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**.

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Maths

Multiplication and Division

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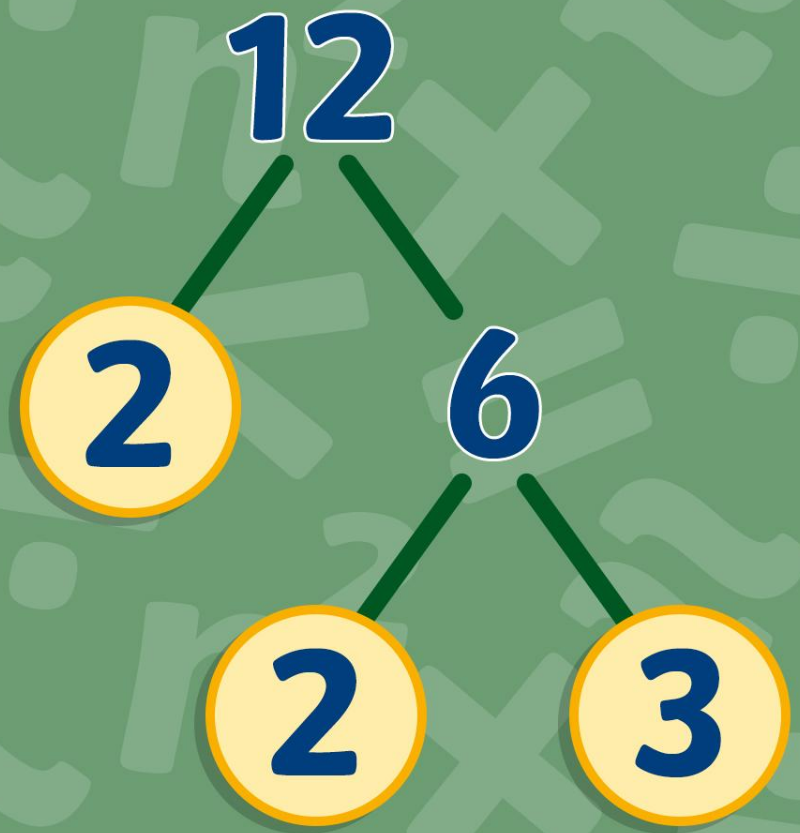
Prime Factors



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Aim

- To find prime factors of 2 -digit numbers.

SuccessCriteria

- I can find factors of 2 -digit numbers.
- I can recognise prime numbers.
- I can write a calculation to match my drawing.

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Remember It

List all the factors that you can find for the numbers below.

24	14	48	33

How could you organise your findings so that you can be certain that you have found all the possible factors?

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Remember It

Click to reveal the factors.

24	14	48	33
		6×8	

Next

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Remember It

24	14	48	33
1 × 24	1 × 14	1 × 48	1 × 33
2 × 12	2 × 7	2 × 24	3 × 11
3 × 8		3 × 16	
4 × 6		4 × 12	
		6 × 8	

They are called prime factors because:

- They are prime numbers.
- This means they are numbers which have only ctors (1 and themselves).

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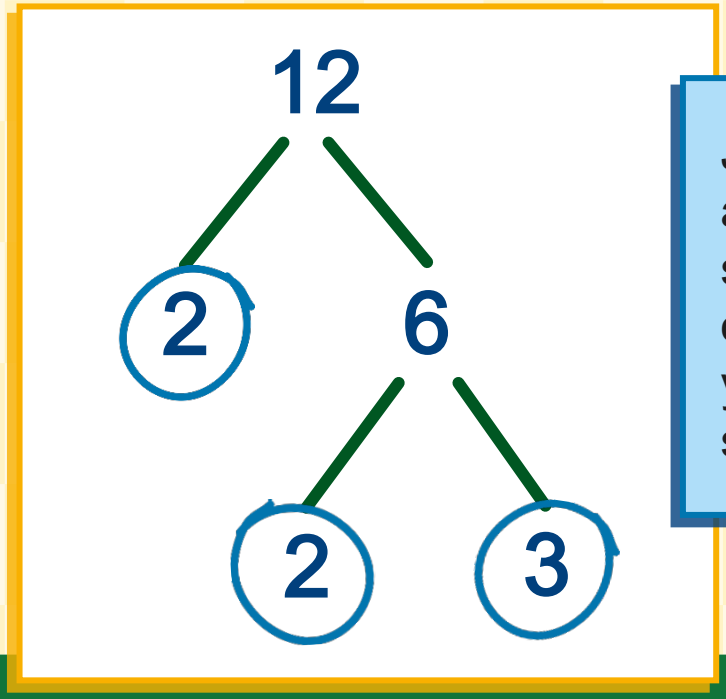
Factor Trees



