Maths

Addition, Subtraction, Multiplication and Division

Common Factors, Common Multiples and Prime Numbers Reasoning

Aim

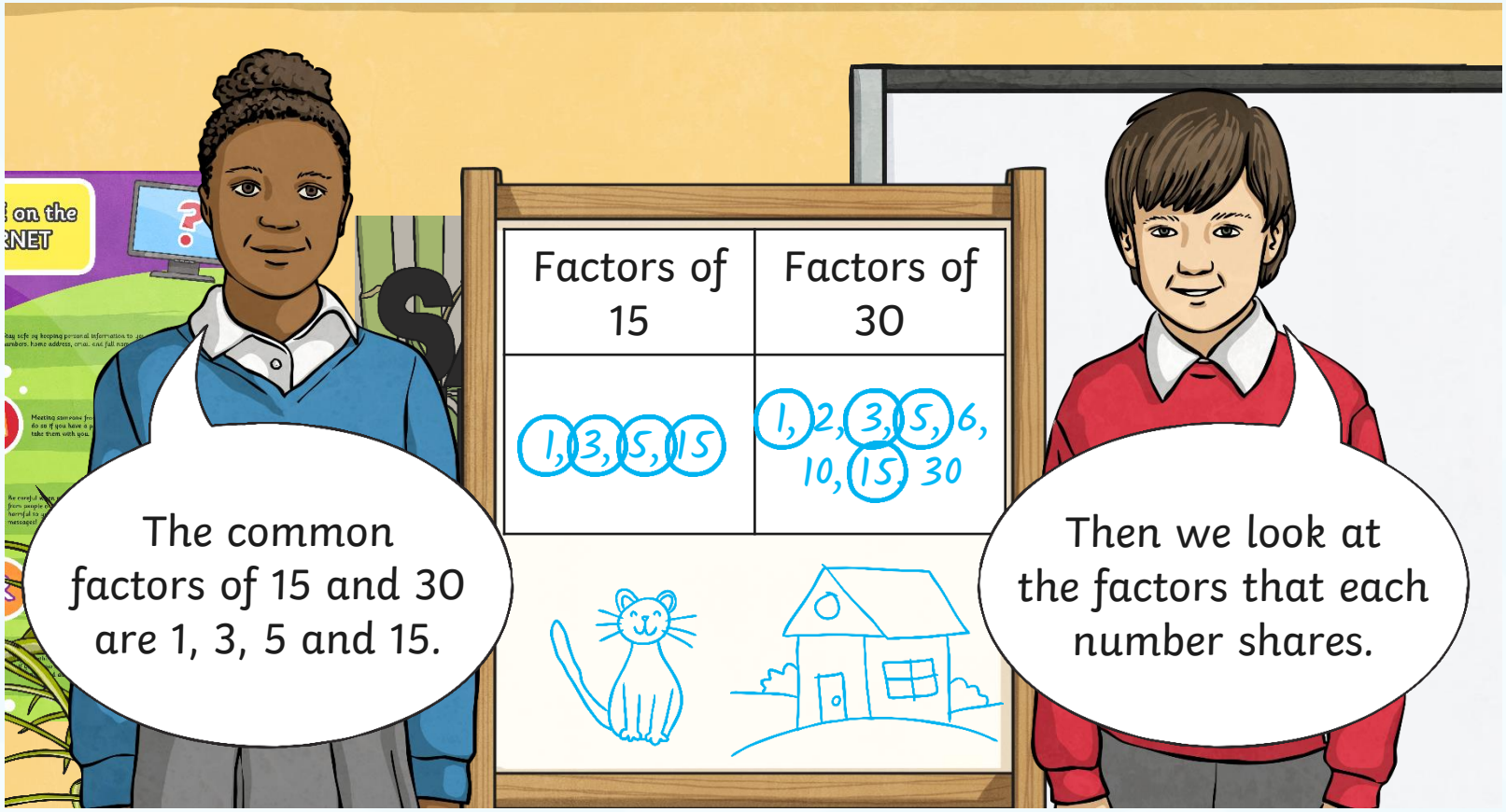
- I can solve reasoning questions using my knowledge of common factors, common multiples and prime numbers.

Success Criteria

- I know what the term ‘common factor’ means.
- I know what the term ‘common multiple’ means.
- I know what the term ‘prime number’ means.
- I can use mathematical language to explain solutions to problems.

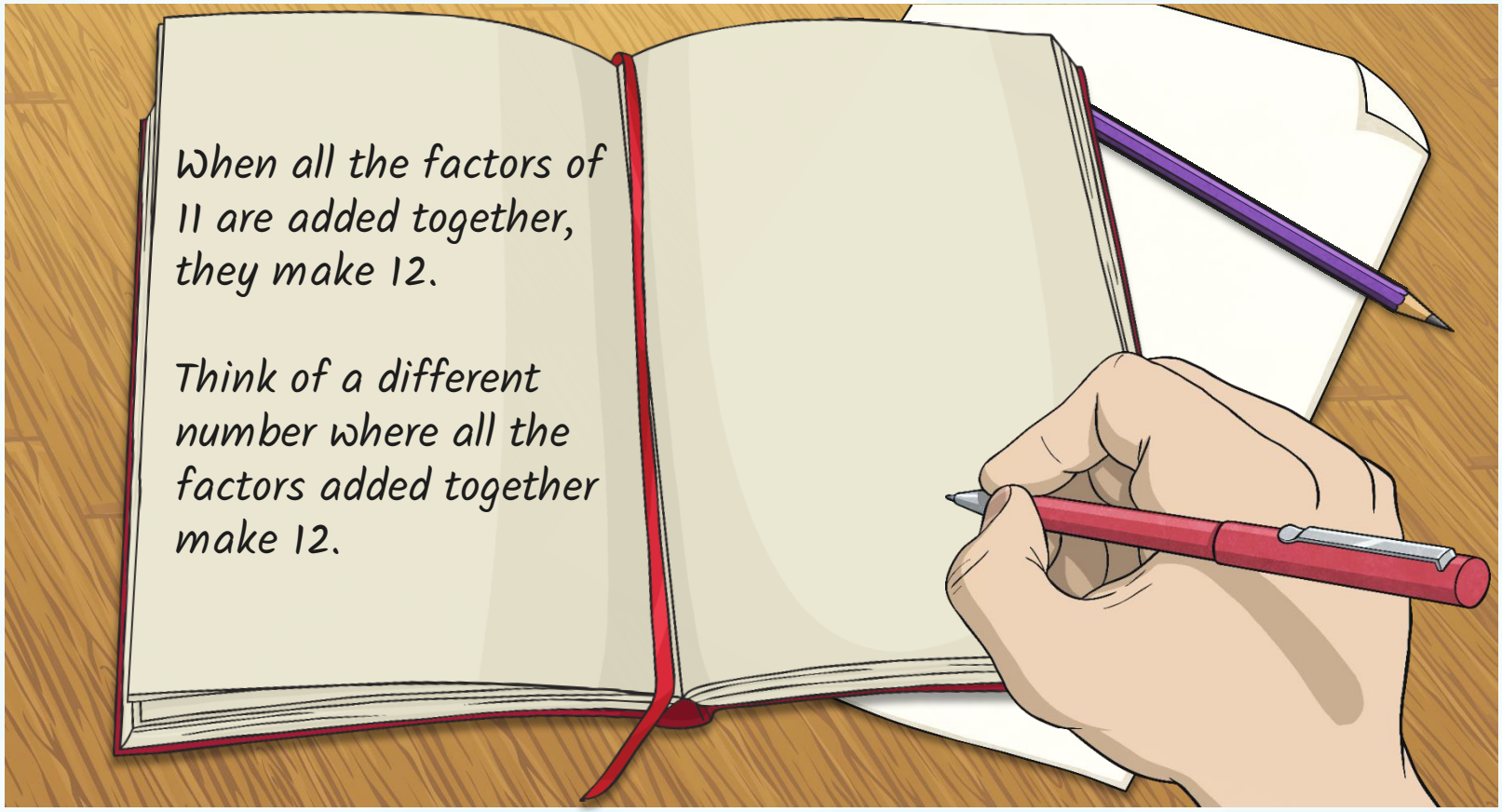
Common Factors Reasoning 1a

What is a common factor?



