Disclaimer

We hope you find the information on our website and resources useful.

Animations

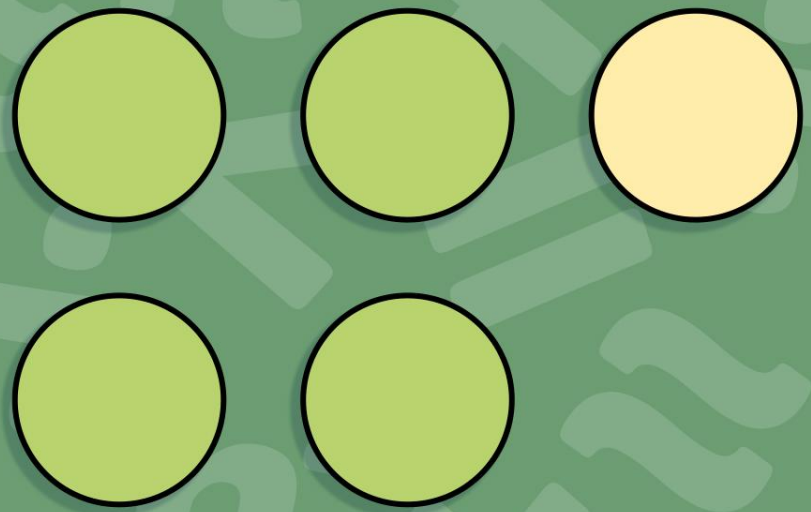
This resource has been designed with animations to make it as fun and engaging as possible. To view the content in the correct formatting, please view the PowerPoint in 'slide show mode'. This takes you from desktop to presentation mode. If you view the slides out of 'slide show mode', you may find that some of the text and images overlap each other and/or are difficult to read.

To enter slide show mode, go to the **slide show menu tab** and select either **from beginning or from current slide**.

Maths

Multiplication and Division

Prime Numbers



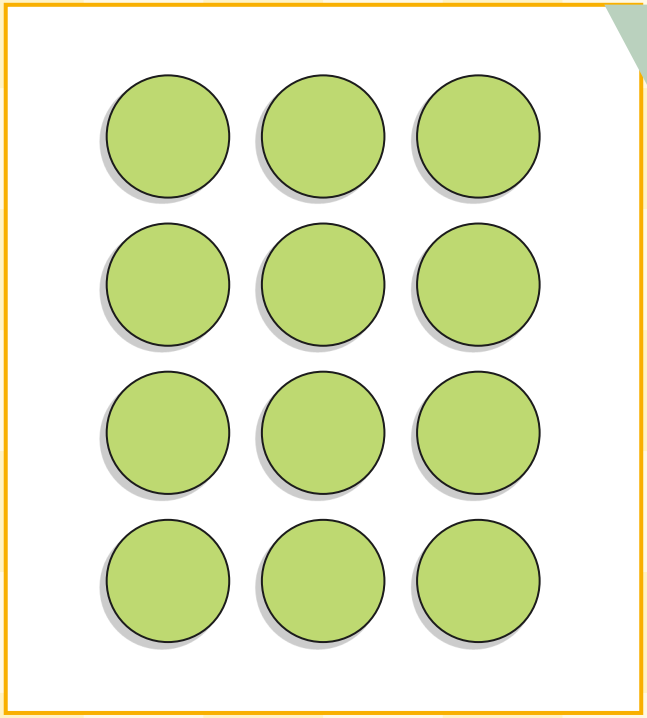
Aim

- To know if a number up to 100 is prime and recall prime numbers up to 19.

SuccessCriteria

- I can create arrays to prove my answers.
- I can find factors of numbers.
- I can explain the differences between prime and composite numbers.

Remember It



These counters have been arranged into a formation. What do we call this?

It is called an **array** .

Is there only one way of creating an array for 12? Are 3 and 4 the only factors for 12? What other calculations could you write?

