

- [Home](#) >
- [Curriculum resources](#) >
- Education for sustainability

Education for sustainability



Sustainability is a critical issue for New Zealand – environmentally, economically, culturally, politically, and socially. We need to learn how to live smarter to reduce our impact on the environment for future generations.

- [About EfS](#)
- [EfS in schools](#)
- [Learning experiences](#)
- [Tools and resources](#)

About EfS

"Mō tātou te taiao ko te atawhai, mō tātou te taiao ko te oranga"

"It is for us to care for and look after the environment to ensure its wellbeing, in doing so we ensure our own wellbeing and that of our future generations"

New Zealand's national curriculum focuses on 21st century learning, ensuring learners are equipped to participate in and contribute to their own society and the wider world. An important aspect of this is encouraging students to consider significant future-focused issues such as sustainability.

The future-focus theme of sustainability is evident throughout *The New Zealand Curriculum*. It is integral to the vision, principles, values, and key competencies, and provides relevant and authentic contexts across the eight learning areas.

Structuring learning around a unifying theme such as sustainability provides opportunities for students to make connections between learning areas, competencies, and values. It requires teaching and learning approaches that draw on all elements of effective pedagogy and focuses on empowering students to take action for a sustainable future.

Sustainability in [Te Marautanga o Aotearoa](#) connects to the principle "environmental health is personal health". This curriculum endorses a place for the school, the family, the community, the hapū, and iwi groups to focus on the place of the student in their own world. Therefore, the school-based curriculum supports holistic teaching programmes and learning pathways which enable the learner to engage purposefully with the environment.

What is education for sustainability

Education for sustainability is about learning to think and act in ways that will safeguard the future wellbeing of people and our planet.

What will my students do in education for sustainability?

Many contexts, topics, or issues that students could explore have a connection to education for

sustainability. There are opportunities in most learning areas for students to examine how the resources we use and what gets left over affects the Earth.

Teachers can introduce students to attitudes and values towards the environment, and create opportunities to explore their own. Students will also have opportunities to take action on issues that are meaningful to them, explore why an issue is important, and develop the skills they need to create change.

What do I teach in education for sustainability?

Education for sustainability includes learning about:

- the environment – water, land, ecosystems, energy, waste, urban living, transportation
- the interactions between the natural environment and human activities, and the consequences of these
- the choices and actions we can take to prevent, reduce, or change harmful activities to the environment.



[Click to enlarge](#)

Central to this learning is the exploration of attitudes, values, and behaviours with respect to the environment - both our own and those of others.

Concepts

Central concepts that students can develop understanding of through EfS include:

- **sustainability** -the ability of individuals, groups, and communities to meet their needs and aspirations without compromising the ability of future generations to meet theirs
- **equity** – respect for all life, social justice, intergenerational equity, finite resources
- **interdependence** – biodiversity, community, cultural diversity, democracy, globalisation
- **responsibility for action** – taking action, informed decision-making, citizenship, consumerism, enterprise, resilience, and regeneration.

How might these elements work together?

Table showing inter-relationships between aspects of education for sustainability:

Context or topic	Concept of EfS as an understanding for students to develop	Sustainability issue	The vision for action - what students might do that targets the sustainability issue
Insects The Bush Birds Endangered animals	Interdependence We are learning about how living things work together to meet their needs.	Loss of biodiversity and habitats for a range of species	Butterfly gardens Skink gardens Native plantings Bird Forests Pa Harakeke
Water Waterways Rivers The water cycle	Interdependence We are learning about connections between land use and waterways.	Erosion of land increasing sediment in waterways	Streamside plantings Stormwater drain campaign
Waste Litter Rubbish Recycling Shopping Christmas	Equity We are learning about finite resources.	Increasing amounts of waste that natural systems cannot process	Packaging audit of school to establish what "waste" comes into the school Create waste system to manage biodegradable organic matter in the school
Transportation	Responsibility for action We are learning to make informed decisions and take action.	Reliance on a non-renewable resource with large energy and waste outputs	Creating a "walking school bus" for students to get to and from school safely Renovation of the school bike sheds for safe and easy storage of bikes for staff and students
Fair trade	Responsibility for action We are learning to make informed decisions and take action.	Ensuring food is produced and sold in ways that the Earth can sustain and people gain a fair price for their goods	Creating a school garden or orchard Working with a community garden to process fruit for local sale

Curriculum connections

Sustainability is a significant theme throughout the national curriculum:

- It is evident in *The New Zealand Curriculum's* vision for young people in New Zealand to be "confident, connected, actively involved, lifelong learners".
- It is an important element for a graduate of Māori-medium education to enable them to effectively participate in the Māori world, advocating a Māori world view and understanding their role within whānau, hapū, iwi, community, and wider society.

