



Maths

Addition, Subtraction,
Multiplication and Division

Short Division Reasoning

Aim

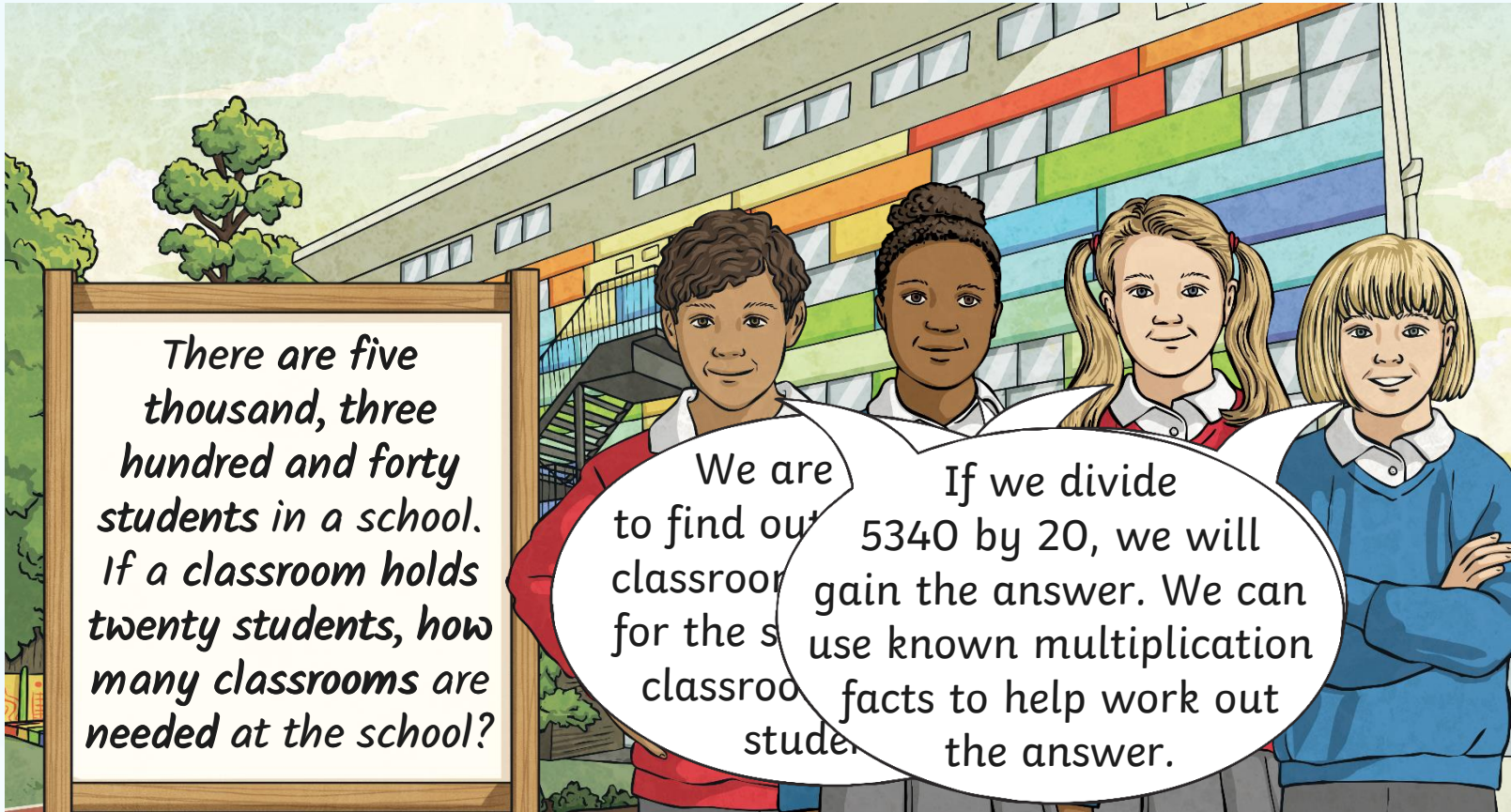
- I can solve reasoning questions using the formal method of short division.

Success Criteria

- I can break down complex problems into smaller steps.
- I can use mathematical language to explain solutions to problems.
- I can use the written method for short division accurately.