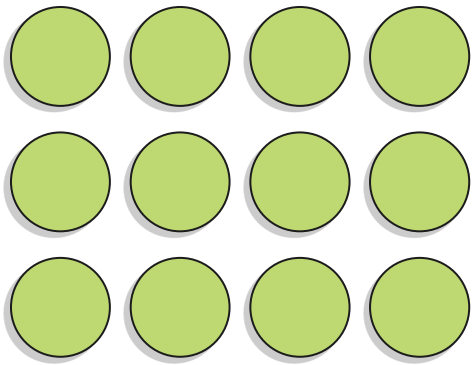
Which calculation is this representing?

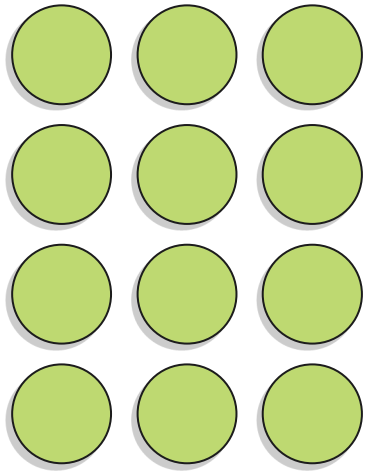
It is representing 3 × 4 or 4 × 3.
4 and 3 are factors of 12.

Arrays

There is only one way to create an array for the number 12.

Is this true? Discuss with a partner.



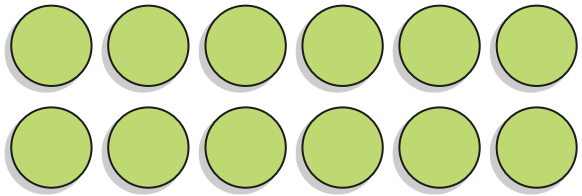


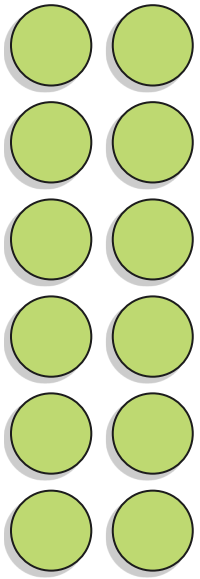
$3 \times 4 = 12$ or $4 \times 3 = 12$

Arrays

There is only one way to create an array for the number 12.

Is this true? Discuss with a partner.

