

The relationship between perfect square numbers and square roots, and...

describe the relationship between perfect square numbers and square roots, and use squares of numbers and square roots of perfect square numbers to solve problems

Learning intention

- describe the relationship between perfect square numbers and square roots, and use squares of numbers and square roots of perfect square numbers to solve problems

Teach and model

- investigating squares of natural numbers from one to 20, and connecting them to visual representations such as dots arranged in a square pattern
- using the square and square root notation, and the distributive property and area diagrams to calculate the squares of two-digit numbers; for example...
- determining between which 2 consecutive natural numbers the square root of a given number lies; for example, 43 is between the square numbers 36 and 49 so $\sqrt{43}$ is...

Check understanding

- Explain the main idea in the relationship between perfect square numbers and square roots, and... 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.