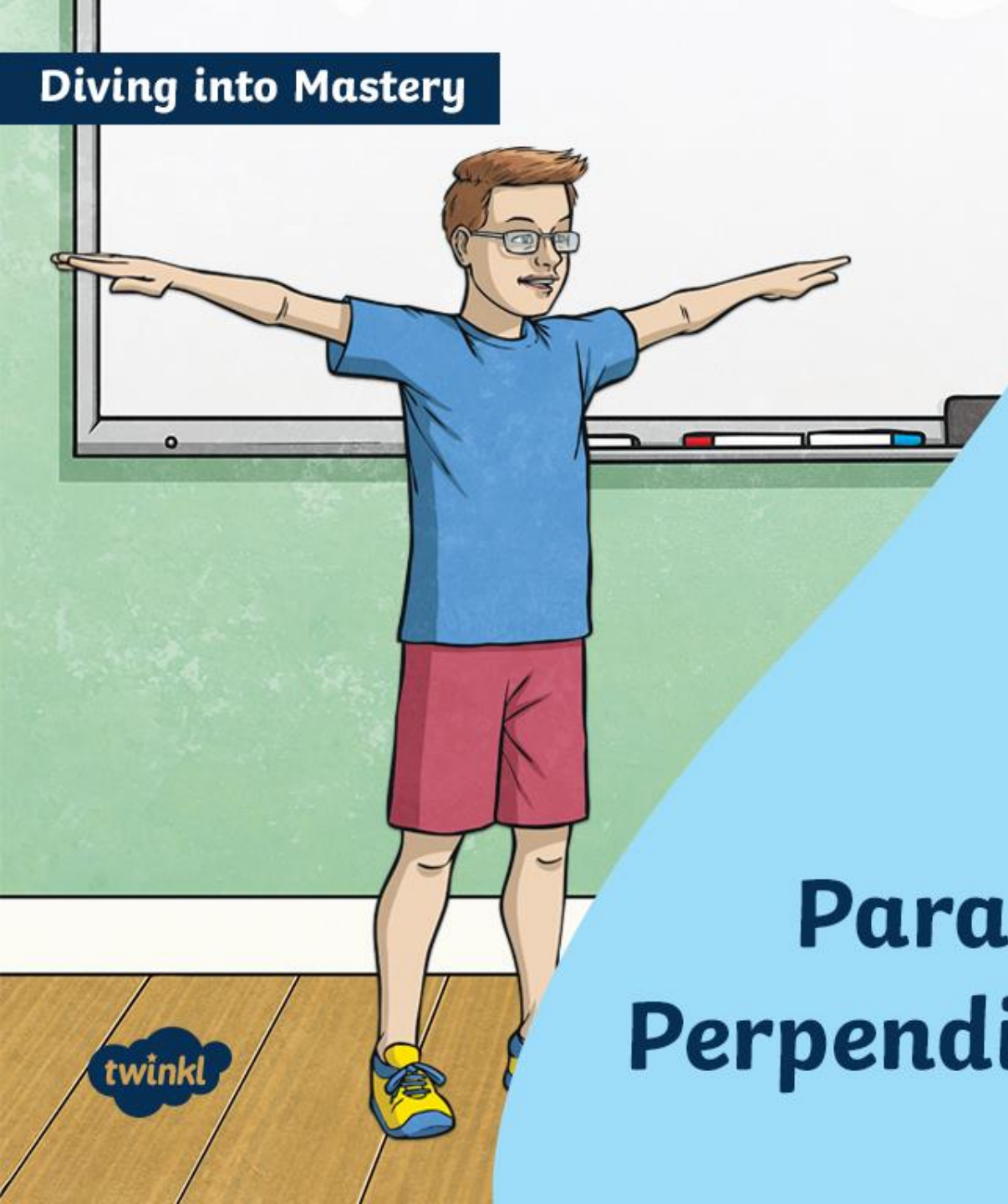
Diving into Mastery



Parallel and Perpendicular Lines

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Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:

Diving

Deeper

Deepest

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

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National Curriculum Objective

- Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.