Jenny likes to use a factor tree to spot prime factors of a number. Can you work out what she has done?

Discuss:

Which type of numbers has she created branches from?

She has created branches from the composite numbers.

Why has she circled certain factors?

She has circled these factors because they are prime factors.

Why has she not created branches from the numbers 2 and 3?

She has not created branches from 2 and 3 because they are prime factors.

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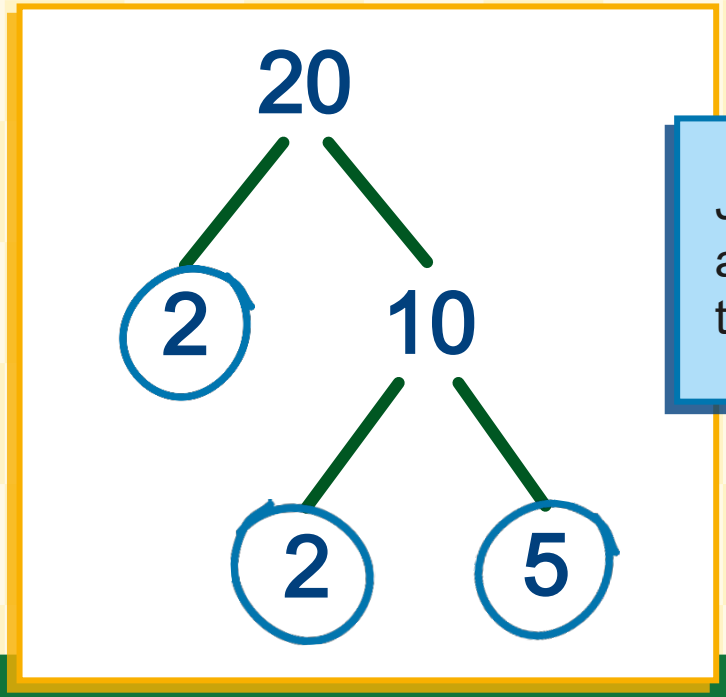
Factor Trees



Jenny made another factor tree, this time for 20.

Discuss:

Which type of numbers has she created branches from?

She has created branches from the composite numbers.

Why has she circled certain factors?

She has circled these factors because they are prime factors.

Why has she not created branches from the numbers 2 and 5?

She has not created branches from 2 and 5 because they are prime factors.

