

Inspiring children to succeed

INSPIRE
MATHS
SCHOOL IMPROVEMENT



Inspire mathematics parents evening

Insert staff name here



OXFORD

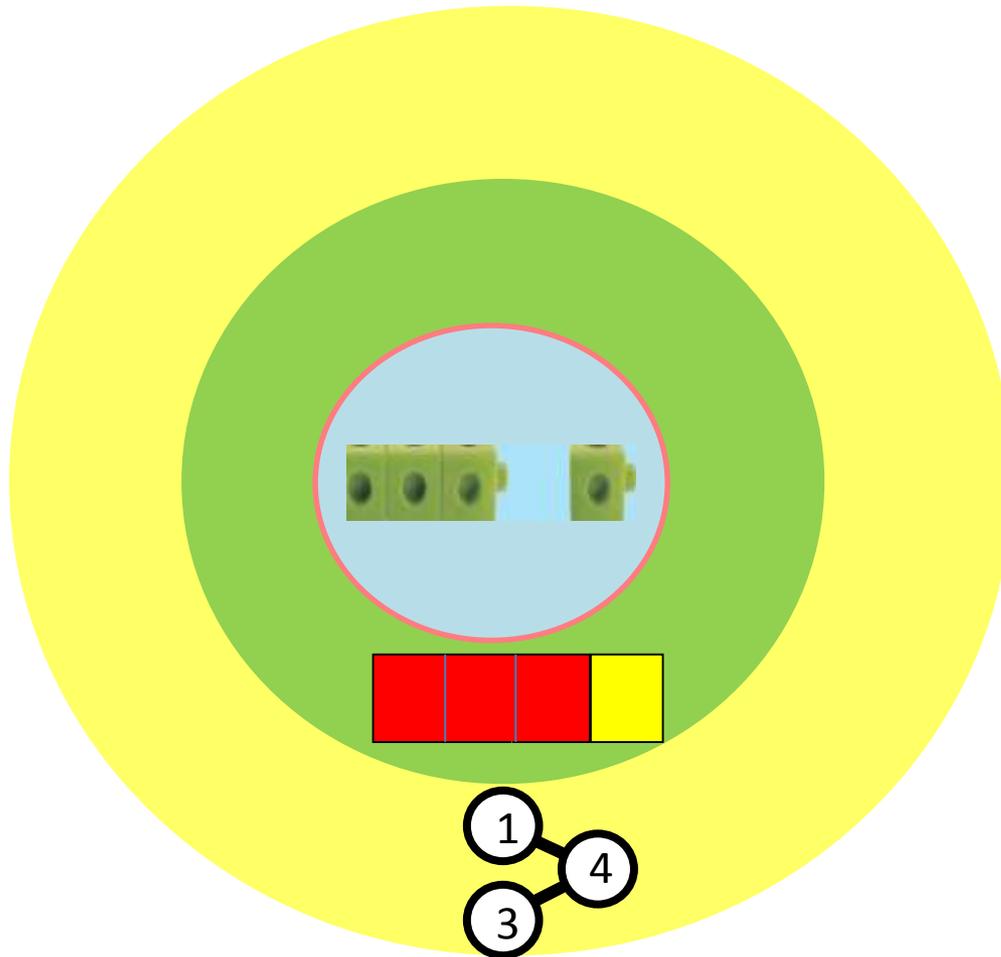
This parents evening will explain...

- how mathematics will be taught at your child's school
- why the children will not be set or grouped
- how the text books will be used in class
- how the part, whole and bar model works
- how you can help your child at home

What is Inspire Math?

- Singapore is consistently ranked in the top three spots in international tests such as TIMMS and PISA
- Singapore maths is used in 85% of Singapore schools
- Inspire Maths is the UK version of the highly acclaimed Singapore maths (My Pals Are Here)
- It is a mastery curriculum with an emphasis on conceptual understanding
- It is a problem solving curriculum
- Systematic development of skills and concepts
- There is an emphasis on CPA approach
- There is an emphasis on the development of intellectual competence such as the ability to visualise

CPA approach



Concrete:

Resources such as cubes, counters and shapes

Pictorial:

Pictures, drawings

Abstract:

Numbers and symbols

Text books

Your child will be expected to work from a text book or a practice book from time to time.

The numbers on the books do not correspond with your child's year group.

A mastery curriculum

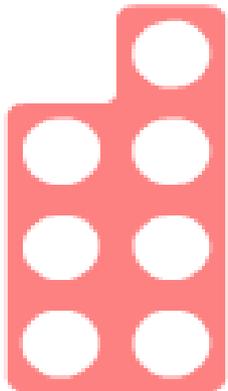
Key features:

- The curriculum is highly structured, based on a spiral approach to learning and learning theories
- Each maths area or topic is covered in depth for the year group once and is not repeated
- Children are not grouped or put into ability sets

The beginning

Knowing everything there is to know about a number.

What do you know about 7?



It is pink! *It is an odd number* *It is a quarter of 28*

It is made up of a 3 and a 4 *It is two more than 5*

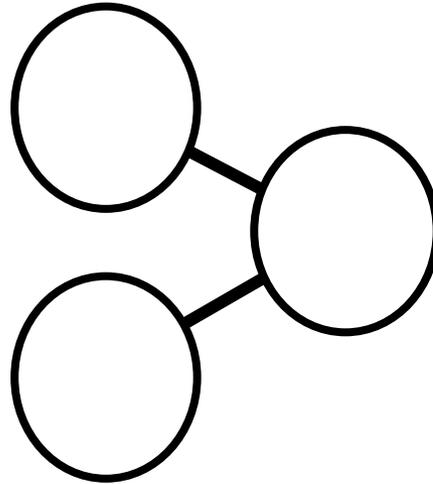
It is made up of a 3 twos and a one *It is half of 14*

It is three fewer than 10 *It is a single digit number*

It is double three and a half *It is a prime number*

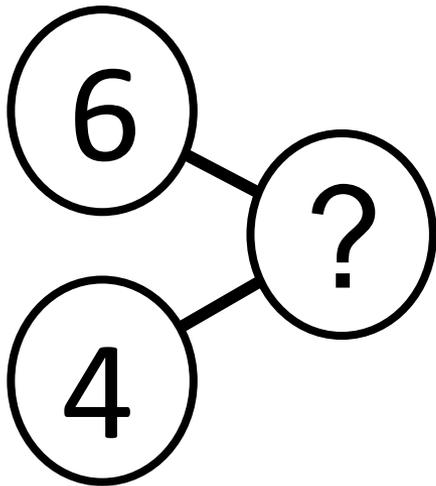
It comes after 6 and before 8 *It is fewer than 10*

The part, whole model



Here is the part, part, whole model used in the mastery approach. It works on the principle that if you know two values out of three, you can calculate the missing value using addition or subtraction.

