

Multiplication and Division

Representing two- step word problems
using bar models.



Lesson agenda

Exploring how to represent two-step word problems using bar models.



Talk Task



Learning to represent and solve division word problems.

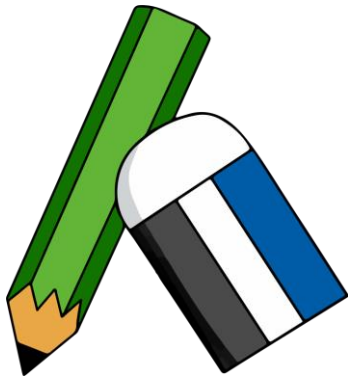


Final quiz to see what you have remembered.



You will need...

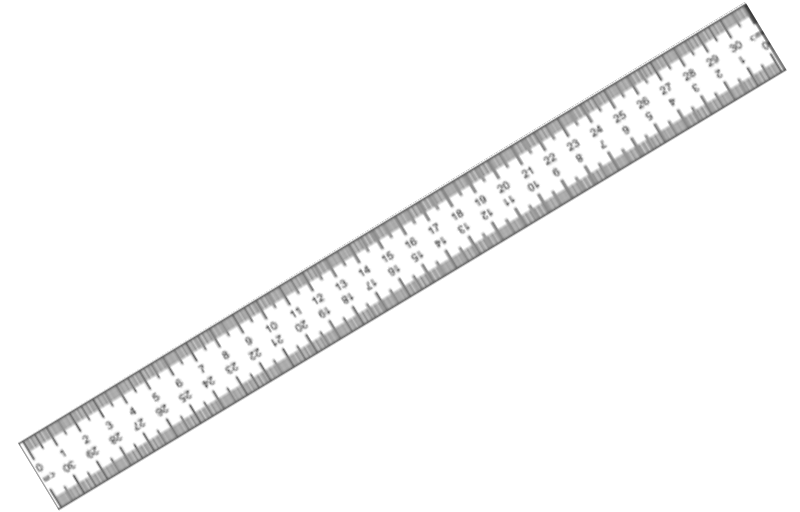
Pencil



Paper



Ruler



Please pause this video if you have not got them already.



Representing word problems



Part:

one amount that makes up a whole.

Whole:

complete including all the parts.



Mr Slade treats his children and their friends to a burger each for £3 and a large fizzy drink for £2. How much does each meal cost? If there are eight people eating, how much does the meal cost altogether?

1. What is the maths that needs to be done to solve the problem?



Two-step word problems

★ **Part:**
one amount that makes up a whole.

★ **Whole:**
complete including all the parts.

Mr Slade treats his children and their friends to a burger each for £3 and a large fizzy drink for £2. How much does each meal cost? If there are eight people eating, how much does the meal cost altogether?

Do you start with the whole or with the parts?

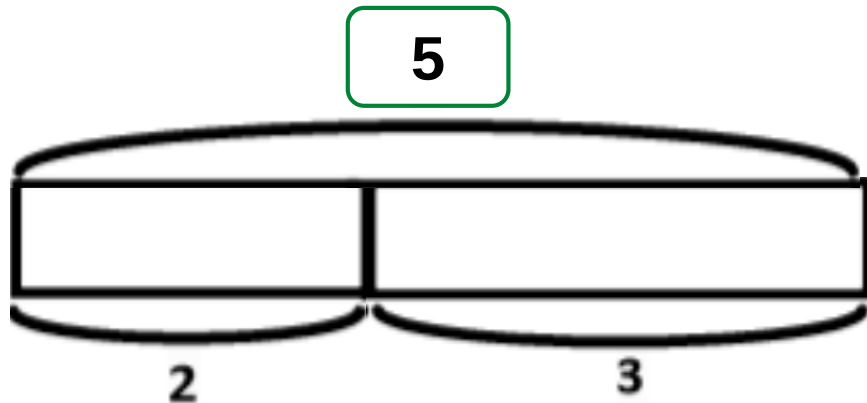
In the first step we start with the parts.

Is there more than one part?

There are two parts - £3 and £2.

Are the parts of equal value?

The parts are not equal.



Two-step word problems

Mr Slade treats his children and their friends to a burger each for £3 and a large fizzy drink for £2. How much does each meal cost? **If there are eight people eating, how much does the meal cost altogether?**

Do you start with the whole or with the parts?