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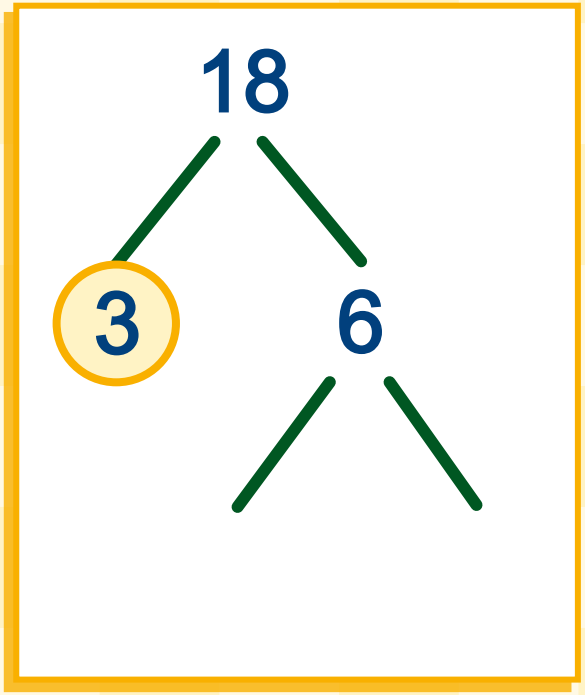
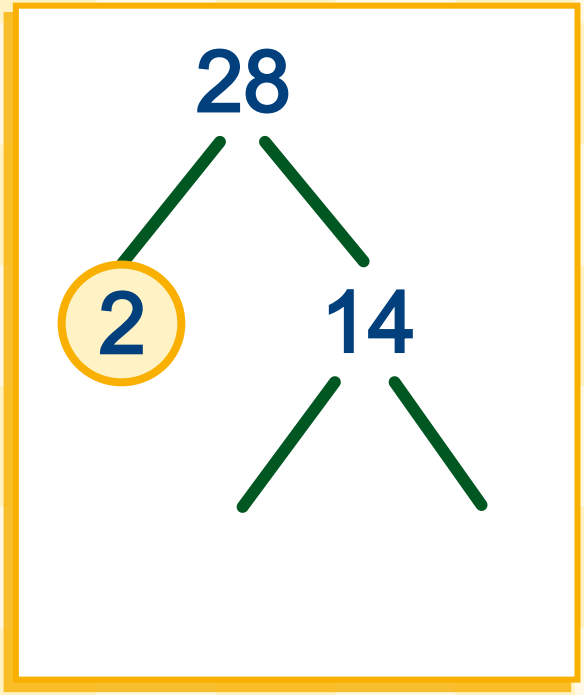
Factor Trees

Complete the factor trees with a partner. Can you spot the prime factors? Make sure you circle them!





Remember to:
Only create branches from composite numbers.
Circle numbers which are prime factors.

Feeling confident? Have a go at creating your own factor trees for the following numbers.

32 44 54 68

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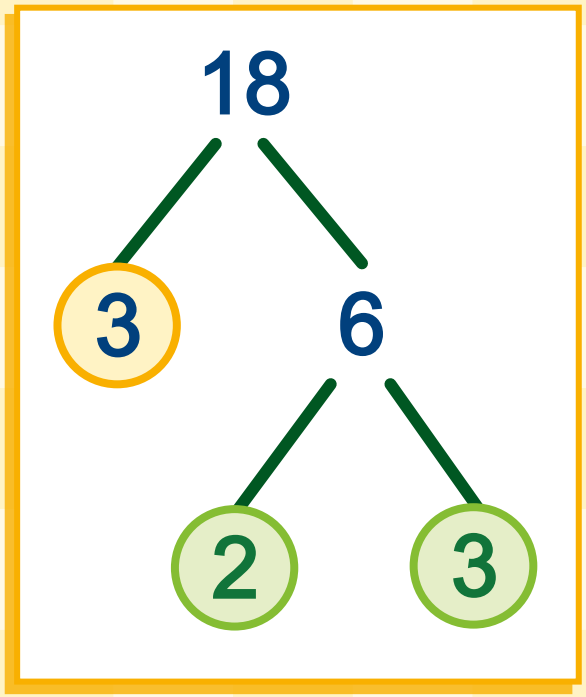
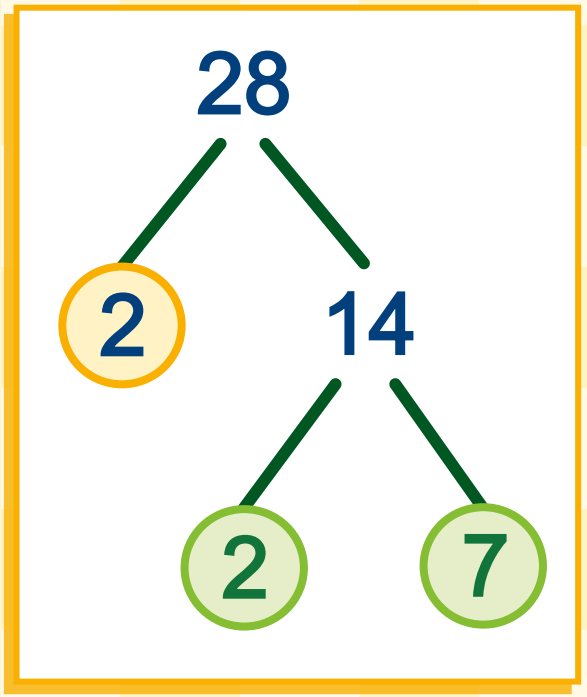
Factor Trees

Check your answers!



