

# MATHS




## Lesson 9

Prep

**Topic: Number and place value**

### Combining small collections (1)

#### Lesson concepts

-  **Number** — Quantity
-  **Equivalence** — Language
-  **Addition and subtraction** — Process/operation

Today students will:

- combine small collections.

#### Resources

##### Find and prepare

- Sheet — Counting rhymes
- Dominoes set or Sheet — Dominoes (cut out)
- Collection of natural objects (from previous lesson)
- Set of plastic toy vehicles or figurines
- Counters (for example: buttons, pegs, beads)

#### 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, subitise, make, match



### Identify and act out familiar situations where quantities are combined

- Sing or say the rhyme 'One finger, one thumb' from the **Sheet** — [Counting rhymes](#) (or another rhyme in which the number of objects increases).
- Encourage students to move their fingers, wrists, hands and arms precisely to create movements to match the words in the rhymes.
- Ask students to show the correct number of fingers to match the words in the rhymes.
- Ask students to count and point to each finger each time that the number in the rhyme changes.
- Make sure students know that the last number they say is the total number of fingers they are showing.
- Explain to students that when the total is getting bigger, they are combining collections.

#### Focus questions

Q: *What happens in this rhyme?*

A: For example, more fingers move each time

Q: *What collections are combined?*

A: For example, there was one finger and one thumb to start with, then another finger joined in

Q: *Can you represent that rhyme using blocks?*

## Describe methods of combining quantities

- Ask students to take out the collection of natural objects from a previous lesson and spread them out on the table, the floor or a tray.
- Tell students to:
  - describe the natural objects (for example, 'I have some feathers, some shells and some leaves')
  - sort the objects into groups (for example, feathers, shells, leaves).
- Ask students to predict (make a sensible guess) the **total** number of natural objects if the groups are combined.
- Tell students to then combine the groups and work out the total.

### Focus questions

Q: *What could you say about combining groups?*

A: For example, the group I made was larger

Q: *How did you predict how many will be in the combined group?*

Q: *How could you check the total of the two groups?*

A: For example, by counting them all

Q: *What other ways could you suggest for doing that?*

A: For example, count forwards from one group; subitise

- Explain to students that they will now explore some different ways of finding out how many when you combine collections.

## Subitise and count forwards from one group



- Show students a domino from a dominoes set or cut from the **Sheet** — [Dominoes](#).
- Ask students to share their prior experiences with dominoes.
- Explain that there are two collections of dots on each domino.

### Say to students

‘ Cover one end of the domino.

Look at the other end of the domino. Can you tell me the total number of dots without counting?

Count the dots to check.

Now cover that end and tell me how many dots on the other end without counting.

- Repeat this until students can recognise the totals without counting (subitise).

### Note

At this stage, students should be able to identify these arrangements up to six without counting (that is, subitise).

- Ask questions to help students think about how to combine the two groups of dots.

### Focus questions

Q: *How many dots on one side of the domino?*

Q: *How many dots on the other side?*

Q: *How can you find out how many are altogether?*

- Have students choose another domino (from the set or from the **Sheet — Dominoes**) and represent the dots, using counters or buttons.
- Demonstrate different ways of working out the total of the combined groups by:
  - counting all of the counters
  - counting forwards from the largest group of dots
  - looking and seeing how many without counting.

## Practising methods of combining collections

- Show students the set of plastic toy vehicles/figurines.
- Ask students to show the following stories with the vehicles and explain what they are doing to find out how many there are altogether, for example:
  - by counting them all again
  - by counting forwards from one group
  - by subitising (that is, tell how many just by looking).

### Story 1

There were three trucks working at the construction site. The foreman called for two more trucks to come and help. How many trucks are at the construction site now?

### Story 2

There are two cars in the car park. Four more vehicles drive into the car park. How many vehicles altogether in the car park now?

### Story 3

There are five vehicles driving on the highway. Three more vehicles turn onto the highway. How many vehicles are driving on the highway now?

- Ask questions to help students to talk about how they combined quantities.

### Focus questions

Q: *How did you work out the total?*

Q: *Which method worked the best for you? Why?*

Q: *What happens when you combine quantities?*

### Example responses



I could see that there were five trucks altogether.



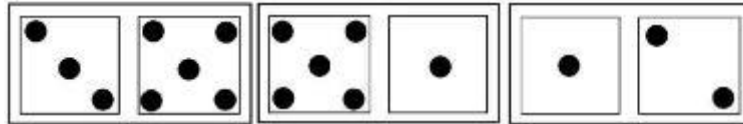
I could see that there were two cars in that group, so I counted forwards the other cars to find out how many are altogether.



I counted them all to see how many there are altogether.

### Optional: Play a game of dominoes

- Shuffle the dominoes.
- Decide who has the first move. (Each player chooses a domino and the player who has the most dots on their domino goes first.)
- Deal out the dominoes so that each player has an equal amount.
- The first player places one of their dominoes on the table.
- The next player lays a domino with a matching number next to the domino on the table, for example:



- Continue building a domino track. The winner is the first player to use all of their dominoes.
- While playing the game, help students to talk about the number of dots on each side of the dominoes, using addition language (for example, equal, the same, more, less, altogether).