Education for sustainability and *Te Marautanga O Aotearoa*

[*Te Marautanga o Aotearoa*](#) endorses a curriculum to support Māori students in their own world and to connect students purposefully towards contributing to a sustainable environment through holistic learning pathways.

Education for sustainability and the *New Zealand Curriculum*

Vision

What do we want for our young people? (NZC, p.8)

- “to secure a sustainable social, cultural, economic, and environmental future for our country”
- be **connected** - able to relate well to others, connect to the land and environment, be members of communities
- be **actively involved** - participate in a range of life contexts, contribute to the well-being of New Zealand – socially, culturally, economically, and environmentally.

Principles

The foundations of curriculum decision making. (NZC, p.9)

Sustainability is explicitly identified as a significant theme for inclusion in the ‘Future Focus’ principle.

High expectations	Supporting and empowering all students to achieve by enabling them to experience and participate in learning towards a goal that they see can make a difference.
Treaty of Waitangi	Acknowledging the principles of the Treaty of Waitangi and seeking to give students opportunities to explore and gain understanding of a Māori perspective of the environment.
Cultural diversity	Recognising the importance of learning from the experiences of others and respecting the histories and traditions that will support a sustainable future for all.
Inclusion	Systems thinking in education for sustainability values and supports diverse skills and abilities, as we all have a part in ensuring a sustainable future.
Learning to learn	Education for sustainability requires learning to be active and developed with students as they explore, plan, and implement solutions to environmental issues.
Community engagement	Recognising that environmental issues are embedded in society, and providing opportunities for students to work with their community to find solutions to local issues.
Coherence	As an integrated discipline, education for sustainability requires the contribution of all learning areas, key competencies, and values to support learning and decision making for action on environmental issues.
Future focus	Sustainability is a significant theme both now and into the future.

Values

To be encouraged, modelled and explored. (NZC, p.10)

Students will be encouraged to value:

- “ecological sustainability including care for the environment”

In exploring environmental issues, people’s interests in the environment, and actions for a sustainable future, students will have many opportunities to:

- learn about their own values and those of others
- develop their ability to express their own values
- explore with empathy the values of others
- critically analyse values and the actions based on them
- discuss disagreements that arise from difference in values and negotiate solutions
- make ethical decisions and act on them.

Key competencies

Capabilities for living and lifelong learning. (NZC, p.12)

More complex than skills, the competencies draw on knowledge, attitudes, and values in ways that lead to action.

Education for sustainability seeks to empower students of all ages to take action on issues of concern and interest to them. It describes this process as action competence, and uses all the key competencies, combined with experiences from the learning areas, to make this goal possible. The development of action competence and the key competencies is seen as part of the process of taking action.

Learning areas

Important for a broad general education. (NZC, p.16)

All learning should make use of the natural connections that exist between learning areas and that link learning areas to the values and key competencies. It is important for both teaching purposes and planning that schools provide clear statements of learning expectations in EFS that help chart progress.

In the *New Zealand Curriculum*, learning about sustainability issues is stated within achievement objectives for:

- **Health and Physical Education** - Healthy Communities and Environments
- **Science** - the Nature of Science, Participating and Contributing, Planet Earth and Beyond, Living World
- **Social Sciences** - Place and Environment
- **Technology** - Technological Knowledge, Technological Practice

And within *Te Marautanga O Aotearoa*:

- **Hauora** - Taiao (health and environment)
- **Putaiiao** - Papatuanuku
- **Hangarau** - Concepts of hangarau
- **Pangarau** - Using pangarau
- **Tiakanga-a-iwi** - The changing world

Education for sustainability and the varied contexts that it supports provide multiple opportunities for rich learning in numeracy and literacy in everyday situations.