The part, whole model



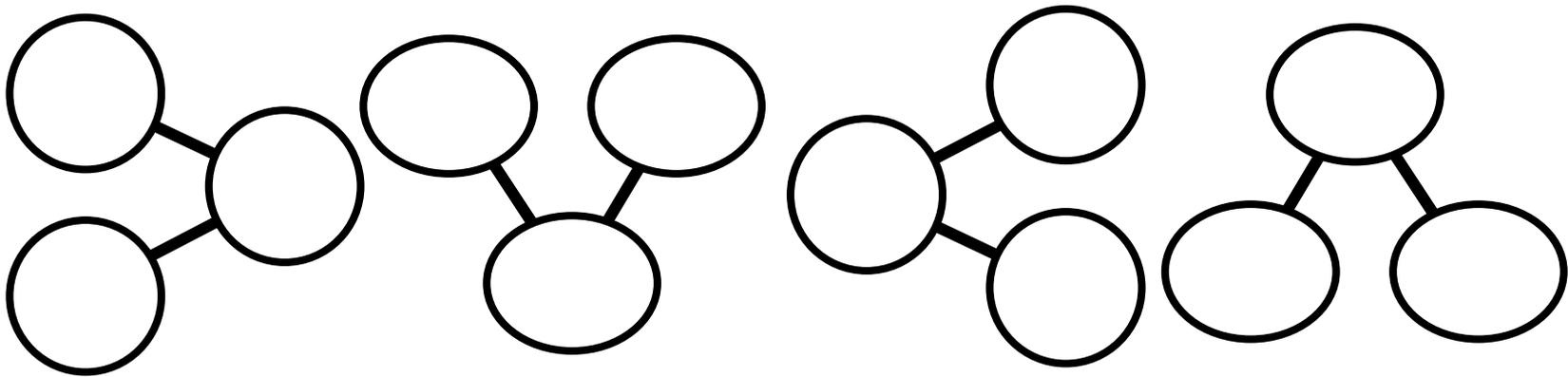
6 and 4 more makes ?

The two parts (6 and 4) combine to make 10.

The part, whole model



The part, whole model



The part whole model can be orientated differently and is used for addition and subtraction problems

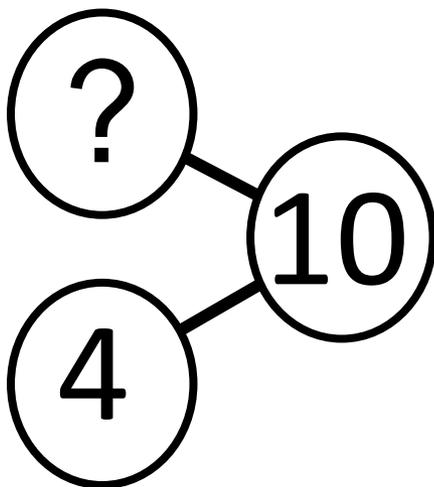
The part, whole model

Something and 4 makes 10

This leads to a missing box calculation.

$$\square + 4 = 10$$

In other words algebra.



The new national curriculum insists children know their number families for all the operations, for example:

$$6 + 4 = 10$$

$$3 \times 7 = 21$$

$$4 + 6 = 10$$

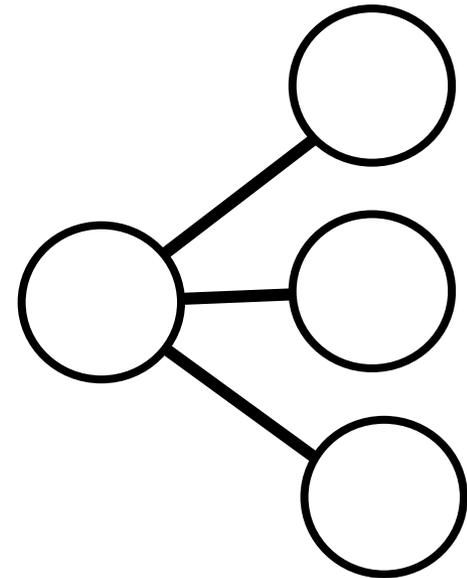
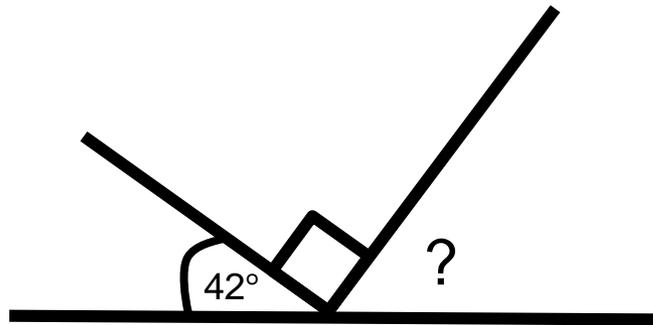
$$7 \times 3 = 21$$

$$10 - 6 = 4$$

$$21 \div 7 = 3$$

$$10 - 4 = 6$$

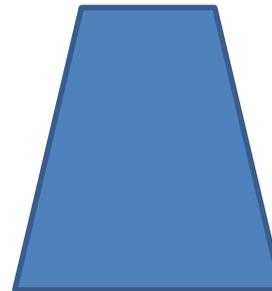
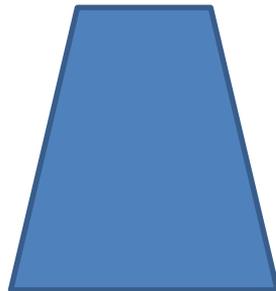
$$21 \div 3 = 7$$



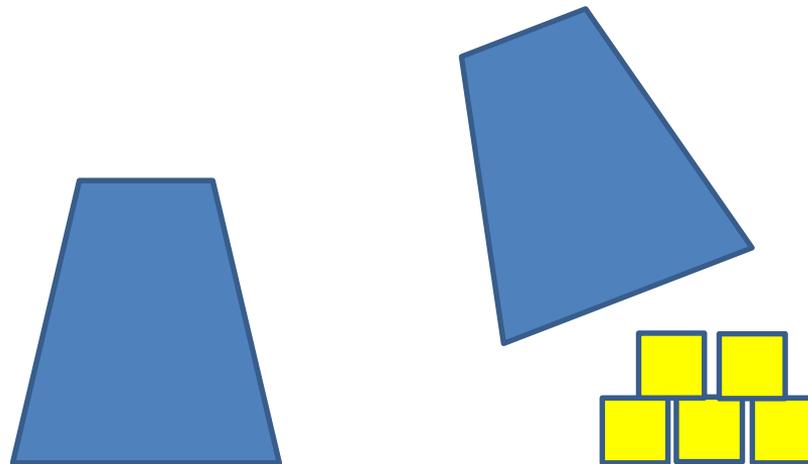
It can also be more than two parts.