2 and 3 are prime factors of 18.



2 and 7 are prime factors of 28.

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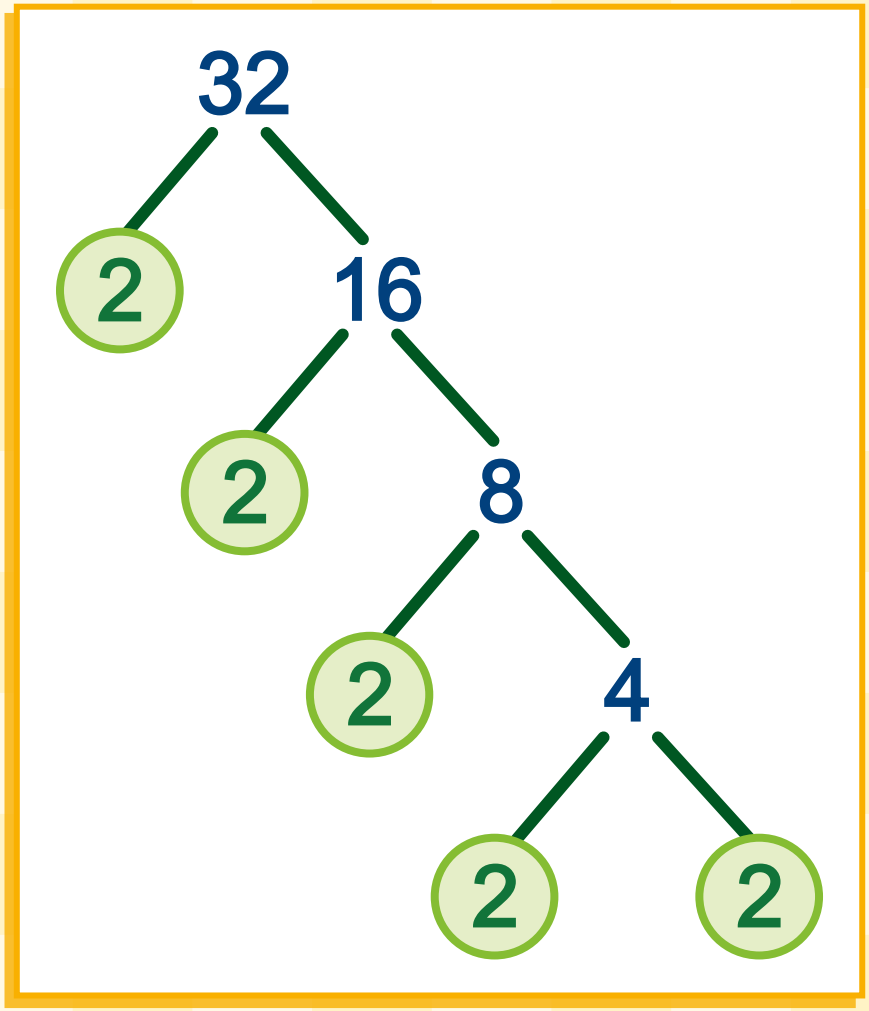
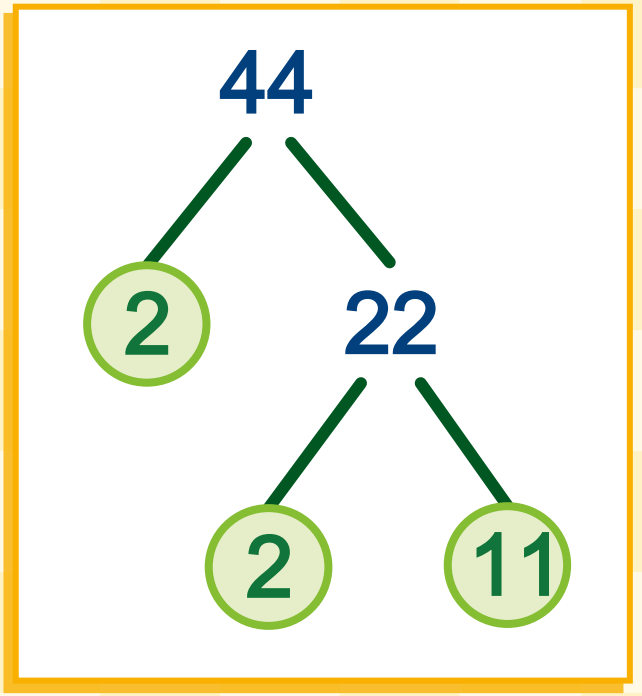
Factor Trees