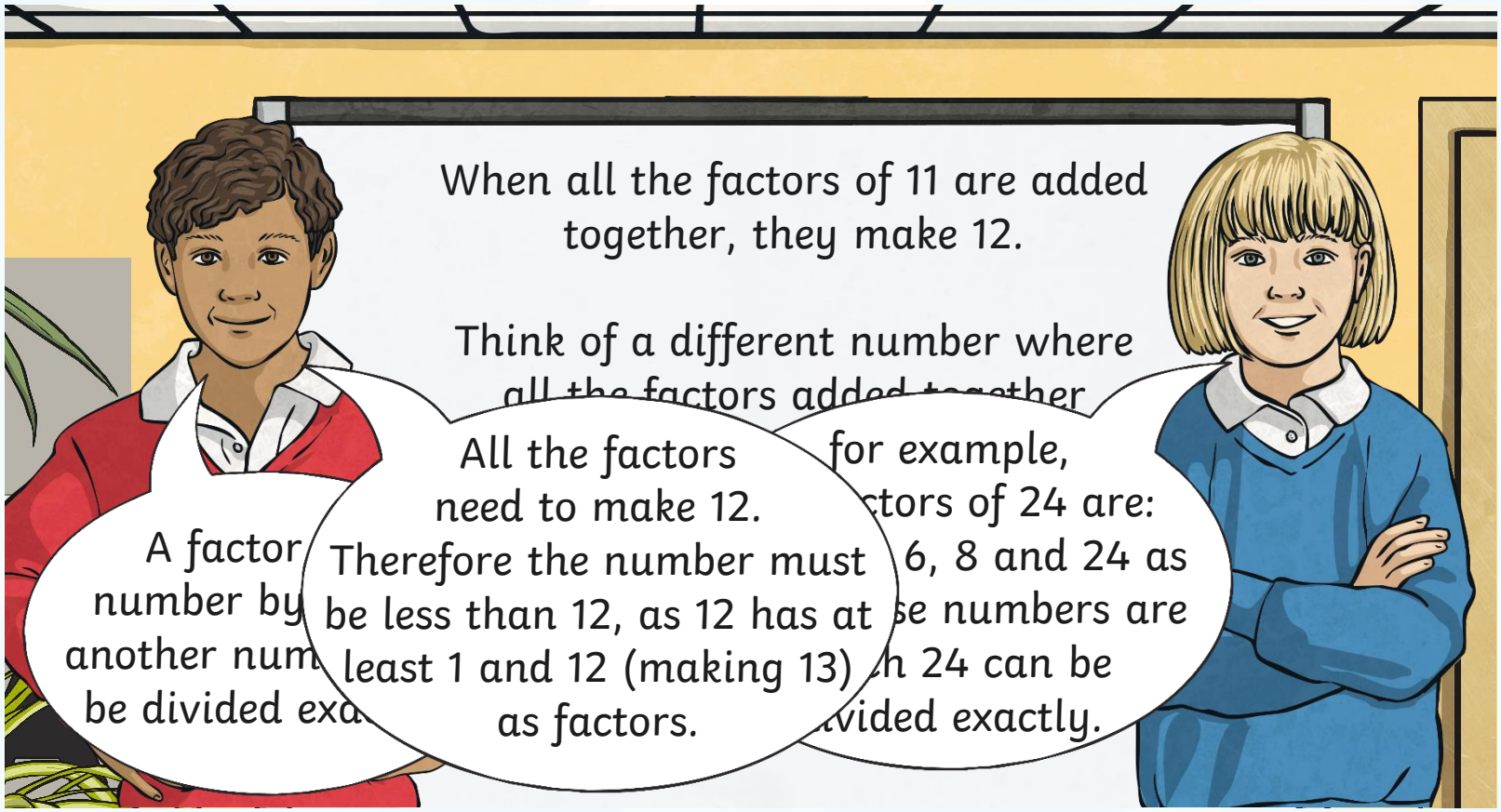
Common Factors Reasoning 1a

Read this reasoning question carefully.



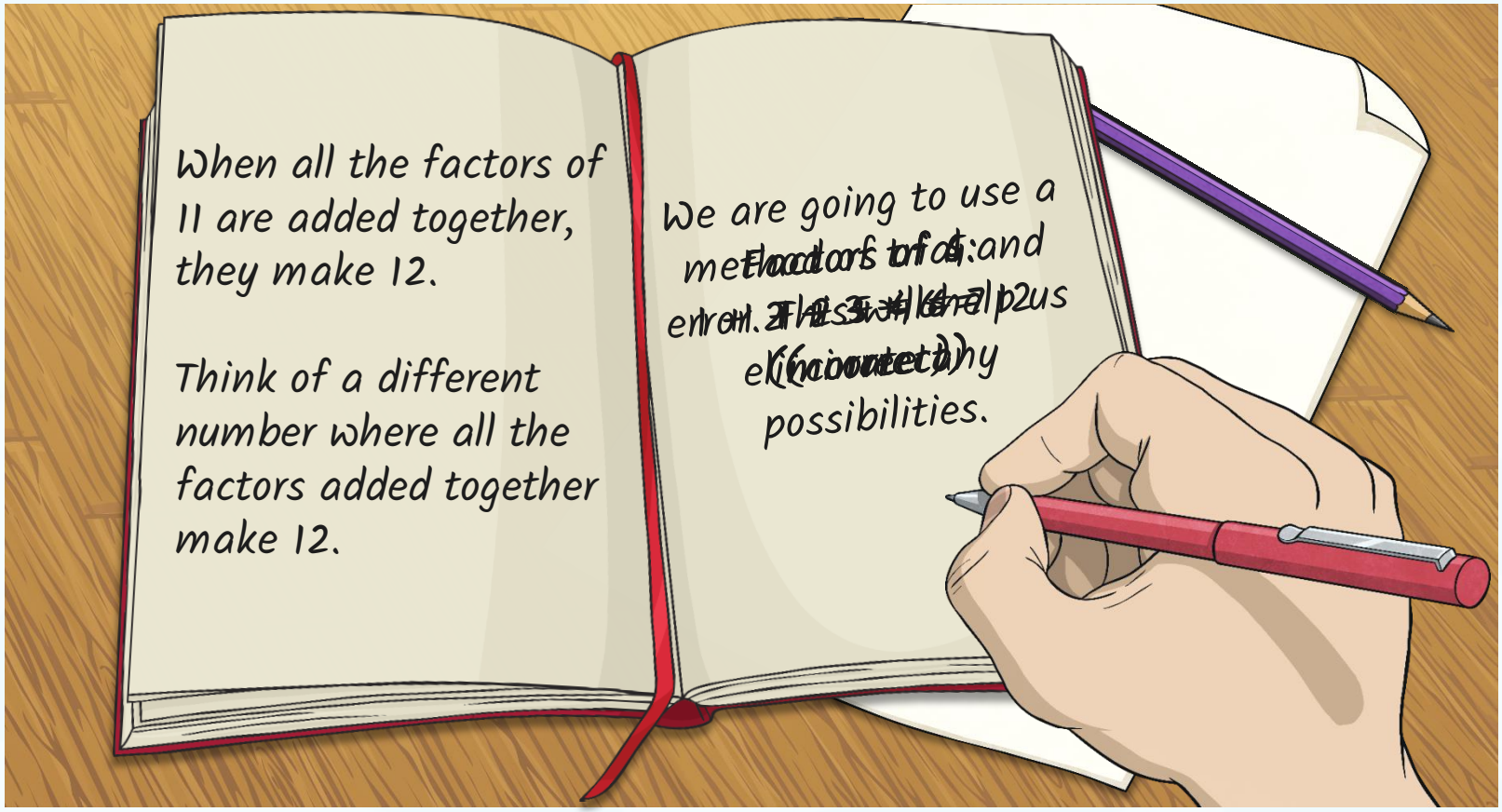
Common Factors Reasoning 1a

Next, let's think about what we already know in order to help us answer the question correctly.