Here is an example from a Year 6 geometry lesson.

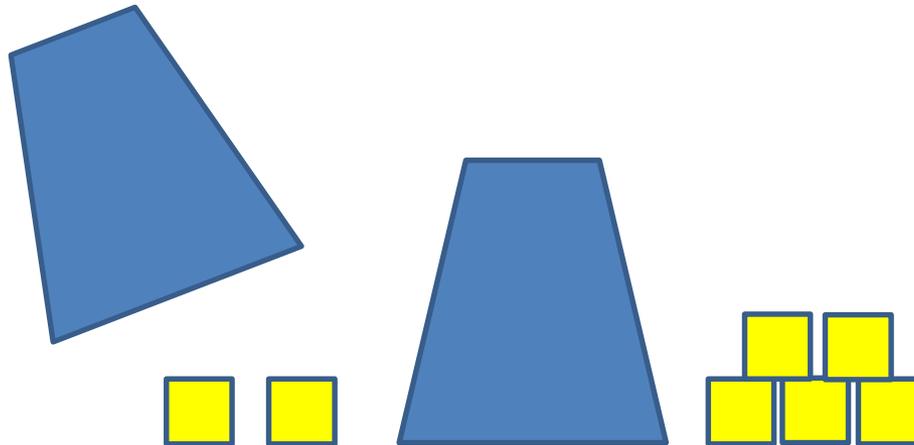
There are 7 cubes under the cups. You can only lift one cup up. Can you work out how many cubes are under the second cup?



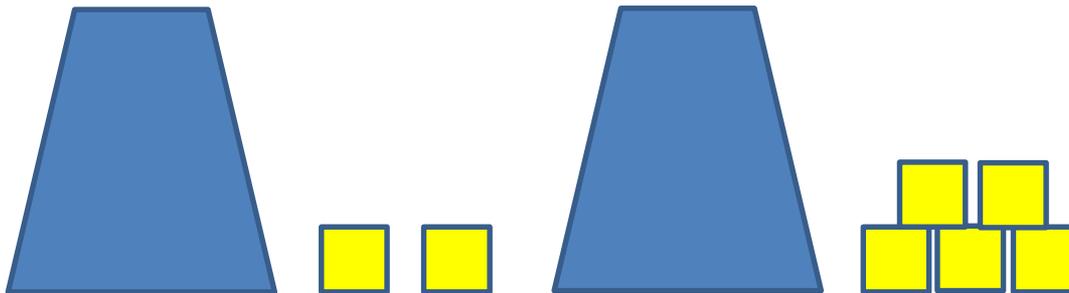
There are 5 cubes under this cup. There are 7 cubes altogether. $7 - 5 = 2$. I know that there are 2 cubes under the other cup.



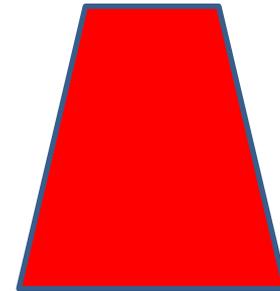
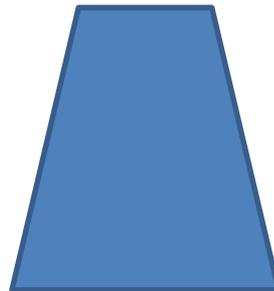
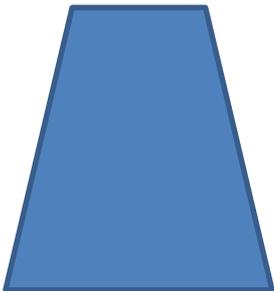
I solved the problem with a subtraction. $7 - 5 = 2$
 I can check my answer with an addition. $5 + 2 = 7$
 or $2 + 5 = 7$



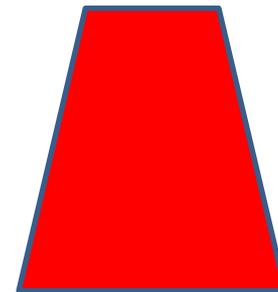
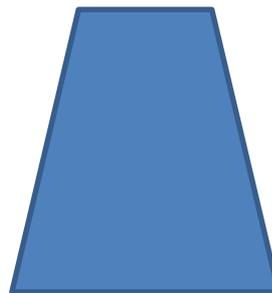
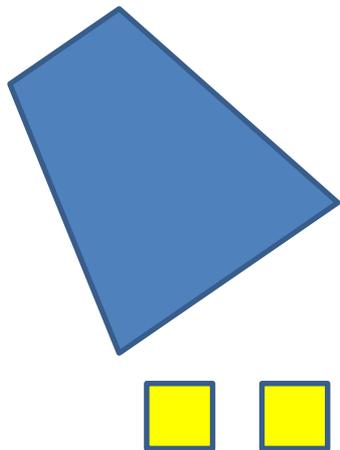
Now try this activity again taking turns to hide the cubes. Use different totals.



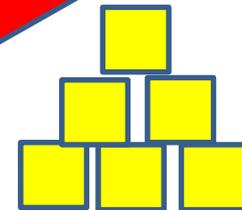
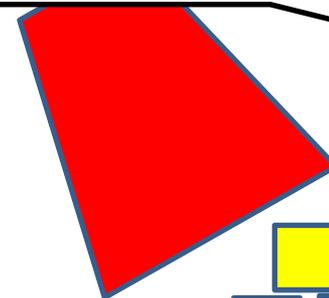
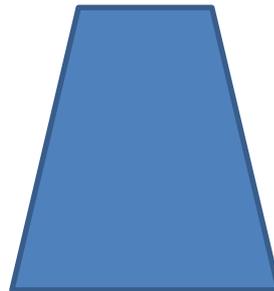
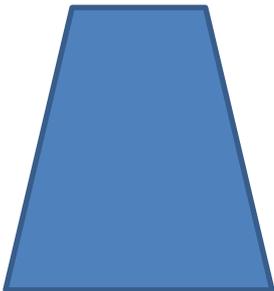
I have three cups and ten cubes. I've hidden the same number of cubes under both blue cups and a different number under the red cup. You can only lift one cup. Can you work out what his hiding under the other cups without lifting them?



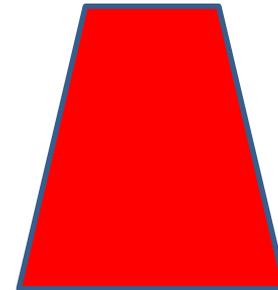
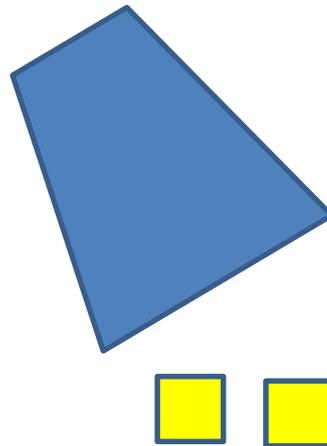
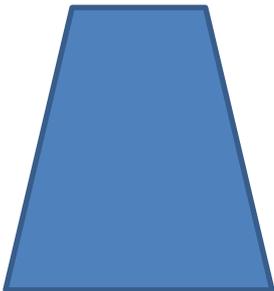
If I lift this cup. What
maths do I need to solve
this problem?



