



Topic: Using units of measurement

Comparing mass, using balance scales

Lesson concepts

-  **Mass** — Language (describing, comparing, ordering)
-  **Mass** — Direct comparison

Today students will:

- ▶ use balance scales to compare the mass of objects
- ▶ explain observations, using mathematical language.

Resources

Digital

Video — Seesaw (0:33)

Learning object — Balance scales

Find and prepare

Three brown paper bags containing objects of distinctly different mass (for example: in one paper bag place a handful of cotton balls; in the next paper bag place a place a handful of buttons or counters; in the last paper bag place a handful of stones or coins)

A cylinder (for example: kitchen-paper roll, can)

A board or flat piece of timber that can balance on the cylinder like a seesaw

Key terms

heft, weight, mass

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.

light, heavy, lighter, heavier, lightest, heaviest, compare, heft, same, balance, tip, size, lift, sequence, order, up, down, side

- Show students the three brown paper bags containing the objects with different masses.
- Ask students to:
 - suggest ways of finding out which bag is the lightest and which is the heaviest
 - try their suggestions
 - order the bags from lightest to heaviest.
- When students have ordered the bags, help them to label two bags: one with 'heaviest' and the other with 'lightest'.

Focus questions

Q: *Why did you put that bag first?*

A: For example, it felt lighter than the other bags when I lifted it up.

Q: *How did you know to put that one next?*

A: For example, it was heavier than the first bag, but lighter than the last bag.

Q: *Was it hard to work out how heavy or light any of the bags were? Why was it hard / why wasn't it hard?*

A: For example, yes, because the bags were almost the same.

- Explain to students that they will explore other ways to compare the mass of objects.

Explore the concept of balance

- Have students view and sing along with the **Video — Seesaw**.



- Ask them to suggest actions and move as they sing the song again.
- Discuss how a seesaw works.

Focus questions

Q: What parts make up a seesaw?

A: For example, a board that tips and the part the board sits on.

Q: How does a seesaw work?

A: For example, the board balances on the other part and tips up and down when someone sits on the ends of the board.

Q: What words can you use to describe what a seesaw does?

A: For example, up, down, balance.

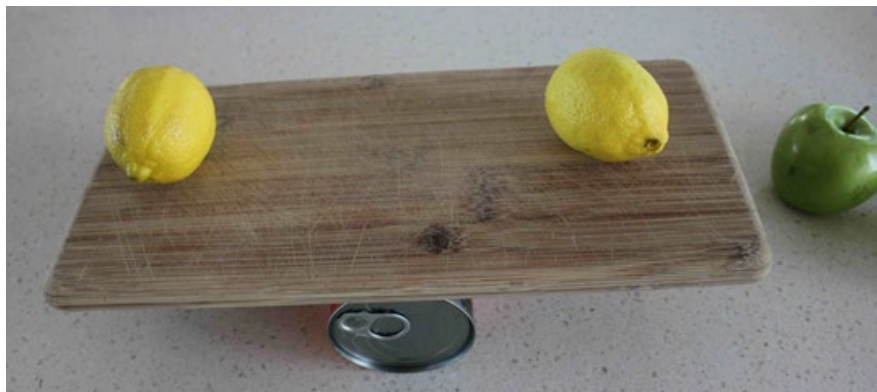
Q: What would happen if you were on one end of the seesaw and Dad was on the other? Why?

A: For example, it would tip down on Dad's end, because he is heavier than me.

Q: What happens if someone the same size as you is on the other end of the seesaw?

A: For example, it might stay flat/straight.

- Explain to students that they will construct a seesaw, using a cylinder and a board (or flat piece of wood)
- Ask them first to draw a picture of what the seesaw might look like, and collect materials that they could use.
- Use soft toys or objects to show students how the seesaw can balance and tip.



- Explain that a seesaw is like a balance scale.

Focus questions

Q: *What could you put on the other side to make the seesaw tip downwards on this end?*

Q: *Why did it tip downwards?*

A: Because the object was heavier.

Q: *What could you put on the other side to make the seesaw tip up on this end?*

Q: *Why did it go up?*

A: Because the object was lighter.

Q: *What could you put on the other side to make the seesaw balance?*

Q: *Why is it balanced?*

A: Because the objects have the same mass.

Compare mass, using balance

- Have students view the **Learning object — Balance scales**.
- Ask questions to prompt students to discuss how balance scales are used to compare mass.