Common Factors Reasoning 1a

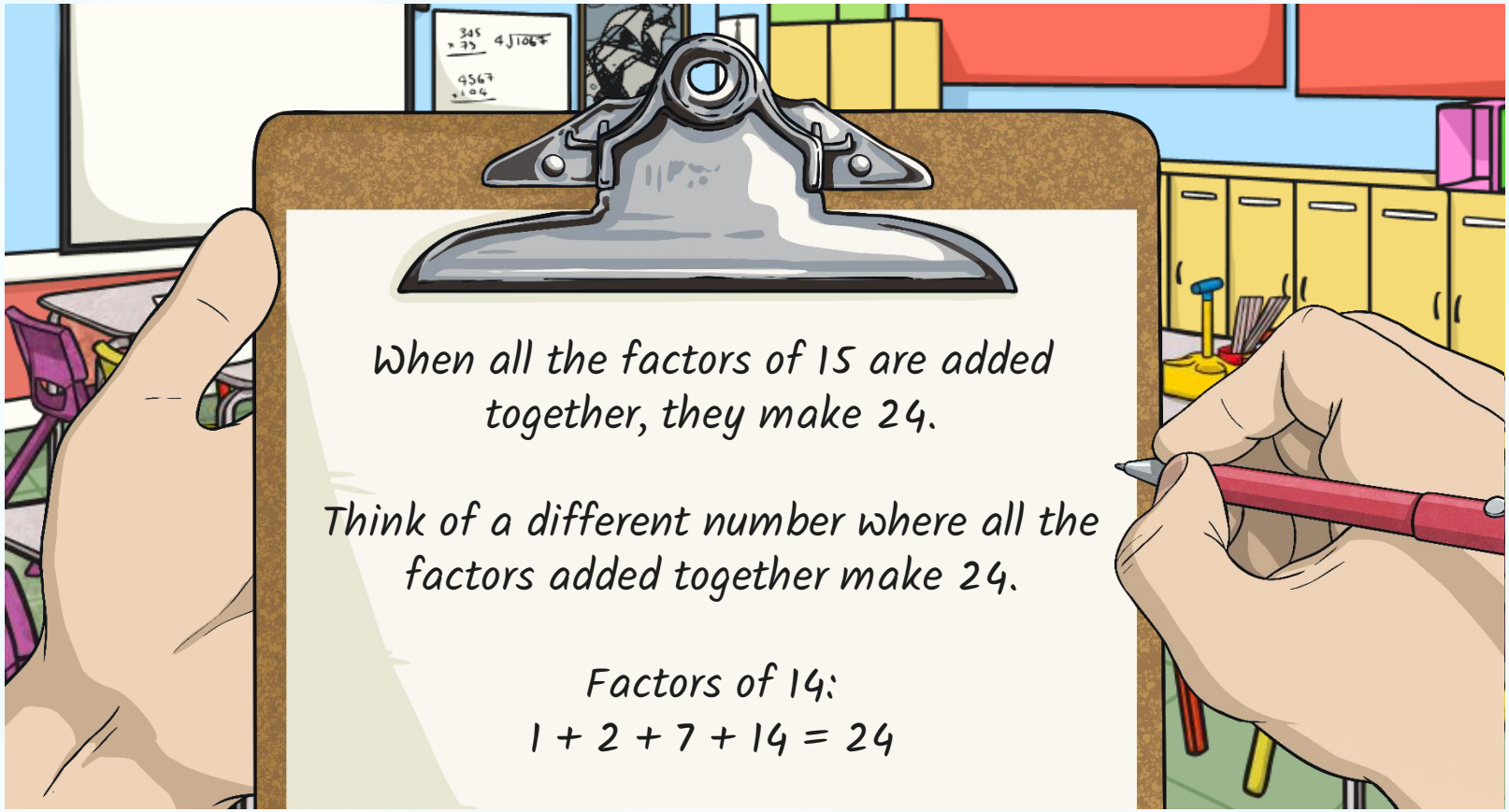
Now we are reading Lily's thoughts and working to solve the problem.



Common Factors Reasoning 1b

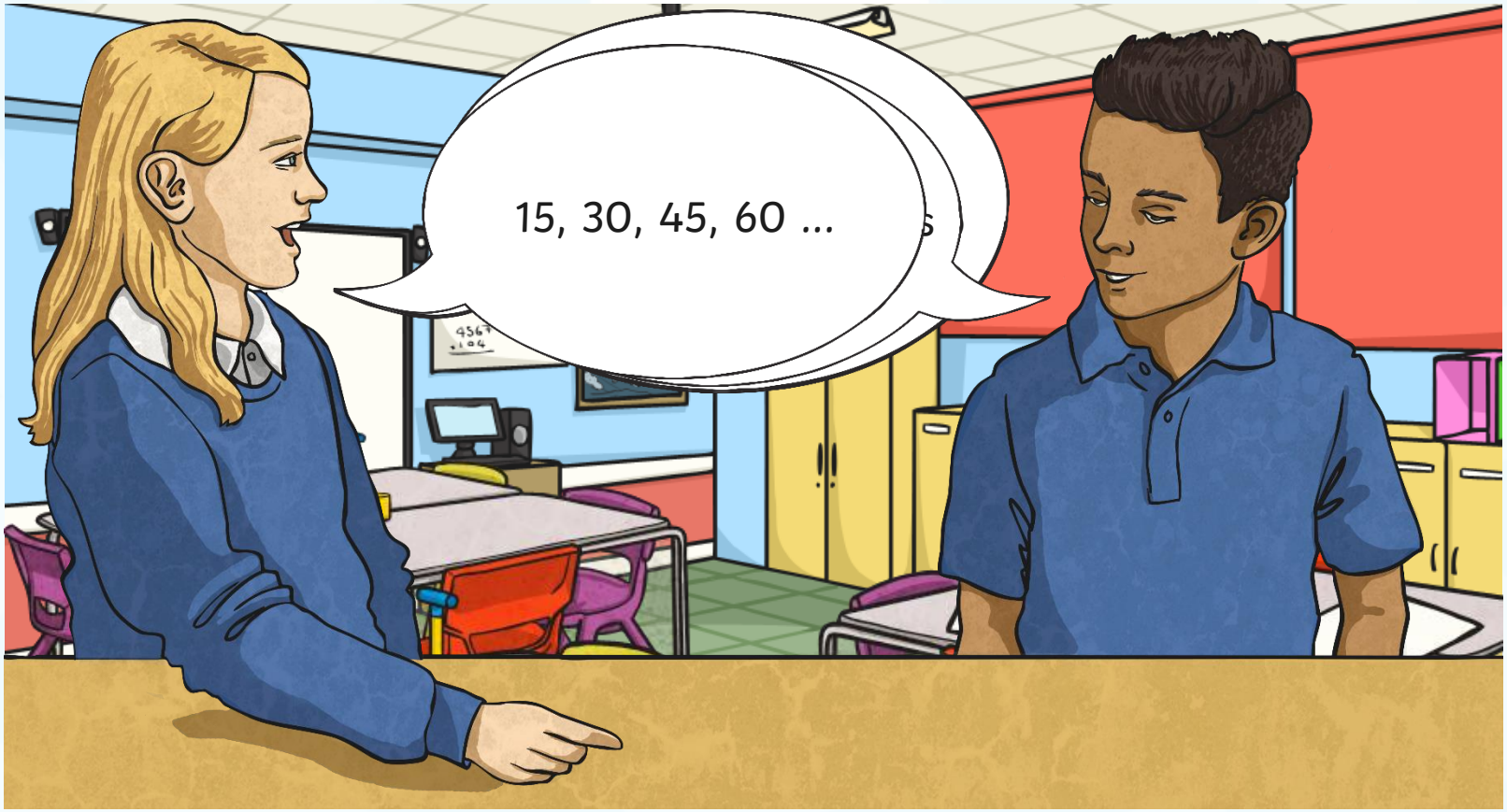
Working with a partner, use your reasoning skills to solve the first question on your Talk Partner Activity Sheet.

