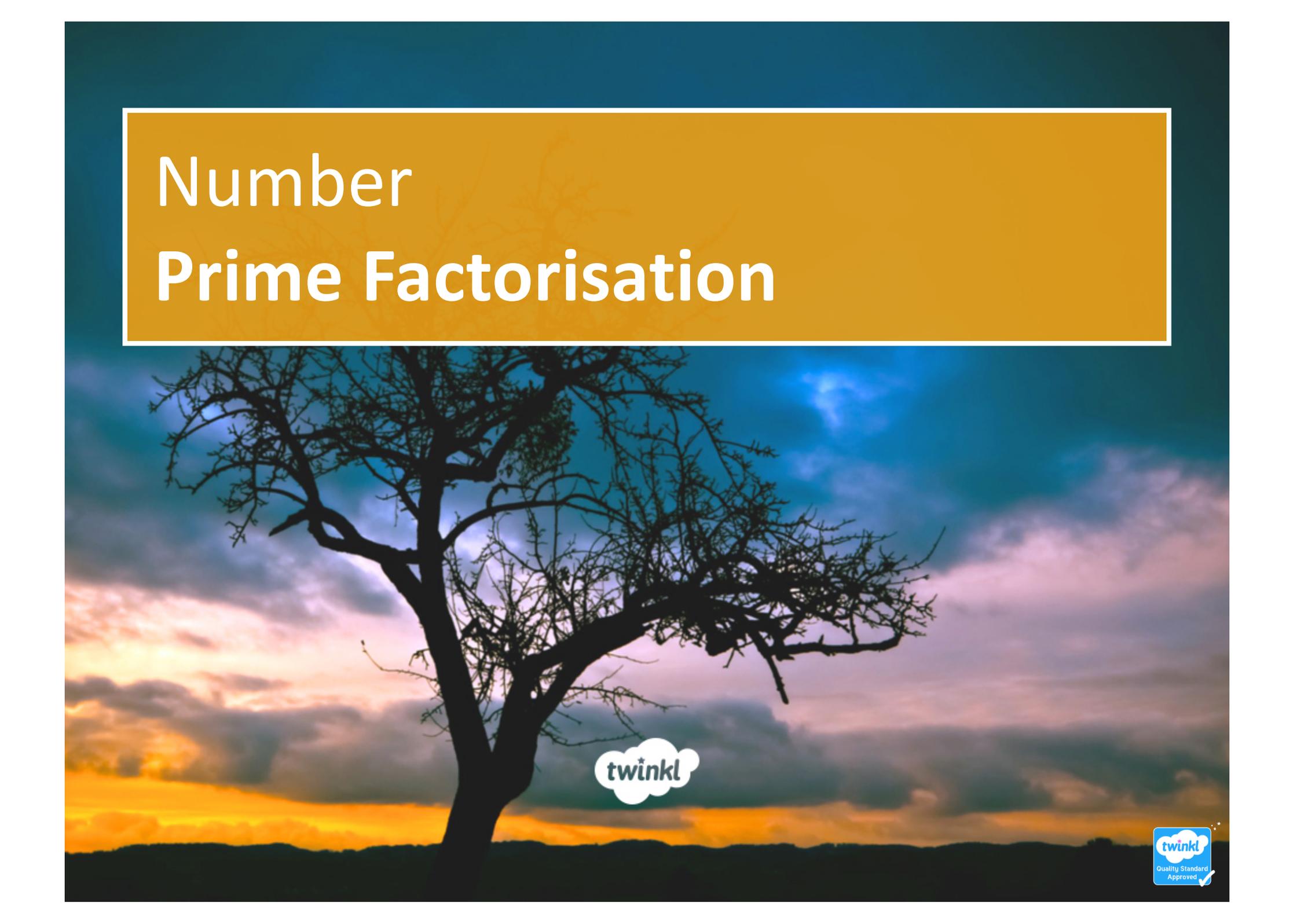


# Number Prime Factorisation

A silhouette of a tree against a sunset sky with a twinkl logo watermark.