Taking action

Students taking informed action to address issues of sustainability and participate in creating a sustainable future is the core of education for sustainability.

Taking action is a process of learning that:

- uses meaningful contexts for learning
- empowers students to do something with their learning: "It's not what you know, it's what you do with what you know" (source unknown)
- supports participation in the wider community, such as taking part in decision making processes
- develops the key competencies leading to action competence in education for sustainability.

Students need to be given multiple opportunities to plan, implement, and carry out actions in response to what they know and understand about the causes of sustainability issues and possibilities for change.

Examples of actions include:

- a personal response or behaviour change such as taking the bus rather than the car

- a project to rehabilitate or prevent degradation of the environment, such as excluding stock from waterways or planting to increase biodiversity
- the development of a system to reduce use of natural resources such as installing a rain water collection system to use on gardens or in toilet cisterns
- a project to educate others on an environmental issue, such as a movie highlighting ways to make a wrapper-free lunch and how this reduces waste to landfills.

Planning for taking action

When planning for taking action in education for sustainability, you will need to consider:

- what will my students learn as a result of this action?
- what prior knowledge and understanding do my students have of the sustainability issue they are seeking to address?
- how can I ensure my students are involved in deciding what to do?

Examples of possible actions to explore these criteria:

Action	Criteria met?	Suggestions for next steps/change
Students decide to install more rubbish bins to resolve the litter problem in their school.	No - this meets the criteria that students be involved in deciding what to do but does not challenge student learning as to the underlying reasons why litter is in the school in the first place.	Students need to be challenged to examine why we have litter, where it comes from, and how it is created. What are the alternatives to multiple wrappers and packaging? Can we create more sustainable systems for packaging that reduce our use of resources?
Teacher accepts an invitation for students to participate in a World Environment Day planting at a local reserve.	No - students are not involved in deciding what action to take. While teachers may have some good purposes for student learning that they have decided on, these would need to be shared carefully and planned with the students to ensure maximum benefit for student learning.	Students investigate the reasons behind the planting programme and decide whether they are able to contribute to this project in a way that will lead to a more sustainable future.
Students, with teacher support, decide to make compost out of the fallen leaves in the school grounds to use in the gardens and nourish the soil rather than burn the leaves on a bonfire.	Yes - the students work with their teacher to understand the interdependence in natural cycles of growth and decomposition. Their learning is focused on finding out and implementing the most appropriate system for composting the leaves.	Students may need to consider how the compost system will be maintained and utilised in the future.

Action competence

The process of students taking action in education for sustainability develops action competence. Experts tell us that action competence is students having the ability and willingness to take action on issues that interest them. In practice, action competence is learning about environmental issues so that students can plan and take informed action on those issues.

Action competence supports the development of the [key competencies](#) of the NZC through the process of taking action.

In education for sustainability six aspects that support the development of student action competence have been identified through [research in New Zealand schools](#). These are:

- experience
- reflection
- knowledge
- visions for a sustainable future
- action-taking for sustainability
- connectedness.

Although they are in a list, it is best to think about them working together. For example, reflection supports knowledge being developed through experience, and taking action needs knowledge, a vision for the future, and being able connect things together.

Framework for students developing action competence:



[Click to enlarge](#)

How a teacher can support their students to develop action competence:



[Click to enlarge](#)

Aspects that support the development of students' action competence in education for sustainability

The above framework for understanding and developing action competence was produced by a New Zealand research team, including teachers, through a [Teaching and Learning Research Initiative project](#). This framework suggests how learners and teachers can work together to develop action competence, and by doing so, also develop key competencies. A brief explanation of the aspects that develop student's action competence is given below.

Experience in developing action competence

Students require a range of learning experiences to understand, and develop, attitudes and values towards the environment and sustainability issues. Teachers need to provide experiences that include learning in the environment and about the environment in ways that motivate and stimulate passion for further investigations and action. Giving students time to reflect is a key task that establishes connections to prior learning and engagement in next steps learning.

Reflection in developing action competence

Students need to reflect on their experiences and actions. Teachers need to facilitate critical reflection practices to help students understand what and how they learn, and to develop strategies for future experiences and actions. Reflection is essential to make the connections between thinking, feeling, and acting.

