

# See-saw Antics

**You need**

- ★ the instructions and results table for the balancing experiment (see copymaster)
- ★ pencils      ★ a 30 cm ruler      ★ tape      ★ identical metal washers (or coins)
- ★ a classmate

## Activity One

Atawhai and his sister Kiri often play on the see-saw at their local playground.

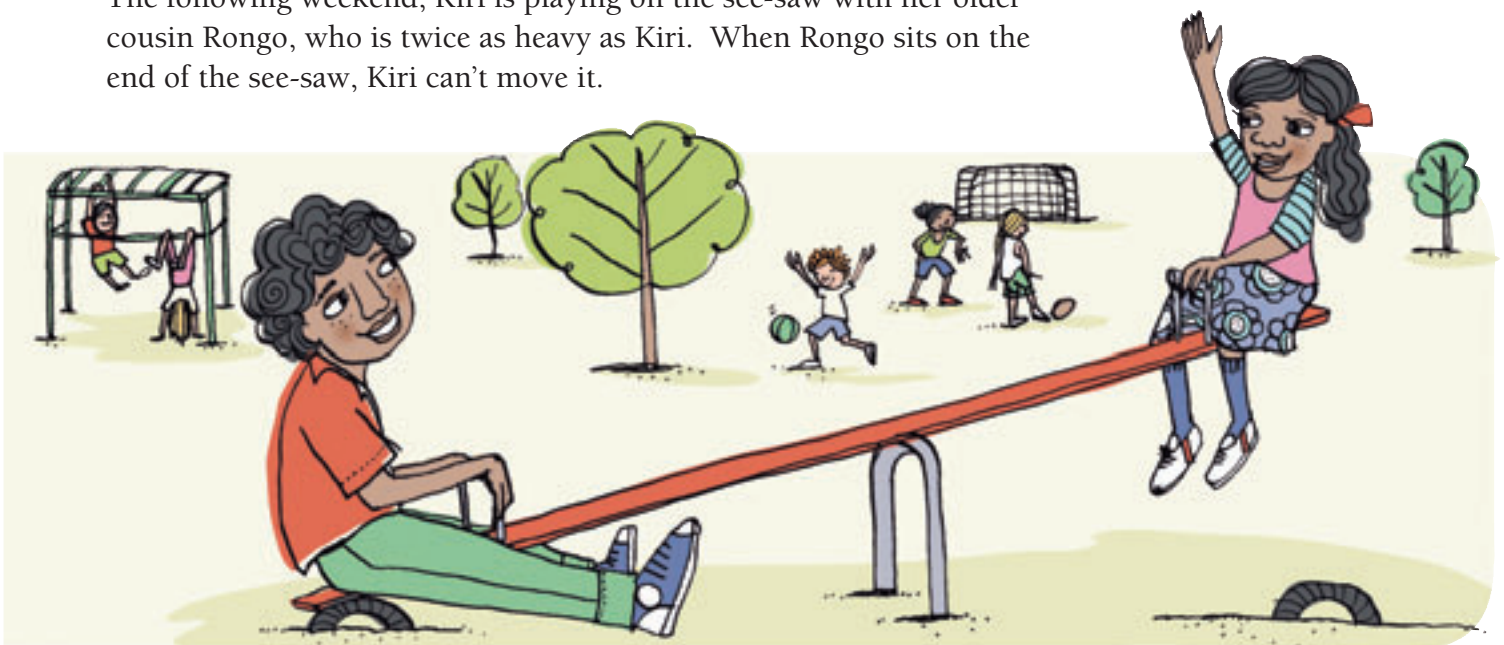


Kiri wonders what makes the see-saw go up and down. She and Atawhai talk to their dad about this.



Well, the see-saw rotates on a turning point. When you move, the see-saw acts as a lever. You can use levers to lift or move lots of things.

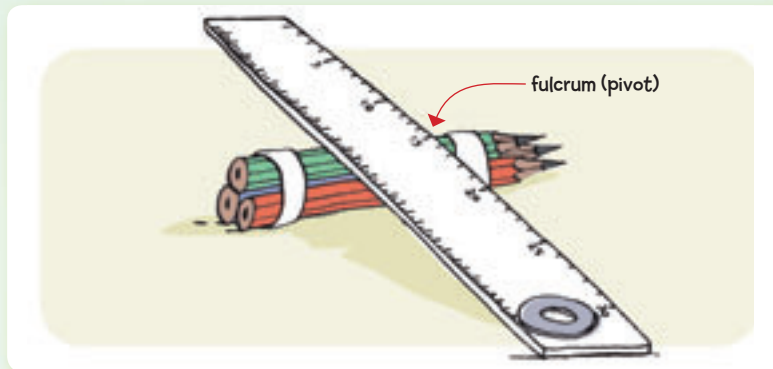
The following weekend, Kiri is playing on the see-saw with her older cousin Rongo, who is twice as heavy as Kiri. When Rongo sits on the end of the see-saw, Kiri can't move it.



1. Where should Rongo sit to balance the see-saw? Explain your answer.

## Activity Two

1. a. With a classmate, carry out an experiment to investigate balancing. Follow the balancing experiment instructions provided by your teacher and fill in your copy of the results table.



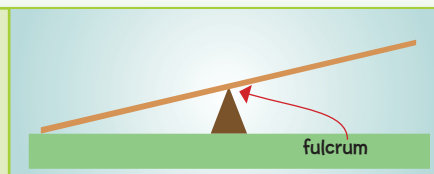
Distance (cm) from the fulcrum of 1 washer	Distance (cm) from the fulcrum of 2 washers (to balance)
15	

- b. Is there a pattern in your results? If so, describe it.
- c. What would happen if you stacked 3 washers on one side?
2. a. How does what you have found out apply to a crane? Discuss.
- b. Discuss with your classmate other situations where balancing is important.

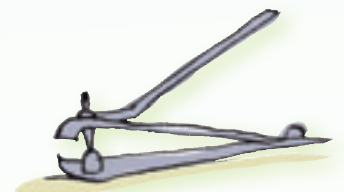


## Activity Three

A lever is a simple tool or machine that uses a force to move a load around a fulcrum. This makes work easier!  
The fulcrum is the point at which energy is transferred.



1. When could arms and legs act as levers?
2. a. What is the fulcrum in:
  - i. a crowbar?
  - ii. a playground swing?
  - iii. a diving board?
- b. What acts as the fulcrum when you are paddling a canoe?
3. Discuss with your classmate which part of each object shown here is the fulcrum and which part is the lever.



### Focus

Gathering and reporting data and investigating patterns and relationships