

# MATHS







## Lesson 8

Prep

**Topic: Number and place value**

### Comparing quantities

#### Lesson concepts

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

Today students will:

- ▶ arrange parts within a quantity
- ▶ compare and sequence quantities.

### Resources

#### Digital

Stimulus sheet — Fish  
Stimulus slideshow — Birds and stars  
Learning object — Dice combo

#### Find and prepare

Ten frames  
At least two numbered dice  
Blank dice (for comparing quantities beyond 6)  
Cards with numerals to at least 20  
Counters

### Key terms

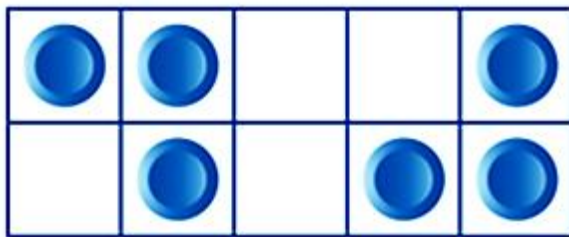
numeral, partition, subitise

For definitions and explanations of terms, please see the [Glossary](#).

## Lesson

### Introduce the lesson: Identify parts within a quantity

- ▶ View a ten frame in the [Mathematics library glossary](#) or use a real-life ten frame and discuss the:
  - quantity on each frame
  - parts that can be seen within the quantity (I can see ... )
  - other ways the quantity could be partitioned.

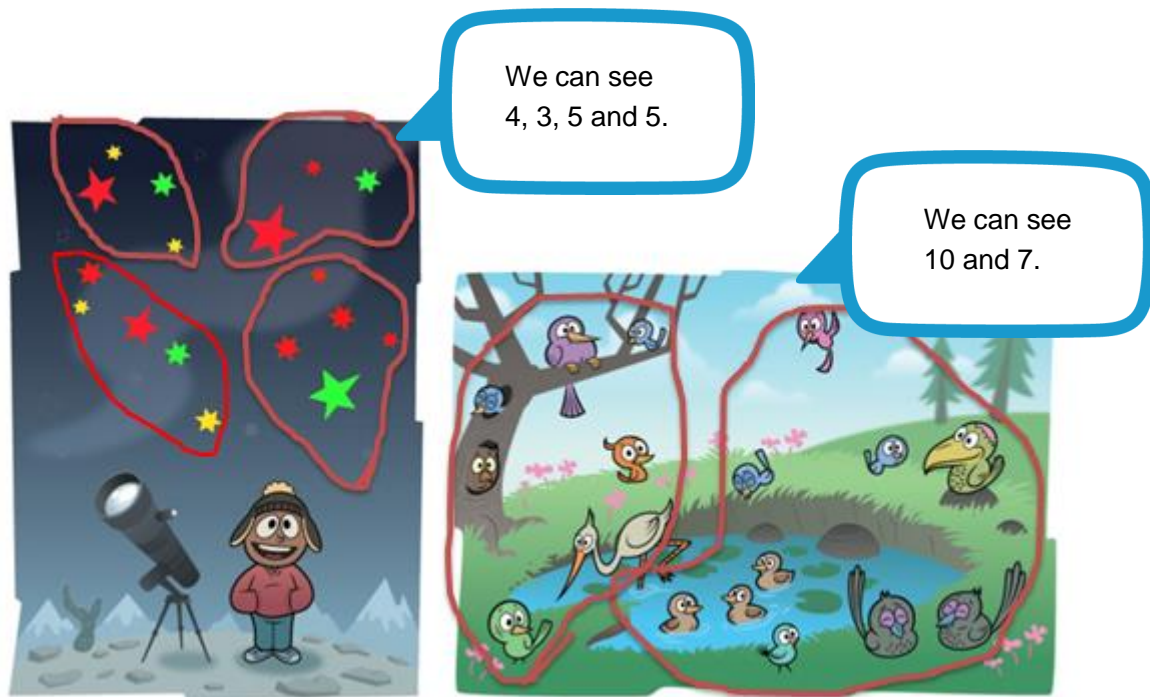


I can see 6. I can also see 3 and 3 or 2, 1, 1 and 2.