Answers



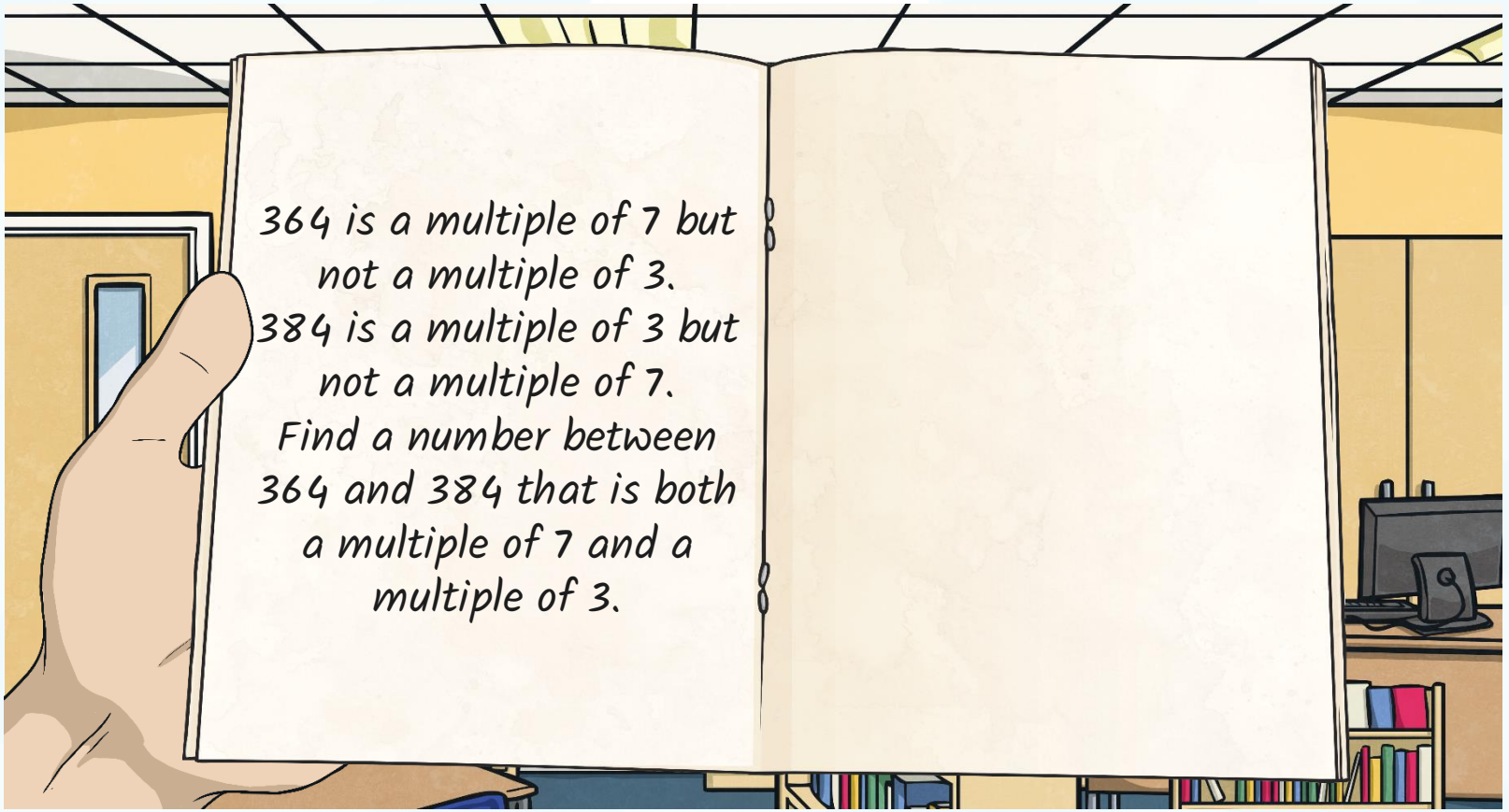
Common Multiples Reasoning 2a

What does the term ‘multiple’ mean?



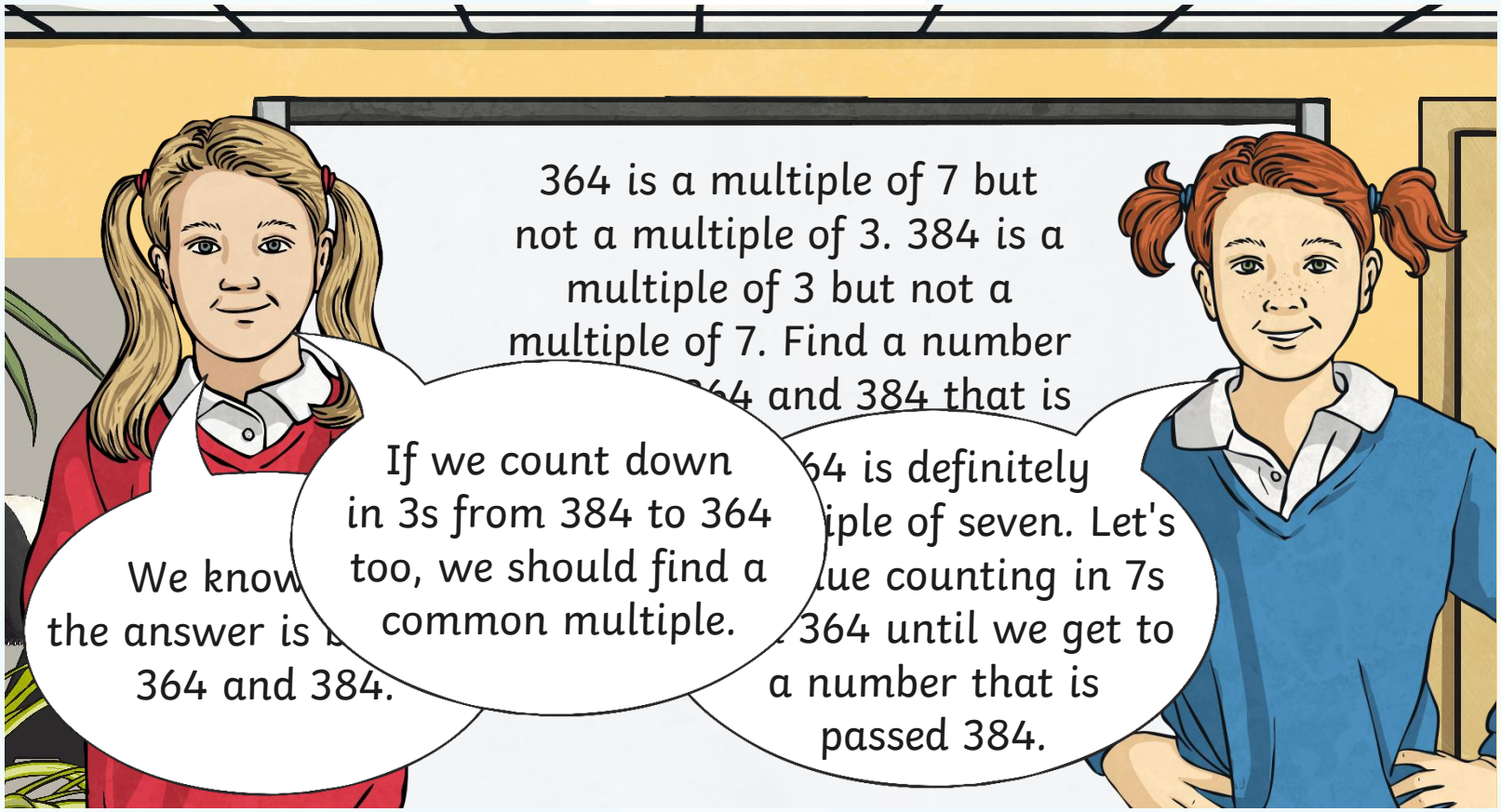
Common Multiples Reasoning 2a

Read this reasoning question carefully.