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**WALT:** Understand the vocabulary of prime numbers, prime factors and composite numbers

**WILF:**

- I can explain what a factor is.
- Explain what a prime number is, referring to factors
- Explain what a composite number is

# Starter

Complete the following:

- Find the factors of 24.
- Give the definition of a prime number.



# Starter

Complete the following:

- Find the factors of 24.  
1, 2, 3, 4, 6, 8, 12, 24.
- Give the definition of a prime number.

A prime number is a positive whole number that has exactly two factors, 1 and itself.



# Composite, Prime or Neither

Positive whole numbers that have more than 2 factors are called composite numbers. Composite means 'made up of several parts'. Numbers like 40, which are not prime, are called composite numbers because they can be made by multiplying two other numbers together, where neither of those numbers are 1.



Give the  
factors of 1

# Composite, Prime or Neither

Positive whole numbers that have more than 2 factors are called composite numbers. Composite means 'made up of several parts'. Numbers like 40, which are not prime, are called composite numbers because they can be made by multiplying two other numbers together, where neither of those numbers are 1.



Give the  
factors of 1

1

1 is not a prime number because it does not have exactly two factors. 1 is not a composite number because it does not have more than two factors. 1 is the only positive whole number that is not composite or prime.

# Prime Factorisation

If you are asked to find 30 as the product of prime factors, you are aiming to find the prime numbers which multiply together to give 30.

A factor tree is a good way to prime factorise a number.

Begin with the number 30, draw two lines coming out of it and think of two numbers which multiply to give 30; do not use the number 1.

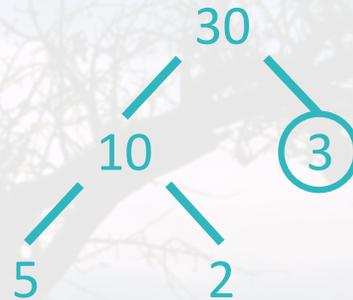


# Prime Factorisation

Now, circle any numbers that are prime. In this example, 3 is the only prime number so far.

Where a number is not prime, you will need to find 2 numbers that multiply to give that number; neither of them should be 1.

10 is not prime. 5 multiplied by 2 is 10, so we write those numbers at the end of the lines coming out of 10.

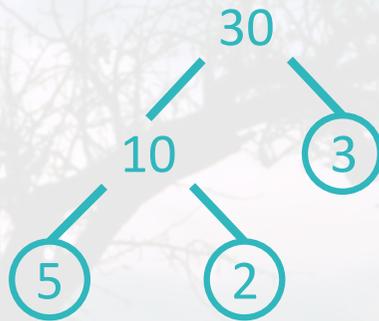


# Prime Factorisation

Now, again, circle any numbers that are prime. In this case, the 5 and the 2.

When all of the numbers at the ends of the lines are circled, the factor tree is complete. The circled numbers are the prime factors.

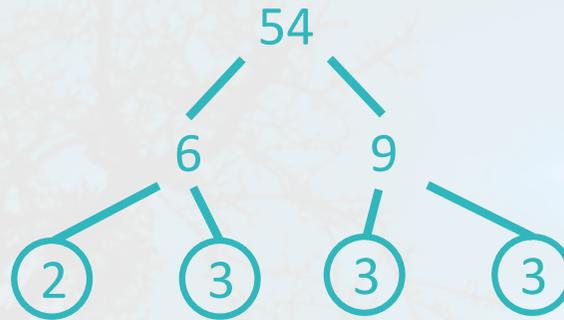
$30 = 2 \times 3 \times 5$ , written as the product of prime factors.



# Prime Factorisation



Now, individually, express 54 as the product of prime factors.



$$54 = 2 \times 3 \times 3 \times 3.$$

You may have split 54 differently to begin with but you will always get the same answer, regardless.



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