Knowledge in developing action competence

Students need to develop knowledge and understanding of sustainability issues, so that actions taken are well-informed. Taking action for sustainability requires an understanding of the underlying causes of the issue to be addressed. Therefore, teachers need to think about using integrated approaches that include: finding and analysing factual and scientific information; social, cultural, and historical views; and exploring alternative ways of doing things from these perspectives.

Having a vision for a sustainable future in developing action competence

Students need to develop and be given opportunities to explore and create a vision for the future. Teachers need to support students to examine the social, environmental, economic, and cultural influences through past and present actions. This can support students to envision how they would like things to be, what they might look like, and how to tackle their concerns and fears about the future.

Action taking for sustainability in developing action competence

Students need to be able to decide on, plan, and take effective action on sustainability issues that concern and motivate them. The action needs to be aimed at addressing the cause of the sustainability issue, and teachers need to connect students' experiences and growing understanding of the issue to achievable things they can do that will make a difference for a more sustainable future. The action can have a direct impact on the natural environment to mitigate, remediate, resolve, or prevent harm to natural resources and ecosystems. Action may also be about seeking to influence others to make decisions and choices that will result in people living and acting more sustainably.

Connectedness in developing action competence

Students need to be supported to make connections in their sustainability learning. Teachers can help students develop those connections by providing coherent pathways for learning that integrate knowledge from different learning areas but also by helping students to acknowledge their attitudes and values, and how they are linked to their behaviour. It includes understanding the interdependence of environmental and societal aspects such as culture and social needs. It also includes the connectedness within the learner's own aspects of action competence, and the learner's connectedness to other people and the environment.

Toitū te Ao carving

"Toitū te Ao"

"A sustainable world"



[Click to enlarge](#)

The carving explores the interdependence and interconnectedness of people and the environment which includes the social/cultural, political, economic, and environmental perspectives of sustainability. It has been created as a visual metaphor representing a Māori world view of education for sustainability.

A range of effective teaching and learning approaches are represented that promote a change in thinking, and develop students' and teachers' action competence for sustainability. Images that can be interpreted as symbols for co-operation, inquiry, and experiential learning are part of the Toitū te Ao.

Teachers may choose to share these processes with students and invite them to consider what part of a particular process they are currently working at in their learning.

Cooperative learning

The raranga (woven) whāriki (mat) pattern symbolises cooperative learning. The raranga may reflect:

- the patiki (flounder) swimming collectively, representing learning together for the better of all
- the interconnectedness of all aspects of the environment as the individual strands of the mat weave together to create the whole
- the laying down of a wero (challenge) for people to collaborate to take action for the environment.

Experiential learning

The raparapa (double spiral) pattern symbolises experiential learning. The raparapa may reflect:

- the connections between prior knowledge and new knowledge gained when reflecting on experience
- double loop learning where underlying assumptions of how and why things are done are challenged through reflection on experiences
- the continuous cycle of experiential learning, reflecting, and questioning, leading to students taking informed action.

Inquiry learning

The poutama pattern (stairway of knowledge) of the tukutuku symbolises inquiry learning. The poutama may reflect the learner:

- moving up and down the stairway and through the layers of the tukutuku as they inquire

- developing new ideas, conceptual understandings, making connections, and building competencies for lifelong learning through the upward step of the poutama
- taking time to practice and use new knowledge and skills as they "rest" on the flattened step of the poutama.

Toitū te Ao was designed by Raukura Gillies for the National Education for Sustainability team of advisors as part of the development of a series of resources to support teacher professional development. The carver was Gavin Britt, with input from Chisnallwood Intermediate students who created the carving. Contributions were also made by the education for sustainability advisors and Tuahiwi School.

The carving has been gifted to the Ministry of Education and UNESCO for the length of the Decade for Education for Sustainable Development 2005–2015.

Toitū te Ao was made using a variety of sustainable materials and taonga species (indigenous natural resources) to highlight the importance of Māori being able to access and use natural resources in order to continue traditional cultural practises.

Using Toitū te Ao for teaching and learning

Toitū te Ao can be used as a resource for teaching and learning, to enable students to consider a Māori perspective of the environment.

As students view the carving, ask:

- What do you see? Make a list of all the things that you see in the carving.
- What things do you think represent the natural environment? The social environment? The cultural environment? Aspects of the economic environment?