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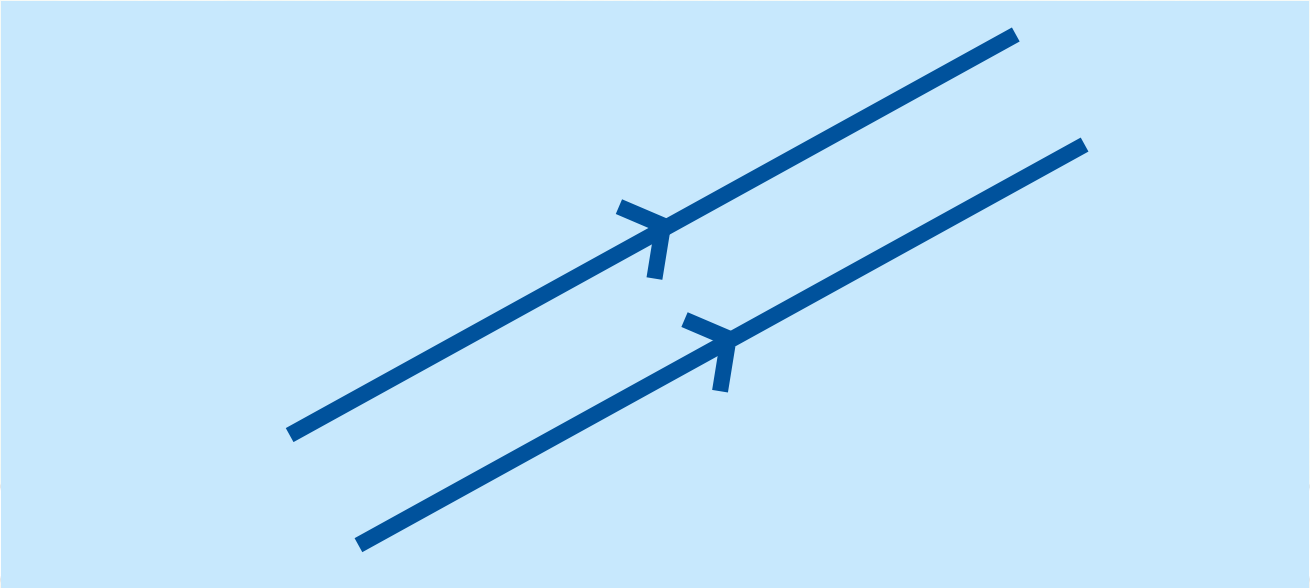
Parallel and Perpendicular Lines

Diving

Parallel lines run alongside each other in pairs.

They would never meet if they carried on.

They are always the same distance apart.



They are shown, in maths, with these arrows.

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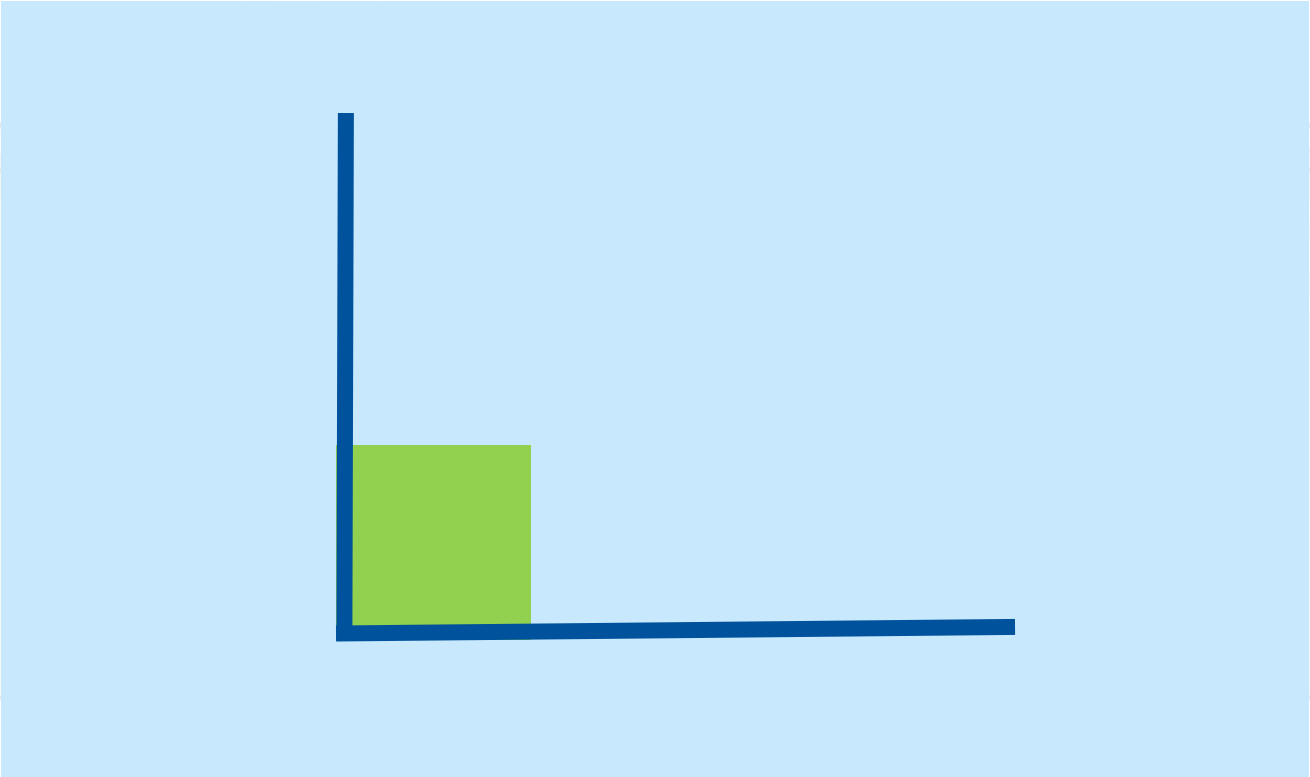
Parallel and Perpendicular Lines