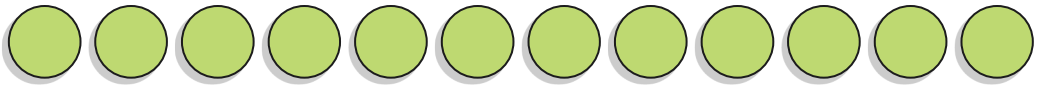




$2 \times 6 = 12$ or $6 \times 2 = 12$

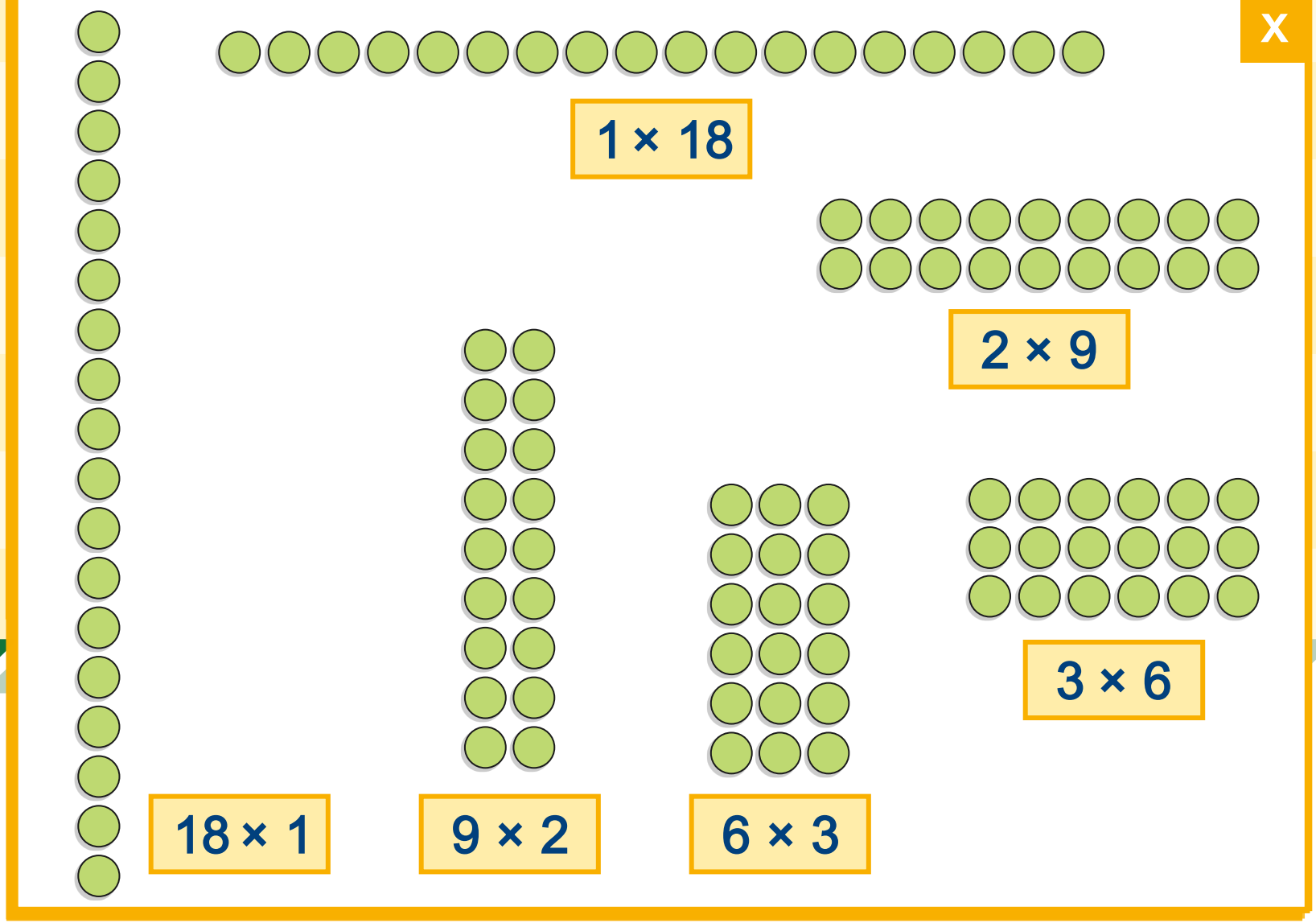
There is only one way to create an array for the number 12.

Is this true? Discuss with a partner.



$1 \times 12 = 12$ or $12 \times 1 = 12$

What Makes a Number Prime?



What Makes a Number Prime?

These numbers are prime!

Not Prime	Prime
6	5
18	7
24	11
	13

You can create arrays for these numbers in **more than one** way. This means that these numbers have **more than two** factors.

You can create arrays for these numbers in **only one** way. This means that these numbers have **only two** factors.

What Makes a Number Prime?

Prime numbers always have **exactly two** factors. These special numbers always have 1 and themselves as a factor!

For example:

5 is a **prime number** as the only factors that create 5 are 1 and 5. There are no other numbers that can be **multiplied** together to create the **product** of 5.