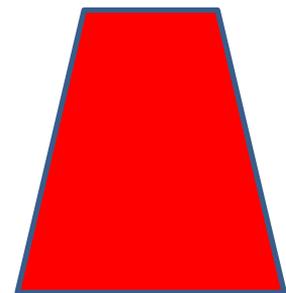
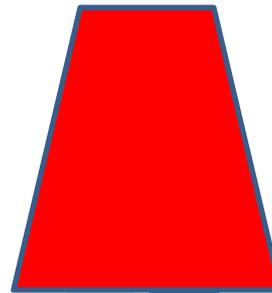
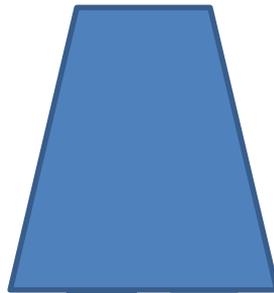
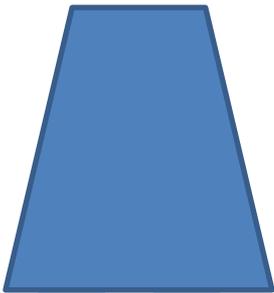
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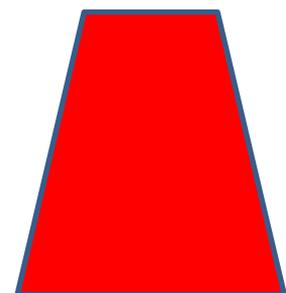
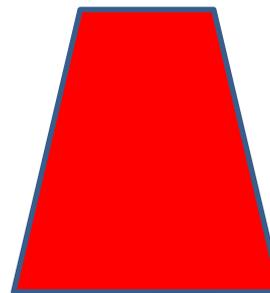
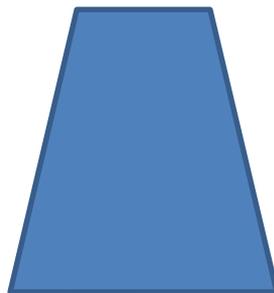
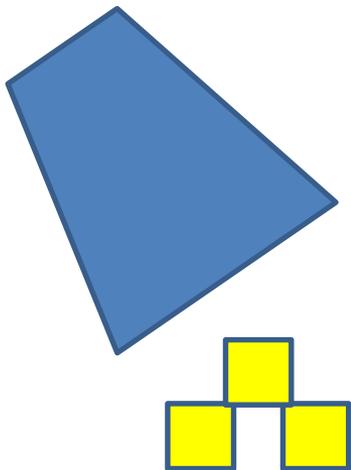
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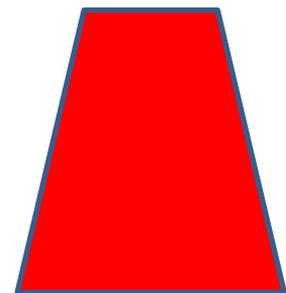
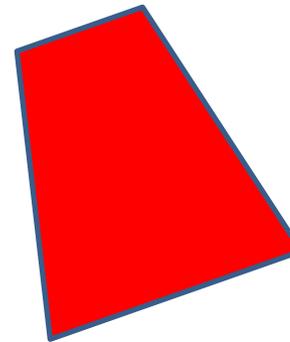
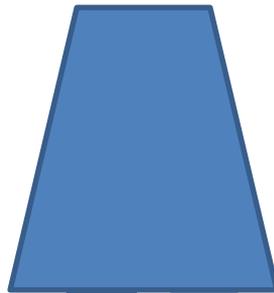
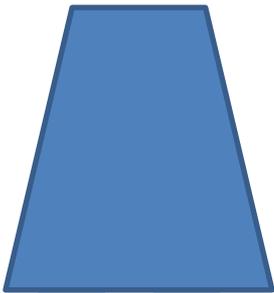
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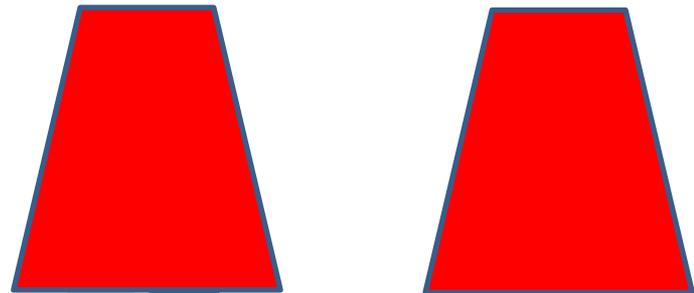
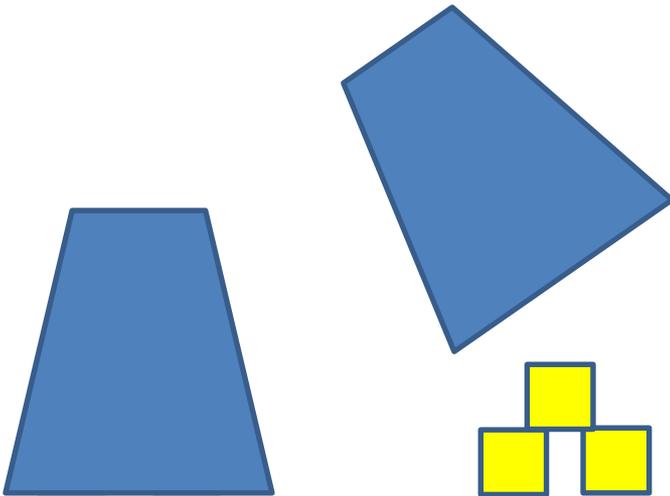
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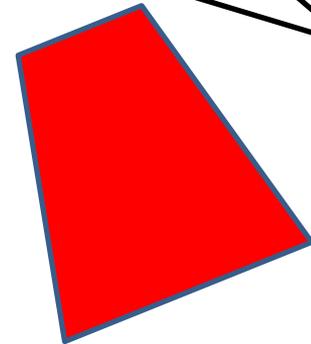
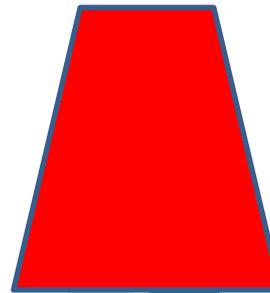
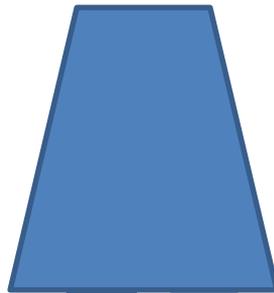
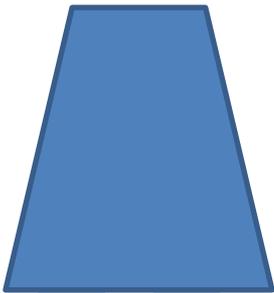
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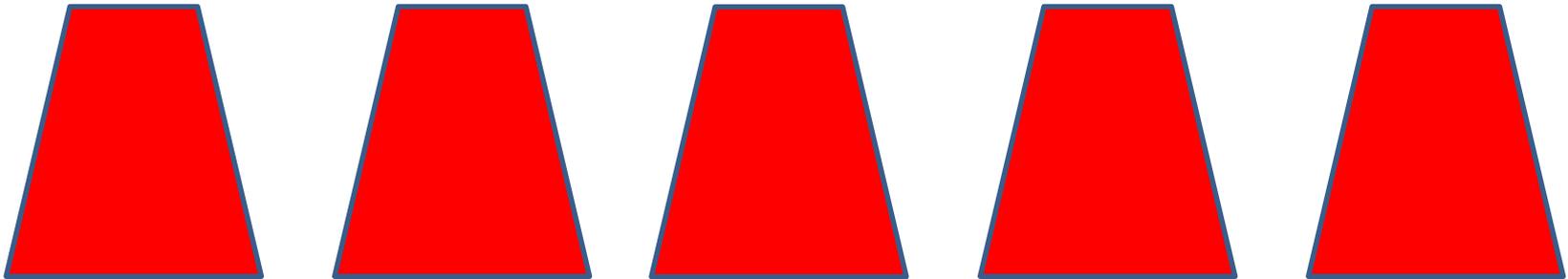
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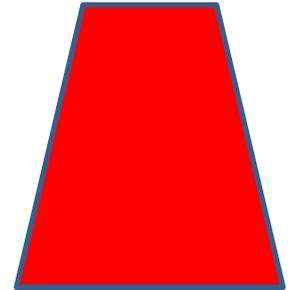
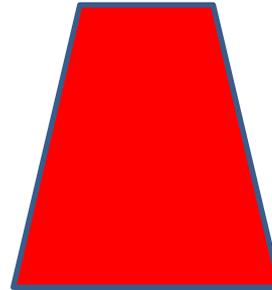
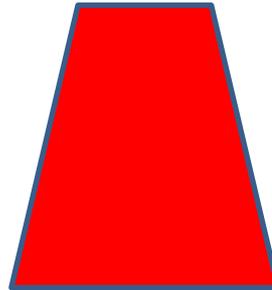
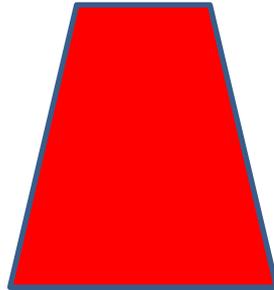
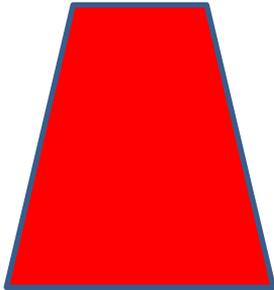
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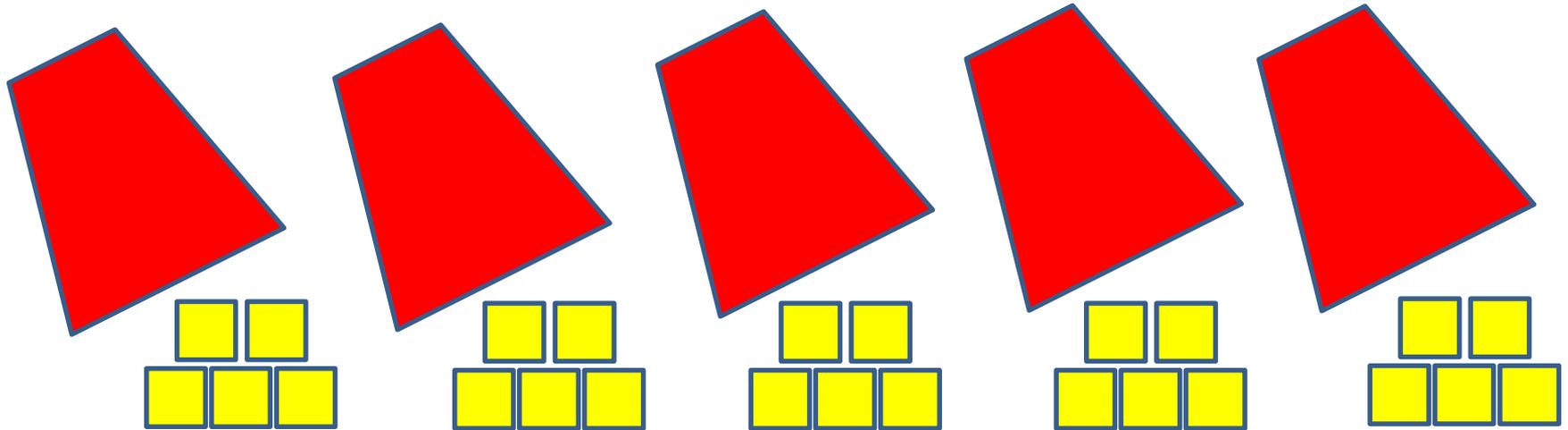