In the second step we start with the parts, which we worked out in the first step. £5

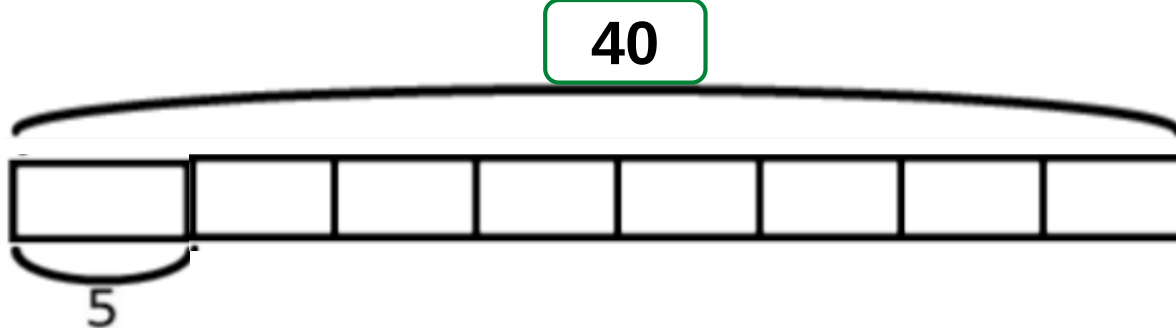
Is there more than one part?

There are eight parts because eight people are eating.



Are there parts of equal value?

The parts are equal. The value of the parts is £5.



Talk Task

★ Part Whole equal ★

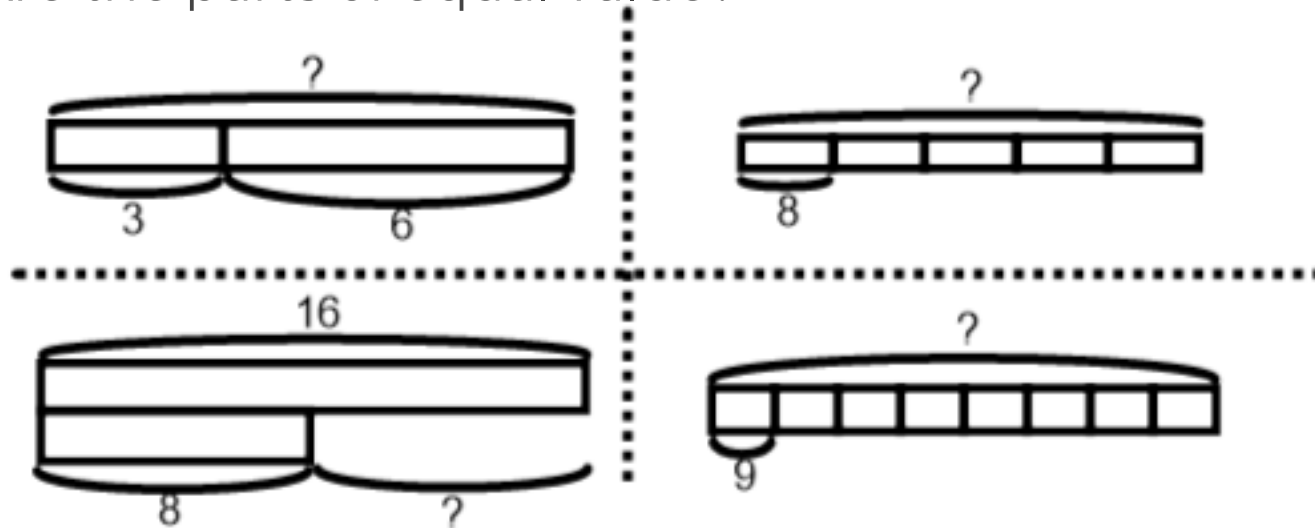
Match the bars to the correct step in the word problem.

Ali is putting up the wallpaper in some new houses before their owners move in. The upstairs of one house needs 6 metres of paper and the downstairs needs 3 metres of paper. How much paper is needed for one house? If there are eight houses, how much paper will he need altogether?

Do you start with the whole or with the parts?

Is there more than one part?

Are the parts of equal value?

