

Feet First term 2: walking and exploring

Updated 2023



Key understanding: Walking benefits people, places and our planet.

Driving question: Walking – what difference can I make?

- Define walking.
- Explain the benefits of walking.
- Predict how using sustainable transport such as walking might improve people, places and the planet.

Activity 2.3 Mathematics and statistics: exploring how far it is

Achievement objectives – refer New Zealand Curriculum Mathematics and Statistics levels 1-4 measurement.

Example learning intentions

Level One

Order the length of different walking routes in your local area, e.g. home to school, school to local park, home to local shops, school to library, classroom to school gate.

Compare and contrast the lengths of different walking routes in the local area.

Level Two

Use conventional and unconventional measures to determine the length of different walking routes in your local area, e.g. home to school, school to local park, home to local shops, school to library.

Compare and contrast data for the lengths of different walking routes in the local area and communicate these using numbers and units.

Level Three

Use conventional and unconventional measures to determine the length of different walking routes in your local area, e.g. home to school, school to local park, home to local shops, school to library.

Compare and contrast data for the lengths of different walking routes in the local area and communicate these.

Find the area of [a local green site or your school's field] available for walking by multiplying the side lengths.

Level Four

Use conventional metric measures to determine the length of different walking routes in your local area, e.g. home to school, school to local park, home to local shops, school to library.

Convert the length of walking routes from metres to kilometres.

Use the side or edge lengths of a local walking route to measuring the perimeter and area covered.

Calculate the average time taken to walk various routes in your local area and use the data to create a local "how far is it between here and there?" walking chart and timetable. Add this data to a map.

Learning experiences

Select the learning experiences that best match the abilities of your student and that support your learning intentions.

Exploring how far is it between here and there.

'Ka uia tonutia e koe ka roa tonu te ara; ka kāore koe e ui ka poto te ara' (If you keep asking the distance, the path will be long; if you don't ask, it will be short).

Identify several different walking routes in the school and around the school grounds. Mark these on a map. Make an estimate of the order of the length of each route. Walk each walking route and check on the accuracy of your ordering.

Use unconventional standards to measure the walking distance between places in the school and in the local area, for example:

- walking time between A and B
- number of classrooms between A and B
- number of lamp posts or power poles or letterboxes
- number of parked cars between A and B
- number of cats, number of farm gates, number of tui songs heard, number of pavement cracks
- number of calories burned in getting between A and B.

Record these different measures on a walking map of the local area.

An average person can walk 2 kilometres in half an hour. Identify all the different places you can get to in a half an hour walk from your school or your classroom.

Create an online Google Map and annotate it with all the different unconventional route measures you develop. For example B is two cats away from A.

Use pace (two steps or each time your right foot touches the ground) as a measure of distance. Become a human tape measure. Keep an even stride and work out how many paces you take to cover a measure of 10 metres. Use pace to measure the walking distance between places in the school and local area.

Invite other people to become human tape measures. Compare the range of different paces needed to cover 10 metres.

Make your dog into a dog tape measure and determine how many paces it takes to cover 10 metres. Repeat this unconventional measure with another dog.

Compare and contrast the different measures to determine which measures are most appropriate to share with your local community.

Communicate your unconventional and conventional measurement data by finding the most reliable and accurate measures for identified walking routes and charting these.

Use your unconventional and conventional measures to estimate the distance of a previously un-walked local route. Take a class walk along the route and use all the different measures. Compare your actual measures with your estimated measures. Analyse and interpret your findings. Look for data trends and patterns.

Convert walking distances measured in metres to kilometres and millimetres.

Convert walking distances measured in kilometres to metres and millimetres.

Find the area of a local walking space by multiplying the side lengths measured in conventional units.

Use Google Maps to measure the distance you travel walking to school each day.

Use the line and measuring tools in Google My Maps to measure perimeter and area of the walking travel routes used to school each day.

[Draw lines and shapes in My Maps](#)

Use side or edge lengths of walking routes in your local areas to find the perimeters and areas of rectangles, parallelograms, and triangles covered by the routes.

