



Word Classes

Adverbs tell us more about the verb. They indicate how, when or where something has happened.

Examples : He folded the paper carefully. The verb is folded (what he did) and the adverb is carefully (how he did it).
He came home yesterday. The verb is came (what he did) and the adverb is yesterday (when he did it).
He looked everywhere. The verb is looked (what he did) and the adverb is everywhere (where he did it).

Many adverbs are made by adding _ly to an adjective. Examples : slow - slowly brilliant - brilliantly

When a word ends in _y change the y to i before adding _ly to the adjective. Examples : angry - angrily dainty - daintily

A Making Adverbs

1 Make adverbs from each of the following adjectives.

- a) wary
b) vigorous
c) brilliant
d) insolent
e) impudent
f) stealthy
g) faint
h) quick
i) jubilant
j) calm

B How Was It Done?

1 Complete each sentence with an adverb that tells how something was done.

- a) James stood
b) Sarah laughed
c) Tom spoke

2 Using the words seriously and vigorously, write two sentences of your own.

- a)
b)

C Where Was It Done?

1 Circle the adverb that tells where something was done.

- a) We came here to ski.
b) Lance ran away.
c) The gumboots stayed outside.
d) It was lost there.
e) I looked everywhere.



D Amazing Adverbs

1 Write adverbs that show two ways you could do each action.

- a) move
b) frown
c) speak
d) listen

E Similar Meanings

1 Write another adverb that has a similar meaning to the one given. You could use a Thesaurus to help. One is done.

- a) happily
b) silently quietly
c) fondly
d) furiously
e) foolishly
f) warily
g) desperately
h) distinctly
i) courageously
j) bitterly



Punctuation

A question mark (?) is placed at the end of a sentence when a question is asked. It completes the sentence and takes the place of a full stop. Sentences that begin with words such as how, when, where, why, do, were, ask questions and should have question marks at the end.

Examples : Where have you been since school got out? Who's that boy waiting outside for you?

A Fantail Flit

1 Rewrite these statements to form questions. One is done for you.

- a) Fantails are always moving. Are fantails always moving?
b) Piwakawaka means fantail.
c) There seem to be fewer fantails today.
d) Fantails dance from tree to tree.
e) Insects are the fantail's favourite food.

B Ask It

- 1 Write a brief question that begins with each given word.
a) How
b) When
c) Where
d) Why
e) Do
f) Were
g) Will
h) Have
i) Is
j) Are

C Roller Coasters

1 Write three key questions about roller coasters you would like answered if you were studying this amusement ride.



- a)
b)
c)

2 Write a question for each of the following answers.

- a) Q
A Roller coasters in New Zealand are inspected by the Ministry of Transport.
b) Q
A The longest roller coaster in New Zealand is at Rainbow's End funpark in Auckland.
c) Q
A The world's fastest roller coaster is the 'Formula Rossa' in the Abu Dhabi which reaches 240 km/hr.



Onomatopoeia (ono - mat - a - pay - a) is when the sound of a word suggests its meaning. They are sometimes called 'sound' words and are often used for effect in prose writing and poetry.

Examples : cuckoo - the word sounds just like the bird's own call
purr - the word sounds just like the cat's contented noise

A Simple Sounds

1 Circle the words which imitate or suggest the sound they make.

pop guitar sizzle quack
leaves money tinkle balloon
hiss twang steam saw clink horn
duck
sausages toot buzz glass rustle

2 Pair up the words in question 1. One is done for you.

pop - balloon
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

B Choosing Sounds

1 Choose an onomatopoeic word that makes a sound made by . . .

a) water going down a drain



b) sheets in the wind
c) wind in the trees
d) oil in a frying-pan
e) water dripping
f) rusty hinge
g) water splashed on fire
h) train through a tunnel
i) key turning in lock

C All My Own Work

1 Making up sound words of your own can be fun. Write two or more words of your own that represent sounds made by the following. One is done for you.

washing-machine working fwunkey, slunkety, slithery, sloshery
sausages cooking in a pan
a cat drinking milk
a glass dropped on concrete
a fireworks display
car starting

72 Māori Contributions



Dictionary Skills

The Māori language, one of our three official languages, is woven into daily use through common words (e.g. *kia ora*, *whānau*, *ka pai*), place names (e.g. *Taranaki*) and songs (e.g. *Pō Kare Kare Ana*). Many of the Māori words are similar to English. This is because Māori originally had about 300 words and, through their association with Pākehā, English words have been adapted to the Māori language.

