 36 seeds.
How many seeds, in how many rows, could he have planted?

At the farm, Harrison planted onions 6 in a row.
He planted 24 rows.
How many onions did he plant?
$\frac{1}{3}$ of the onions grew successfully.
How many onions didn't grow?

At the farm, Harrison planted onions 6 in a row.
He planted 24 rows.
$\frac{1}{3}$ of the onions grew successfully.
How many onions didn't grow?

Harrison had 92 cabbage plants to fill 13 rows.
He thinks with 7 cabbages in each row there will be no cabbages left over.
Is he correct?
Explain how you know?

What if...
Less straight forward
Finding all possibilities
Explain
Instructions left out
More steps
Simple
Short x non-unit fractions – times tables

MA03177

10 x 9 = 90

7 x 9 = 63

17 cauliflowers were planted in each row.

One possible approach...

The number of onions in the Green Challenge was increased by $2\frac{1}{2}$ times?

12 rows of 3
3 rows of 12
9 rows of 4
4 rows of 9
18 rows of 2
2 rows of 18
6 rows of 6
1 row of 36
36 rows of 1

6 x 24 = 144 onions.

6 x 24 = 144 onions.

$\frac{1}{3}$ of 144 = 48

$\frac{2}{3}$ of 144 = 48 x 2

96 onions didn't grow.

6 x 24 = 144 onions.

$\frac{1}{3}$ of 144 = 48

$\frac{2}{3}$ of 144 = 48 x 2

96 onions didn't grow.

No is he isn't correct.

An even number x an odd number = an odd number.

There will be 1 cabbage left over.

13 x 7 = 91

CARD 8

A class of 36 children are travelling to an 'outdoor' pursuit centre together. They travel by mini bus. Each mini bus will hold 8 passengers. How many mini buses are needed to transport the children? How many spare seats will there be?

In the car park at the 'outdoor' pursuit centre there were 6 mini buses that held 8 passengers and 6 mini buses that held 18 passengers. How many passengers will there be if all the seats are filled?

What if...

...two classes attended the 'outdoor' pursuit trip?

Each child in the class takes either £6 or £3 pocket money to spend on their trip. How much pocket money could have been taken in total? Find different solutions.

A class of 36 children are travelling to an 'outdoor' pursuit centre together. They travel by mini bus. Each mini bus will hold 8 passengers. How many mini buses are needed to transport the children? How many spare seats will there be? 6 adults will be accompanying the children. How many minibuses are needed now? How many spare seats will there be?

A class of 36 children are travelling to an 'outdoor' pursuit centre together. They travel by mini bus. Each mini bus will hold 8 passengers. 6 adults will be accompanying the children. How many minibuses are needed? How many spare seats will there be?

The manager at the mini bus company says that to collect 111 children from the 'outdoor' pursuit centre, 14 mini buses, which carry 8 passengers, will be needed. He says there will be 4 spare seats. Is he correct? Explain how you know.

What if...

Less straight forward

Finding all possibilites

Explain

Instructions left out

More steps

Simple

Rounding + times tables ÷ with remainders short x

MA03177

6 x 8 = 48 passengers.

6 x 18 = 108 passengers.

108 + 48 = 156 passengers in total.

One possible approach...

In the Orange Challenge for 72 children, 9 mini buses would be needed and there would be no spare seats.

e.g.

£3		£6	
1 child	(£3)	35 ch.	(£210) = £213
2 ch.	(£6)	34 ch.	(£204) = £210
3 ch.	(£9)	33 ch.	(£198) = £207
4 ch.	(£12)	32 ch.	(£192) = £204
5 ch.	(£15)	31 ch.	(£186) = £201

etc.

36 ÷ 8 = 4 r 4

5 mini buses will be needed.

There will be 4 seats spare.

36 ÷ 8 = 4 r 4. 5 mini buses will be needed.
There will be 4 seats spare.
36 children + 6 adults = 42
They will need 6 mini buses now (8 x 6 = 48).
There will be 6 spare seats.

36 ÷ 8 = 4 r 4

36 children + 6 adults = 42

They will need 6 mini buses now (8 x 6 = 48).

There will be 6 spare seats.

He is not correct because

14 x 8 = 112.