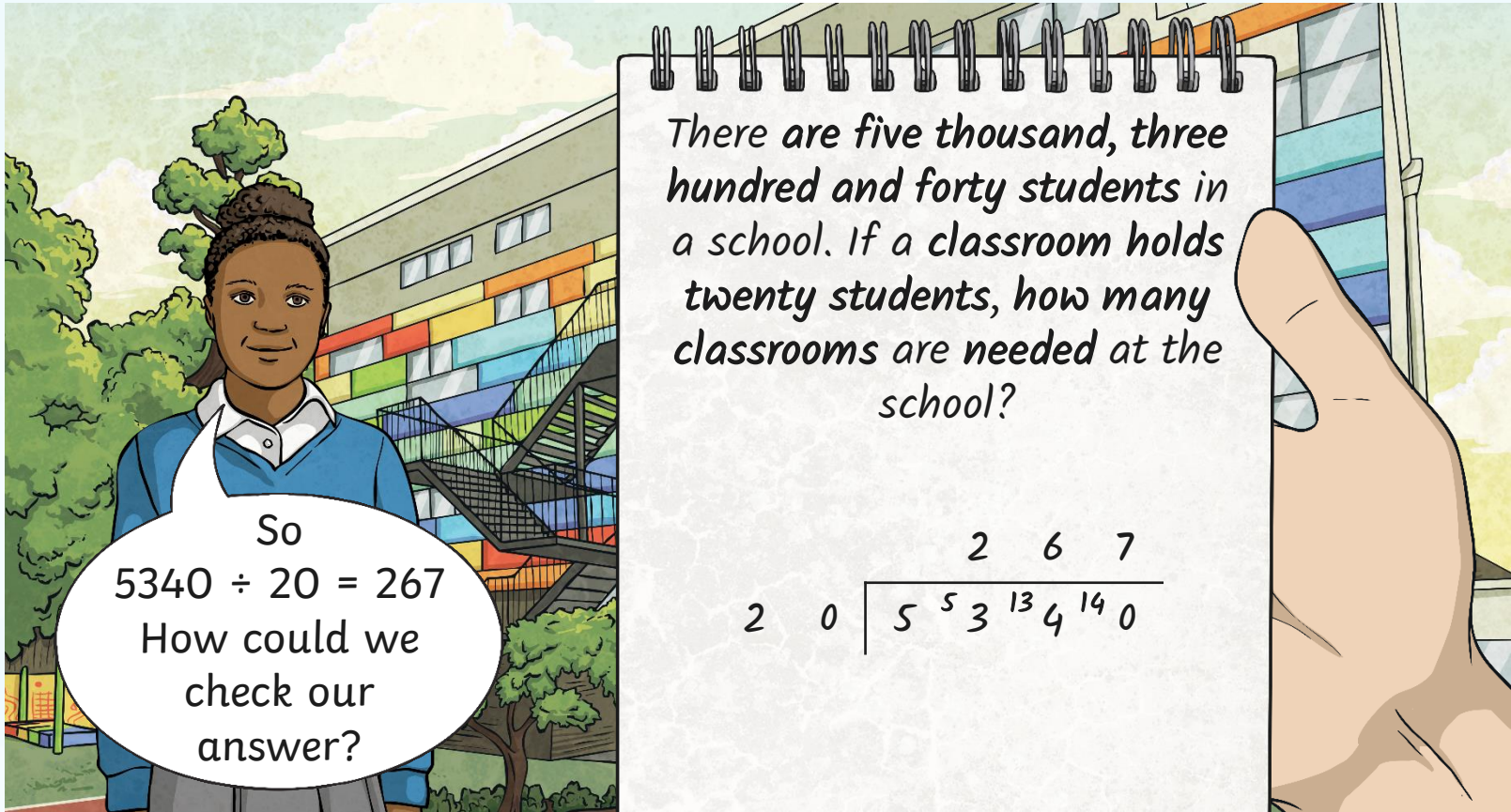
Short Division Reasoning 1a

Read this reasoning question carefully.



Short Division Reasoning 1a

Now we are ready to apply our learning to solve the problem:



Short Division Reasoning 1b



Working with a partner, use your reasoning skills to solve the first question on your Short Division Talk Partner Activity Sheet.

