

# 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

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?

15

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

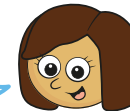
Here are the ingredients for making one smoothie.

### 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.



Tommy

Who can make the most smoothies?

Alex