I have five cups. The total number of cubes I've used is 25. There is the same number of cubes under each cup. How many cubes is under this cup?

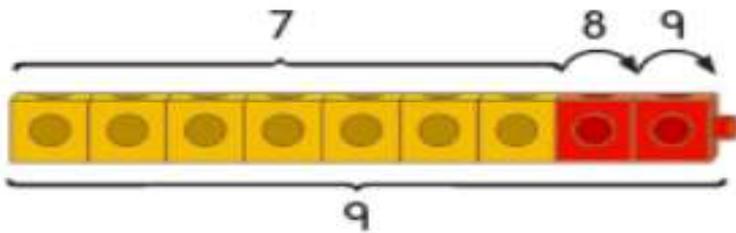


What mathematics do you
need to solve this problem?
What number facts do you
already know?





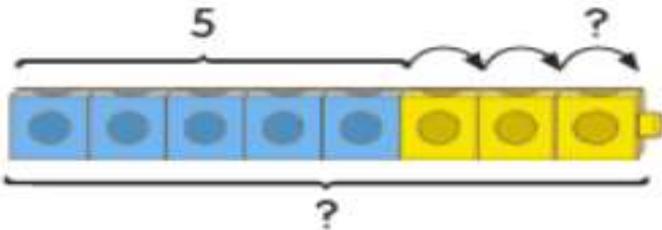
What is 2 more than 7?



