

Solve spatial problems, applying angle properties, scale, similarity, Pythagoras' theorem...

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Learning intention

- solve spatial problems, applying angle properties, scale, similarity, Pythagoras' theorem and trigonometry in right-angled triangles

Teach and model

- investigating the applications of Pythagoras' theorem in authentic problems, including applying Pythagoras' theorem and trigonometry to problems in surveying and...
- applying the formula for calculation of distances between points on the Cartesian plane from their coordinates, emphasising the connection to vertical and horizontal...
- understanding the relationship between the corresponding sides of similar right-angled triangles and establishing the relationship between areas of similar figures and the...

Check understanding

- Explain the main idea in solve spatial problems, applying angle properties, scale, similarity, pythagoras' theorem... using an example.
- Show the idea in a second way: with words, a model, a diagram or symbols.
- Apply the idea to a short unfamiliar situation and justify the result.

Teaching cautions

- Ask the student to explain their choice, not only state an answer.
- Check that key vocabulary is understood in a new example.
- Mix representations so the skill is transferred rather than copied.

Quick lesson sequence

- Connect to prior knowledge and introduce the key vocabulary.
- Model one clear example, then solve a second example together.
- Finish with an independent check and a short student explanation.