Diving

Perpendicular lines are pairs of lines that meet at a right angle.



They are usually marked by using the right-angle symbol at the point where they meet.

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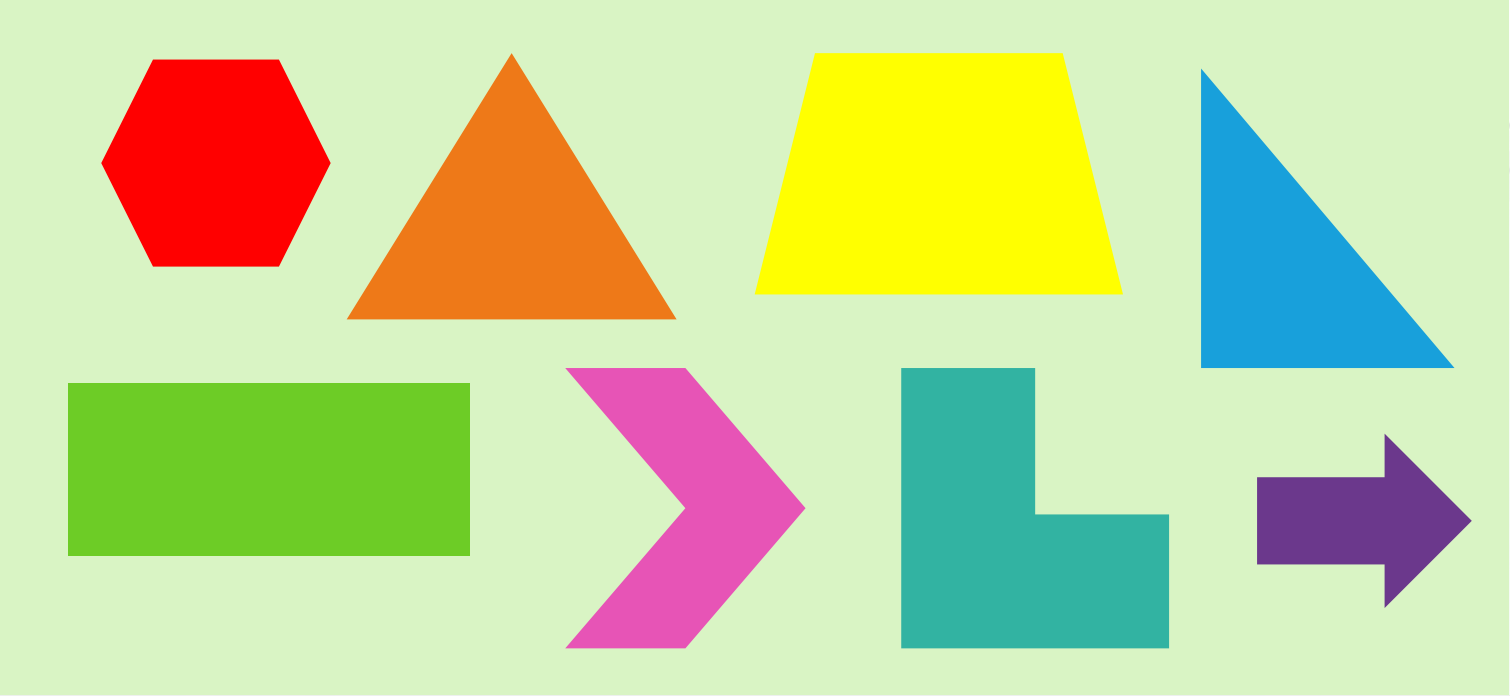
Parallel and Perpendicular Lines

Diving

Look at these shapes.



