

Design, test and refine solutions to spatial problems using algorithms...

design, test and refine solutions to spatial problems using algorithms and digital tools; communicate and justify solutions

Learning intention

- design, test and refine solutions to spatial problems using algorithms and digital tools; communicate and justify solutions

Teach and model

- designing and making scale models of three-dimensional objects using digital tools; for example, making components of a puzzle using a three-dimensional printer, planning...
- applying a computational thinking approach to solving problems involving networks; for example, connectedness, coverage and weighted measures; taking different routes...
- defining and decomposing spatial problems, creating and applying algorithms to generate solutions, evaluating and communicating solutions in terms of the problem; for...

Check understanding

- Explain the main idea in design, test and refine solutions to spatial problems using algorithms... 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.