#### Focus questions

- Q: What parts can you see within the quantity?*
- Q: How could you partition it differently?*
- Q: If there were more than two parts, what could they be?*
- Q: Does the quantity change if you rearrange the parts? How can you tell?*

- ☰ Briefly display an image such as the **Stimulus sheet** — [Fish](#).
- Ask students to try to remember how many fish are in the image.
- Have students tell how they counted the fish and:
  - discuss ways of working out the total
  - decide on the most efficient way (for example: counting every image is slow and it can get confusing if you have too many to count)
  - identify the parts by circling the parts (for example: groups within that can be subitised such as twos, fives).
- ▶ Provide copies of images such as **Stimulus slideshow** — [Birds and stars](#).



### Focus questions

Q: How many can you see? How can you check?

Q: How did you work it out?

Q: What parts can you see within the total?

Q: Are there any other ways of looking at the group? What are they?

Q: If you break up/partition the group different ways, will you still have the same total? Why do you think that? How could you check?

A: Yes, because there are still the same number, just in different arrangements. I could count them to check.

### Compare quantities

- Compare quantities with students by:
  - uncovering two groups of objects with distinctly different quantities, for example: three and nine
  - instructing students to observe and identify the quantities
  - re-covering the quantities
  - recalling and discussing students' observations.

## Focus questions

Q: *Were the groups the same size? How could you tell?*

Q: *How many in each group?*

Q: *How did you work that out?*

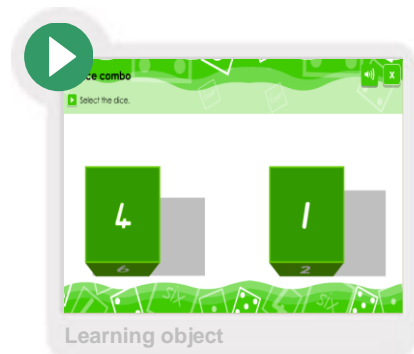
Q: *What parts can you see within the groups?*

Q: *How could you describe them?*

Q: *What mathematical words could you use to compare the quantities?*

A: more, less, same, part, equal

- Repeat the process with two quantities the same and two quantities closer in quantity (for example: 12 and 11).
- Discuss how:
  - numbers can be used to represent quantities
  - you can use mathematical language to compare the quantities.
- Roll two numbered dice (or use the **Learning object — Dice combo**) and compare the quantities that numbers represent.



## Note

Some students may need to make the quantities with materials if they are having difficulty comparing quantities using numerical representations. Larger quantities can also be written on blank dice for comparing quantities beyond 6.

## Focus questions

Q: *How were the quantities represented?*

A: with numerals

Q: *What mathematical words could you use to compare these quantities?*

A: more, less, same, equal

- Toss two dice **twice** and record the four numbers on separate pieces of paper.
- Display the numbers and have students compare the quantities by referring to the numerals.

### Focus questions

- Q: Which is the largest/smallest quantity?
- Q: How could you order these?
- Q: How would you describe this sequence/order?
- Q: How else could you order these?

## Sequence quantities

- Distribute number cards (with the numerals to at least 20).
- Explain to students that they are going to sequence the quantities written on the cards to create a number track.
- Ask students to:
  - place their cards in order on the ground or a table to create a number track.

### Note

Check that students see the track from the left to the right.

### Focus questions

- Q: Can you guess my number? (for example: I am 1 less than 5; I am 2 more than 12)
- A: 4; 14
- Q: How else could you arrange this number track? Explain.
- A: Going from largest to smallest.

- Check students' understanding of the sequence of the track:
  - turn over some cards on the track so students can't see the numbers
  - ask students to identify the blank cards
  - switch the order of some numbers and ask students to correct the order of the numbers.

### Focus questions

- Q: Which number would come next? How do you know?
- Q: Which numbers are more/less than this? How do you know?