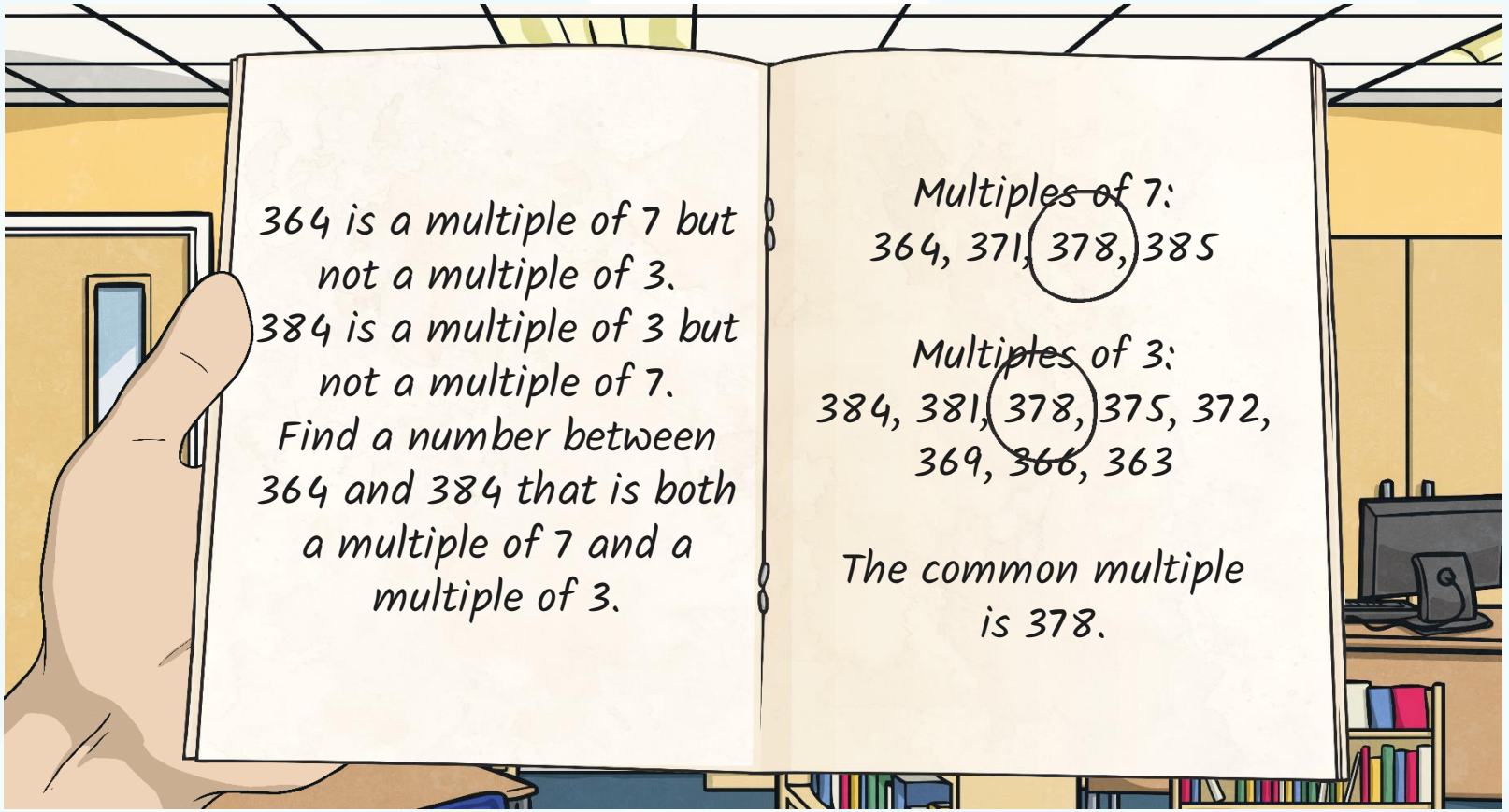
Common Multiples Reasoning 2a

Next, let's think about what we already know in order to help us answer the question correctly.



Common Multiples Reasoning 2a

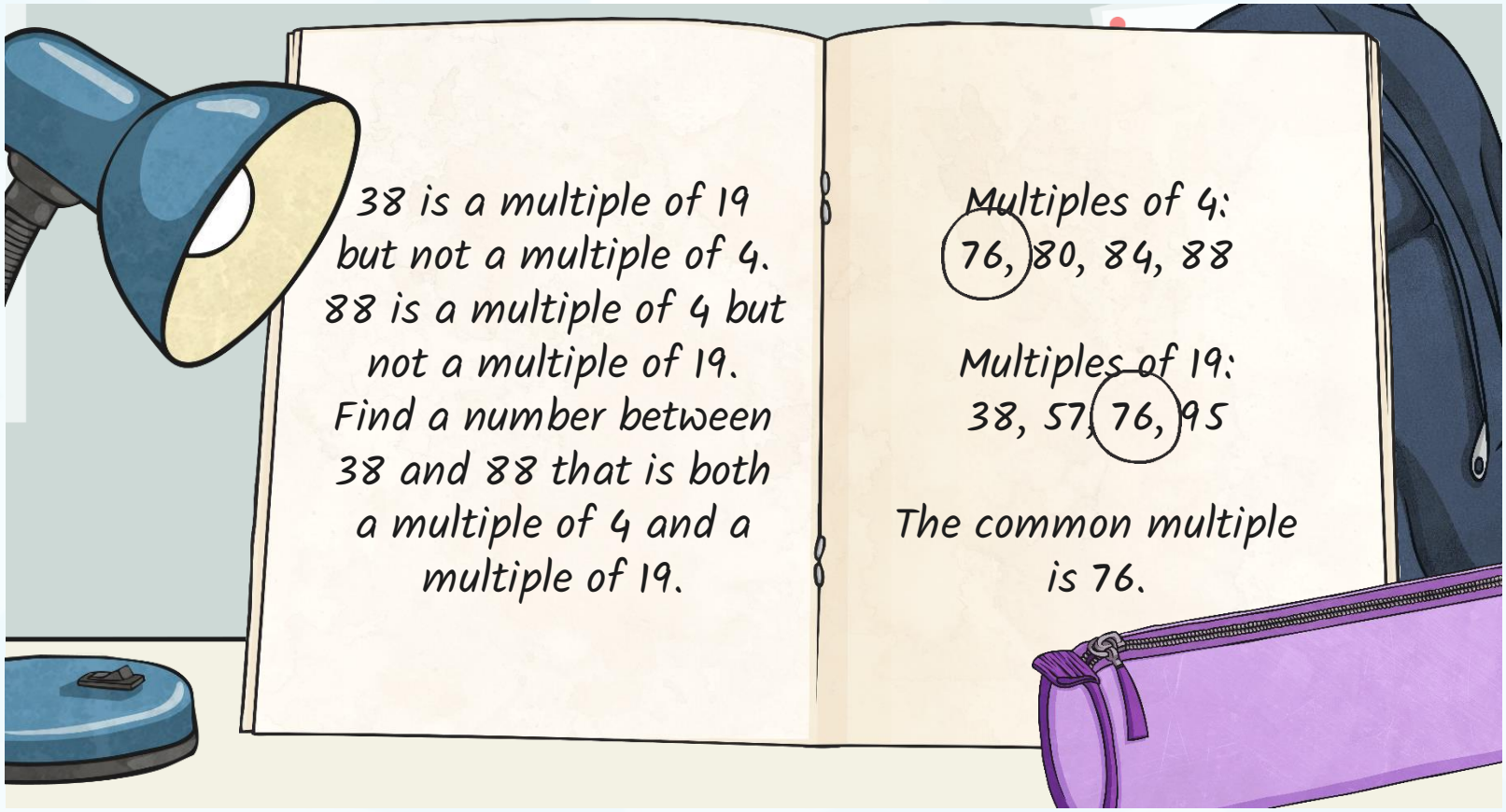
Finally, let's check our answer to make sure we have answered the question fully.
Now we are ready to apply our learning to solve the problem.