Create fun walks to school in your local area. Share a “How far is it between here and there?” resource map for the walks you create in your local area. Use the conventional and unconventional measurement data you have discovered.

Assessment

Learning area: mathematics and statistics

	I can identify several unconventional route measures for a walking track, explain why they are reliable measures and evaluate their validity against conventional measures.
	I can identify several unconventional route measures for a walking track and explain why they are reliable measures.
	I can identify several unconventional route measures for a walking track.
	I can identify an unconventional route measure for a walking track.
	I need help to describe an unconventional route measure for a walking track.

Key competency: using language, symbols and text

	I can compare unconventional or conventional measures to determine the length of walking tracks, compare these measures with measures of other tracks, and convert these measures into metres and kilometres.
	I can compare unconventional or conventional measures to determine the length of a walking track and compare these measures with measures of other tracks.

	I can use unconventional or conventional measures to determine the length of a walking track.
	I can order the length of a walking track against other tracks.
	I need help to measure a walking track.

Internet resources

[NZ Maths Geometry and Measurement](#)

[View your My Maps using Google Maps](#)

[Draw lines and shapes in My Maps](#)

[AllTrails](#) An online resource of user created trails from around the world.

Thinking resources

Complete a PMI on an unconventional measure for a walking track.

Complete a Venn diagram for two different measures for a walking track.

Compare and contrast two different walking tracks using conventional and unconventional measures.

Explain the reasons for an unconventional measure.

Use SCAMPER to create a new measure for a walking track.

What if questions

Use these for class and group discussion or writing.

What if we changed our conventional metric measurement to rods, poles and perches?

What if we had no way to order distance?

What if walking tracks were measured by the time taken for a child to walk them?

What if the measure of a track was dependent on the weather conditions?

What if the distance measure of a track was based on how many rest places were provided on the route?

Activity 2.4 Science: exploring living things and habitats

Achievement objectives – refer to New Zealand Curriculum Science levels 1-4 living world, ecology.

Example learning intentions

Define 'living thing', 'dead', 'non-living', 'environment', 'habitat'.

Describe a habitat.

Compare and contrast 2 different habitats and the living things found there.

Explain how a living thing is suited to a particular habitat.

Define 'environment' and 'environmental change' (both natural and human induced).

Describe the effects of naturally induced environmental change on a habitat.

Describe the effects of human-induced environmental change on a habitat.

Explain the causes and consequences of environmental change on the habitat of living things.

Compare a habitat before and after environmental change (natural or human-induced).

Compare the living things in a habitat before and after environmental change.

Explain how a living thing responds to changes in a habitat caused by environmental change, both natural and human induced.

Learning experiences

Select the learning experiences that best match the abilities of your student and that support your learning intentions.

Living thing and habitat

Define 'living thing'. For example, living things can do the following: obtain and use energy, excrete waste materials, respond to the environment, grow and reproduce.

Define 'dead' and 'non-living'. Brainstorm and record student responses.

Label a series of images as living or non-living thing. Include images of non-living things with some of the characteristics of living things, for example, fire and moving water.

Define 'habitat'.

Identify habitats in a local environment, for example: cracks in a pavement, a power pole, tree trunk, under a boulder, under bark, a sandstone cliff face, scoria slopes, the sides of a road drain.

Label the habitats in photograph or drawings of a local environment.

Describe a habitat. Sketch or photograph the habitat.

Locate living things in habitats in the local environment. For example, beetles, grasshoppers and ants living in pasture. Take care not to disturb the habitat.

Observe living things in an identified habitat.

Describe the appearance and behaviour of a living thing in an identified habitat. Sketch or photograph the living thing.

Compare and contrast 2 different habitats and the living things found there.

Explain how a living thing is suited to a particular habitat. For example, a slater is suited to damp bark, an earthworm is suited to moist loose soil.

Identify the habitat of a living thing that you walk past on your way to and from school each day.

Environment

Define environment. For example, all the factors in the surroundings that can affect a living thing; temperature, soil moisture, intensity of light, salinity, current flow, exposure to wind or waves, other living things, amount of food etc.