A cartoon illustration of a young man with brown hair, wearing a yellow hoodie, holding a green pen. He is holding up a piece of white paper with a smiley face at the top. The paper contains a math problem and a partial long division calculation. A speech bubble from the boy contains a solution and a question about checking the answer. The background shows a brick building and a blue sky with clouds.

So
 $7884 \div 12 = 657$
How could we
check our
answer?

A factory makes 7884 wax
crayons. Wax crayons come
in packs of 12. How many
packs can the factory make?

$$\begin{array}{r} 657 \\ 12 \overline{) 7884} \end{array}$$

Short Division Reasoning 2a

Read this reasoning question carefully.

A chocolatier sells truffles in bags of 11. How many bags can be made from 8289 truffles?

Will there be any truffles unused?

$$\begin{array}{r} 753 \text{ r}6 \\ 11 \overline{) 8289} \end{array}$$

First, let's highlight all the numbers in the question. A division problem like this is a long division problem. We can use a long division problem to solve this. We have 8289 truffles and we want to divide them into bags of 11 truffles each. The answer is 753 bags with a remainder of 6.

Short Division Reasoning 2b



Working with a partner, use your reasoning skills to solve the second question on your Short Division Talk Partner Activity Sheet.

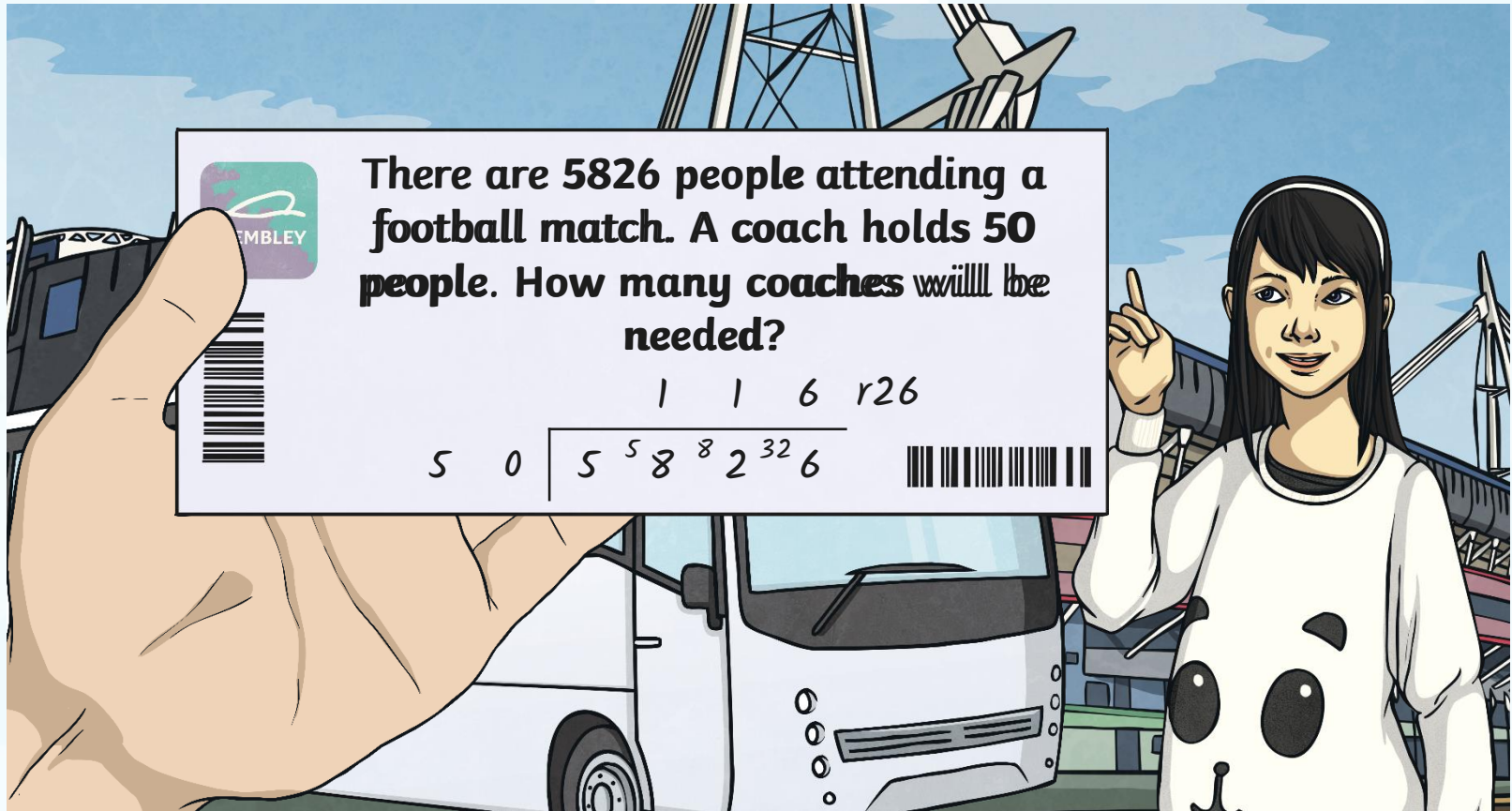
So
 $7564 \div 11 = 687 \text{ r}7$
How could we check our answer?