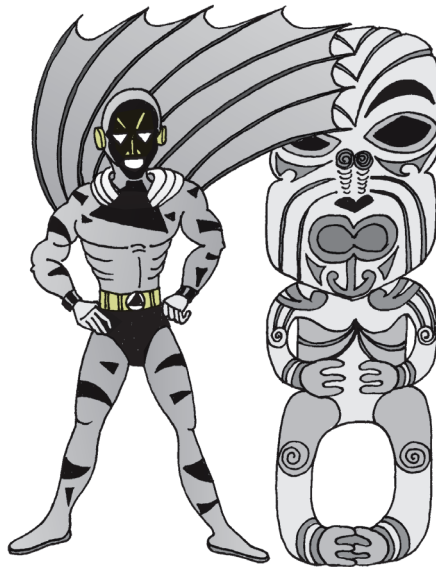
Examples : cow - *kau* ; hospital - *hōhipera*, *hōhipere*

Correct pronunciation of the vowels is essential. a as in car e as in air i as in sea o as in floor u as in sue

A Look for Similarities

1 Match up the months of the year by drawing an arrow between the two.

- | | |
|--------------|----------|
| a) January | Hepetema |
| b) February | Āperira |
| c) March | Tihema |
| d) April | Hānuere |
| e) May | Hune |
| f) June | Oketopa |
| g) July | Māehe |
| h) August | Mei |
| i) September | Hūrae |
| j) October | Noema |
| k) November | Pēpuere |
| l) December | Ākuhata |



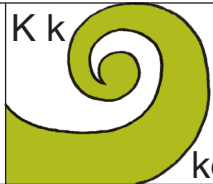
B Ka Pai Te Kai

1 Work out what each word means by saying it out loud. Each word is some kind of food.

- | | |
|---------------|-------|
| a) āporo | ..... |
| b) aperikota | ..... |
| c) pēkana | ..... |
| d) panana | ..... |
| e) pihikete | ..... |
| f) pata | ..... |
| g) kāpeti | ..... |
| h) keke | ..... |
| i) kāreti | ..... |
| j) ika, ngohi | ..... |
| k) makaroni | ..... |
| l) pea | ..... |

C Māori Alphabet

1 Design a Māori alphabet chart. Each letter must have a Māori design and a Māori word or place-name for that letter. There are fewer letters in the Māori alphabet : A, E, H, I, K, M, N, NG, O, P, R, T, U, W, WH.

				K k  koru

76 First-Person Writing



First-person writing is written from the writer's viewpoint. They were there and saw it happen or did it themselves. First-person writing uses words such as *I, we, us, my, me*.

Example : As **I** sat watching the swimmers, it suddenly occurred to **me** that one was in trouble.
 My cousin and **I** ran to the lifeguard to raise the alarm.

A Underline First

- 1 Underline the words that indicate that this extract has been written in the first-person.

I wrapped the blanket tightly around me as I sat near the window overlooking the city. Night was falling. I called my sister to come and enjoy the scene and we both pressed our noses to the pane. Together we marvelled at the sparkling diamonds spread out in front of us.



B First-Person Starters

- 1 Complete these starters using first-person writing.
- a) During the holidays
 - b) Looking back
 - c) Frantically
 - d) The dog rushed towards
 - e) When the hurricane struck

C Your Account

- 1 Write a brief account of something exciting you have personally observed. Your writing will be in the first-person.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....



Technology changes rapidly in today's world. What is new today may be old next week. The organisers and inventors of the new technology try to keep ahead of rival markets so they make more profit for their shareholders.