Common Multiples Reasoning 2b

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

Answers

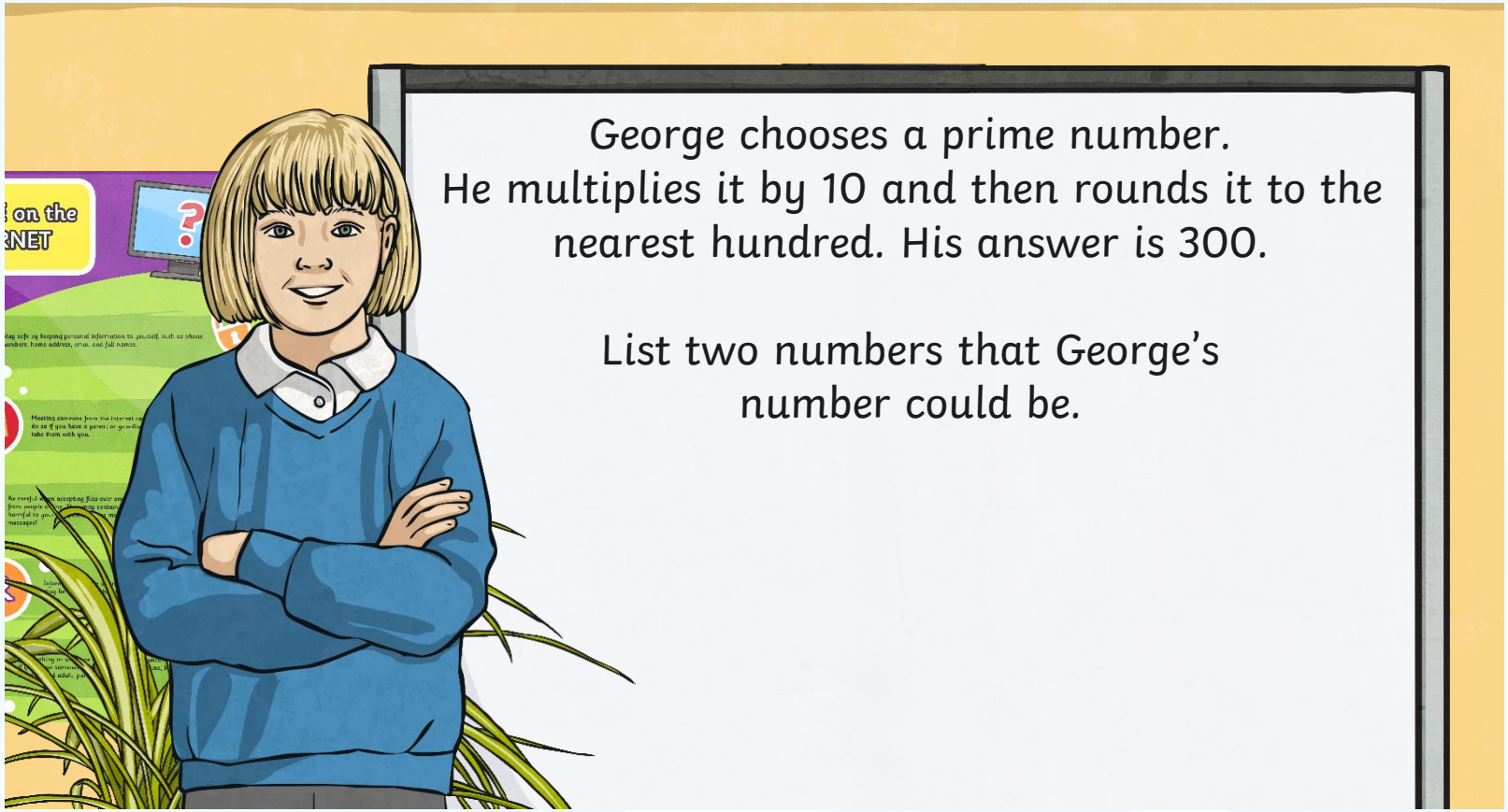


Prime Numbers Reasoning 3a

What does the term ‘prime number’ mean?

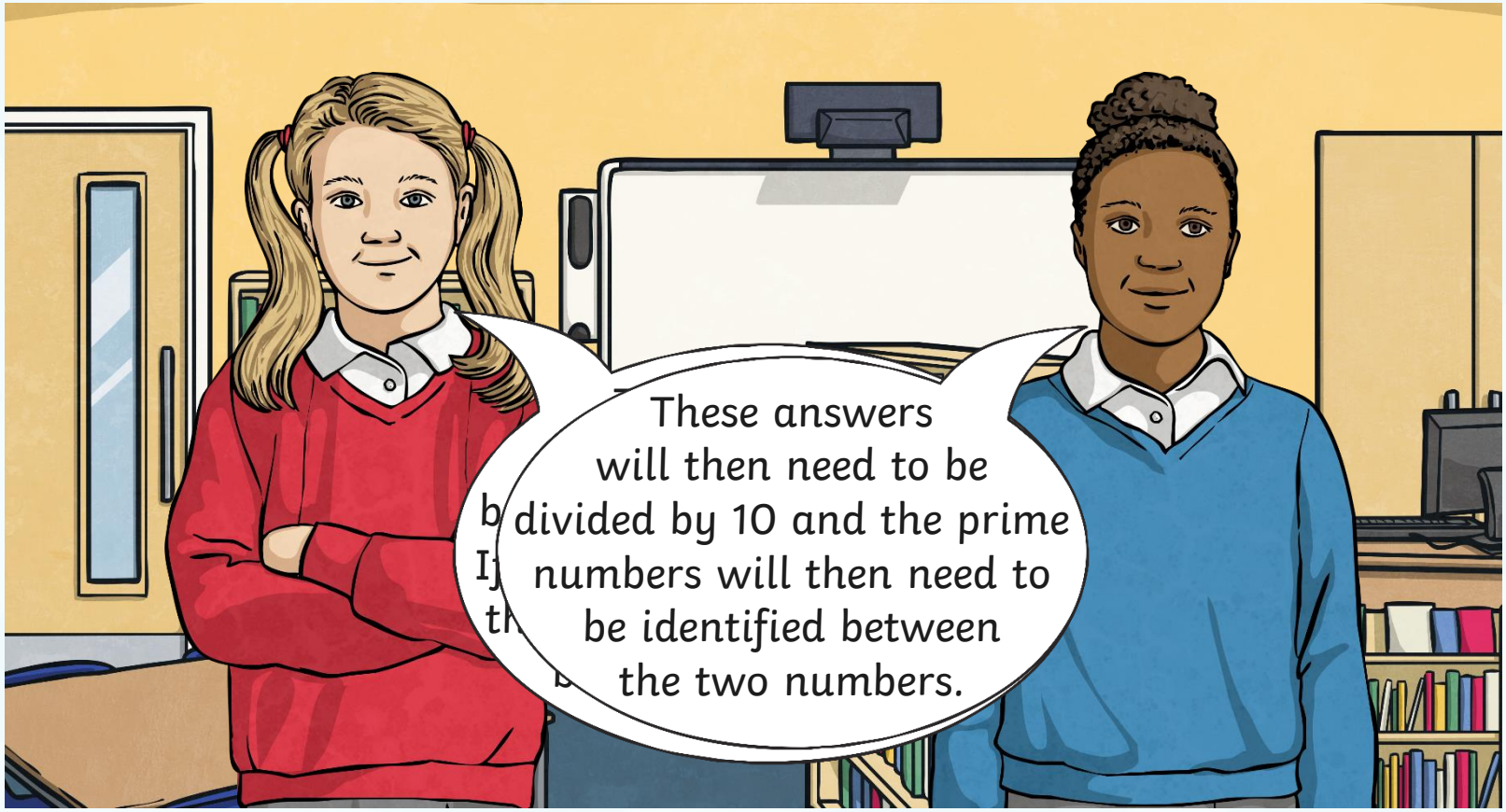
Prime Numbers Reasoning 3a

Read this reasoning question carefully.