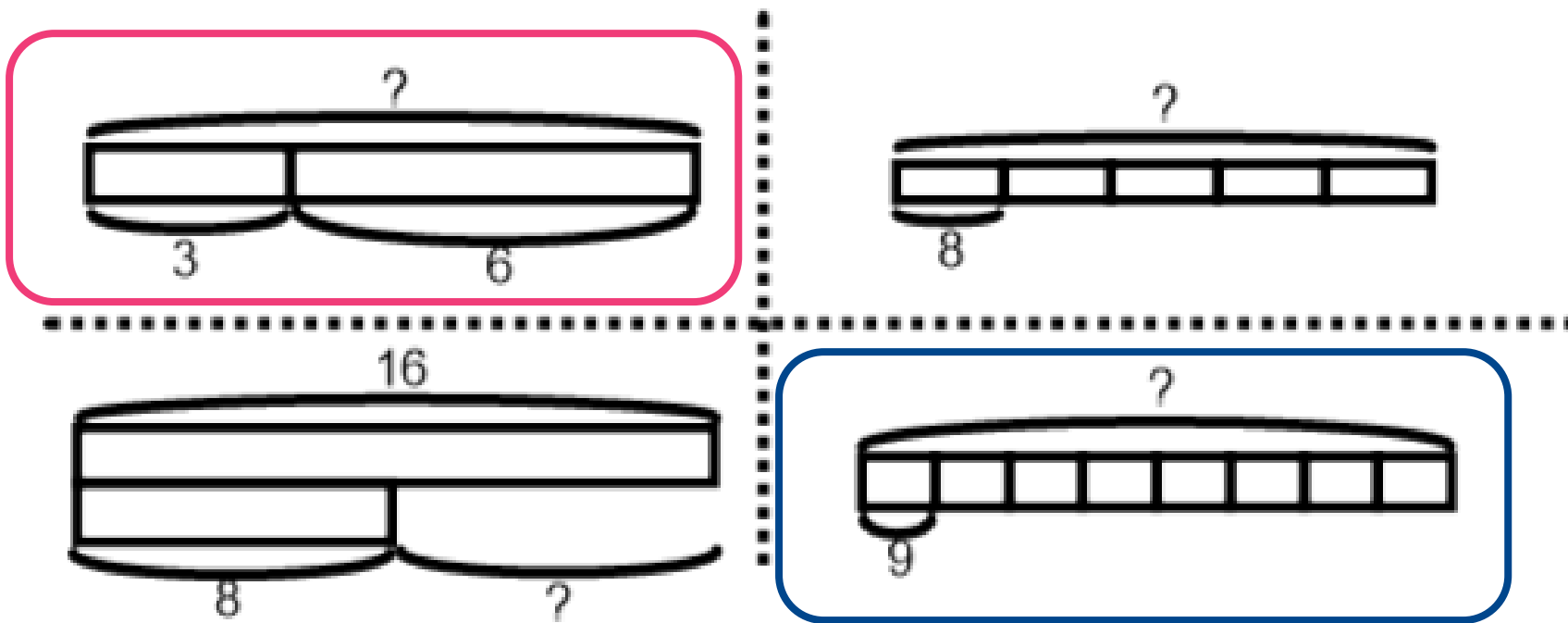


Talk Task answers

★ Part Whole equal ★

Match the bars to the correct step in the word problem.

Ali is putting up the wallpaper in some new houses before their owners move in. The upstairs of one house needs 6 metres of paper and the downstairs needs 3 metres of paper. How much paper is needed for one house? If there are eight houses, how much paper will he need altogether?



Representing and solving multi-step problems including division



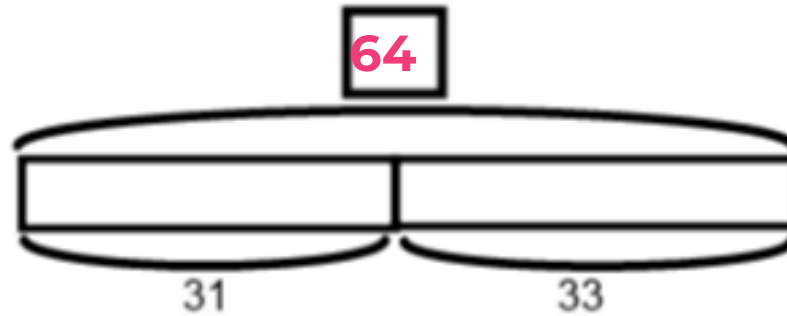
The parts should be equal in multiplication equations

Division and multiplication are inverse operations. The parts in division calculations are also equal.

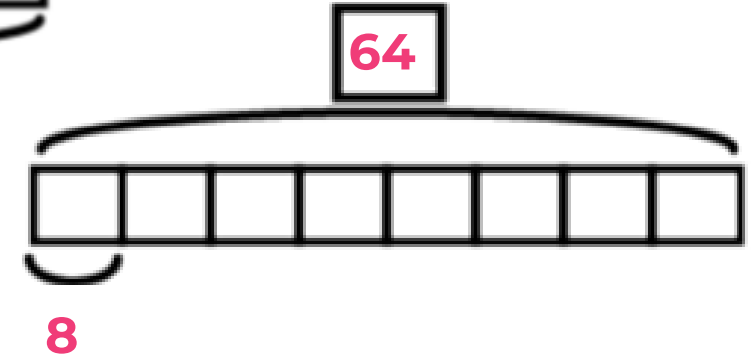


Representing and solving multi-step problems including division

After winning 33 marbles on Monday and another 31 marbles on Tuesday...