Check your answers!





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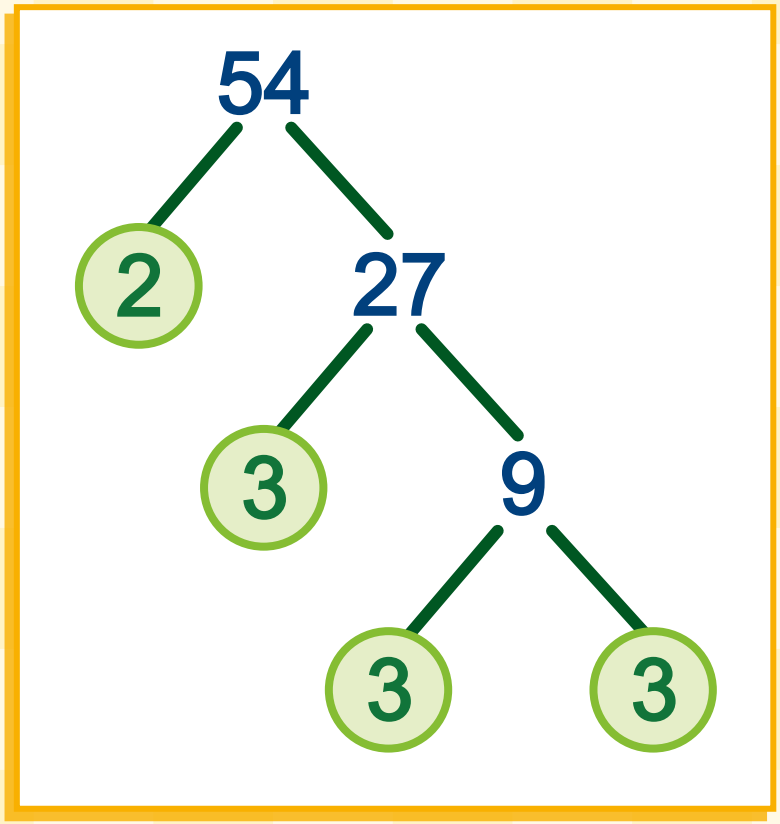
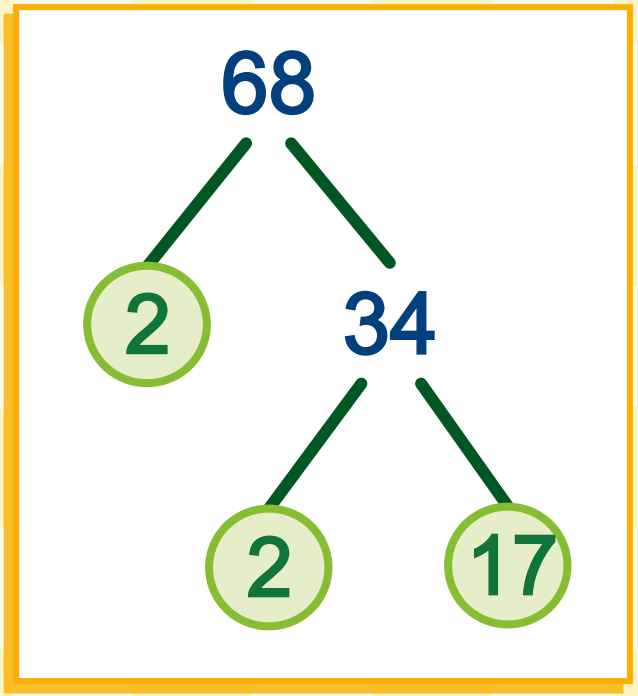
Factor Trees

Check your answers!





