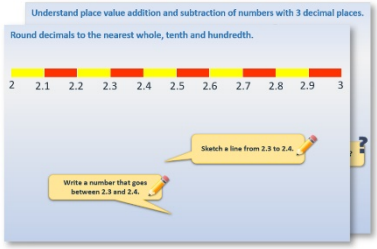
Year 6: Week 4, Day 2
Ratio (1)

Each day covers one maths topic. It should take you about 1 hour or just a little more.

1. Start by reading through the **Learning Reminders**.
They come from our *PowerPoint* slides.



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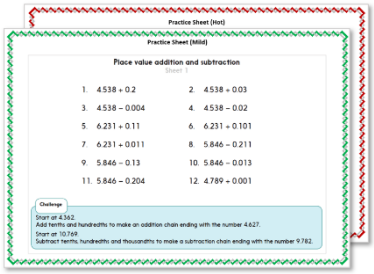
2. Tackle the questions on the **Practice Sheet**.
There might be a choice of either Mild (easier) or Hot (harder)!
Check the answers.



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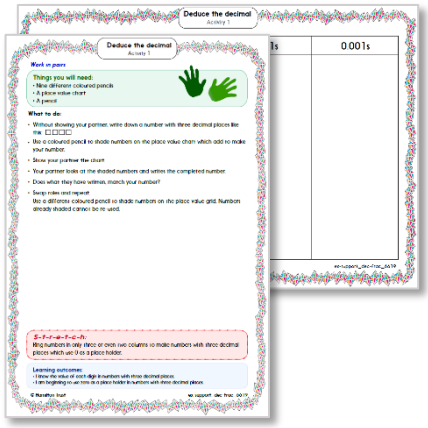
3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**



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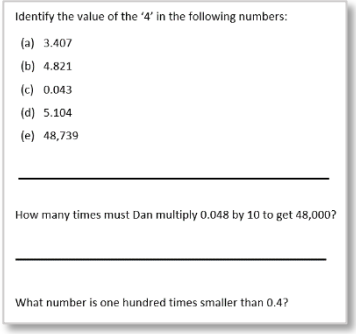
4. Have I mastered the topic? A few questions to **Check your understanding**.
Fold the page to hide the answers!



Learning Reminders

Describe ratios between unequal quantities, e.g. paint; Solve ratio problems, e.g. in the context of recipes.

Ingredients for chocolate chip cookies

200g butter
100g caster sugar
250g self-raising flour
100g chocolate chips

This makes about 12 cookies. I want to scale this up to make more than 12 cookies. I've got 300g butter in the fridge, so all I need to do is add 100g onto all the other ingredients to make more, right?

This won't work, because in a recipe there are set ratios between ingredients to keep the taste the same, e.g. there is twice as much butter as sugar. We call this a ratio; in the case of the butter and sugar, the ratio is 2 to 1. If we just add 100g of everything the ratio won't be 2 to 1 any more.

We increased the amount of butter by half, or 50%, so we needed to increase all the other ingredients by half to make it work.

Learning Reminders

Describe ratios between unequal quantities, e.g. paint; Solve ratio problems, e.g. in the context of recipes.

Ingredients for chocolate chip cookies	
200g butter	300g butter
100g caster sugar	150g caster sugar
250g self-raising flour	375g self-raising flour
100g chocolate chips	150g chocolate chips

We increased the amount of butter by half, or 50%, so we needed to increase all the other ingredients by half to make it work.

Find the weight needed for each ingredient if 300g of butter is used.

The original recipe made 12 cookies. How many cookies would our scaled-up list of ingredients make?

18 cookies

Practice Sheet Mild

Pizza recipe

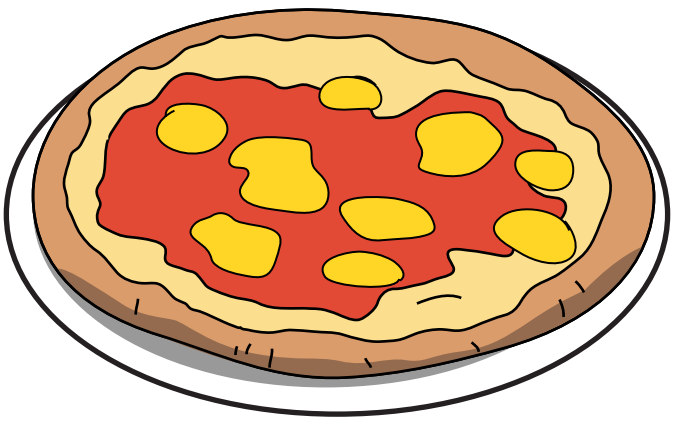
Adapt the recipe to make:

2 pizzas
8 pizzas
1 pizza

Recipe for 4 pizzas

Base:
500g strong flour
10g dried yeast
1/2 teaspoon of salt
1/2 teaspoon of sugar
4 tbsp of olive oil
250ml lukewarm water

Topping:
400g tin of tomatoes
200g grated cheese
1 clove of garlic
1 onion



Practice Sheet Hot

Pizza recipe

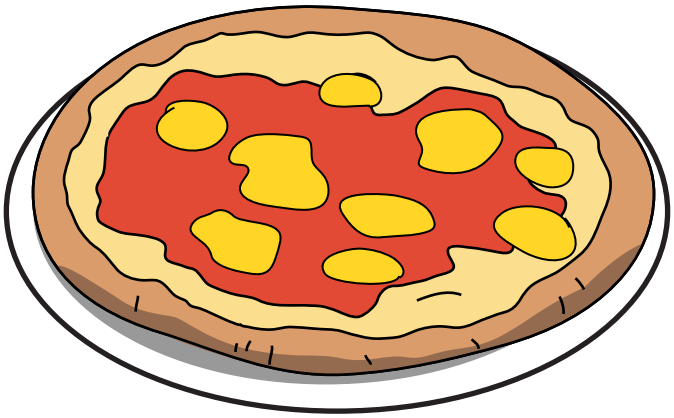
Adapt the recipe to make:

2 pizzas
8 pizzas
6 pizzas

Recipe for 4 pizzas

Base:
500g strong flour
10g dried yeast
1/2 teaspoon of salt
1/2 teaspoon of sugar
4 tbsp of olive oil
250ml lukewarm water

Topping:
400g tin of tomatoes
200g grated cheese
1 clove of garlic
1 onion



Practice Sheets Answers

Pizza recipe (mild and hot)

Base	4 pizzas	1 pizza	2 pizzas	6 pizzas	8 pizzas
Flour	500g	125g	250g	750g	1000g/1kg
Yeast	10g	2.5g	5g	15g	20g
Salt	1/2 tsp	1/8 tsp	1/4 tsp	3/4 tsp	1 tsp
Sugar	1/2 tsp	1/8 tsp	1/4 tsp	3/4 tsp	1 tsp
Oil	4 tbsp	1 tbsp	2 tbsp	6 tbsp	8 tbsp
Water	250ml	62.5ml	125ml	375 ml	500 ml
Topping					
Tomatoes	400g	100g	200g	600g	800g
Cheese	200g	50g	100g	300g	400g
Garlic	1 clove garlic	1/4 clove garlic	1/2 clove garlic	1 1/2 cloves garlic	2 cloves garlic
Onions	1 onion	1/4 onion	1/2 onion	1 1/2 onions	2 onions

A Bit Stuck?
Taste Test

Things you will need:
- Two glasses
- Squash
- Ruler

What to do:

1. Pour 1cm of squash into a straight glass, then top up with another 6cm of water (7cm total).

2. Look at the colour and taste it.

3. Pour 2cm of squash into an identical glass.
   How much water do you predict needing to add for it to **taste the same**?

   Try it! If it tastes the same (and the colour/shade is the same), the squash and water have **the same ratio** as the first glass you made.

4. If you were to make double the amount again in a really tall glass, what quantity of squash and water would you need?

5. Complete this table, including a few of your own rows **using the same ratio**.

Water	Squash
1cm	6cm
2cm	
2.5cm	
	24cm
	33cm

S-t-r-e-t-c-h:

To be really accurate, you could weigh the squash and water... How much does 1cm of water – in your chosen glass – weigh? So, what weight of water should you add...?

Check your understanding

Questions

Orange paint is mixed using this ratio of red and yellow paints:

red : yellow

2 : 7

Sam uses 4 litres of red.

Assuming he uses the correct amount of yellow, how many litres of orange paint will he make?

This list of ingredients for chilli soup recipe is for 4 people. Adapt it for 6 people.

2 garlic cloves
2 chillies
1 onion
2 red peppers
200g sweet potato
400g tinned tomatoes
500ml vegetable stock

Fold here to hide answers

Check your understanding

Answers

Orange paint is mixed using this ratio of red and yellow paints:

red : yellow

2 : 7

Sam uses 4 litres of red.

Assuming he uses the correct amount of yellow, how many litres of orange paint will he make? 18 litres If he uses 4 litres of red then he must use 14 litres of yellow to maintain the red : yellow ratio.

This list of ingredients for chilli soup recipe is for 4 people. Adapt it for 6 people.

2 garlic cloves	3 garlic cloves
2 chillies	3 chillies
1 onion	$1^1/_2$ onion
2 red peppers	3 red peppers
200g sweet potato	300g sweet potato
400g tinned tomatoes	600g tinned tomatoes
500ml vegetable stock	750ml vegetable stock

All amounts are ‘scaled up’ by a factor of 1.5, or multiplied by 1.5.