Home News Radio Podcasts & Series Topics Pacific

SCIENCE / ENVIRONMENT

Why the Tongan volcano triggered a worldwide tsunami

From Our Changing World 5:00 am on 21 July 2022

Share this



Ellen Rykers, Science Communicator

The eruption of Hunga Tonga Hunga Ha'apai, just north of Tonga's main island, surprised scientists. The underwater volcano had erupted a few times in recent years – but only small, localised outbursts. What happened in January was on a whole other scale – blanketing the Tongan archipelago in ash and sending tsunami waves across the Pacific.

“When I heard about this one, I wasn't expecting anything near as big as what actually happened,” says Dr. Emily Lane, a tsunami expert at NIWA.

The tsunami, in particular, was unprecedented: most tsunamis are caused by earthquakes, not volcanoes. Plus, those tsunamis that are caused by volcanoes tend to only have effects within a few hundred kilometres. But Hunga Tonga Hunga Ha'apai's waves radiated as far as Japan and South America, and tsunami activity was even detected in the Caribbean and Mediterranean. What made this tsunami go global?

Hunga Tonga Hunga Ha'apai's secret superpower lies in the air pressure shockwave it produced, which circled the globe. This shockwave supercharged the existing tsunami waves, giving them the energy and staying power to travel further than usual.

Plus, the air pressure wave can travel over land, allowing it to sweep across distant oceans like the Mediterranean and Caribbean, warping the sea surface and instigating detectable tsunami activity in these far-flung places.

But there are more complexities underlying volcanic tsunamis, and we don't understand them – or the risk they pose – particularly well.

Enter Dr. Colin Whittaker and his research team at the University of Auckland. In a warehouse filled with giant aquarium-esque tanks, Whittaker's team is unravelling the secrets of tsunamis generated by volcanoes.

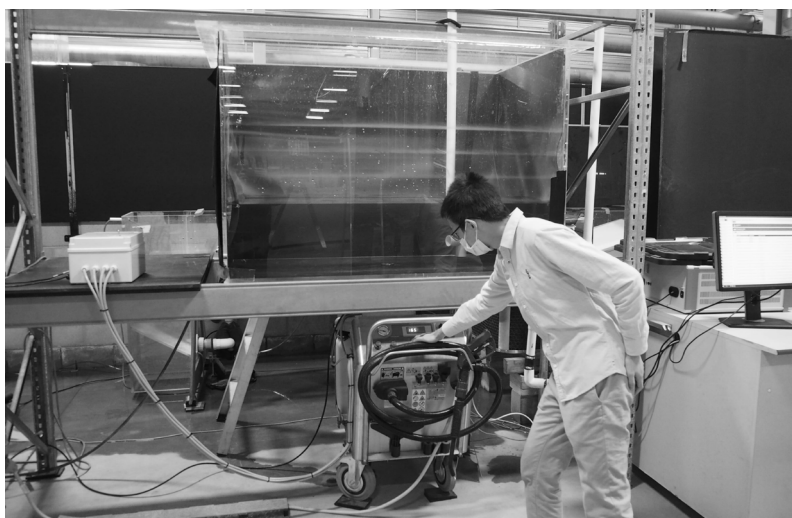
One of the ways a volcano can make waves is through the sheer force of the explosion. This is what Dr Yaxiong Shen is investigating, by using a steam jet in a large tank to simulate an underwater eruption. By changing different parameters, Shen can figure out which conditions will lead to the biggest waves.

PhD candidate Natalia Lipiejko is probing another mechanism: hot, fast-flowing landslides of volcanic debris and gas called pyroclastic density currents. Lipiejko mimics these pyroclastic density currents by injecting compressed air into teeny volcanic beads – which makes the beads act like a fluid – and sending them sliding down a ramp into a tank of water.

Ultimately, the experimental results, combined with mathematical modelling and real-life data from Hunga Tonga Hunga Ha'apai, will help us understand these rare but deadly natural disasters – and perhaps prepare for them better in future.

The volcanic tsunami research project is a partnership between NIWA, the University of Auckland, GNS Science, and the University of Otago, and is supported by a Marsden grant from the Royal Society Te Apārangi.

