

# Extend and apply knowledge of addition and subtraction facts to...

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## Learning intention

- extend and apply knowledge of addition and subtraction facts to 20 to develop efficient mental strategies for computation with larger numbers without a calculator

## Teach and model

- partitioning using materials and part-part-whole diagrams to develop subtraction facts related to addition facts, such as  $8 + 7 = 15$  therefore, 15...
- using partitioning to develop and record facts systematically; for example, "How many ways can 12 monkeys be spread among 2 trees?",  $12 = 12 + 0$ ,  $12 = 11 + 1$ ...
- understanding basic addition and related subtraction facts and using extensions to these facts; for example,  $6 + 6 = 12$ ,  $16 + 6 = 22$ ,  $6 + 7 = 13$ ,  $16 + 7 = 23$ , and  $60 + 60$ ...

## Check understanding

- Explain the main idea in extend and apply knowledge of addition and subtraction facts to... 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.