2 added on
to 7 is 9.

2 more than 7 is 9.

What is 3 more than 5?



5, , ,

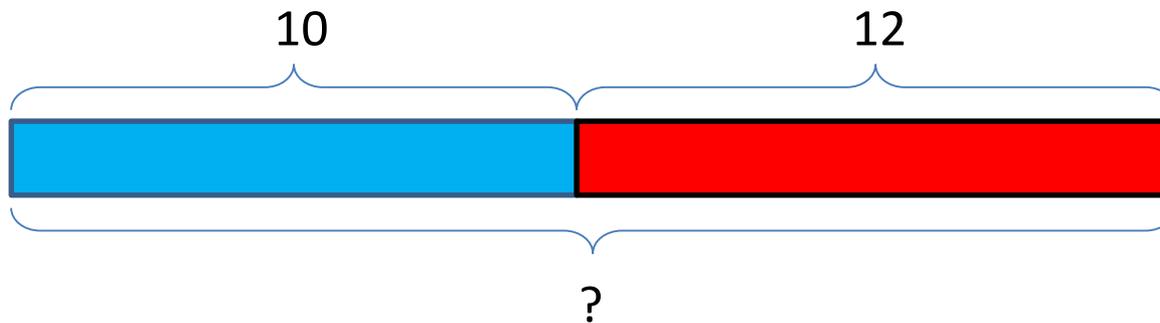


3 more than 5 is .

Omar bakes 10 biscuits.

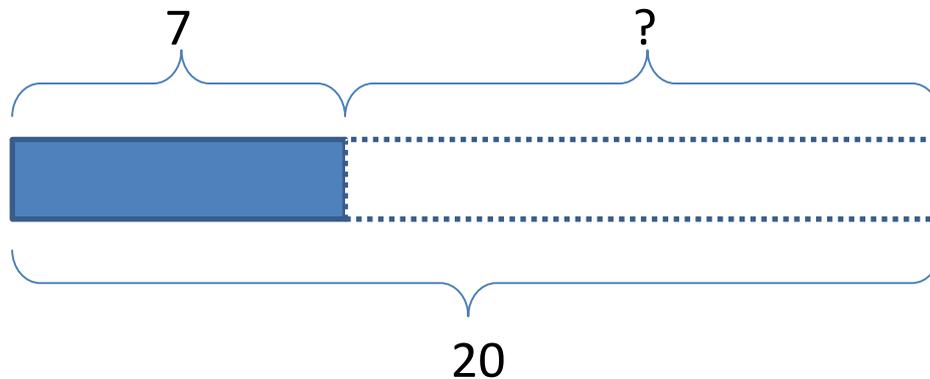
Ruby bakes 12 biscuits.

How many biscuits do they bake altogether?



They bake altogether 22 biscuits altogether.

Hardeep buys large eggs and small eggs.
 Altogether he buys 20 eggs
 There are 7 small eggs.
 How many large eggs are there?



There are 13 large eggs.

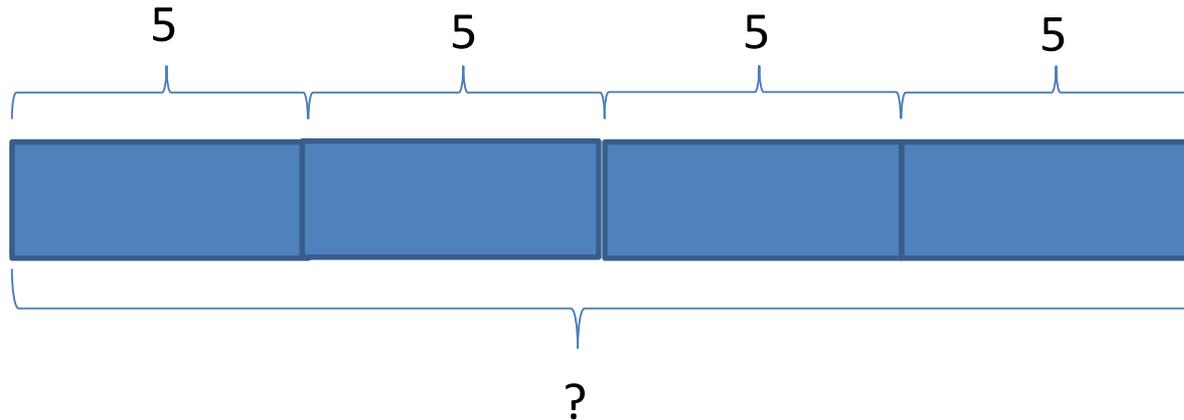
*Millie has a new fish tank.
She wants to put 21 fish in it.
Millie's mum gives her 15 fish.
She uses her pocket money to buy the rest.
How many fish does she buy?*

*305 children go to the park on Saturday.
278 more children go to the park on Sunday than on Saturday.
How many children go to the park on Sunday?*

Peter puts 5 bread rolls into each packet.

He has 4 packets.

How many bread rolls does he put into the 4 packets altogether?

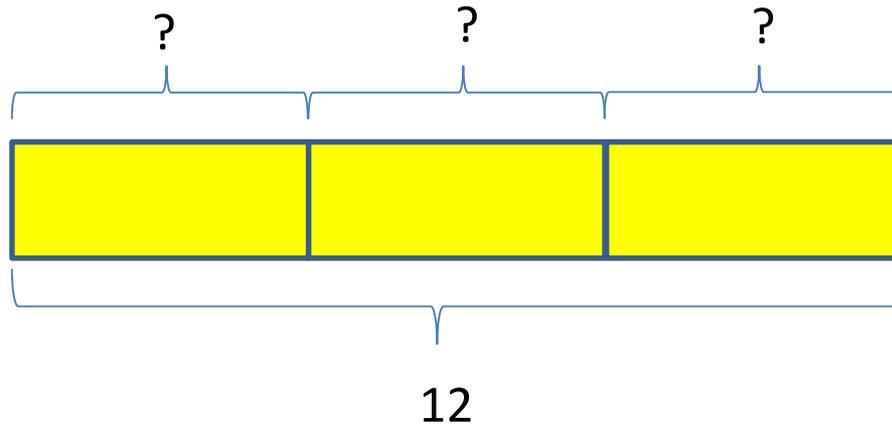


There are 20 bread rolls altogether.

Hardeep buys 12 pears.

He puts an equal number of pears into 3 boxes.

How many pears are there in each box?



There are 4 pears in each box.

Sam the baker has 795 g of flour.

He uses 145g of it to make biscuits.

He puts the remaining flour into 5 equal bags.

- a. How much flour is left?
- b. What is the mass of each bag of flour?