How many pairs of parallel lines can you see in each shape?
How many pairs of perpendicular lines can you see in each shape?

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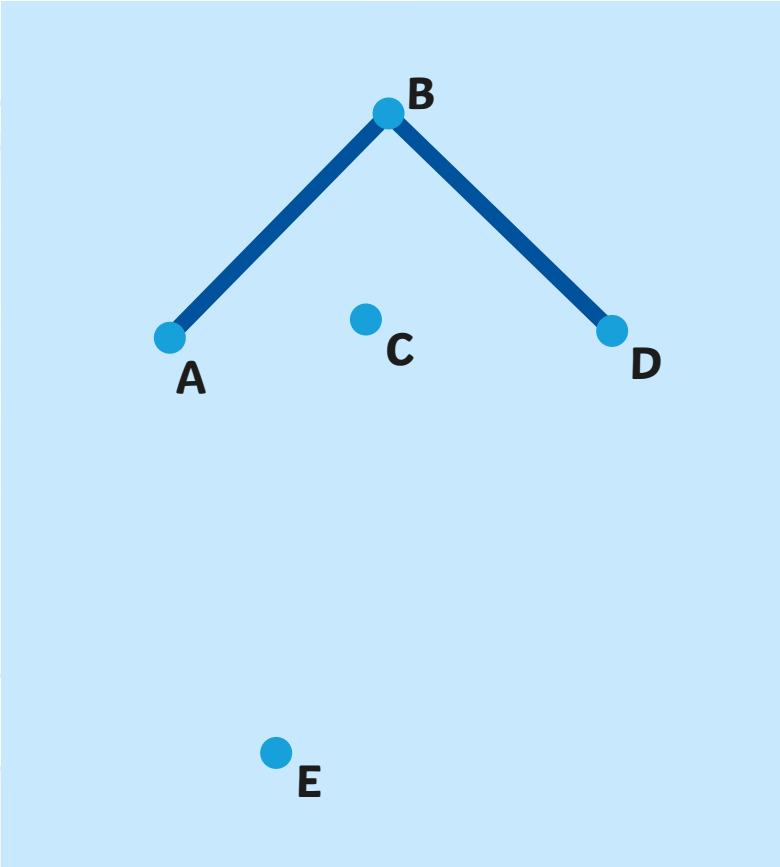
Parallel and Perpendicular Lines | **Deeper**

Which dots should I join up to make a pair of perpendicular lines?



Remember, we can label lines by naming them after the points they start and end at.

Lines **AB** and **BD** will be perpendicular to each other.

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Parallel and Perpendicular Lines | Deeper

Which statements about this shape are **false**?

- Line BD is parallel to line AC.
- Line AB is perpendicular to BD. ✗
- Line AB is parallel to line CD. ✗
- Line AB is not perpendicular to any other lines.

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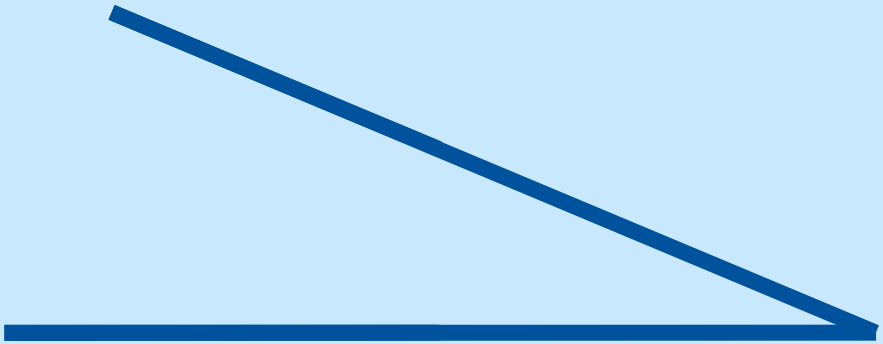
We can prove that lines are parallel by continuing them and showing that they will not meet.

If I continue these lines, will they meet eventually?



