MATHS

Prep

Topic: Number and place value

Adding using counting

Lesson concepts

- Number — Quantity
- Addition and subtraction — Part-part-whole (partitioning)
- Addition and subtraction — Process/operation

Today students will:

► count on when adding.

Resources

Find and prepare

Number track made out of tape or chalk on the ground or cards that can be sequenced to make a number track

Small bags (for example: snap lock bags)

Envelopes or paper pockets containing various quantities of stamps/paper shapes

Cards with numerals to twenty or beyond

Small objects for counting (for example: marbles, pebbles, counters)

Chalk

Key terms

addition

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

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Lesson

> ### Note
>
> It is important to highlight and develop the following vocabulary throughout this lesson: joining, total, more, less, larger, smaller, add, plus, addition, collection, quantity, getting bigger.

Introduce the lesson: Count on from different starting points

- Ask students to reflect on their addition experiences and identify that when adding:
  - the total is usually more (adding zero is the exception)
  - you can work out the total in a number of ways
  - counting on (forwards) is one way that you can work out the new total.
- Provide opportunities for students to practise counting on from different starting points.

  Sample activity — Count the hops across lily pads
  - Draw a set of 5–6 lily pads on the ground.
  - Tell students, 'A frog started on lily pad number 12 and hopped on'.
  - Allow students to hop on the lily pads and count on as they go.
  - Repeat the activity several times, beginning at a different number each time.

> ### Focus questions
>
> Q: *What happens to the quantity/total as you count on?*
>
> Q: *When you get more, would you count forwards or backwards? Why do you think that?*

Use counting on when adding

- Encourage students to explain addition by referring to hops.

The frog started at 12 and hopped
on 2 lily pads and ended on 14.
So, 12 and 2 makes 14.

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- Present a different addition situation and discuss ways of working out the new total.

Say to students

‘ Maria had 8 marbles in her bag and she found 3 more. How many does she have now? ’

Focus questions

Q: How many would she have now? How do you know that?

Q: How could you work that out?

Q: What is another way to work that out?

Q: How did you count?

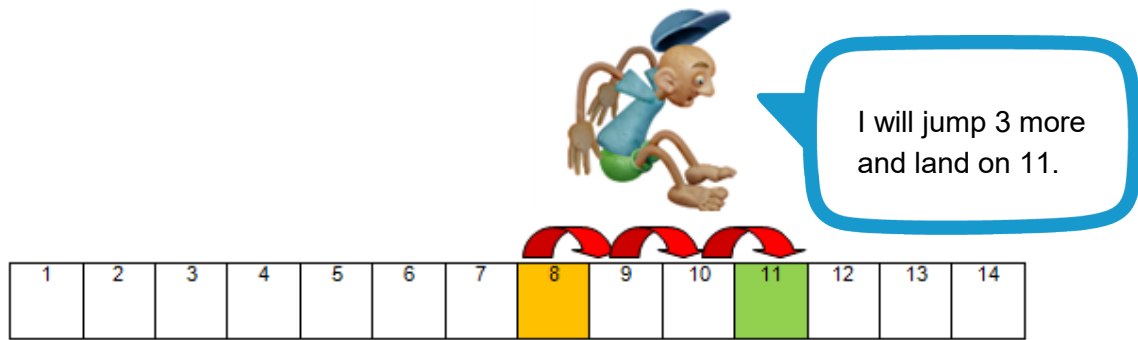*Q: Did you have to start at one? Explain.*

Q: Why did you start counting at eight?

- Encourage students to demonstrate their processes.

- Refer to the marble story and demonstrate 'counting on' using a bag and three marbles.

Say to students

‘ You know that she has 8 marbles in the bag.

It is not necessary to recount those marbles.

You can hold that number in your head.

You start at 8 (the first part) and count on 3 more (the other part) as you add the other marbles. ’

- Allow students to practise counting on marbles as they are placed into a bag by:
  - providing students with a small collection of marbles and a bag
  - posing a problem, for example: Maria had four marbles in her bag and she found five more. How many does she have now?
  - placing the correct quantity of marbles into the bag (for example: 4)
  - having students count on the extra marbles as they are placed into the bag
  - repeating the activity with different starting points.
- With students:
  - assemble a number track
  - identify the relationship between the numbers on the lines and the quantities they represent.
- Recall the marble addition story and represent the addition experience on the number track by jumping on from the starting number.

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I will jump 3 more and land on 11.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |

Focus questions

Q: How is this addition?

Q: How is this like counting the marbles in a bag?

Q: Which way do you prefer to work out how many marbles you have altogether? Why?
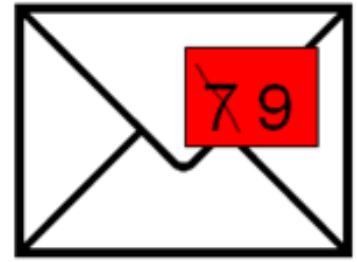
Stamps — Counting on 2

- Have students:
  - select an envelope containing stamps or cut out shapes with the total written on the outside
  - check the total inside
  - add 2 more
  - count on as they place them in the envelopes
  - cross out the number
  - record the new total on the outside
  - describe what they did using mathematical language, for example:

I started with 7 shapes and received 2 more. I ended up with 9.

So, 7 and 2 make 9.

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- o if necessary, tip out the contents and recount to check the total
  - o repeat the process, adding another 2.

Hopscotch — Counting on 2

- Have students:
  - o create a number track by drawing a hopscotch-type grid on concrete and writing the numerals in the grid
  - o roll a pebble (marker) to a number
  - o stand on that number
  - o draw two markers (pebbles) from a bag
  - o jump on a space for each marker
  - o place a marker on the numbers as they count on
  - o describe what they did using mathematical language, for example:

> I started at 10 and jumped on 2 more. I ended on 12.
>
> So, 10 and 2 make 12.

  - o continue adding on 2 until they reach the end of the track.

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Marbles — Counting on 2

- Have students take turns to:
  - collect a handful of marbles
  - count/identify the quantity
  - place the marbles in a bag
  - collect 2 more marbles
  - count on as they add them to their bag
  - describe what they did using mathematical language, for example:

I started at 10 and added 2 more
and ended with 12.

So, 10 and 2 make 12.

- Discuss students' observations and experiences with counting on.

Focus questions

Q: *What happened to the total as you added?*

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

Q: *In what other ways could you have worked that out?*

Q: *How does counting help you when adding?*

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