A company produces tennis balls. Each pack contains 11 balls. How many packs can be made from 7564 balls?
Are there any tennis balls remaining?

$$\begin{array}{r} 687 \text{ r}7 \\ 11 \overline{) 7564} \end{array}$$

Short Division Reasoning 3a

Read this reasoning question carefully.



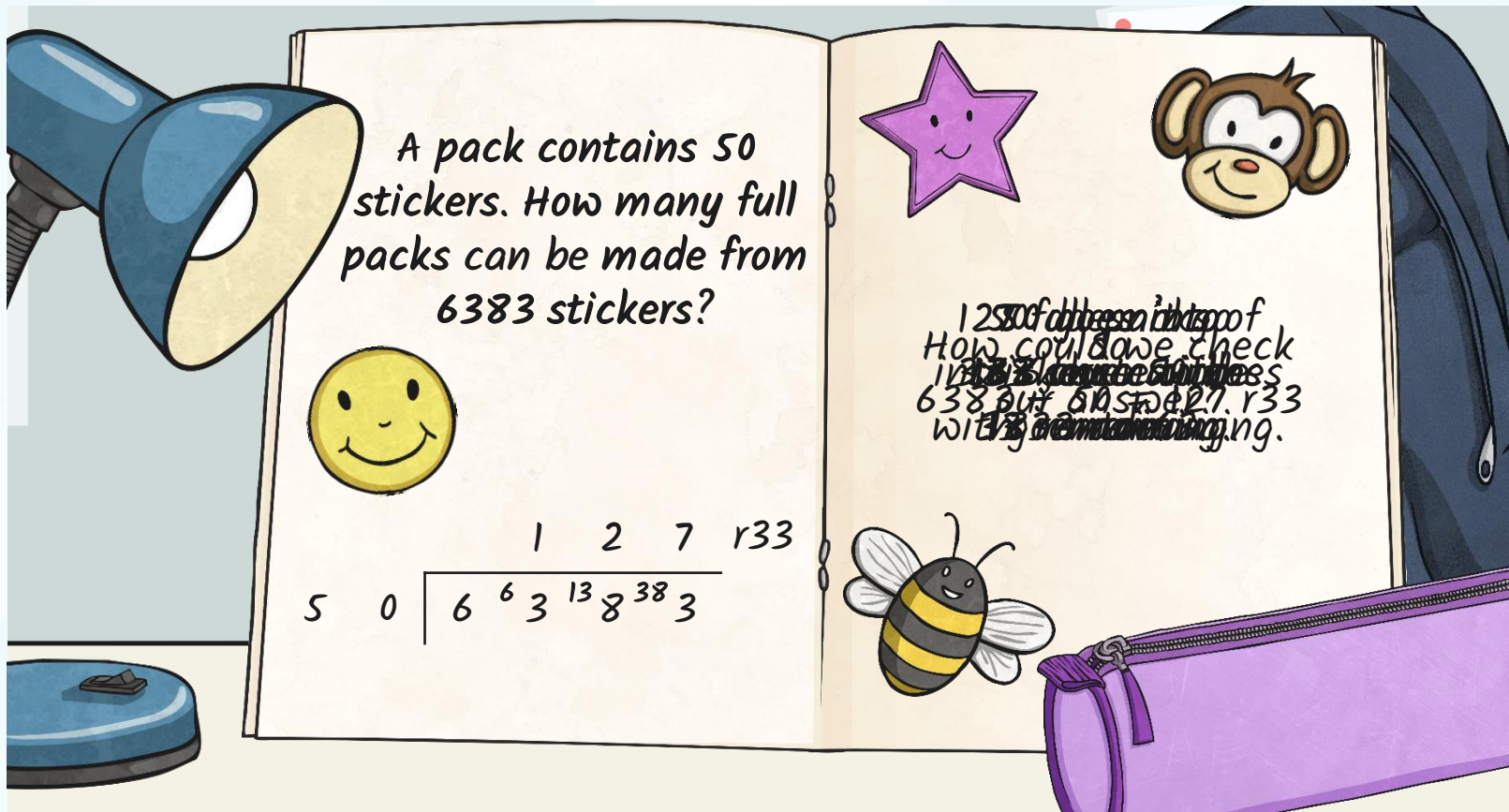
There are 5826 people attending a football match. A coach holds 50 people. How many coaches will be needed?

