

Moving Your Body

by Naomi Arnold

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Level 2

Purple 2



The refresh of *The New Zealand Curriculum* is replacing the Learning Progression Frameworks and Literacy Learning Progressions by incorporating the learning for literacy and communication into the curriculum learning area progressions. To learn more about the refresh, visit [Refreshing The New Zealand Curriculum](https://www.education.govt.nz/refreshing-the-new-zealand-curriculum/).

Overview

This report provides information about the human skeleton and how bones, ligaments, and muscles work together to create movement. “Moving Your Body” can be used as an introduction to the topic of movement, which is explored further in other texts in this journal. This TSM includes teaching suggestions that can be built on when using the other texts.

A PDF of this article and an audio version as an MP3 file are available at www.juniorjournal.tki.org.nz

For information about related texts, see the introductory TSM “Exploring Movement”.

Learning Progression Frameworks

- Making sense of text: using a processing system
- Making sense of text: using knowledge of text structure and features
- Making sense of text: vocabulary knowledge
- Acquiring and using information and ideas in informational texts

Curriculum links

- English
- Science: The living world
- Health and physical education



The New Zealand Curriculum

Key text features

“Moving Your Body” includes the following characteristics that help ākonga to develop the reading behaviours expected at Purple and to build their awareness of the features of non-fiction.

The structure of the text as a report with an introduction, a series of main points, and a conclusion

The writer’s use of the second person (“you”, “your”) to create a conversation with the reader and encourage them to make connections to their own experiences

Design features typical of non-fiction: headings, photographs, and labelled diagrams

Topic-specific vocabulary, some of which may be unfamiliar (for example, “muscles”, “adult”, “skeleton”, “thigh”, “kneecap”, “shin”, “calf”, “joints”, “stretchy”, “ligaments”, “allow”, “directions”, “attached”, “tendons”, “signals”, “strength”, “biceps”, “triceps”, “straighten”, “damaged”, “accident”, “fracture”, “position”, “heal”, “physiotherapist”, “exercises”, “treatments”, “physiotherapy”, “injured”, “disabled”), and the Latin names for bones (“humerus”, “ulna”, “radius”, “femur”, “patella”, “tibia”, “fibula”), requiring ākonga to use their processing systems

A variety of sentence structures, including some with extended noun phrases, requiring ākonga to attend to punctuation and linking words, including pronouns, to track connections between ideas

MOVING YOUR BODY
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THE BONES IN YOUR BODY
Let's start with bones. In the adult human body, there are 206 bones! Your bones are joined together to form your skeleton. Your skeleton supports your whole body and helps it to move.

What did you do when you woke up this morning? Did you sit up, climb out of bed, and walk to the bathroom? Did you eat your breakfast, brush your teeth, and get dressed? If you did any of these things, you probably moved your body without thinking about it.

Under your skin, your bones and muscles work together. They make sure you can stand up, sit down, and move your legs and arms. Your bones and muscles even allow you to smile and open and shut your eyes.

Labels in diagram: skull, jaw, spine, ribs, hip, tibia (shin bone), fibula (calf bone), femur (thigh bone), patella (kneecap), humerus, ulna, radius, shoulder.

Language features typical of non-fiction, for example:

- precise descriptive language including:
 - noun phrases (“adult human body”, “whole body”, “stretchy bands”, “upper arm”, “biceps muscle”)
 - definitions in parentheses or indicated by phrases such as “are called”
- the prefixes in “biceps” and “triceps” and the suffix “-ist” in “physiotherapist”
- the topic words appearing in different forms (join, joined, joints; move, moved, moving; attach, attached; physiotherapy, physiotherapist)

Possible reading purposes

What can ākongā expect to find out or think about as a result of reading this text?

- To find out about how the human body is put together and how it moves
- To think about why being able to move is important and what can happen when bones and muscles don't work as they should
- (If also reading "Moving with Technology") To think about how technology helps us with movement.

Possible learning goals

What opportunities does this text provide for ākongā to learn more about how to decode, make meaning, and think critically about texts?