$1 \times 5 = 5$

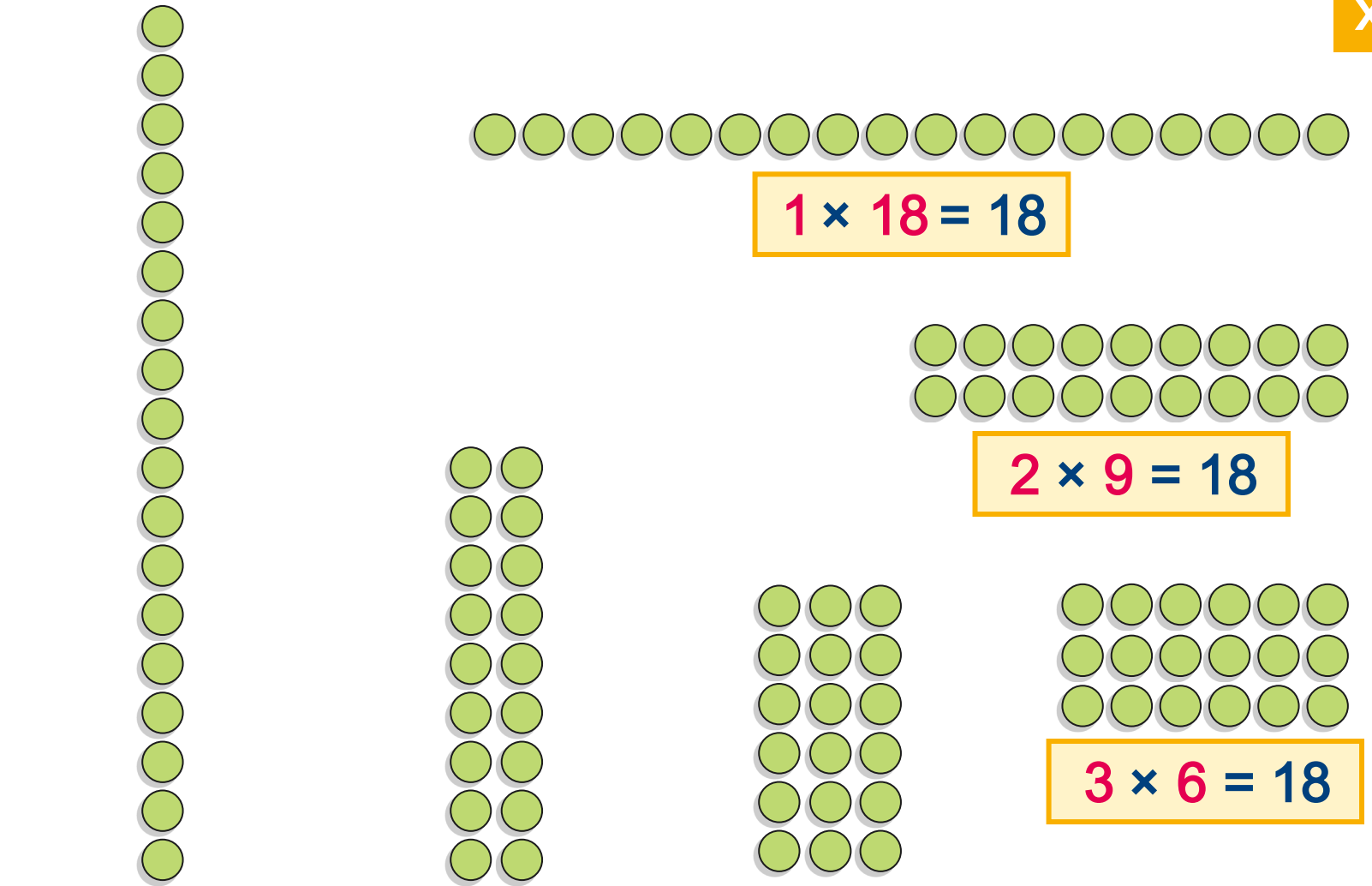
$5 \times 1 = 5$

What Makes a Number Composite?

These numbers are composite!

Composite	Prime
6	5
18	7
24	11
	13
You can create arrays for these numbers in **more than one** way. This means that these numbers have **more than two** factors.	You can create arrays for these numbers in **only one** way. This means that these numbers have **only two** factors.

What Makes a Number Composite?



Which statement is correct? Explain your reasoning.

1 is a prime number because it has 1 and itself as factors.

1 is not a prime number so it must be a composite number.

1 is neither a prime nor a composite number as it has only 1 factor.

Reasoning

1 is neither a prime nor a composite number as it has only 1 factor.

1 is different to all other numbers as it is neither a prime number nor a composite number. By building an array, you can prove that it has only 1 factor.