$$\begin{array}{r} 116 \text{ r}26 \\ 50 \overline{) 5826} \\ \underline{50} \\ 82 \\ \underline{50} \\ 326 \\ \underline{300} \\ 26 \end{array}$$

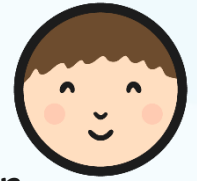
Short Division Reasoning 3b



Working with a partner, use your reasoning skills to solve the third question on your Short Division Talk Partner Activity Sheet.



Reasoning Practice



Have a go at independently solving the reasoning questions on your Short Division Independent Activity Sheet.

Independent Activity

I can solve reasoning questions using the formal method of short division.

Solve these reasoning questions. Choose the challenge best for you.

★	★★	★★★
A biscuit factory has made 900 biscuits. The biscuits are packed into boxes of 12 biscuits. How many boxes can be made? _____ boxes.	A wedding cake contains 4875 grams of flour. The cake is cut into 15 sections. How much flour is in each section? Each section contains _____ grams of flour.	Rufus raises £6846 for charity. He shares the money equally between his 12 chosen charities. How much does each charity receive? Each charity receives _____.
A bakery sells cupcakes _____ of 15. How many _____	If the shoelace attached to a conker is made from 11cm of _____ how many shoelaces can _____	Tarquin's reading book has 4735 pages. Can Taquin read 11 pages every night? Explain your answer.

Reasoning Answers



Line 1

★	★★	★★★
<p>A biscuit factory has made 900 biscuits. The biscuits are packed into boxes of 12 biscuits. How many boxes can be made?</p> <p><u>75</u> boxes</p>	<p>A wedding cake contains 4875 grams of flour. The cake is cut into 15 sections. How much flour is in each section?</p> <p>Each section contains <u>325</u> grams of flour.</p>	<p>Rufus raises £6846 for charity. He shares the money equally between his 12 chosen charities. How much does each charity receive?</p> <p>Each charity receives <u>£570.50</u>.</p>

Reasoning Answers



Line 2

★	★★	★★★
<p>A bakery sells cupcakes in boxes of 15. How many boxes can be made from 936 cupcakes? Are there any cupcakes remaining?</p> <p><u>62</u> boxes <u>6</u> cupcakes remaining.</p>	<p>If the shoelace attached to a conker is made from 11cm of lace, how many shoelaces can be made from 8375cm of lace? How much lace is remaining?</p> <p><u>761</u> shoelaces <u>4</u> cm of lace remaining.</p>	<p>Tarquin's reading book has 4735 pages. Can Tarquin read 11 pages every night? Explain your answer.</p> <p><i>No – for 430 days, he can read 11 pages a night and for one night, he will read five pages.</i></p>