<https://www.rnz.co.nz/national/programmes/ourchangingworld/audio/2018849837/why-the-tongan-volcano-triggered-a-worldwide-tsunami>



Dr. Yaxiong Shen starts an experiment to investigate volcanic tsunamis. Photo: Ellen Rykers



Study questions or key questions are those that point you towards information that is useful for your research. It is important that the questions are able to be answered with more than a 'yes' or 'no'. 'Closed' questions provide very little usable research information.

Example : *Did they travel by canoes?* Yes (closed question)

To research a topic, 'open' questions need to be asked. These questions require in-depth research by the student or group.

Example : *What type of canoe was used?* (open question)

When deciding on study questions it is useful to begin each question with WHO, WHAT, WHERE, WHEN, HOW or WHY.

A What You Need to Know

1 For the research on *Māori Migration to Aotearoa* the key questions could be:

- WHO was Kupe?
- WHO were the tribes?
- WHAT was the purpose of leaving Hawaiki?
- WHERE did they settle?
- WHERE was Hawaiki?
- WHAT size were the vessels?
- WHEN did the voyage take place?
- WHERE did the canoes land?
- WHY Aotearoa?
- HOW did they find their way?

2 To plan your study questions fill in this chart. You could end up with more questions than you need.

WHAT DO I NEED TO KNOW?	WHO	
	WHAT	
	WHERE	
	WHEN	
	HOW	
	WHY	

Page 97 - Tourism Information

- A1 a) Two dogs. (*Rua* - two; *kuri* - dogs)
 b) They were killed and eaten.
 c) Burial ground. Sacred ground.
 d) Chief of Kawhia.
 e) The Spiral Staircase.
 f) Waitomo.
- B1 a) The cave was opened to visitors by James Holden who owned the land above the cave.
 b) There was 18 months of underground construction work carried out. This work included the walkways, bridges and a spiral entrance way.

Page 99 - War Poetry

- A1 a) 16 years old. b) 18 years old.
 c) 10 000 d) His mother
 e) The Germans
- B1 a) The soldier knew that in the end he would be killed and so he counted the days until that time came.
 b) The soldier thought that he and others would be so brave and victorious winning battles they would become famous.
 c) The soldiers were overwhelmed in battle and fell before their enemy.
 d) A year was the life expectancy of a soldier at the front trenches in World War I.
 e) The soldiers were eager to fight against their enemy : the Hun or Germans.
- C1 Student's own answers.



Page 101 - Wikipedia Entry

- A1 a) St. Mary's Bay with Northcote.
 b) To allow ships to go to the Chelsea Sugar Refinery wharf.
 c) Officially opened by the Governor-General Lord Cobham, 106 000 people walked across the bridge.
 d) Four lanes.
 e) AJ Hackett bungy jump, a bridge climb
 f) 36.831985°S 174.745519°E
 g) 168 754 per day
 h) 25 cents per car
- B1 a) 'Nippon clip-ons' were the name given to the two-lane clip-ons added to the sides of the bridge by Japanese manufacturers.
 The 'coathanger' is the nickname given to the Auckland Harbour Bridge because that is what its shape resembles.
 b) Originally, before the bridge was built, the North Shore was a very rural area with barely 50 000 people. Opening up the area with the bridge connection helped the North Shore to rapidly expand.
 c) Because of the increase in traffic due to the rapid expansion of the North Shore ten years after the opening of the bridge two-lane sections were added to the sides of the bridge to cope with the volume of vehicles.

Page 103 - Emergency Information

- A1 a) 9 litres for three days.
 b) Washing milk bottles doesn't remove protein and as a result the bottles may harbour bacteria which could cause illness.
 c) Stored water should be changed once a year.
 d) Purification Tablets, Household bleach
 e) Food that does not require cooking - There may be no way cooking can be done for a while.
 Food should give plenty of energy - Lots of work to be done.
 Food should be not perishable - Food that is easy to keep without rotting or spoiling over time will keep.
- B1 a) Bleach added to water needs to disperse so there is no taste of it.
 b) People cannot survive without water because the body needs water to hydrate.
 c) Water should be stored in a cool, dark place. It is wise to store the water in two places.
 d) Tea, coffee and milo are good to help people revive from shock or just to make them feel better when dealing with an emergency