Students can then select a section, piece, or one element of the carving that they can relate to or that creates a focus for them in some way. Ask students to share the story of why they relate to or have chosen to focus on that part of Toitū te Ao.

- Does your story refer to a "lesson" or experience you have had?
- What did you learn?
- How could you share that learning with others?
- Are there other "symbols" within Toitū te Ao that you might tell a story about and share?

A Māori perspective of the environment

When the carving was designed and created the artist deliberately interwove some 'symbols' for us to consider regarding a Māori perspective of the environment. Some of these 'symbols' include:

- Ranginui and Papatūānuku
- Tawhirimātea, Tānemāhuta, Rongomatane, Ruaumoko, and Tangaroa – some of [the children of Ranginui and Papatūānuku](#)
- [Hineahuone](#) – the first woman and Te Ira Tangata – the whakapapa line for people
- Te Raranga Pātiki – a woven mat in a flounder pattern representing co-operative learning
- Te Potama Tukutuku – step-like pattern representing inquiry learning
- Te Raparapa – double spiral pattern representing experiential learning

Environmental issues represented in Toitū te Ao

Some environmental issues highlighted include:

- Kapowai – the dragonfly and the ecosystem that it is part of
- Kauri Gum eyes – a harvest of kauri trees over 1000 years

- Whole paua shell – a rāhui, maitaitai, or reserves to protect and revitalise kaimoana
- Whale's fluke – New Zealand's growing industry of tourism
- All of the ocean Tangaroa's realm – resource management, quota, foreshore and seabed, land use, pollution
- Hoiho the yellow-eyed penguin – native species and the issues they face from introduced species, predation, habitat loss
- Tuatara as the guardian coming through time

Each of these "symbols" could be starting points for a unit of work or inquiry for students to explore.

Published on: 16 Feb 2015

[Return to top](#)

[Sitemap](#)

- [The New Zealand Curriculum](#)
 - [Foreword](#)
 - [Purpose and scope](#)
 - [Vision](#)
 - [Principles](#)
 - [Values](#)
 - [Key competencies](#)
 - [Official languages](#)
 - [Learning areas](#)
 - [Effective pedagogy](#)
 - [The school curriculum: Design and review](#)
 - [The Education Act and the curriculum](#)
 - [Requirements for boards of trustees](#)
 - [Years and curriculum levels](#)
 - [Glossary and whakatauki](#)
 - [Acknowledgments](#)
- [Reviewing your curriculum](#)
 - [About](#)
 - [Setting the direction](#)
 - [Possible pathways](#)
 - [Examples and inspiration](#)
- [National Standards](#)
 - [Professional development](#)
 - [Tools](#)
 - [Supporting parents and whānau](#)
 - [From great to excellent](#)
 - [Key information](#)
 - [Reading and writing standards](#)
 - [Mathematics standards](#)
 - [National Standards archives](#)
- [Principles](#)
 - [High expectations](#)
 - [Treaty of Waitangi](#)
 - [Cultural diversity](#)
 - [Inclusion](#)
 - [Learning to learn](#)
 - [Community engagement](#)
 - [Coherence](#)

- [Future focus](#)
- [Key competencies](#)
 - [About](#)
 - [Tools](#)
 - [Examples](#)
 - [Resources](#)
 - [Key competencies and effective pedagogy](#)
- [System of support \(incl. PLD\)](#)
 - [Background](#)
 - [Triggers](#)
 - [Learning needs](#)
 - [Resource selector](#)
 - [Designing learning for school context](#)
 - [Impact of changed practices](#)
 - [Learner-initiated supports](#)
 - [School-initiated supports \(Incl. PLD\)](#)
 - [NCEA L2 toolbox](#)
- [Secondary middle leaders](#)
- [Middle schooling](#)
- [Curriculum resources](#)
- [Curriculum stories](#)
- [Archives](#)
- [Contact New Zealand Curriculum](#)
-

[TKI - Te Kete Ipurangi](#)

- [About this site](#) |
- [Contact TKI](#) |
- [Help](#) |
- [Feedback](#)
- [Accessibility](#) |
- [Copyright and privacy](#) |
- [Copyright in Schools](#) |
- [Search](#)

[New Zealand Government](#)

© Crown copyright.