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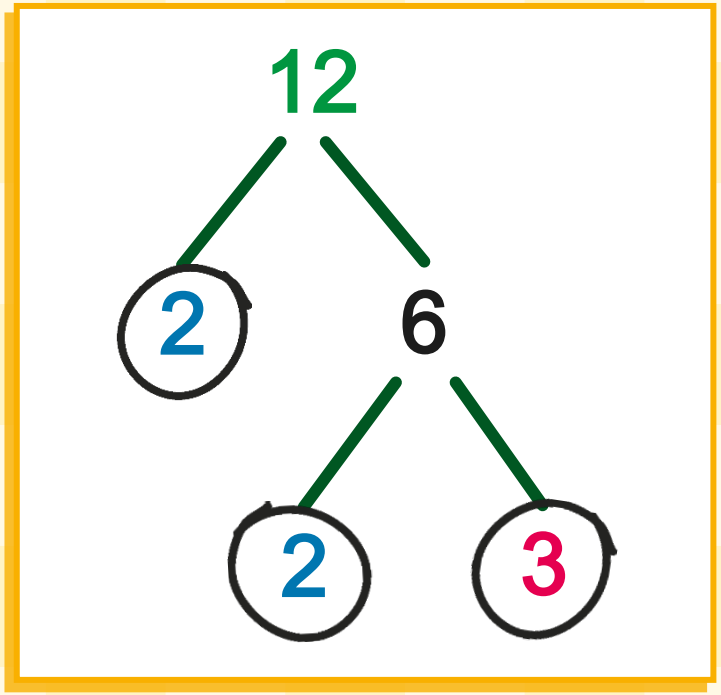
Prime Factors Multiply to Make a Product

Let's go back to Jenny's factor tree.

After I have created a factor tree, I can write a calculation to show how the prime numbers are multiplied to create the product.



$$2 \times 2 \times 3 = 12$$

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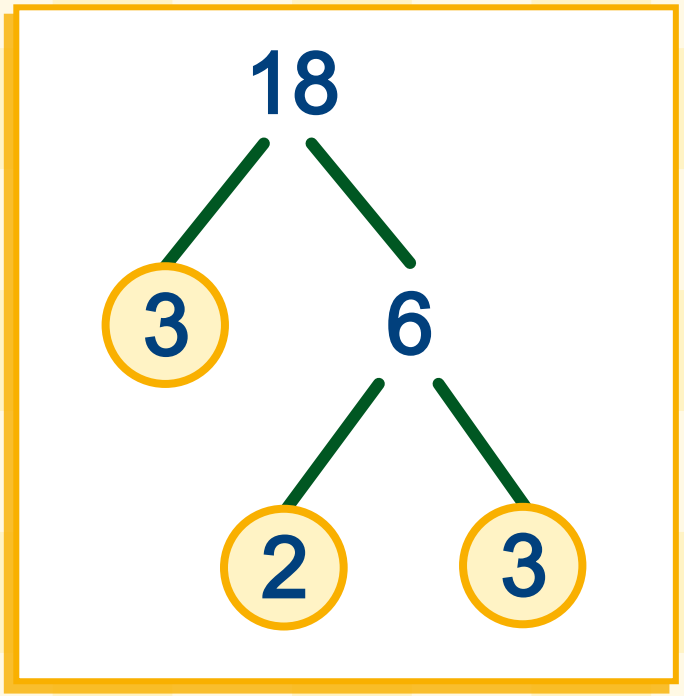
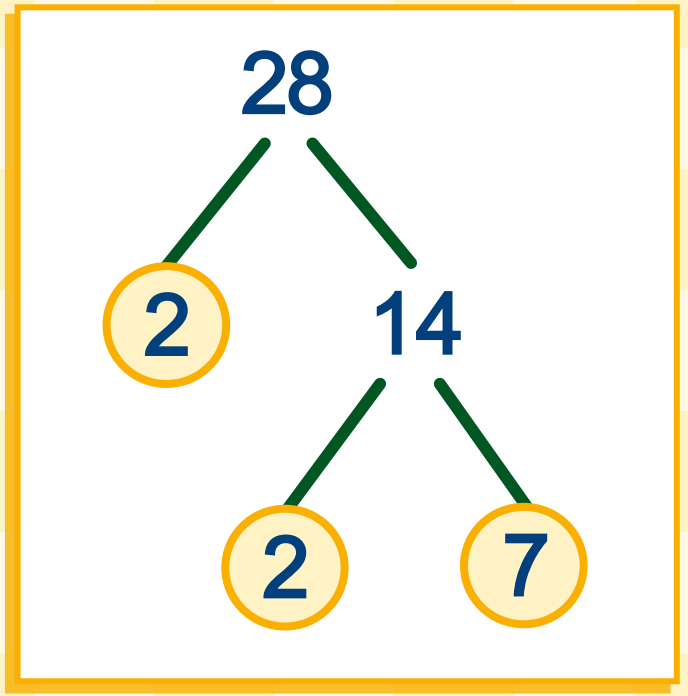
Prime Factors Multiply to Make a Product

