

Recipes

Notes and guidance

For this small step, children apply their knowledge of ratio and proportion to solving problems involving ingredients for recipes.

As a class, look at a simple list of ingredients for, for example, 4 people and discuss how it could be adapted for 8/2/40 people. After solving simple scaling-up/scaling-down problems, children look at problems with a given amount of a specific ingredient, for example “The recipe needs 100 g of butter. Aisha has 500 g of butter. How much _____ can she make?”

Children can then explore multi-step problems that involve multiplying and dividing quantities of ingredients, for example adjusting the quantities for 4 people to 5 people by dividing each ingredient by 4 and then multiplying by 5

Things to look out for

- Children may only scale one of the ingredients instead of all of them.
- Children may not see efficient methods for two-step problems.
- Children may make errors when they need to convert between units of measure.

Key questions

- How can a double number line help you decide how much of each ingredient you need?
- How many times more people are there? How will this affect the amount of each ingredient needed?
- Do you need to find the amounts needed for one person first? Why or why not?
- What is the greatest number of _____ you can make with _____?
- How does changing the quantities in a recipe link to using scale factors?

Possible sentence stems

- There are _____ times as many people, so I need _____ times as much of each ingredient.
- First, I will find the quantities for 1 person by dividing by _____ and then I will multiply this by _____

National Curriculum links

- Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts

Recipes

Key learning

- Here are some ingredients for cupcakes.
Tom wants to make 10 cupcakes.
Explain to a partner how to work out what ingredients Tom will need.
How much of each ingredient will Tom need to make the different numbers of cupcakes?

Cupcakes (makes 5)
100 g flour
2 eggs
40 g sugar

15 cupcakes

20 cupcakes

25 cupcakes

- Here are some ingredients for soup.
How much of each ingredient is needed to make soup for the different numbers of people?

Soup (for 6 people)
1 onion
60 g butter
180 g lentils
1.2 litres stock
480 ml tomato juice

2 people

1 person

9 people

- Sam is making pancakes.
She follows a recipe with this list of ingredients.
She has 1.2 litres of milk and wants to make as many pancakes as she can.
How many eggs will she need?

Pancakes
120 g plain flour
2 eggs
300 ml milk

- Here are the ingredients for an apple crumble.
How much of each ingredient is needed to make apple crumble for the different numbers of people?

Apple crumble (5 people)
300 g plain flour
225 g brown sugar
200 g butter
450 g apples

10 people

12 people

- A baker uses 12 eggs to make 108 muffins.
How many muffins will 20 eggs make?
How many different ways can you work it out?

Recipes

Reasoning and problem solving

Here are the ingredients for 10 flapjacks.



Flapjacks (makes 10)

- 120 g butter
- 100 g brown sugar
- 4 tablespoons golden syrup
- 250 g oats
- 40 g sultanas

15

- 150 g brown sugar
- 6 tablespoons golden syrup
- 375 g oats
- 60 g sultanas

Huan has 180 g butter.

What is the greatest number of flapjacks he can make?

How much of each of the other ingredients will he need?

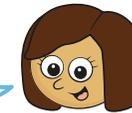
Here are the ingredients for making one smoothie.



Smoothie

- 2 apples
- 3 bananas
- 500 ml milk

I have 7 apples, 9 bananas and 1 litre of milk.



Kim



Alex

I have 6 apples, 10 bananas and 1.5 litres of milk.

I have 10 apples, 5 bananas and 750 ml of milk.



Tommy

Alex

Who can make the most smoothies?