MATHS

Lesson 17

Prep

Topic: Number and place value

Representing addition as combining parts of a whole

Lesson concepts

- **Number**— Quantity
- **Addition and subtraction** — Process/operation
- **Addition and subtraction** — Relationships
- **Addition and subtraction** — Part–part–whole

Today students will:

- add by combining parts of a whole.

Resources

Digital

Learning object — Ten grids (2)

Find and prepare

Sheet — Hand prints

Sheet — The bus game

20 counters (or buttons) of two colours

A dice

Key terms

partition

For definitions and explanations of terms, please see the Glossary.

Lesson

Introduce the lesson

Note

It is important to highlight and develop the following vocabulary throughout this lesson.

part, whole, join, makes, and, more, total, altogether, combine, add, less, partition, visualise

Bunny ears

- Play a game of 'Bunny ears' with students.
- How to play:
  - Say a number between one and 10 and have students make bunny ears with their fingers to show that number.
  - Talk about different ways to show the number (for example: 'five' can be three fingers on one hand and two on the other **or** one finger on one hand and four on the other).

Focus questions

Q: *How could you show six?*
A: For example: one on one hand and five on the other

Q: *What parts can you see in six?*
A: For example: one and five

Q: *What is another way to show six?*
A: For example: two on one hand and four on the other

Q: *What parts can you see in six now?*
A: For example: two and four

Identify part combinations in familiar representations

- Students need the **Sheet** — Hand prints, 20 counters (or blocks) of two colours and a dice.
- Show students the **Sheet — Hand prints** and have them count the fingers on the hands.

Focus questions

Q: *How many fingers are on one hand?*
A: Five

Q: *How many fingers are on the other hand?*
A: Five

Q: *How many are altogether?*
A: 10

- Have students roll the dice and place that many counters on the hands (for example: if students roll a ‘6’, cover six fingers on the hand prints).

- Ask questions to help students to talk about how many more are needed to make 10.

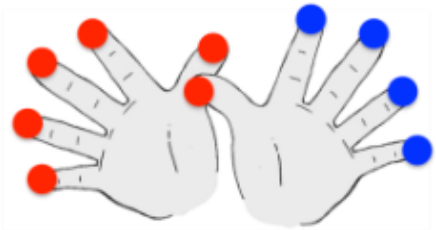
Focus questions

You know that there are 10 fingers on the two hands.
You have counters covering [six] fingers.

Q: *How many more counters are needed to cover 10 fingers?*
A: For example: four

Q: *How do you know?*
A: For example: There are four empty spaces.

- Ask students to use the different-coloured counters to cover the remaining [four] fingers.



- Ask students to say what they can see on the hand prints, for example, ‘I can see that six counters and four counters make 10 altogether’.
- Repeat the game two or three times.

Focus questions

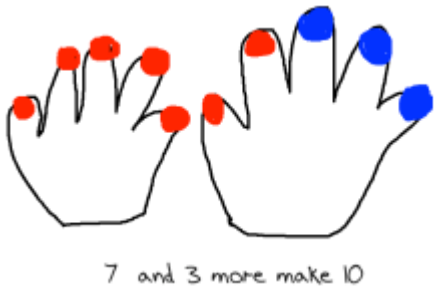
Q: *What parts can you see in [five]?*
A: For example: three and two

Q: *What could you roll on the dice to make 10 in the next roll?*
A: For example: five more

Q: *How do you know?*
A: For example: There are five empty spaces.

Q: *What would make your amount more than 10? How do you know?*
A: For example: Six, because five more would make10 and six more would make more than 10.

- Ask students to close their eyes and imagine or visualise a combination to 10 that they saw when playing the hand print game.
- Ask students to draw pictures to show what they remember.
- Write or scribe a sentence describing what they can see in their drawing (for example: I can see that seven and three make 10).



Develop visual images of combinations to 10

- Ask students to close their eyes and imagine or visualise a combination to 10.
- Ask students to use the **Sheet** — The bus game and draw pictures to show what they remember.
- Write or scribe a sentence describing what they can see in their drawing (for example: I can see that four and six make 10.).

- Ask questions to help students to talk about the parts of 10 they visualised.

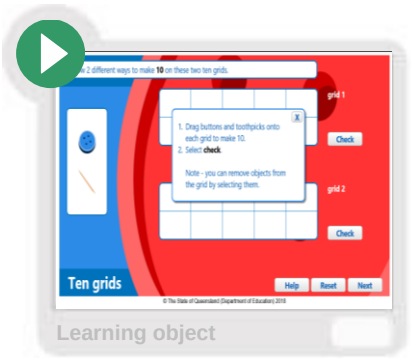
Focus questions

Q: *What can you see in this picture?*
A: For example: There are four green people and six orange people on the bus.

Q: *What are the parts of 10 that you can see?*
A: For example: four and six

Q: *How could you make 10 another way?*
A: For example: five and five

Ten grids



- Help students to complete the **Learning object — Ten grids (2)** and talk about the different arrangements and combinations to 10.
- In this learning object, students use buttons and toothpicks to make the required number on a ten grid. Having two grids per screen encourages students to try two different representations for each number.
- As students complete the learning object, ask them to describe what they can see on the grids.