Can you write the calculations for the factor trees below?
Discuss your calculation with a partner.





$3 \times 2 \times 3 = 18$

$2 \times 2 \times 7 = 28$

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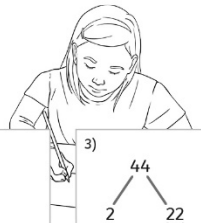
Find Prime Factors

Prime Factors

To find prime factors of 2-digit numbers.

Aneeka has completed some factor trees.
Can you help her by circling the prime factors?
The first one has been done for you.



1) 20 → 2, 10 → 2, 5

2) 32 → 2, 15 → 3, 5

3) 44 → 2, 22 → 2, 11

George has tried to complete some factor trees but he has become a little lost along the way.
Could you help him complete his factor trees? Don't forget to circle the prime factors!

4) 28 → 2, 14 → 2, ☐

5) 40 → 2, 20 → 2, 10

6) 60 → ☐, 30 → 2, ☐

Prime Factors

To find prime factors of 2-digit numbers.

…nd write the calculation to match.
…ne factors.

2) 40 → 2, 20 → 2, 10

3) 60 → ☐, 30 → 2, ☐

☐ × ☐ × ☐ × ☐ = ☐

☐ × ☐ × ☐ × ☐ = ☐

…he prime factors of the following numbers: **48 56 82**
…atching calculation and circle the prime factors!

5) 56

6) 82

…is only one way to create a factor tree for 24.
…ee? Prove your answer.

Prime Factors

To find prime factors of 2-digit numbers.

…trees for the number 24.

24 → 8, 3

24 → 4, 6

…duct of its prime factors?

☐ × ☐ × ☐

…possible to complete one of these
…fferent ways. Is he correct? Prove it.