This text provides opportunities for ākongā, over several readings, to:

- draw on their phonics knowledge to **decode** words and use other sources of information such as context, sentence structure, and knowledge of morphology to check for meaning
- use information in the text and visual language features to identify and track information (**summarise**)
- **make connections** to what they already know about the human body to **visualise** and **make inferences**
- **ask questions** and look for or think about possible answers
- **monitor** their reading and, when something is unclear, take action to solve the problem.

English language learners, whose progress is being tracked and monitored through the [ELLP Pathway](#), also have opportunities to develop the following skills from the Pathway Stage 2:

- know the meanings of common prefixes ("biceps", "triceps")
- understand gradations of meaning based around the adverb "usually" (pages 6 and 7).

Introducing the article

Use your knowledge of your ākongā to ensure that your introduction to the article builds or activates their prior knowledge and provides appropriate support for a successful first reading. Several options are provided below for you to **select from and adapt**.

For English language learners, you could talk through pages 2 and 3 to introduce some of the topic vocabulary. Use the diagram of the skeleton to name the key body parts (head, arms, legs, hands and so on), ideally in their first language as well as English. You could also practise saying the names (including the Latin names) of the bones. You can find further information about features of texts that may need support at [The English Language Learning Progressions \(ELLP\)](#) or in the [ELLP Pathway](#).

- Tell ākongā you have an article for them to read about how the human body moves. Have them carry out some simple movements (bending, nodding, wiggling fingers or toes) then share their ideas about what allows their bodies to make these movements.
- Support ākongā to draw a human body shape or give them an enlarged copy of the diagram on page 3 with the labels blanked out. Have ākongā label the body parts they know and then give them the labels of the bones from the text (written on cards or sticky notes) for them to try to add to the diagram. (Explain that some of the words are in Latin and that this is the language scientists and doctors have used for hundreds of years because it was well-known in many different countries.) When they have finished, show them the Journal so they can compare their labels with the skeleton on page 3. You might also use this discussion to introduce some te reo Māori terms for body parts (for example, popoki/kneecap, rara/rib).
- Alternatively, you could use an [anticipatory guide](#) (such as the one shown on the right) to help ākongā bring their prior knowledge to the text and use the text to support their decisions. This would be particularly supportive for English language learners.

	True	False
In the adult human body, there are more than three hundred bones.		
The human body can sometimes heal itself by resting.		
Muscles are the only part of your body that help you move.		
If you did not have a skeleton, you would not be able to move.		
Our hands have five bones – one for each finger.		
Joints are the places where bones meet and are joined with ligaments.		

- Read the title of the article to clarify that it's not just about bones but about how they move. Browse the report together, using the headings, diagrams, and photos as a guide to what ākongā will find out. You could start a KWL chart for key topic words in the headings and captions.
- Record any questions arising from this text preview.
- Share the reading purpose(s). This TSM suggests an initial purpose ("to find out ...") of building background knowledge, followed by a deeper purpose ("to think about ...") when rereading and discussing the text or when reading linked texts. Give ākongā sticky notes to mark aspects they might want to return to or discuss later.

Reading the article

Encourage ākonga to read the article by themselves, intervening only if needed. Much of the processing ākonga do at this level is “inside their heads” and may not be obvious until the discussion afterwards. The focus of the first reading is to identify key information and ideas relevant to the initial reading purpose. Allow for several sessions to read and discuss the text, to investigate other reading purposes, and to explore ideas and language features more deeply.

Reading behaviours to look for and support

Examples of the sorts of behaviours (often overlapping and developed over several readings) that will support ākonga to meet the reading purpose(s).

Ākonga use information in the text and visual language features to identify and track information.

- They use the headings to clarify the focus of each new section and keep these in mind as they read the supporting detail.
- They use linking words and punctuation to clarify connections between ideas, for example:
 - (page 2) “Under your skin, your bones and muscles work together. They [your bones and muscles] make sure you can ...
 - (page 4) “The places where your bones meet are called joints. At these joints [the places where your bones meet], stretchy bands called ligaments ...
- They use the labelled diagrams and images to support their understanding of the information in the body text.

