

MATHS





Lesson 2

Prep

Topic: Number and place value

Counting forwards and backwards

Lesson concepts

-  **Number** — Names and symbols
-  **Number** — Quantity
-  **Number** — Counting
-  **Number** — Subitising

Today students will:

- ▶ count collections to 10 or beyond
- ▶ use forwards and backwards counting sequences
- ▶ subitise collections to five
- ▶ represent counting sequences.

Resources

Digital

Learning object — Space junk

Find and prepare

Sheet — Five riding bikes (assembled)

Container with five pencils

Play materials (for example: iceblocks sticks, pegs and string)

[Cards with numbers to 10 or beyond](#)

Chalk, tape, mats or pieces of paper/card (to create a number track)

Key terms

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

Lesson

Introduce the lesson

Note

The following language is important to highlight and develop throughout this lesson:

before, after, next, order, numbers, quantity, count, sequence, forwards, backwards, starting point, ones counting sequence, more, less, how many, total, same

Quantify collections using counting sequences

Practise forwards and backwards counting

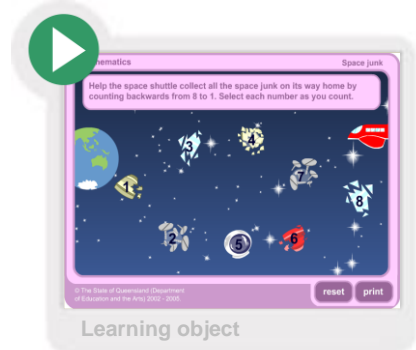
Assist students to practise saying the forwards counting sequence:

- role-play situations where forwards counting would be needed (such as collecting play equipment, putting dirty clothes in a basket)
- use rhymes such as 'One, two, three, four, five, once I caught a fish alive'.

Assist students to practise saying the backwards counting sequence:

- create situations or actions that represent counting backwards (such as a rocket blasting off)
- read the story on the assembled **Sheet** — [Five riding bikes](#)
- open the **Learning object** — **Space junk** and help students to complete the learning object.

In this learning object, a space shuttle makes its way back to Earth collecting space junk as students select pieces labelled from eight to one in consecutive descending order. Students practise counting backwards and recognising numbers to eight.



Discuss the reasons for counting (that is, counting is used to determine how many).

Explain that you usually count forwards but sometimes it is important to count backwards.

What's left?

Display a pencil container with five pencils or a similar collection.

Ask students to:

- discuss how they might work out how many pencils are in the container
- count the contents together.

Place one pencil in five different places in the room.

Discuss and demonstrate different ways of working out how many are left in the container (for example: by recounting the contents or counting backwards as each pencil is removed).

Repeat the activity by giving out a different quantity.

Ask students to:

- predict how many will be left
- check by counting back.

Focus questions

Q: Which way of counting was quicker? Why was that?

A: Counting backwards.

Q: Can you think of any other times counting backwards would be quicker?

A: Personal response required.

Represent counting sequences and explore counting sequences in reference to five

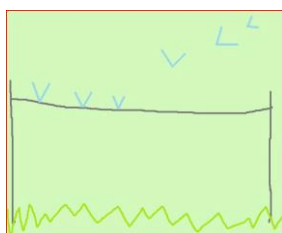
Represent a bunch of up to five flowers (in a drawing or using artificial flowers).



Demonstrate to students:

- how many people would get one flower each if you gave them out (encourage students to subitise these quantities)
- how many would be left if you gave out two or more flowers
- how you could count to work that out.

Represent up to five birds on a clothes line or in a tree (for example: using drawings or pegs on a string).



Show students how:

- to work out how many would be on the line if some flew away (by counting back from a known quantity)
- to work out how many would be on the line if some flew back (by counting on from the known quantity)
- to work out how many without starting the count at number one each time.

Focus questions

Q: *What type of counting did you use?*

A: Counting backwards.

Q: *Why did you count that way?*

A: For example: It's quicker than counting from one each time.

Q: *Which way would you count if you wanted to get more/less?*

A: For example: count forwards to get more/count backwards to get less.

Allow students to enact or represent these situations, focusing on forwards and backwards counting from a subitised quantity (that is, a quantity to five that does not require counting).

Count on and back

Monster, may I? Counting forwards and backwards (optional activity)

Play the game, 'Monster, may I?' (this may be played with family members):

- One player is identified as 'the monster'.
- Players form a line that is 20 steps from the monster and stand facing him/her.
- The monster gives one or two instructions to individual students (for example: 'Peter, take two steps forwards then four steps backwards').
- Students must ask 'Monster, may I?' before taking the steps.
- If they forget, they must go back to the start.
- The winner is the first to get to 'the monster'.

Variation: The monster could select from the cards with numbers to 10 or beyond to inform them about the instructions they give.

Focus questions

Q: *When you go backwards, are you getting closer or further away from the monster? How can you tell?*

A: For example: further away because I am moving away from the monster.

Q: *How many more steps do you think you will need to reach the monster?*

A: Personal response required.

Q: *How could you check that?*

A: Personal response required.

Q: *When you step backwards, will you need more or less steps to get to the monster? Why do you think that?*

A: Personal response required.

Q: *How far have you gone? After taking two steps backwards, how far have you gone now?*

A: Personal response required.

Q: *How could you work that out?*

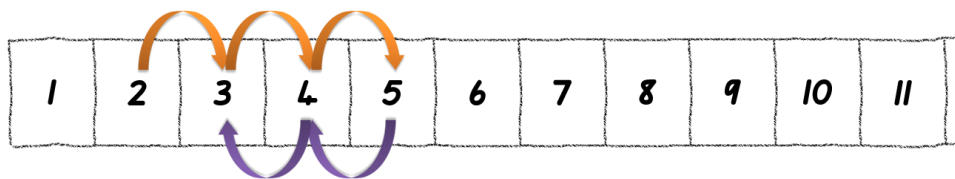
A: Personal response required.

Demonstrate how to connect the 'Monster, may I?' instructions to counting forwards and backwards.

Draw a number track to 20 in chalk (or place mats/tape on the carpet).

Discuss how to:

- count forwards when you step forwards
- count backwards when you step backwards (for example: beginning at two, count and step three forwards, then count and step two backwards)



Before counting, ask students to guess where they may end up.

Focus questions

Q: *If I start at 3 and count to 10, do I count forwards or backwards? How do you know?*

A: For example: forwards because the number is getting bigger.

Q: *If I start at 5 and count to 1, do I count forwards or backwards? How do you know?*

A: For example: backwards because the number is getting smaller.

Q: *Where will you end up if you keep counting backwards?*

A: For example: at number 1.