Prime Numbers Reasoning 3a

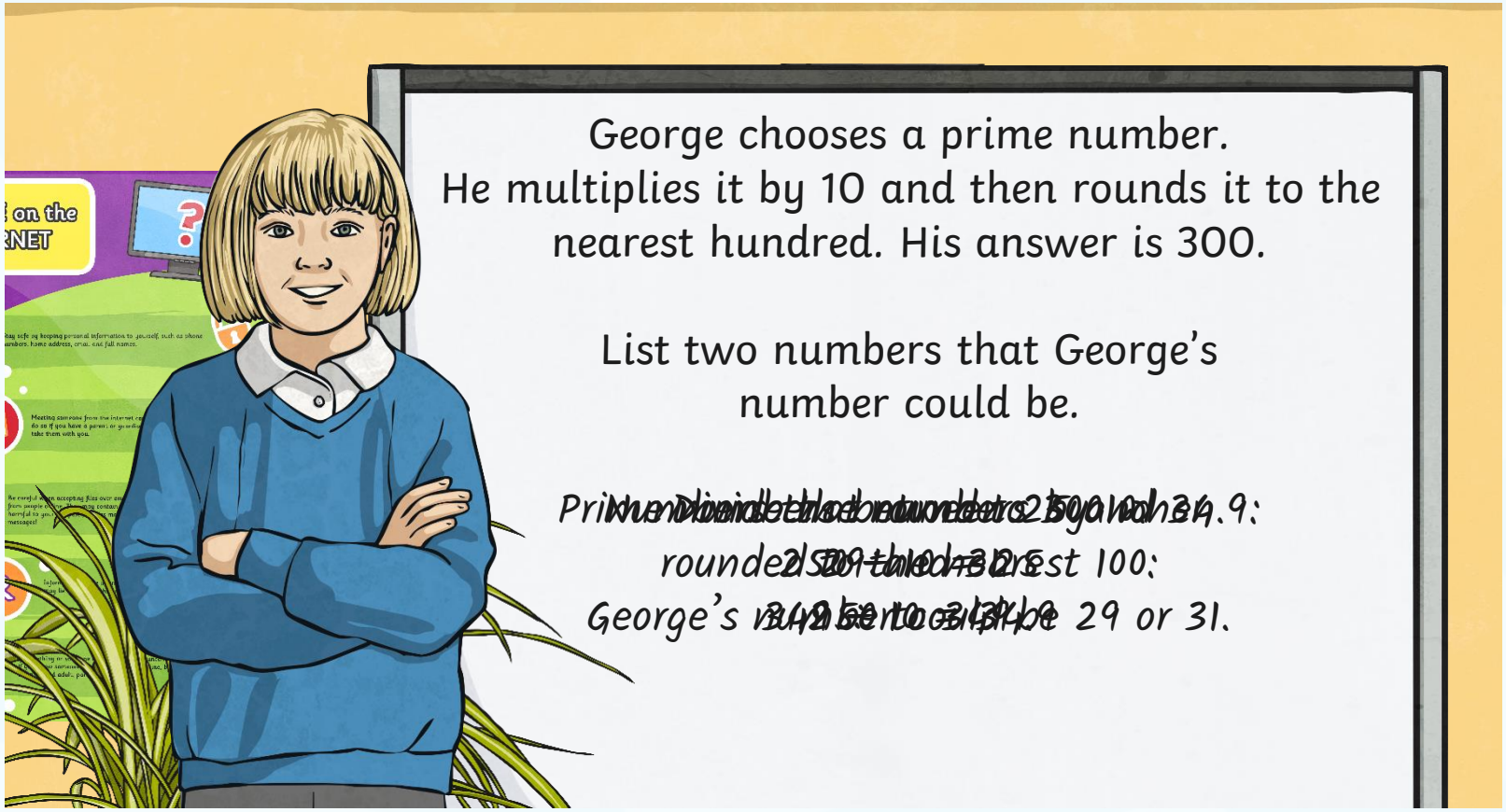
Next, let's think about what we already know in order to help us answer the question correctly.



Prime Numbers Reasoning 3a

Finally, let's check our answer with the information and key vocabulary in the question to make sure we have answered the question fully.

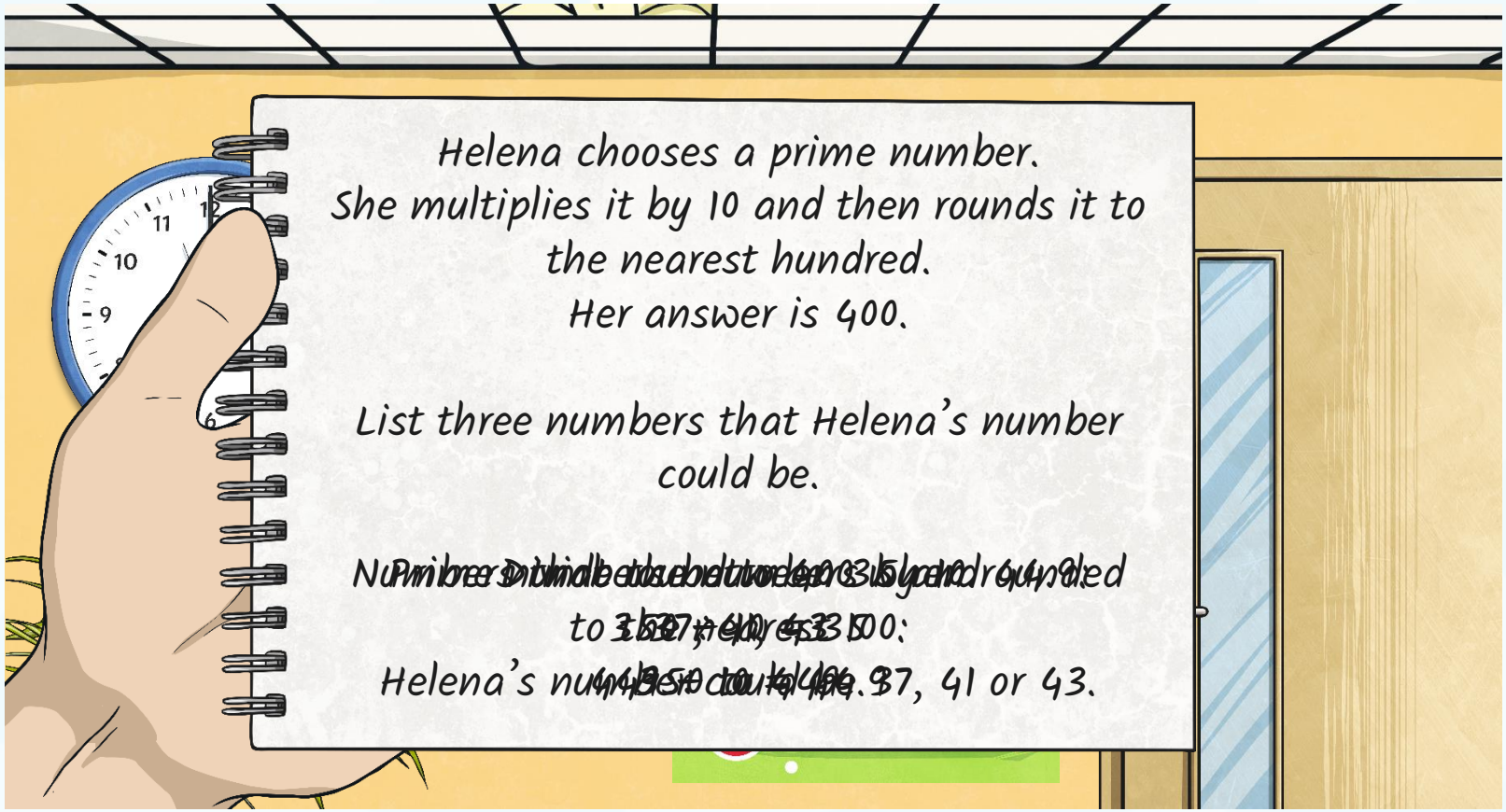
Now we are ready to apply our learning to solve the problem.



