





Topic: Number and place value

Representing a quantity in different arrangements

Lesson concepts

-  **Equivalence** — Conservation
-  **Number** — Quantity
-  **Number** — Counting
-  **Representations** — Concrete

Today students will:

- ▶ count forwards from different starting points
- ▶ represent quantities in different arrangements.

Resources

Sheets

Sheet — Numbers 0 to 9 (cut out, save for future lessons)

Find and prepare

Bag (paper or cloth)

Range of small items to count (for example: counters, beads, marbles, dried beans)

Clean bucket or container

Paper balls (to toss into the bucket)

Range of containers (for example: ice cube trays, muffin trays, egg cartons, seedling planters, biscuit packaging)

Key terms

arrangement, collection, count, equal number, forward, materials, number, one more, pattern, quantity, rearrange, representation, same, total

Lesson

Introduce the lesson

Say to students

- ‘ In this lesson, you will count forwards from different starting points and show quantities with different materials and arrangements. ’

Practise recalling the counting sequence to 20 and beyond.

Count forwards from different starting points

In the bag

Place a small collection of items (up to five) in a bag.

Collect all the items in your hand and bring them out of the bag.

Ask students to identify the quantity at a glance (subitise).

Collect a different number of items and place them in the bag.



Note

Reinforce that the total is the same whether you can see it or not.

Focus questions

- Q: *How many counters are in the bag?*
 Q: *How many will there be in the bag if I put one more in?*

Place one more counter into the bag.

Tip all of the counters out of the bag and recount them.

Discuss how, when you put one more counter in, you are counting forwards.

Practise counting forwards from small numbers using the bag.

Recount the contents to check the total each time.

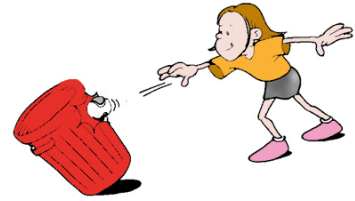
Focus questions

- Q: *When could you count forwards?*
 Q: *Why is counting forwards helpful?*
 Q: *What happens to the total as you count on?*

Explain to students that they will play 'Toss it in the bucket' using paper balls and a clean bucket or container.

Ask students to:

- place an agreed number of paper balls in the bucket
- recount the contents if they are unsure of the total
- toss more paper balls into the bucket, one at a time
- count forwards as each paper ball lands in the bucket.



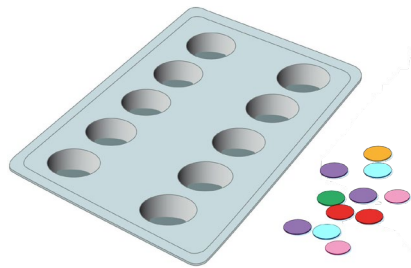
Focus questions

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

Q: *How did the total change when the ball missed the bucket?*

Generate and connect different representations of a quantity

Set up containers and small items to place into the containers (such as ice cube trays and beads, muffin trays and counters, egg cartons and marbles, seedling planters and dried beans, or playdough balls and ice-cream sticks).



Place the cards cut from **Sheet** — [Numbers 0 to 9](#) in a bag.



Ask students to:

- select a card from the bag
- represent the number on the card by placing the items in the container
- place their number beside the materials
- select a different number from the bag and repeat the process.

Focus questions

Q: *What do you notice about this number or this collection?*

Q: *What happens to the total if the collection is arranged differently? Why do you think that?*