

Multiply and divide decimals by multiples of powers of 10...

multiply and divide decimals by multiples of powers of 10 without a calculator, applying knowledge of place value and proficiency with multiplication facts; using estimation and rounding to check the reasonableness of answers

Learning intention

- multiply and divide decimals by multiples of powers of 10 without a calculator, applying knowledge of place value and proficiency with multiplication facts; using estimation...

Teach and model

- applying place value knowledge, including that the value of the digit is 10 times smaller each time a place is moved to the right, and known multiplication facts, to multiply and...
- applying and explaining estimation strategies in multiplicative situations involving a decimal greater than one that is multiplied by a two- or three-digit number...
- explaining the effect of multiplying or dividing a decimal by 10, 100, 1000 ... in terms of place value and not the decimal point shifting

Check understanding

- Explain the main idea in multiply and divide decimals by multiples of powers of 10... 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.