

Topic: Using units of measurement

Comparing mass

Lesson concepts



Mass — Language (describing, comparing, ordering)



Mass — Direct comparison

Today students will:

- ▶ compare the mass of objects
- ▶ explain observations, using mathematical language.

Resources

Digital

Learning object — Light and heavy (Foundation maths practice)
(IXL Learning) <http://au.ixl.com/math/foundation/light-heavy>

Learning object — Light and heavy (Preschool maths practice)
(IXL Learning) <http://au.ixl.com/math/preschool/light-and-heavy>

Find and prepare

Sheet — Colour and number dice

Materials to make a simple balance scale
(skirt hanger and 2 resealable bags)

OR materials to make a simple seesaw (a cylinder and board)
(see previous lesson)

Small blocks or objects that are the same size and shape,
to place on the scales (for example: pegs)

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, collection, change, empty, full

Adjust mass



- Show students the dice made from the **Sheet** — [Colour and number dice](#).
- Explain to students that they will play a game using the dice and their balance scales.

Explain how to play the game

- The game is played with two players.
- Place the balance scales (or see-saw) between the players.
- Start the game with six blocks in each side of the balance scales (in resealable bags), so that they are balanced.
- Each player has a pile of ten other blocks.
- Players add blocks or take away blocks from the balance bag closest to them, according to the roll of the dice.
- The red sides of the dice mean **take away from** and the green sides mean **add to**. For example, if players roll a 'green 1', they can add one block to their balance bag. If players roll a 'red 3', they have to take three blocks out of their balance bag.
- After each player has had two turns, they will compare their balance bags and see which is the heavier or lighter, or if they are the same.
- The player with the heavier bag will keep all of the blocks from both bags.
- The game then starts again, with five blocks in each bag.
- The game continues until one player has no blocks left.
- As students play the game, ask questions to help them talk about comparing mass with the balance scales.

Focus questions

Q: *How did the balance scales change when you put one more block into the bag?*

A: For example, the arm moved down.

Q: *How did it change when you took blocks out of the bag?*

A: For example, the arm moved up.

Q: *What did it look like when the scales were balanced?*

A: The arms were straight.

Q: *What did it mean when the scales were balanced?*

A: It meant that the objects in each bag weighed the same.

Q: *How many more blocks could you add before the bag hit the ground?*

Interpret visual representations of comparative mass

- If you have access to the internet, view and discuss the **Learning object — Light and heavy** (Foundation maths practice) <http://au.ixl.com/math/foundation/light-heavy> and/or the **Learning object — Light and heavy** (Preschool maths practice) <http://au.ixl.com/math/preschool/light-and-heavy>.

(These websites allow users to practise their maths each day by answering a certain number of questions about whether objects are heavier or lighter. Membership is not required.)

- Discuss with students how pictures can show different masses. Allow students time to answer some questions.