WALT scale by amounts.

- WILF:
- Read the question carefully and underline the key words
- Choose the operation needed based on the words used
- Make an amount bigger or smaller as needed.

Scaling... what is it?

Scaling allows us to make amounts smaller or bigger by using multiplication and division.

It is often used in baking, cooking, building and pricing things, so it is an important skill to have.

It is usually presented as a word problem. Let's take a look...

Scaling

Here is a recipe for biscuits:

90g flour

50g butter

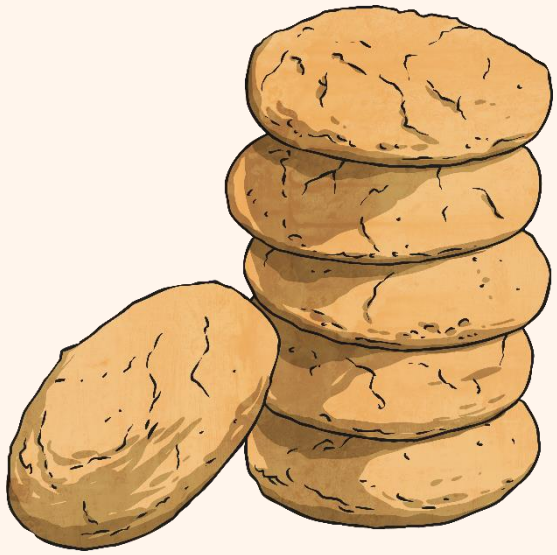
60g seeds

30ml water

Nigel has 100g of butter to make some biscuits.
How much flour, seeds and water will be needed?

To solve this question, first we underline the key parts and decide which operation to use. We've identified that Nigel has 100g of butter and wants to know how much of the other ingredients he will need. The recipe is for 50g of butter. What relationship does this number have to 100, that Nigel has?
Nigel has ***twice as much*** butter, therefore we need to **multiply** each of the other ingredient amounts ***by 2***, to scale them up evenly.
Have a go! ☺

Scaling



Here is a recipe for biscuits:

90g flour

50g butter

60g seeds

30ml water

Nigel has 100g of butter to make some biscuits.
How much flour, seeds and water will be needed?

90 x 2 = 180g
60 x 2 = 120g
30 x 2 = 60ml

Therefore, he will need 180g flour, 100g butter, 120g seeds and 60ml of water.

Try the same careful reading strategy to pick out what you need to do here, then have a go:

Four children take some food and drink on a picnic. They share equally:

24 chocolate sweets

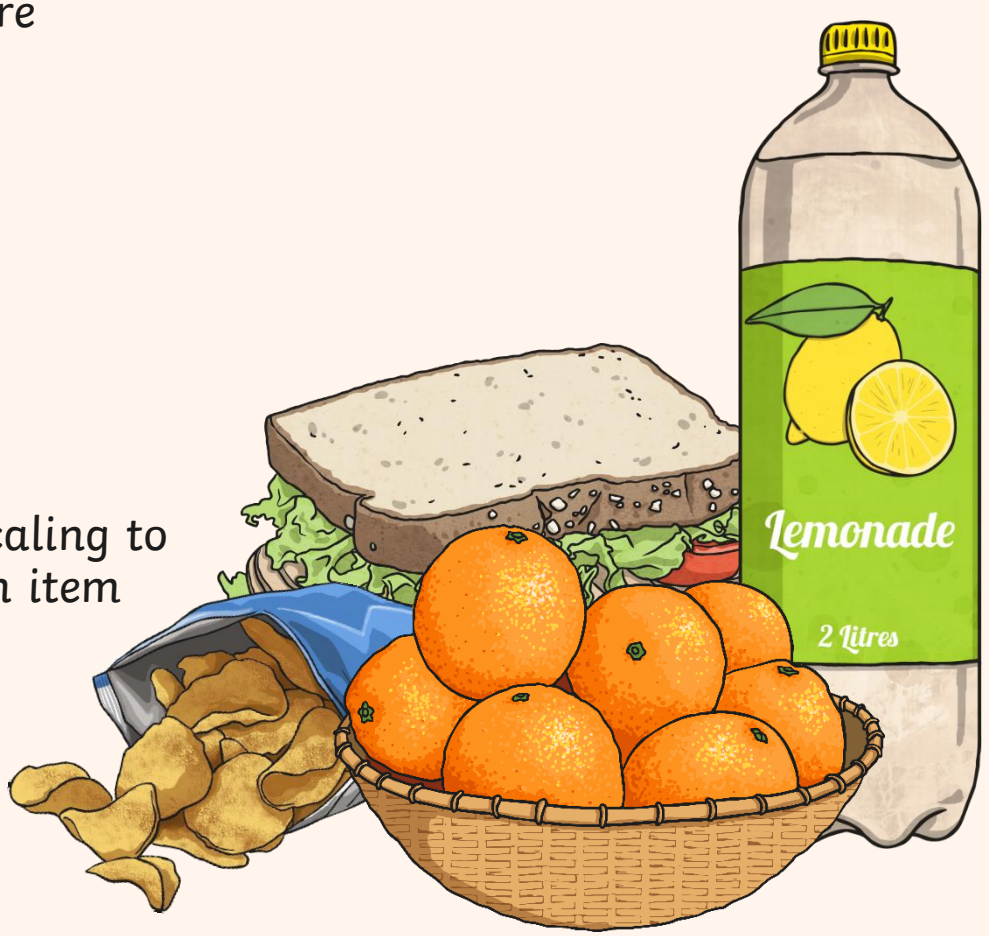
12 rounds of sandwiches

6 oranges

3 bags of crisps

1.5 litres of lemonade

Explain how you can use scaling to calculate how much of each item they receive.



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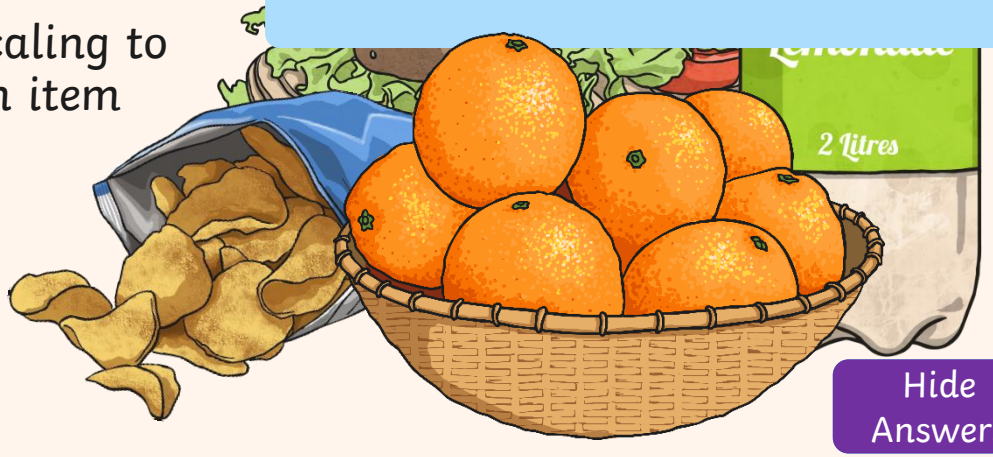
Explain how you can use scaling to calculate how much of each item they receive.

Because there are 4 people and it is ***shared*** equally between them, we need to ***divide*** each number ***by 4***.

6 chocolate sweets
3 rounds of sandwiches
1 $\frac{1}{2}$ oranges
$\frac{3}{4}$ bag of crisps
3/8 of a litre of lemonade



Hide Answers

This also works with money!

£1 = $1.50

A traveller buys £80 worth of dollars. How many dollars will she receive? Explain how you calculated the answer.

Another traveller wants $180. How much will this cost him in sterling (£)? Explain how you calculated the answer.

If £1 gets you $1.50, what is the operation you need to do for each?