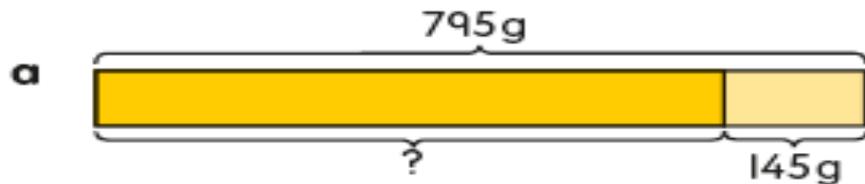


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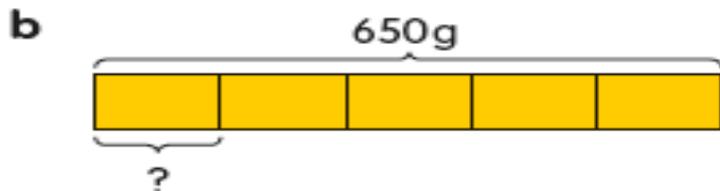
He puts the remaining flour into 5 equal bags.

- How much flour is left?
- What is the mass of each bag of flour?



$$795 - 145 = 650$$

There is 650 g of flour left.



$$650 \div 5 = 130$$

The mass of each bag of flour is 130 g.

Tai saves 4 times as much money as Farha.

Ruby saves £12 less than Tai.

Farha saves £32.

How much money does Ruby Save?

Tai saves 4 times as much money as Farha.

Ruby saves £12 less than Tai.

Farha saves £32.

How much money does Ruby save?

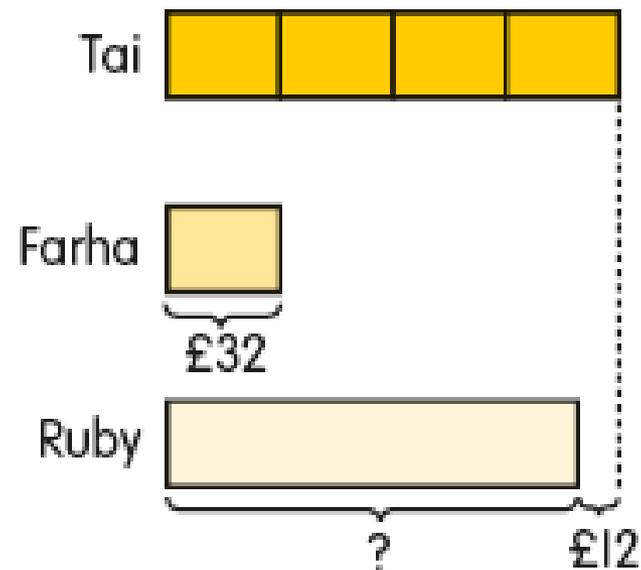
$$1 \text{ unit} \rightarrow \text{£ } 32$$

$$4 \text{ units} \rightarrow \text{£ } 32 \times 4 = \text{£ } 128$$

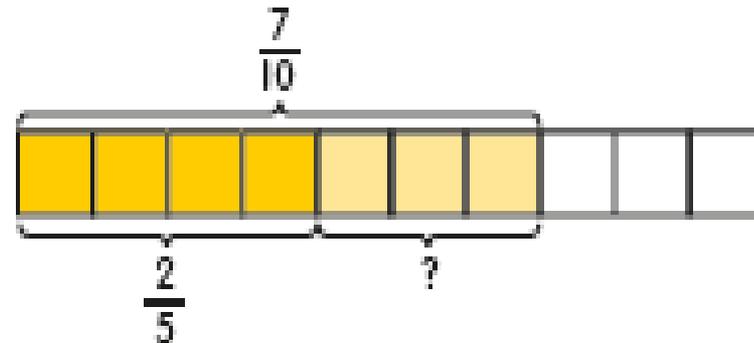
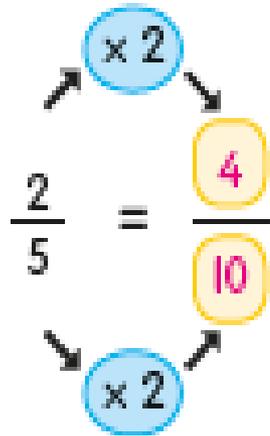
$$\text{Tai saves } \text{£ } 128$$

$$\text{£ } 128 - \text{£ } 12 = \text{£ } 116$$

$$\text{Ruby saves } \text{£ } 116$$



2 Subtract $\frac{2}{5}$ from $\frac{7}{10}$.



$$\frac{7}{10} - \frac{2}{5} = \frac{7}{10} - \frac{4}{10}$$

$$= \frac{3}{10}$$

William has 95p

He has 20p less than his brother

How much money do William and his brother have altogether?

$$95p + 20p = 115p$$

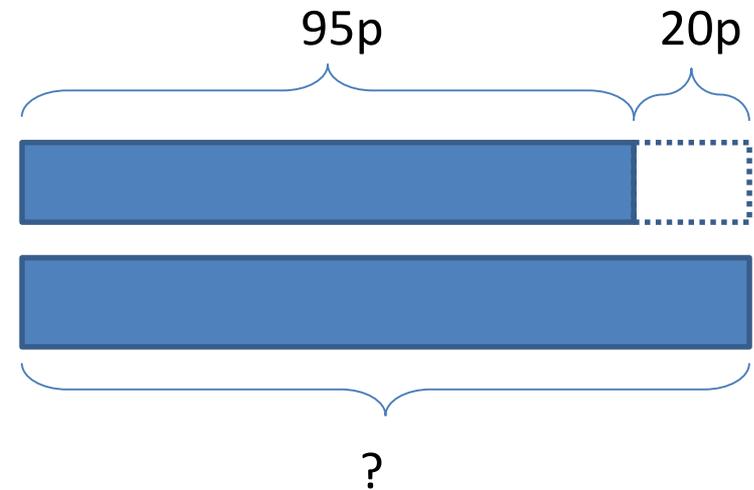
William's brother has 115p

William's brother has £1.15

William has 95p

William and his brother have 210p
altogether.

William and his brother have £2.10
altogether.



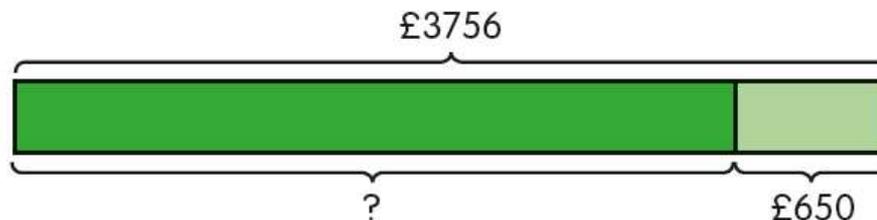
A youth group had £3756 for a camping trip.

They saved £650 and spent the rest on 12 tents and some food for the trip.

The tents cost £205 each.

How much did they spend on food?