Page 105 - Kiwi Inventions

- A1 a) By voice b) 1954
 c) Bungy jumping d) In Britain
 e) Ernest Rutherford f) In an engine
 g) Three h) No
- B1 a) The basis for the design of the land yacht or blokart was that it should be wind-powered, portable and easy to use.
 b) Ernest Rutherford explored science in the fields of radioactivity and nuclear physics.
 c) Ernest Godward invented an eggbeater, a burglar-proof window, a spiral hairpin and a carburettor.
 d) Blokarts are able to be used on surfaces such as beaches, parking lots, sports grounds, ice and deserts.
 e) AJ Hackett got the idea for bungy jumping from Vanuatu where those taking part in the traditional performance leapt from wooden structures attached to vines.
 f) William Hamilton invented the hay lift, an air compressor, an ice smoothing machine and the water sprinkler.

Page 107 - A Concert Review

- A1 a) Robyn McLean
 b) Hawkes Bay Opera House, Hastings.
 c) Bret McKenzie and Jemaine Clement.
 d) A lone cellist.
 e) 1.5 million followers.
 f) Arj Barker.
 g) 3 of : 'Too Many Dicks', 'Hurt Feelings', 'Business Time', 'The Most Beautiful Girl in the Room', 'Hiphopotamus vs. Rhymenoceraus'.
 h) An Oscar.
- B1 a) To stop ticket scalping the promoters went to great lengths to drip-feed tickets to the public.
 b) The reviewer writes such things as : 'had the audience eating out of the palms of their hands', 'they don't miss a beat with their ad-lib banter', 'the talent's there in droves', 'This show is utterly brilliant', 'there ain't no party like a Conchords party'.
 c) The fans were mentioned by the reviewer and comments made such as : 'each looking like they'd unwrapped Willy Wonka's final golden ticket', 'Had the audience eating out of the palms of their hands', 'their spell on the audience', 'extra "arena" shows added to satisfy their legions of fans', 'with audience members on their feet at the end'.

Page 109 - History Text

- A1 a) East Asia (Taiwan)
 b) Melanesia, Western Polynesia, Eastern Polynesia
 c) Orally - by word of mouth.
 d) Taro, bananas, coconuts, rats, dogs, pigs
 e) Outrigger canoes
 f) 1800-2000 years
- B1 a) They found their way by using the stars, sun, moon, ocean currents, swells, wind tide patterns, water temperatures, wave patterns, birds, whales and clouds.
 b) The reasons islanders wanted to find new land were : uncertainty of their future because of warfare and famine.
 c) The experts studied language patterns, stories and customs and pottery patterns that are similar. Also there is a food source trail.
 d) The voyagers could run out of food or water, be blown off course, capsized, be overcome by storms and hurricanes and get lost at sea.
 e) In Aotearoa there were high mountains with snow, volcanoes, inland lakes, hot pools, rocky coastlines and large sheltered harbours. The soil was fertile and grew food crops.

Page 111 - Online News Article

- A1 a) January 2022 on Hunga Tonga Hunga Ha'apai, just north of Tonga's main island
 b) The eruption covered the Tongan archipelago (islands) in ash and sent tsunami waves across the Pacific.
 c) Dr Emily Lane was surprised at the size of the eruption.
 d) Tsunamis are usually caused by earthquakes, not volcanic eruptions.
 e) The impact of the tsunami was felt as far away as Japan, South America, the Caribbean and Mediterranean seas. The impact was global.
 f) Hunga Tonga Hunga Ha'apai's secret power was the air pressure shockwave it produced which circled the globe.
- B1 a) Dr. Colin Whittaker and his research team decided to discover how the tsunami behaved using an aquarium-type tank in a warehouse.
 b) Dr Yaxiong Shen's job was to fill the large tanks with water and use a steam jet to reproduce the eruption's behaviour. She discovered what conditions led to the biggest waves.
 c) One scientist studied hot, fast-flowing landslides of volcanic debris and gas called pyroclastic density currents while another injected compressed air into teeny volcanic beads - which made the beads act like a fluid - and sent them sliding down a ramp into a tank of water.
 d) To help us understand these rare but deadly natural disasters - and perhaps prepare for them better in future.