Use environmental probes and other observations to identify and measure all the factors that might affect the environment of an identified habitat.

Use these environmental measures to describe the environment of the identified habitat at an identified point in time.

Create or complete a trading card (like a Pokémon card) summarising the environmental features in the habitat of your chosen living thing.

Define 'environmental change' (both natural and human induced).

Describe the effects of naturally induced environmental change on a habitat. Read journal articles and view YouTube clips.

Describe the effects of human induced environmental change on a habitat. Read journal articles and view YouTube clips.

Sequence the effects of some natural and human induced change on New Zealand environments using [Wikipedia: timeline of the New Zealand environment](https://en.wikipedia.org/wiki/Timeline_of_the_New_Zealand_environment).

Identify and describe a habitat in the school grounds that has been affected by naturally induced changes in the environment.

Identify and describe a habitat in the school grounds that has been affected by human-induced changes in the environment.

Identify a habitat you walk past each day on your way to school.

Observe key environmental factors in this habitat as you pass it each day.

Describe how this environment changes due to natural events during the hours, days, weeks and months you walk to and from school.

Describe how this environment changes due to human events during the hours, days, weeks and months you walk to and from school.

Sequence these environmental changes on an annotated timeline.

Explain the causes and consequences of environmental change on the habitat of living things.

Compare a habitat before and after environmental change (natural or human-induced).

Explain the causes of changing the environment of a habitat, the consequences for the habitat and the response of the living things.

Compare the living things in a habitat before and after environmental change.

Explain how a living thing responds to changes in a habitat caused by environmental change, both natural and human -induced.

Create a “walk to explore habitat and living things” local information and map resource that can be commented on by your local community. Use this to keep a record of the observed changes in the environment of the habitat and the behavioural responses of the living things in the habitat over time.

Assessment

Learning area: science

	I can identify several relevant similarities and differences between changing habitats explored when walking, explain these similarities and differences and make a generalisation.
	I can identify several relevant similarities and differences between changing habitats explored when walking and explain these similarities and differences.
	I can identify several relevant similarities and differences between changing habitats explored when walking.
	I can identify a relevant similarity or difference between changing habitats explored when walking.
	I need help to compare and contrast changing habitats explored when walking.

Key competency: participating and contributing

	I can identify several ways in which I can contribute to the local habitat and map resource, explain how my contributions will help others and evaluate how useful shared contributions will be to the final resource.
	I can identify several ways in which I can contribute to the local habitat and map resource, and explain how my contributions will help others.
	I can identify several ways in which I can contribute to the local habitat and map resource.
	I can identify how I can contribute to the local habitat and map resource.
	I need help to identify what I can contribute to the local habitat information and map resource.

Internet resources

[Ministry of the Environment](#) New Zealand Ministry of the Environment Website

[Ministry of the Environment: Environmental Issues](#) Overview of environmental issues in New Zealand.

[Enviroschools](#)

[Wikipedia: Timeline of the New Zealand environment](#)

[Science Learning Hub](#)

[Zealandia resources for schools](#) Trading card game, citizen science and more.

[Pūtātara a call to action](#) sustainability and global citizenship across the curriculum

[Education for Sustainability \(TKI\)](#)

[Kiwi Conservation Club](#)

[Forest and Bird resource library](#)

[What is this bug? \(Manaaki whenua Landcare Research\)](#)

[Learnz Virtual School Trips](#)

Thinking resources

Complete a PMI on human-induced environmental change.

Brainstorm all the possible habitats in a large tree.

Do a SWOT analysis on a proposal to re-vegetate an area in the school grounds.

Complete a Venn diagram on human and naturally induced environmental change.

Complete an affinity diagram for all the ideas and concerns the local community has about the effects of a proposed local development project on the habitat of living things.

What if questions

Use these for class and group discussion or writing.

What if all New Zealand schools/towns had to keep a wilderness area – a part of the school/city kept free from human induced environmental change?

What if all lawns and verges were banned?

What if pavement crack gardens became popular?

What if living things chose to make their habitats in environments altered by humans?

What if humans could not protect themselves from the effects of environmental change on their habitat?