

# MATHS

## Lesson 10

Prep

**Topic: Number and place value**

### Combining small collections (2)

#### Lesson concepts



**Number** — Quantity



**Equivalence** — Language



**Addition and subtraction** — Process/operation

Today students will:

- ▶ combine small collections.

#### Resources

##### Find and prepare

Chalk or masking tape to draw or mark out a ten frame

At least 12 toys (for example, teddy bears, dolls, action figures, puppets)

#### Key terms

subitising

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.

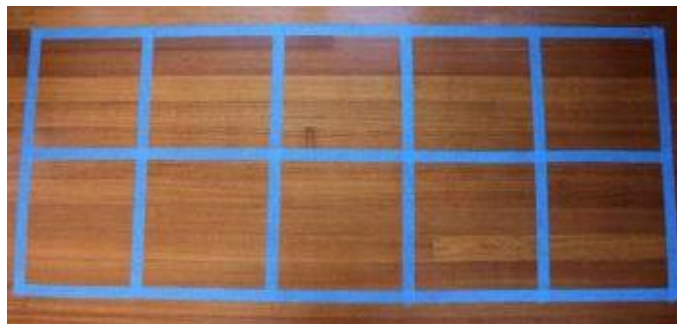
count, compare, sort, number, total, quantity, amount, more, less, the same, subitising, make, match, equal, most, least, combine, join, arrangement, count on, recount, add, total

### The wheels on the bus

- Sing the song 'The wheels on the bus' (or a similar song about a bus) with students.

### Representing quantities in arrangements

- Mark out a ten frame (that is, two rows of five squares). Use chalk on a path, masking tape on the floor, or draw a ten frame in the sand or dirt. For example:



- Have students count the squares by stepping into each square and counting them.
- Ask students to count the squares again, starting from different points.
- Explain to students that the shape is called a 'ten frame' because it has ten spaces on the frame.

### Focus questions

Q: *How many squares are there?*

A: 10

Q: *How do you know?*

A: For example, I counted them

Q: *What happened when you started in a different place and counted the squares?*

A: Nothing: there were still 10 squares

Q: *How do you know?*

A: For example, because we haven't added any squares or taken any away

- Have students:
  - place one toy in five squares, then count the toys
  - rearrange the five toys: place them in different squares and count them again.

### Focus questions

Q: *How many toys do you have?*

A: Five

Q: *How many are there if you arrange them this way?*

A: There are still five

Q: *How do you know that?*

A: For example, because we haven't added any toys or taken any away

Q: *How many more toys will you need to make 10 altogether?*

A: Another five toys

Q: *How did you work that out?*

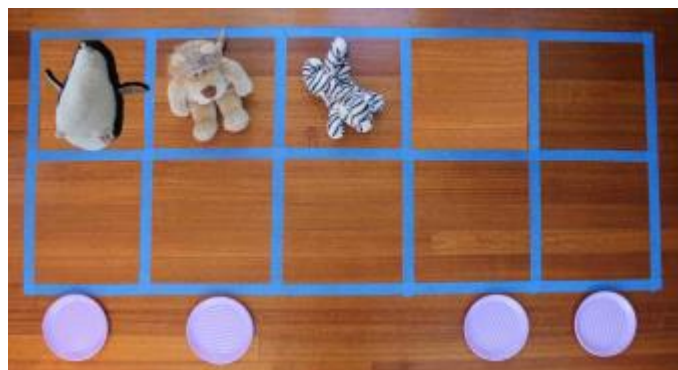
A: For example, there are five empty spaces on the ten frame

Q: *What if you had more than 10 toys; where could you put them?*

A: For example, outside the ten frame

### Combining quantities in different arrangements

- Play a bus game:
  - Use paper plates or circles of cardboard to add wheels to the ten frame.
  - Explain to students that they are going to pretend the ten frame is a double-decker bus and each space is one seat on the bus. For example:
- Ask students to place some passengers on the bus.



### Focus questions

Q: *How many seats will there be on the bus?*

A: 10

Q: *How do you know that?*

A: Because there are 10 squares on the ten frame

Q: *How many full seats can you see now?*

A: For example, three

Q: *How many empty seats can you see?*

A: For example, seven

Q: *How many more will have to get on to fill the bus?*

A: For example, seven

- Ask students to add the other toys on the bus and fill all of the seats.
- Explain to students that they are combining or joining the two groups to fill the bus.
- Ask students to repeat the activity, starting with a different number of toys on the bus.

### Focus questions

Q: *How many seats are there on the bus now?*

Q: *How many full seats can you see this time?*

Q: *How many empty seats can you see this time?*

### Explain to students

6 Different parts have been 'put together' to make a total of 10.

There are many words that mean 'put together'; for example, combine, add, join, and plus. ,

## Bus story

- Have students show the story with their toys.
- Explain to students that you are going to tell them a story about the passengers getting on and off the bus, for example:

### Say to students

Today is shopping day, so all of the toys are catching a bus into town to do their shopping.

At the first bus stop on the way to town, three passengers (toys) get on.

### Focus questions

Q: *How does the total number of passengers change when some more get on?*

A: The total gets bigger

Q: *How many passengers are on the bus now?*

A: Six

Q: *How has the total number of passengers changed?*

A: For example, three more were added

Q: *How many spare seats are there?*

A: Four

Q: *How many more passengers will fit on the bus?*

A: Four

### Say to students

At the next stop, there are six passengers waiting to get on.

### Focus questions

Q: *Will there be enough room for six more passengers?*

A: No

Q: *How many will fit on the bus?*

A: Four

Q: *What can the passengers do?*

## Say to students

‘ Two passengers will have to wait for the next bus. ’

## Focus questions

Q: *How many passengers are there on the bus now?*

A: 10

Q: *How many are on the top deck now?*

A: Five

Q: *How many are on the bottom deck?*

A: Five

Q: *What could you say about the number of passengers on the top and bottom decks of the bus?*

A: For example, five passengers on the top and five on the bottom make 10 altogether

## Say to students

‘ At the next stop, three passengers decide to get off the bus and walk the rest of the way to town. ’

## Focus questions

Q: *How will the total number of passengers change when some get off?*

A: The total number of passengers will get smaller

Q: *How many passengers can the driver pick up now?*

A: Three

Q: *At the next stop, there is one passenger waiting. Is there enough room for one more passenger?*

A: Yes

Q: *How many are on the bus now?*

A: Eight

## Say to students

‘ When the bus gets to the shops, all of the passengers get off. They say ‘thank you’ to the driver and go to do their shopping. ’

## Focus questions

Q: *How many passengers are on the bus now?*

A: None

Q: *How many passengers will be able to get on the bus now?*

A: 10