Reasoning Answers



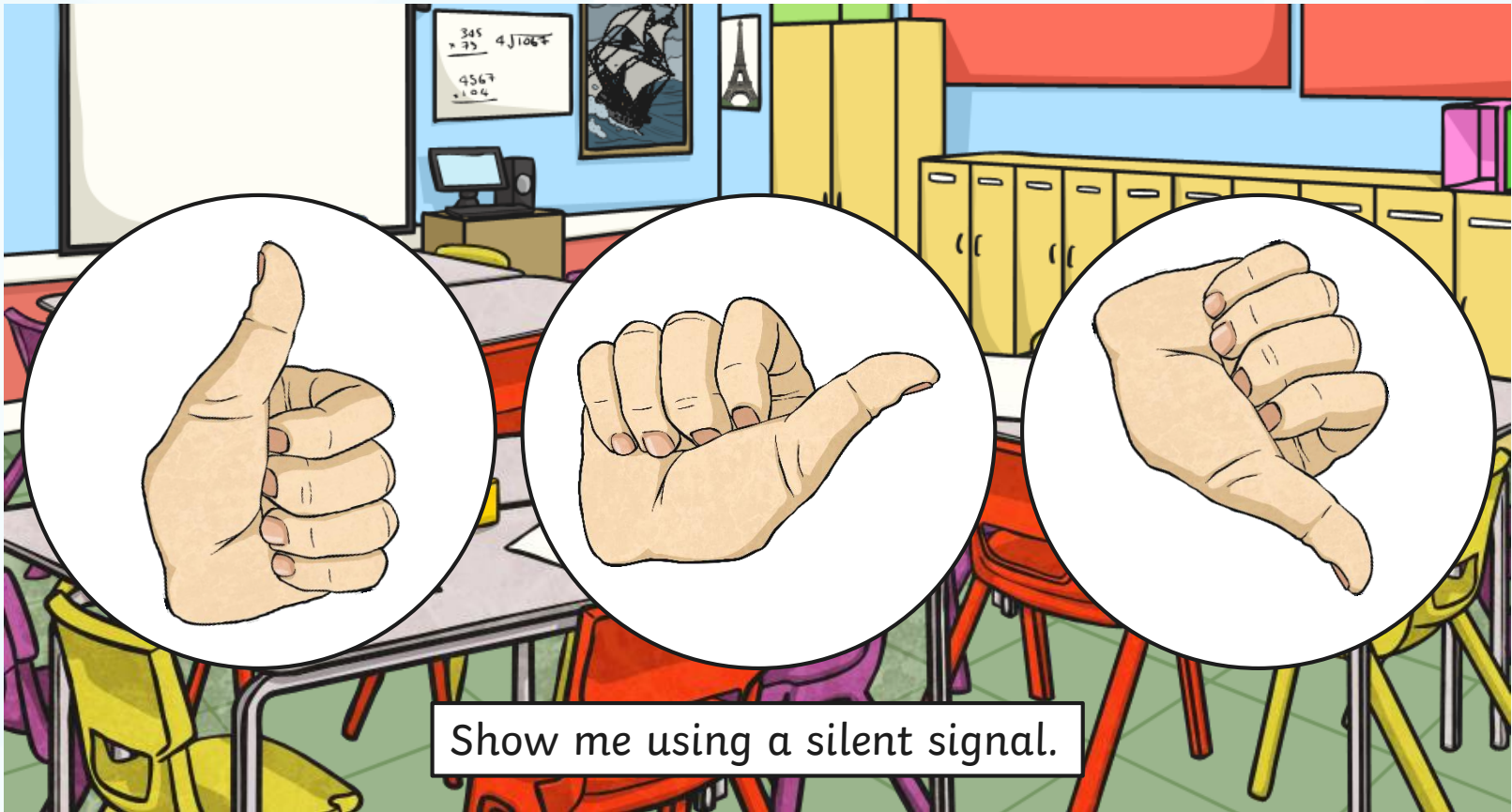
Line 3

★	★★	★★★
<p>A box holds 12 CDs. How many boxes are needed for 558 CDs? <u>47</u> boxes</p>	<p>Eggs are sold in boxes of 12. If a store has 4893 eggs, how many full boxes can be made? <u>407</u> boxes</p>	<p>There are 472 adults and 227 children going to London on coaches. Each coach seats 35 people. How many coaches are needed? <u>20</u> coaches</p>

Reasoning Answers



How confident do you feel about using short division to solve reasoning questions?



Show me using a silent signal.

Aim



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