Prime Numbers Reasoning 3b

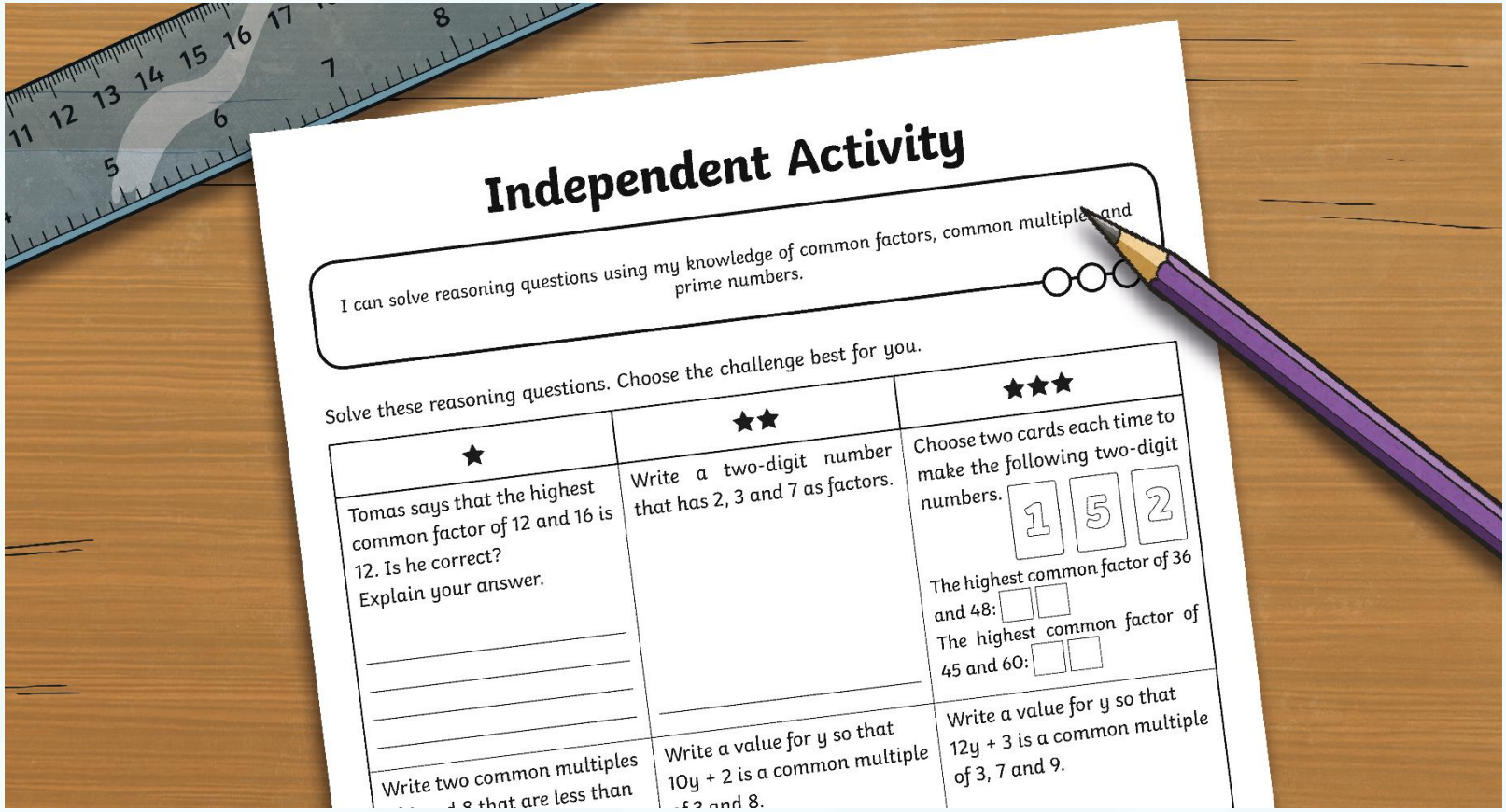
Working with a partner, use your reasoning skills to solve the third question on your Talk Partner Activity Sheet.

Answers



Reasoning Practice

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



Reasoning Answers

Line 1

★	★★	★★★
Tomas says that the highest common factor of 12 and 16 is 12. Is he correct? Explain your answer. *Tomas is incorrect. 12 is not a factor of 16. The highest common factor of 12 and 16 is four.*	Write a two-digit number that has 2, 3 and 7 as factors. *84*	Choose two cards each time to make the following two-digit numbers. (1, 5, 3) The highest common factor of 36 and 48: *12* The highest common factor of 45 and 60: *15*

Reasoning Answers

Line 2

★	★★	★★★
Write two common multiples of 3 and 8 that are less than 60. *24 and 48*	Write a value for y so that 10y + 2 is a common multiple of 3 and 8. *y = 7*	Write a value for y so that 12y + 3 is a common multiple of 3, 7 and 9. *y = 5*

Reasoning Answers

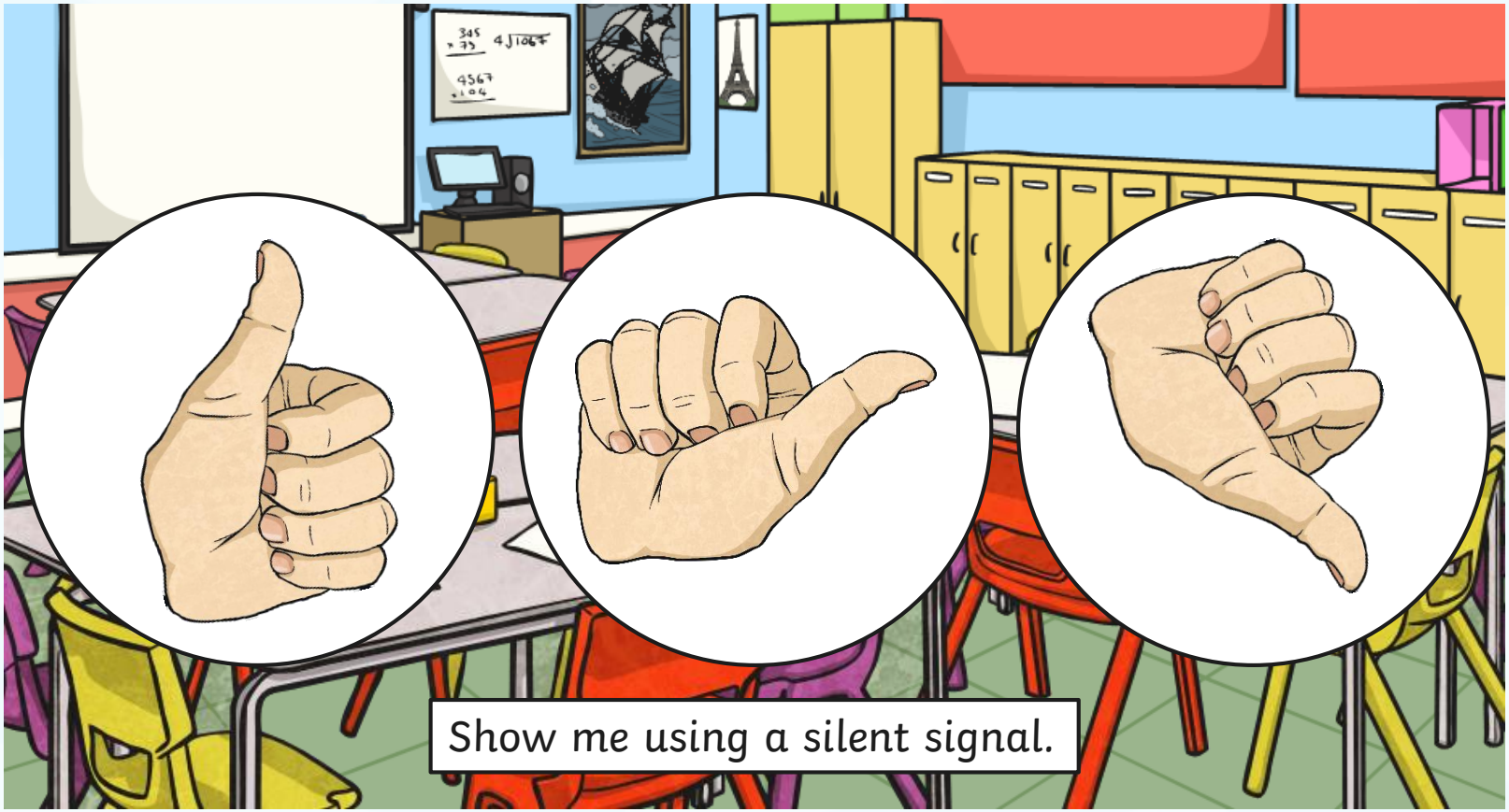
Line 3

★	★★	★★★
Johan thinks of two prime numbers. He adds them together to make 28. What could his numbers be? 5 and 23 11 and 17	Write three prime numbers that add together to make 87. 17, 29, 41	Write three prime numbers which multiply to make 1001. 7 × 11 × 13 = 1001

Reasoning Answers

Whole Class

How confident do you feel about solving reasoning questions about common multiples, common factors and prime numbers?



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