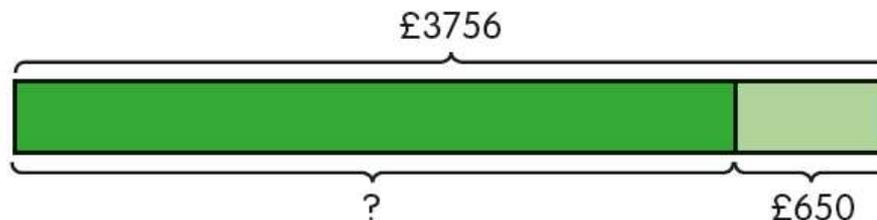
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First find the total amount the youth group spent.



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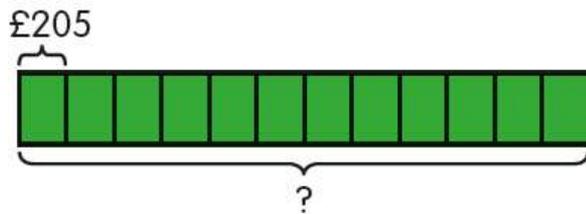
$$3756 - 650 = 3106$$

They spent £3106 altogether.

First find the total amount the youth group spent.



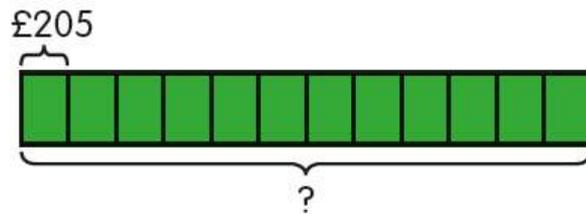
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Next find the total cost of 12 tents.



A youth group had £3756 for a camping trip. They saved £650 and spent the rest on 12 tents and some food for the trip. The tents cost £205 each. How much did they spend on food?



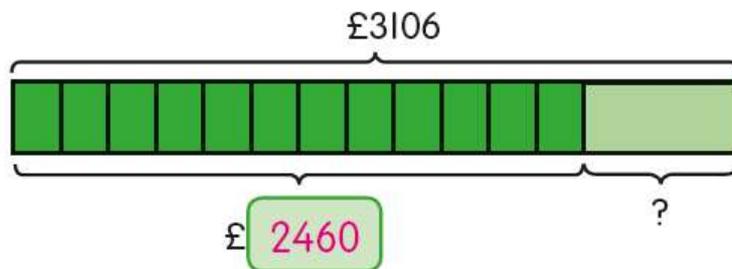
$$12 \times \text{£}205 = \text{£} 2460$$

The 12 tents cost $\text{£} 2460$.

Next find the total cost of 12 tents.



A youth group had £3756 for a camping trip. They saved £650 and spent the rest on 12 tents and some food for the trip. The tents cost £205 each. How much did they spend on food?



$$£3106 - £2460 = £646$$

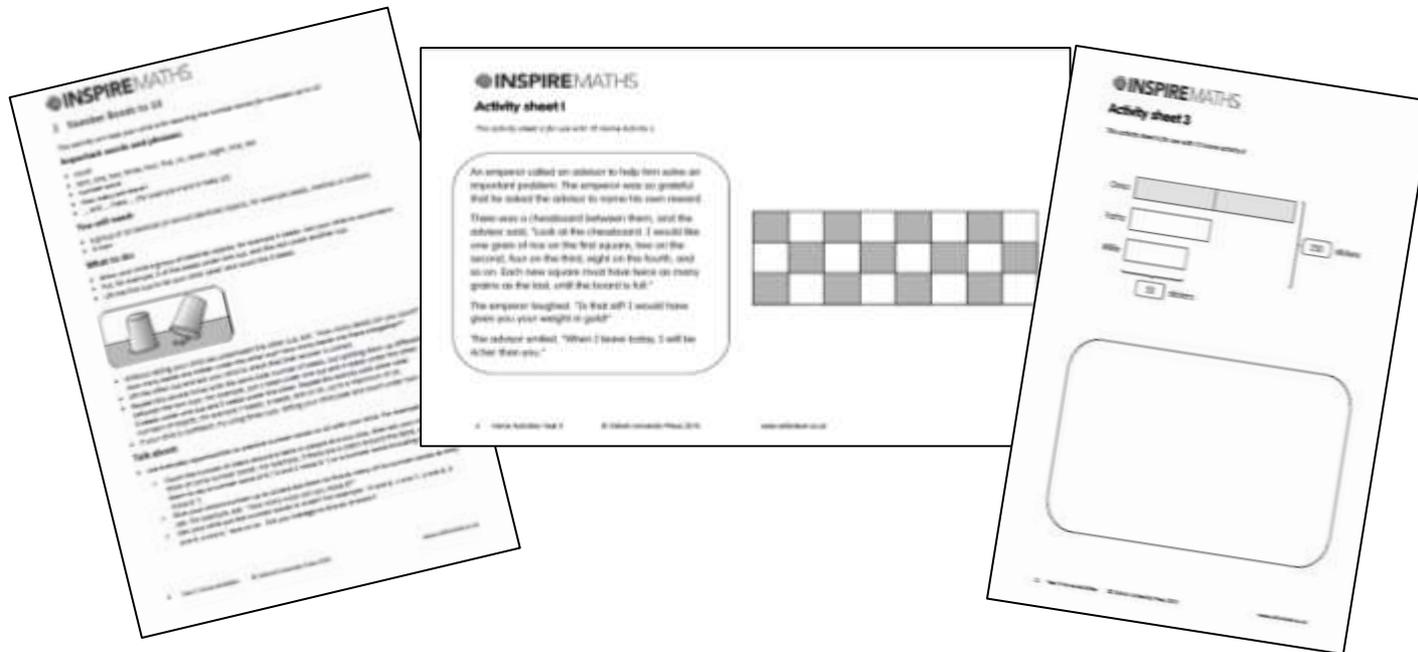
They spent £646 on food.

Finally subtract the cost of 12 tents from the total amount that the youth group spent.



Homework

From time to time, your child will be set Inspire homework activities or worksheets to complete at home.



How can I help my child?

Help your child by finding mathematics in everyday situations, for example a shopping trip is rich in mathematical opportunities.

- Spending money, calculating change and working out what is the best value in store.
- Packets, once empty can provide your child will immediate access to 3D shapes and nets
- Packets and tins are also a great source of information, e.g. mass and volume
- Multi-packs of items such as drinks or yogurts are sold in pairs, fours and sixes which links well with work on multiples or times tables.

How can I help my child?

Help by...

- Knowledge of number, help them explain what comes before or after a given number, how the number is made, e.g. tens and ones.
- Encourage them to draw pictures and models such as part, whole and bar models.
- Support them with their homework, encourage them to answer questions in full sentences.
- If you are unsure, please ask your child's teacher to explain