They make connections to what they already know about the human body to visualise and make inferences.

- They make connections between the activities mentioned on page 2 and their own experiences to visualise how their bones and muscles might work together.
- They use their knowledge of human skeletons to infer that despite the diagram on page 3 labelling separate bones, many work together in pairs and some in multiples (ribs).
- They make a connection between the diagram of the hand on page 4 and the earlier information that the human body has 206 bones to infer that many bones in the human body are quite small.
- They notice the use of exclamation marks in the opening paragraphs on pages 3 and 5 and infer why the author wanted to draw attention to these sentences.
- They infer from the fact that the body has more than 600 muscles but only 206 bones, that muscles are very important in helping bones move.

They ask questions and look for or think about possible answers.

- They use their sticky notes to record questions they think of as they discover new information, for example, they might wonder:
 - if children have a different number of bones than adults
 - why human bodies have so many more muscles than bones
 - if, when you talk, your brain sends messages to your mouth
 - how muscles get damaged
 - how exercises help heal damaged muscles.

They demonstrate self-monitoring and problem solving.

- They draw on their phonics knowledge and other word-solving strategies. For example, they:
 - break words into chunks or syllables (“hu-man”, “pa-tel-la”, “lig-a-ment”, “el-bow”, “along-side”, “frac-ture”, “in-jured”)
 - draw on their knowledge of variations in the sounds of letters and letter combinations (“muscles”, “shoulder”, “break”, “physiotherapist”)
 - search for further information, for example, definitions, photographs, and/or diagrams to support word meanings.
- They mark words, phrases, and ideas they want to come back to.

Deliberate acts of teaching

How you can support individual ākonga (if needed).

- Remind ākonga of strategies they can use for word solving (for example, looking for the biggest known word chunk or applying their knowledge of letters, sounds, and word structure) and for clarifying meaning (rereading or reading on, referring to the photos or diagrams, looking for definitions, and thinking about the overall meaning of the sentence). If necessary, provide specific support, for example, with the Latin terms.
- Explain that when reading non-fiction, they may sometimes need to read more slowly, reread parts, and check aspects such as photos, diagrams, and labels to build their understanding.
- Note anything you might want to follow up on later, perhaps as a mini-lesson or as an after-reading activity.

Thinking, talking, rereading

You can revisit this article (and the other items in this journal) several times, providing opportunities for ākongā to build comprehension, vocabulary, and fluency. **Select from and adapt** the following suggestions. Some of the suggestions overlap, and several can be explored further as independent reading activities. For some suggestions, you may find it helpful to project the PDF of the article so that you can zoom in on relevant sections.

- Invite ākongā to share their initial responses to the article and connections to their own experiences, for example, of injuries to bones or muscles, and to share any new questions or ideas arising from their sticky notes.
- Remind ākongā of the initial reading purpose and have them record what they have found out on a summary table, such as the partially completed one below. Work through one of the sections together, with ākongā using highlighter pens on a printout of the report to identify the main points under each heading. Model how to write the main points as bullet points. Alternatively, you could model how to write a summary sentence. Ākongā could work in pairs on the other sections (one section per pair) and then share their summary with another pair.

Page	Heading	Main points
3	THE BONES IN YOUR BODY	<ul style="list-style-type: none"> • 206 bones • bones are joined to form a skeleton • your skeleton supports your body and allows it to move
4	JOINTS	<ul style="list-style-type: none"> • joints are the places where bones meet • bones are connected by ligaments (stretchy bands) • ligaments let bones bend and move
5	MUSCLES	(and so on)