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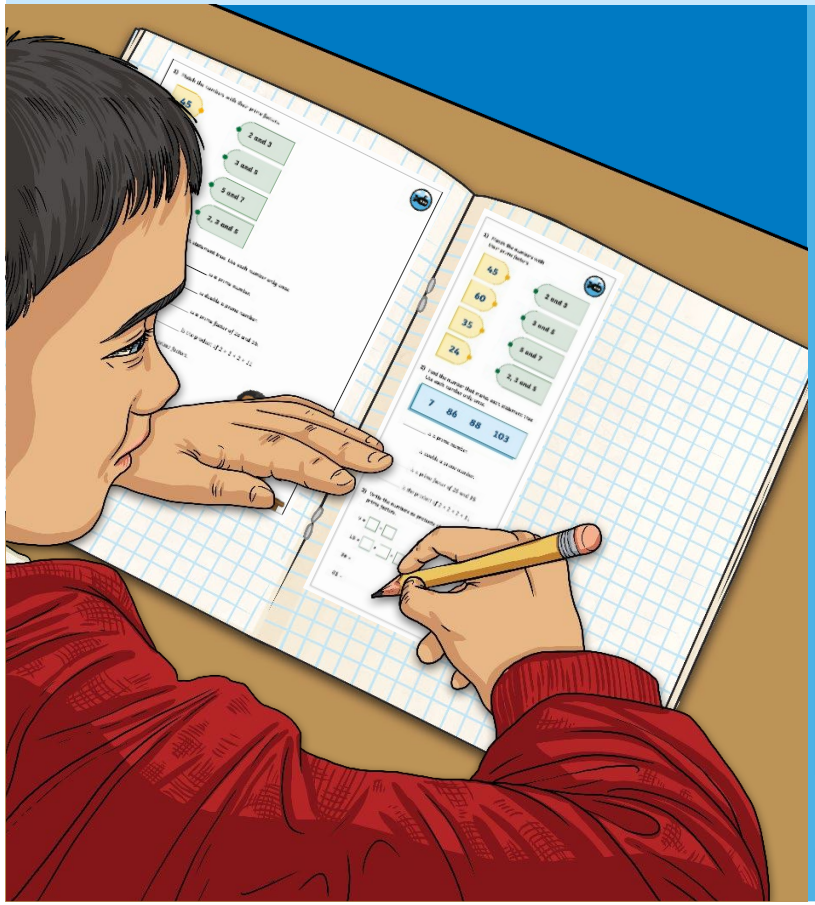
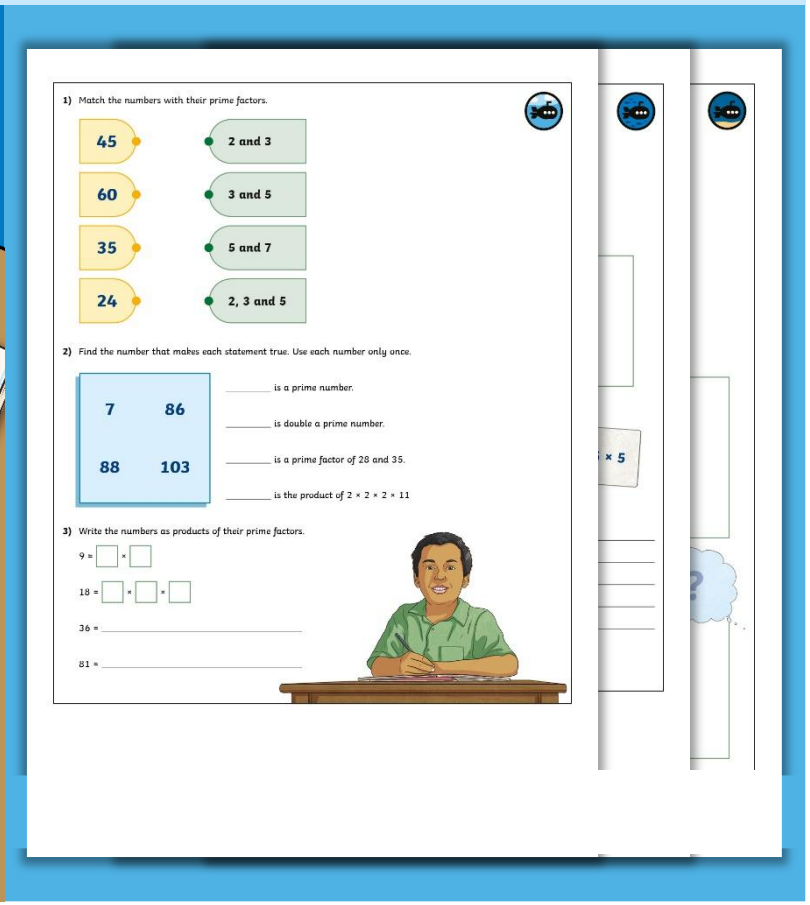
Diving into Mastery

Dive in by completing your own activity!





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When 2 prime numbers are multiplied, they create a composite number.

Is the above statement: **always true** , **sometimes true** or **never true** ?

The above statement is always true.

An example: $2 \times 3 = 6$

If we multiply two prime numbers, we instantly give the product two factors in addition to 1 and itself. Therefore, it is a composite number.

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