There will be just one spare seat.

Freddie gives $\frac{1}{3}$ of his grapes to his best friend Jack and eats half of what's left himself.
He started with 45 grapes, how many are left?

What if...

...you decide on the number of grapes and the fraction that is eaten?

Freddie wants to share his 105 grapes between him and his best friend.

They each have at least $\frac{2}{7}$ of the grapes.
He shares the remainder in multiples of 5.
How many grapes could each of them have?
Find all the possibilities.

CARD 9

Freddie has 105 grapes.

He eats $\frac{3}{7}$ of them for his snack.

How many grapes did he eat?

Freddie has 105 grapes.
He eats $\frac{3}{7}$ of them for his snack.
How many grapes did he eat?
Freddie eats $\frac{3}{10}$ of the grapes that are left.
How many does this leave him with?

Freddie has 105 grapes.
He eats $\frac{3}{7}$ of them for his snack.
Freddie then eats $\frac{3}{10}$ of the grapes that are left.
How many does this leave him with?

Freddie says if he shares his grapes between himself and his 4 friends, they will all get $\frac{1}{4}$ each.
Is he correct?
Explain how you know.

What if...
Less straight forward
Finding all possibilities
Explain
Instructions left out
More steps
Simple
Non-unit fractions of quantities x –

MA03177

15 grapes are left.

$\frac{1}{3}$ = 15 (45 – 15 = 30)

$\frac{1}{2}$ of 30 = 15

One possible approach...

Freddie has 162 grapes and he eats $\frac{4}{9}$ etc.

Total number of grapes = 105.

$\frac{2}{7}$ of 105 = 30 is the minimum number of grapes.

Freddie	Friend
75	30
70	35
65	40

105 ÷ 7 = 15

3 x 15 = 45

Freddie ate 45 grapes.

105 ÷ 7 = 15
3 x 15 = 45
Freddie ate 45 grapes.
105 – 45 = 60
$\frac{3}{10}$ of 60 = 18
60 – 18 = 42
Freddie has 42 grapes left.

105 ÷ 7 = 15
3 x 15 = 45
Freddie ate 45 grapes.
105 – 45 = 60
$\frac{3}{10}$ of 60 = 18
60 – 18 = 42
Freddie has 42 grapes left.

No, Freddie is wrong.

If he shares his grapes between himself and 4 friends then each one will get $\frac{1}{5}$.

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CARD 10

Ava has 3 cakes. She wants to share them equally between 4 of her friends, Sarah, Julia, Jane and Pam.
What decimal fraction of a cake would each friend get?

Ava has some cakes.
Ava eats half a cake.
She then cuts the remainder of the cakes into eighths ($\frac{1}{8}$ = 0.125).
Pam gets 0.125 of a cake.
Sarah and Julia each get 0.375 and Jane gets 0.625 of a cake.
How many cakes did Ava have to begin with?

What if...

...Ava starts with a different number of cakes and shares them between a different number of friends?

Ava shares 4 cakes between her and Julia.
They each get at least 0.25 of a cake.
Find all solutions.

Ava has 3 cakes.
She wants to share them equally between 4 of her friends, Sarah, Julia, Jane and Pam.
What decimal fraction of a cake would each friend get?
Sarah gives her share to Pam.
How much cake will Pam have?

Ava has 3 cakes.
She wants to share them equally between 4 of her friends, Sarah, Julia, Jane and Pam.
Sarah gives her share to Pam.
How much cake will Pam have?

Ava told her 5 friends that if she cuts four cakes into 6 equal pieces, they will each get the same amount of cake.
Is she correct?
Explain how you know?

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$0.125 + 2\ (0.375) + 0.625 = 1.5$

$1.5 + 0.5 = 2$ cakes.

One possible approach...

Ava had twice the number of cakes and half the number of friends.

Ava	Julia
0.25	3.75
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etc.

3 cakes ÷ 4 = $\frac{3}{4}$

$\frac{3}{4}$ = 0.75 of a cake.

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0.75 + 0.75 = 1.5 cakes.

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Yes she is correct each friend will get $\frac{4}{6}$ or $\frac{2}{3}$ of a cake.

4 x 6 = 24

24 ÷ 6 = 4