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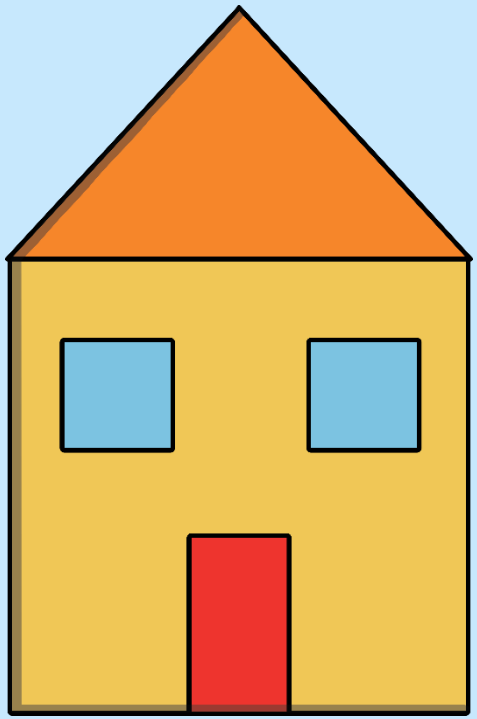
Parallel and Perpendicular Lines | **Deepest**

Identify a pair of parallel lines and a pair of perpendicular lines in this picture:



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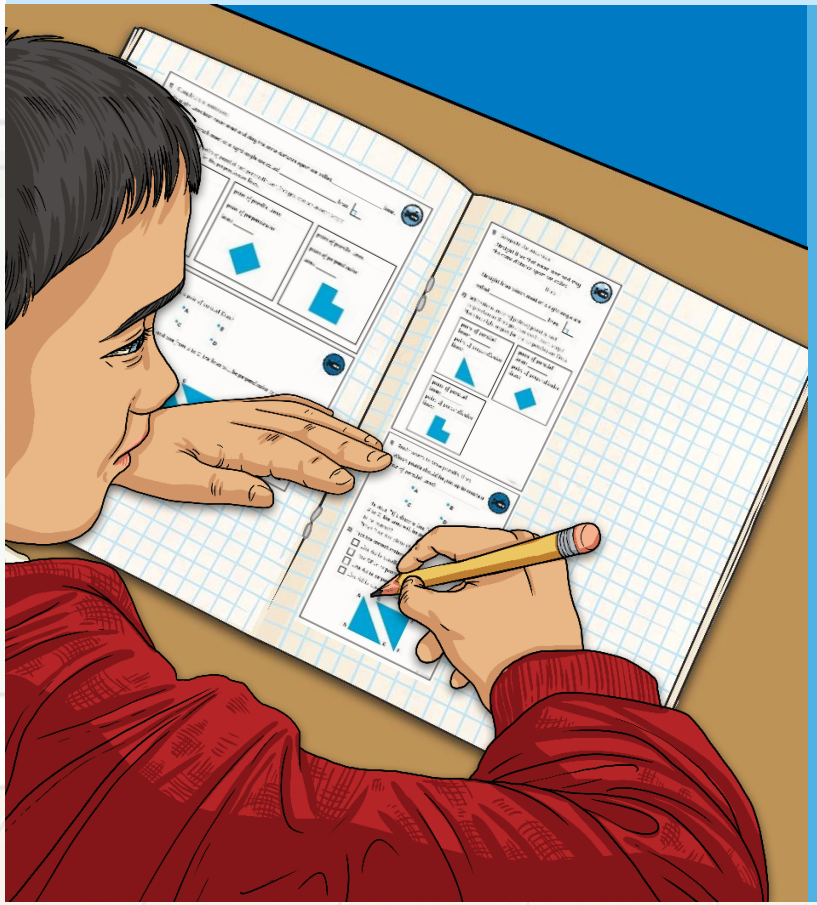
Parallel and Perpendicular Lines

Dive in by completing your own activity!



1) Complete the sentences:

Straight lines that never meet and stay the same distance apart are called _____ lines.

Straight lines which meet at a right angle are called _____ lines.

2) Write the number of pairs of parallel and perpendicular lines you can see in each shape.
Mark the right angles for the perpendicular lines.

pairs of parallel lines: pairs of perpendicular lines: _____	pairs of parallel lines: pairs of perpendicular lines: _____	pairs of parallel lines: pairs of perpendicular lines: _____

1) Robin wants to draw parallel lines.