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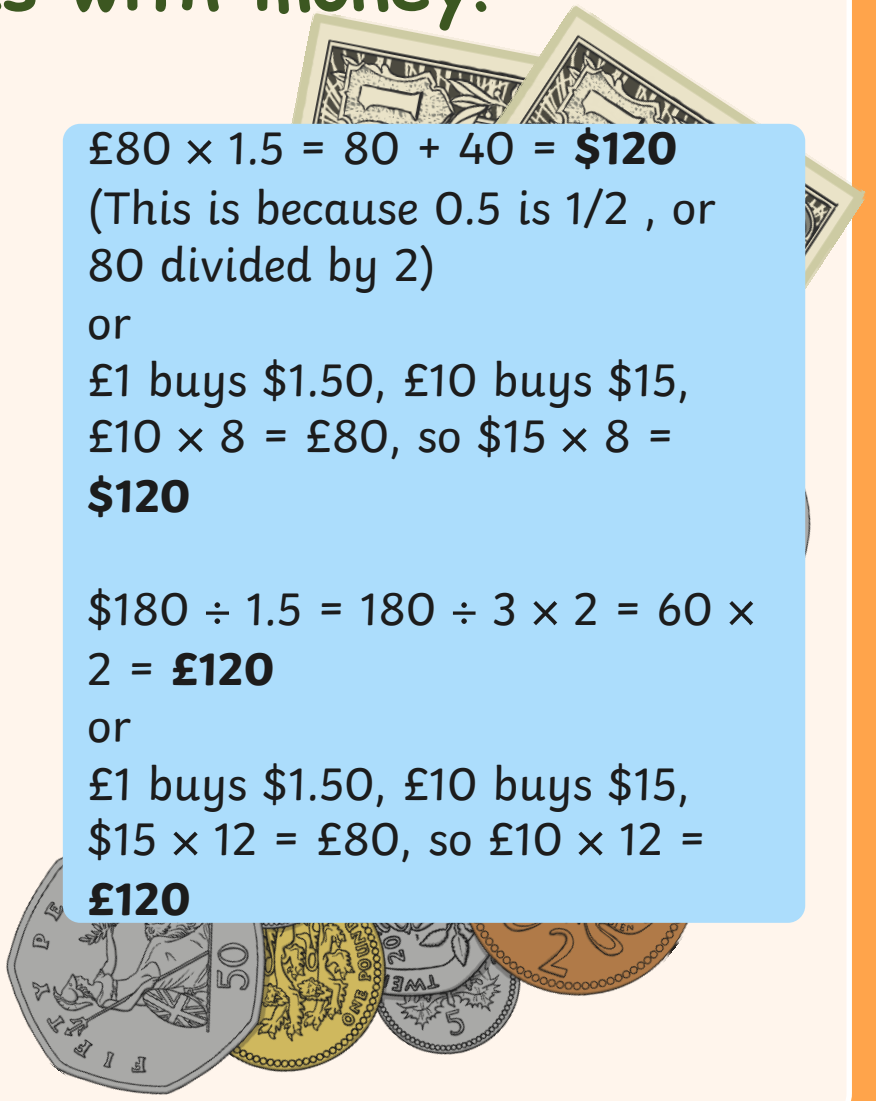

£80 × 1.5 = 80 + 40 = **$120**
(This is because 0.5 is 1/2 , or 80 divided by 2)
or
£1 buys $1.50, £10 buys $15, £10 × 8 = £80, so $15 × 8 = **$120**

$180 ÷ 1.5 = 180 ÷ 3 × 2 = 60 × 2 = **£120**
or
£1 buys $1.50, £10 buys $15, $15 × 12 = £80, so £10 × 12 = **£120**

Read these carefully and have a go...

A cake in the bakery cost £12.49, but is reduced in the sale by 10%. How much is it now?

The ultimate trampoline costs £65, but is reduced in the sale by 2/5. How much is it now?

How do we scale by a percentage or fraction?

A cake in the bakery cost £12.49, but is reduced in the sale by 10%. How much is it now?

If an item is £12.49 and 10% is off, this means we need to find 10% of £12.49. To do this, simply make the number ten times smaller by moving your decimal point, then subtract that from the original amount.

10% = £1.25 (rounded up). 12.49 – 1.25 = £11.24

The ultimate trampoline costs £65, but is reduced in the sale by 2/5. How much is it now?

Here we are simply using our amount of a fraction strategy to scale the price, then take it away from the original cost.

65 divided by 5 = 13 13 x 2 = 26 65 – 26 = £39

Have a go at today's activities.

Week 1. Maths. Wednesday Activity.