

## Copymaster: Pages 2–3: Playing with Energy

Example of energy	Type of energy (potential or kinetic)
Petrol	
A stretched rubber band	
A battery	
2 billiard balls colliding	
An apple falling from the tree	
A flying rubber band	
A child riding a bicycle	
A vibrating bass drum	
Air blowing out of a hairdryer	
Hot springs	

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### Energy game cards

**1.**

### **Wind**

The wind is blowing at 300 metres per minute.

**Move forward 1 space for each metre per second of wind speed.**

**2.**

### **Tornado**

The energy in a small tornado can be equivalent to as much as 10 000 kilowatt-hours. A typical household uses 28 kilowatt-hours of energy a day.

**Move forward the number of years it would take a typical household to consume as much energy as a tornado.**

**3.**

### **Rain**

Rain is falling at 180 millimetres an hour.

**Move forward the number of millimetres per minute.**

**4.**  
**Running**

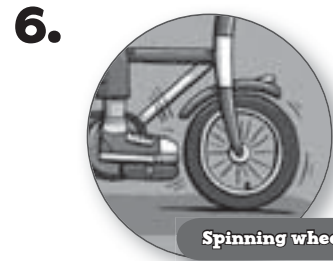
Keisha can run 5 kilometres in 30 minutes.

Move forward 1 space for each kilometre she runs in 12 minutes.

**5.**  
**Earthquake**

Each whole number on the Richter scale represents an earthquake that is 10 times more powerful than the preceding one. That is, a 2.0 earthquake is 10 times more powerful than a 1.0 earthquake.

Move forward the number on the Richter scale that is 100 times more powerful than a 2.0 earthquake.



Kumar can cycle 24 kilometres in an hour.

Move forward the number of kilometres he rides in 10 minutes.

**7.**  
**Travelling by car**

From Levin to Hamilton is 420 kilometres.

Move forward 1 space for each hour it takes to reach Hamilton at an average speed of 70 kilometres per hour.



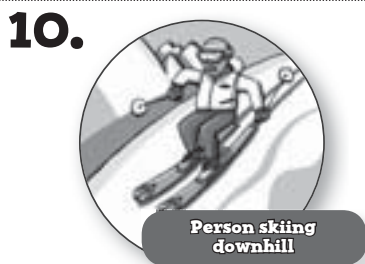
Sefo can kick a soccer ball 33 metres.

Move forward the number of kicks it will take him to kick the ball the length of a 100 metre soccer field.

**9.**  
**A shout**

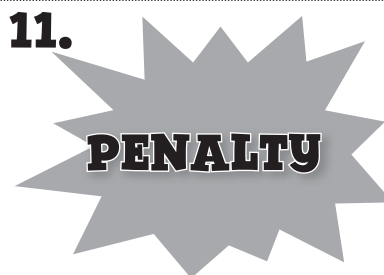
Sound travels at 0.34 kilometres per second.

Move forward 1 space for each kilometre that sound travels in 9 seconds.



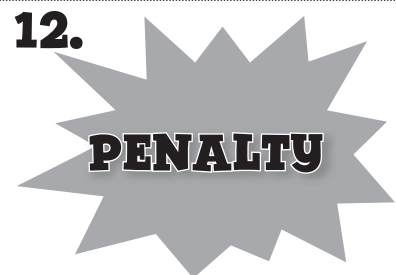
A ski-lift carries 7 200 people every hour.

Move forward the number of people it carries each second.



Energy drain! Your cellphone has a dead battery.

Lose 2 potential energy tokens.



You forgot to eat lunch!

Lose all your potential energy tokens.

13.



You catch a big wave.

Surf ahead 5.

14.

## Wind

A 19 kilometre per hour wind is about 10 knots.

Move forward at the speed in knots of a 9.5 kilometre per hour wind.

15.

## Tornado

The winds in a tornado can blow at speeds of greater than 180 kilometres per hour, but the tornado itself may move forward at only 30 kilometres per hour.

Move forward the number of minutes it would take this tornado to travel 2 kilometres.

16.



Rolling skateboard

Helen burns 500 kilojoules in 10 minutes of skateboarding.

Move forward 1 space for each minute she needs to burn 300 kilojoules.

17.

## Rain

MetService predicts 16 millimetres of rain between 8 a.m. and noon.

Move forward 1 space for each millimetre that falls in an average hour.

18.

## Jogging

Dina burns 250 kilojoules in 5 minutes of jogging.

Move forward 1 space for each minute she needs to burn 150 kilojoules.

19.

## Earthquake

Each whole number on the Richter scale represents an earthquake that is 10 times more powerful than the preceding one. That is, a 6.0 earthquake is 100 times more powerful than a 4.0 earthquake.

Move forward the number on the Richter scale that is 1 000 times more powerful than a 1.0 earthquake.

20.



Boiling kettle

A half-full kettle boils in 90 seconds.

Move forward the number of minutes a one-third full kettle takes to boil.

21.



Spinning wheel

Kumar burns 500 kilojoules in 10 minutes of cycling.

Move 1 square for each minute he needs to burn 100 kilojoules.

**22.**  
**Travelling  
by car**

From Christchurch to Kaikoura is 180 kilometres.

Move forward 1 space for each hour it takes to reach Kaikoura at an average speed of 60 kilometres per hour.

**23.**  
**Rolling ball**

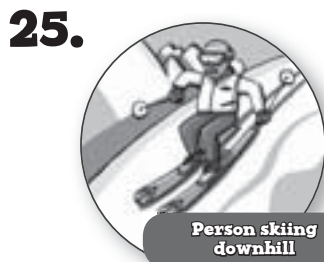
A ball rolling downhill travels 2 metres the first second, 4 metres the next, 6 metres the next, and so on.

Move 1 space for each second it takes to travel 30 metres.



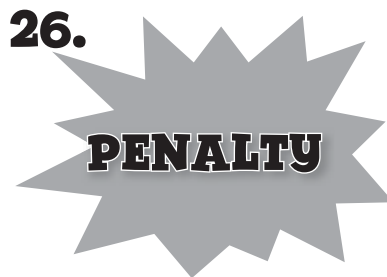
Sefo burns 1 kilojoule per second playing soccer.

Move forward 1 square for each minute he needs to burn 300 kilojoules.



A skier is travelling downhill at 30 kilometres per hour.

Move forward 1 square for each kilometre he travels in 8 minutes.



Too much friction!

You're stuck on this square.



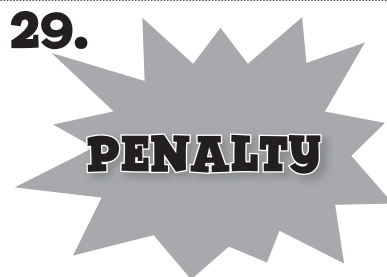
You get a new skateboard.

Skate ahead 4 spaces.



You catch a tail wind.

Move ahead 3 spaces.



Your rubber band snaps!

Lose 1 potential energy token.



You remember to charge your cellphone.

Gain 3 potential energy tokens.