She shares them fairly between India, Erin, Deepak, Polly, Arun, Tegan, Christie and Yenn. How many marbles will each of her friends get?



How can we solve this?

Do we know any calculations that have a whole of 64 and equal parts with a value of 8?





Represent the word problems and solving multiplication and divisions.

1. Select a word problem and use the question frame to help you draw bar models that help you represent it.
2. Solve Each part of the problem (including addition and subtraction calculations).
3. Use your multiplication facts to help you solve multiplications and divisions efficiently.

Do you start with the whole or the parts?

Is there more than one part?

Are the parts of equal value?

Children at Mr Slade's school are holding a bake sale. Class Three have made 34 muffins and Class Four have made 22. How many muffins in total? They are being sold in packs of eight. How many packs can they sell?

To get to the café, Tim can take a five minute bus journey followed by a three minute walk. If he walks the whole way, it takes four times as long. How long does it take to walk?

Mr Slade is looking for prizes to give to his pupils. In the art shop the paint and brush set is normally £16 but it is in the half price sale. He buys three. How much does he spend?

Tim is buying milk for the café. He uses eight times as much green top as red top. He orders 80 litres of green top. How much red top milk does he buy?

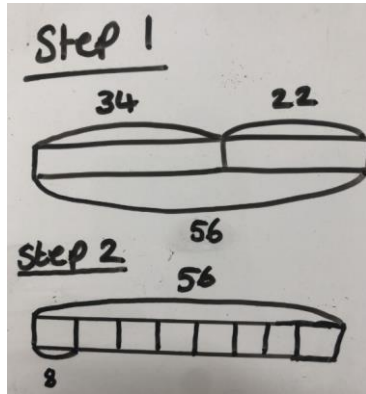


Independent task answers

Do you start with the whole or the parts?

Is there more than one part?

Are the parts of equal value?

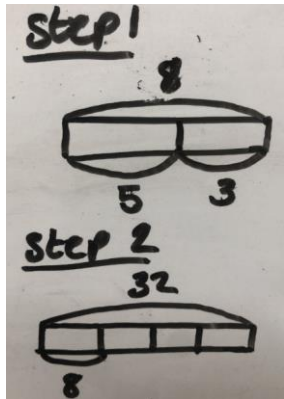


Children at Mr Slade's school are holding a bake sale. Class Three have made 34 muffins and Class Four have made 22. How many muffins in total? They are being sold in packs of eight. How many packs can they sell?

7 packs

To get to the café, Tim can take a five minute bus journey followed by a three minute walk. If he walks the whole way, it takes four times as long. How long does it take to walk?

32 minutes

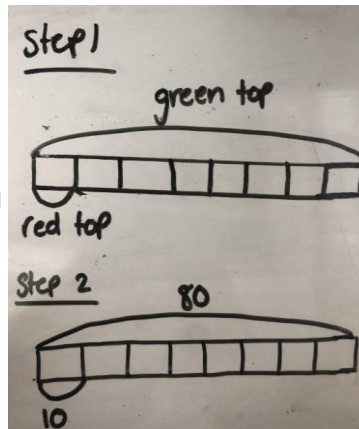
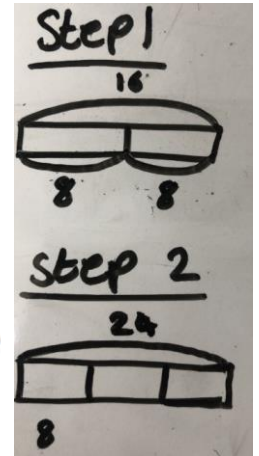


Mr Slade is looking for prizes to give to his pupils. In the art shop the paint and brush set is normally £16 but it is in the half price sale. He buys three. How much does he spend?

£24

Tim is buying milk for the café. He uses eight times as much green top as red top. He orders 80 litres of green top. How much red top milk does he buy?

10 litres



Share your work with Oak National

If you'd like to, please ask your parent or carer to share your work on Twitter tagging **@OakNational** and **#LearnwithOak**



Now complete the quiz!