$1 \times 1 = 1$

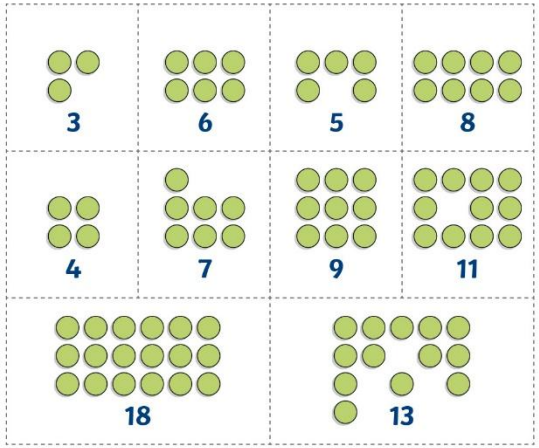
Prime Numbers

Prime Numbers

To know if a number up to 100 is prime and recall prime numbers up to 19.

Cut out the images of the arrays. Then sort them into the table to show if the arrays represent prime numbers or composite numbers.

Remember: if the array is incomplete, it is a prime number.



Create your own drawings of arrays for the numbers below and sort them into the table.

2	10	12	14	15	16	17

Prime Numbers

umber up to 100 is prime and recall prime numbers up to 19.

the correct place on the table.
each number to prove your answer.

mbers	Composite Numbers

3	6	19	12
10	13	16	7

Prime Numbers

umber up to 100 is prime and recall prime numbers up to 19.

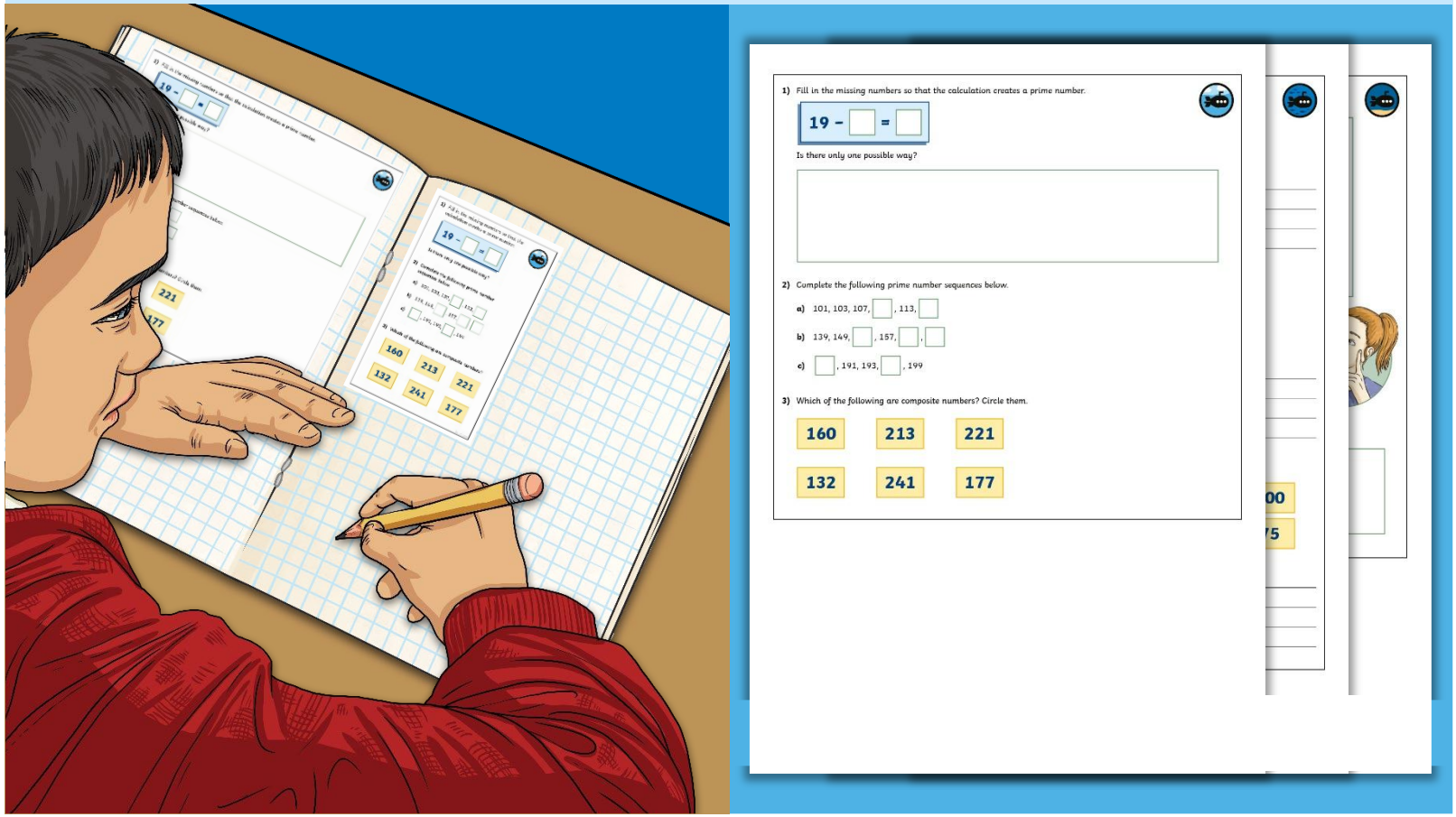
numbers up to
are below. His
as missed some
ime numbers