Which points should he join up to create a pair of parallel lines? _____

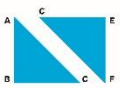
A B C D

He says, "If I draw a line from A to D, and one from B to C, the lines will be perpendicular to each other."

Is he correct? _____
Prove it on the picture.

2) Tick the correct statements:

- ☐ Line AC is parallel to line DF.
- ☐ Line DE is perpendicular to line EF.
- ☐ Line AB is perpendicular to line AC.
- ☐ Line AB is parallel to line EF.



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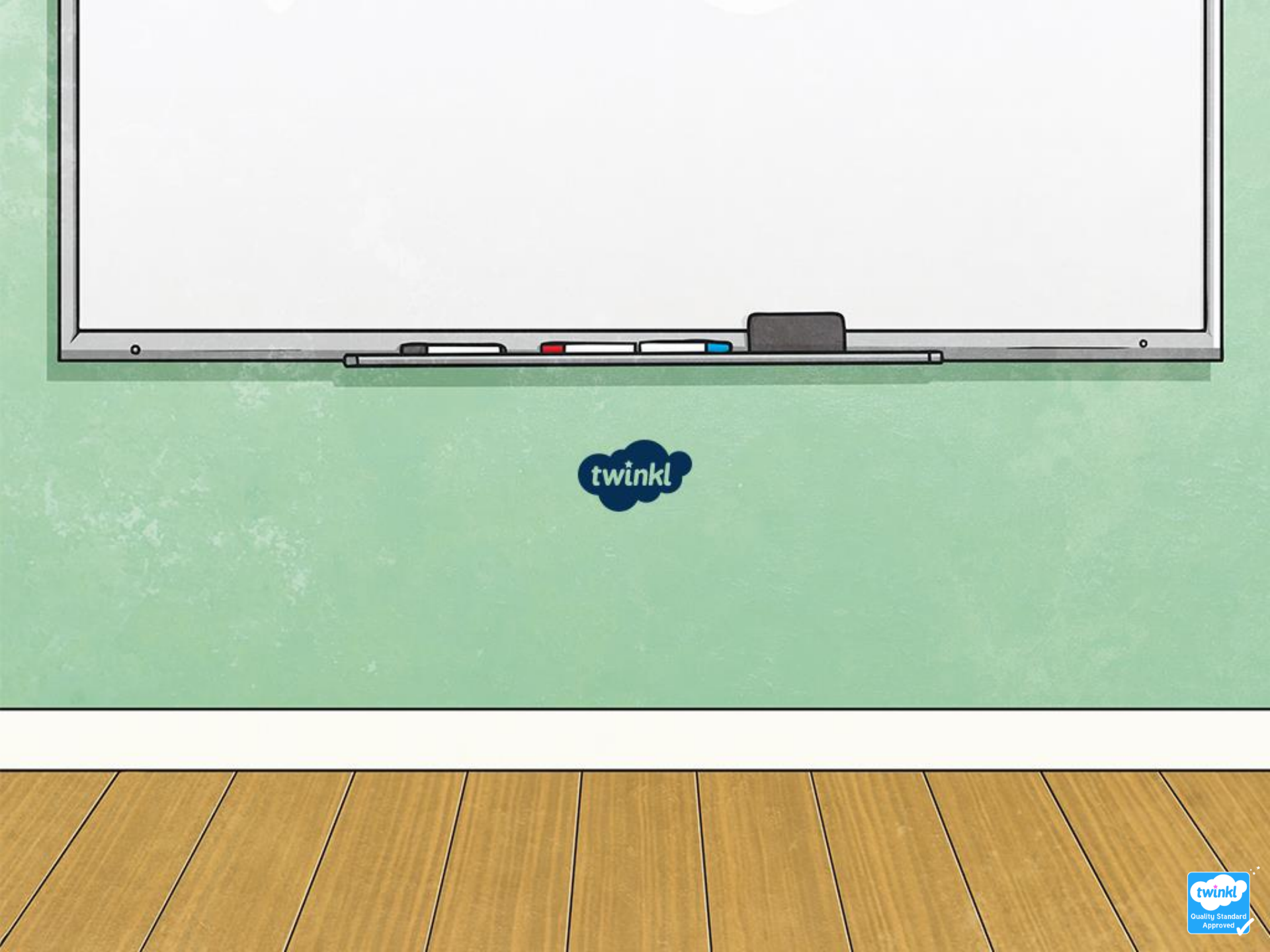
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