- Explore vocabulary:
 - Support ākongā to add what they have learned about key topic words to the KWL chart (if you introduced one before reading) or record words on a new chart. Support English language learners to link the topic words to their first language (if known).
 - Have ākongā read the sentences where the words occur and, together, discuss the clues to their meaning. Remind them of the importance of reading on to the end of a noun phrase to get the full meaning, for example, “adult human body”, “stretchy bands”, “upper arm”, “biceps muscle”, “a cast made of plaster”, “broken ends of the bone”. Provide further support with word meanings as necessary, for example, you could use rubber bands to illustrate the concept of ligaments as “stretchy bands”.
- Explore the diagrams in more detail. You could enlarge the page 5 “brain signals” diagram and together track the connections between the diagram and the supporting information in the text. Then have ākongā work in pairs to track and clarify the information in the other diagrams on pages 4 and 5 (one diagram per pair). Explain the importance of close, repeated reading (and talking) to build understanding of new words and ideas. Ākongā could create captions for the diagrams, explaining what they are showing. Model this first, for example, the diagram on page 5: “A cartoon diagram that shows how the brain sends signals to muscles”.

Building language knowledge

As ākongā reread and discuss the article, note opportunities for explicit instruction and to explore language features in more detail. For example:

- discuss how ākongā worked out new vocabulary (or tried to)
- explore word structure:
 - Draw attention to the topic words that appear in more than one form (join, joined, joints; move, moved, moving; physiotherapist, physiotherapy). Use this as a stepping-off point to generate different forms of other topic words (for example, bones, bony; muscles, muscly, muscular, muscled; move, moving, movement; connect, connected, connection; protects, protection; injured, injury; disabled, disability).
 - Discuss the prefixes “bi” and “tri” meaning “two” and “three” in “biceps” and “triceps”. Enjoy finding further examples of words with these prefixes and clarifying their meanings (bicycle, biweekly, bilingual, bipod, biplane, biennial; tripod, triangle, tricycle, triple, triennial). You might also explore words with the prefix “uni” or “quad” (unicorn, uniform, unicycle; quadriceps, quadrilateral).
 - Explain the use of “-ist” in “physiotherapist” to describe someone who does physiotherapy. Together, explore other terms ending in “-ist” that ākongā may know and discuss their meanings (chemist, florist, tourist, artist, cyclist, psychologist, conservationist).

You could use the adverb “usually” (on pages 6 and 7) to support English language learners to explore gradations of meaning relating to frequency. Read and discuss the sentences on pages 6 and 7 that include “usually”, then give ākongā cards with other examples (always, sometimes, never, often, hardly ever, rarely) and ask them to work together to arrange them in order from least often to most often.

Further activities

- Ākonga can build their comprehension and fluency by listening to the audio version as they reread the article.

Audio versions are particularly supportive for English language learners because, as well as clarifying pronunciation, they provide good models of the prosodic features of English, such as intonation and phrasing.

- Provide opportunities for ākonga to make connections to other texts in this journal. For example, they could:
 - read “Moving with Technology” to find out how technology can help people with movement
 - build their understanding of the concept of “joints” by experimenting with split-pin paper fasteners and then reading (and following the instructions in) “Make a Moving Puppet”.
- Support ākonga to research questions arising from their reading (for example, about how physiotherapists help people, drawing on information sources such as related texts (see the TSM “Exploring Movement”), the school library, the internet, and knowledge held by people in the community.
- Explore the holistic concept of health and wellbeing outlined in *Te Whare Tapa Whā* (Sir Mason Durie) or in the *Fonofale* model of wellbeing.
- You could ask ākonga to draw out the main idea about movement (what the author wants us to think about) from each of the articles. Discuss how they can build their understanding as they read widely around a topic. You could have ākonga add their ideas to a table as they read and think about each text. An example is provided below.

Article	Main idea about movement
Moving Your Body	Bones, ligaments, tendons, and muscles work together to help us move.
Moving with Technology	Technology can make movement easier, safer, and quicker for humans.
Moving Pictures	There are many ways we can make things in pictures look as if they are moving.
Make a Moving Puppet	Split-pins can join things together and make them move like a joint.
Bouncing the Beat	Dancing and keeping to a beat are special ways of moving.
Super Huhu	We can imagine many different ways of moving. People can combine different actions to solve problems.

For English language learners, [SELLIPS](#) and the [teaching strategies section of ESOL Online](#) also have ideas for purposeful and relevant tasks.