3	4	5	6	7	8	9	10
13	14	15	16	17	18	19	20
23	24	25	26	27	28	29	30
33	34	35	36	37	38	39	40
43	44	45	46	47	48	49	50

? How do you know?
low by drawing a model to show your reasoning.

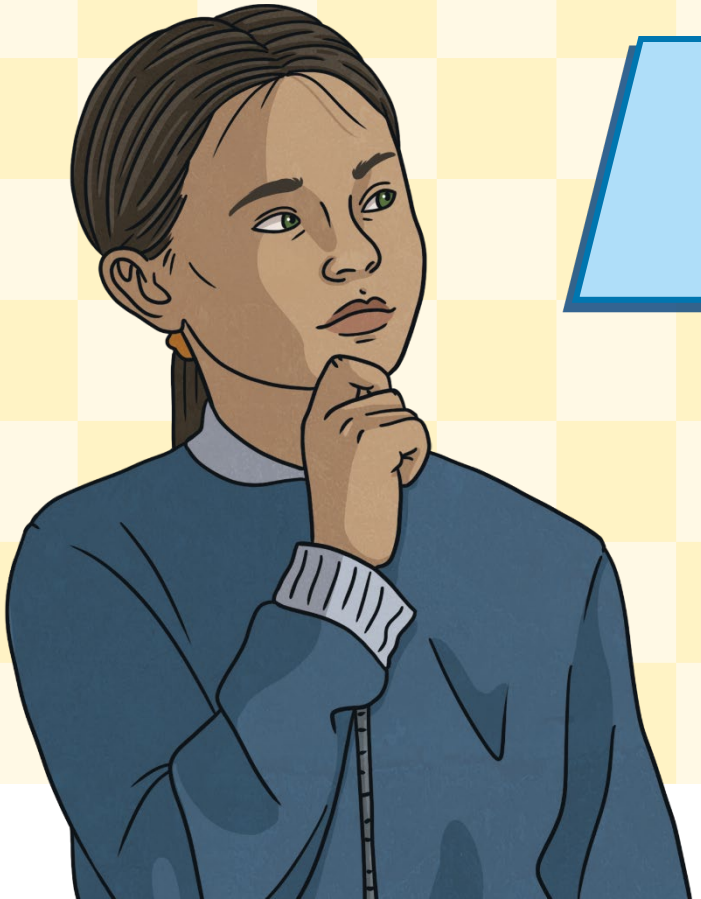
Diving into Mastery

Dive in by completing your own activity!



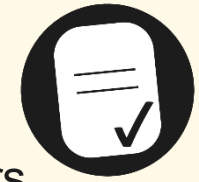
Always, Sometimes or Never?

Is the following statement **always** , **sometimes** or **never** true?
Prove it!



Prime numbers are odd.

Aim



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