

Fireside's World Bound Climate Change Curriculum

Fireside Adventures recognizes that we learn, play and live on the unceded traditional lands of the Musqueam, Squamish, and Tsleil-Waututh First Nations, amongst many others.

Who We Are

The World Bound Curriculum presented below was developed from the ideas and experiences of the Fireside Adventures community. Fireside Adventures is a community outdoor experiential education (COEE) organization for children, youth, and adults founded by Jeff Willis in collaboration with many others. For over 15 years, we have been paddling oceans, clambering up mountainsides, and building profound relationships between humans and nature. We have witnessed the transformational gifts of nature and community – shifting perspectives, reshaping harmful patterns, and providing the resources to live a joyful and fulfilling life.

During these 15 years, we have also seen the ever-worsening toll that climate change is taking on our ecosystems, our communities, and our individual well-being. As the years have passed, it became clear that we could do more, that we *needed* to do more. Fireside Adventures is not a group of climate change experts or policy-makers, and we don't claim to be. We are a community of parents, aunts and uncles, brothers and sisters, mentors, teachers, and outdoor educators who know that inaction is simply not an option in a climate crisis. We are a network of people urged to action by the knowledge that climate change is threatening everything we hold most dear. We are doers, and we've decided to do something.

The World Bound Climate Change Curriculum is the result.

A Personal Note on World Bound

"I have searched and searched for a stand-alone climate change education secondary school credit in the BC curriculum and across the world. There isn't any. It doesn't exist. I am dumbfounded that physics and calculus are stand-alone accredited courses taught from math and science departments. How did these courses become separate courses when climate change is buried in environmental science or social studies? I believe climate change education is more important at this point than calculus.

If we believe that climate change is a priority then our education system has to fundamentally make climate change education a priority. If we think our leadership has failed us, then we need to change the leadership model, direction and priorities. If we believe our kids are disconnected from the land and lack a relationship with nature - then we need to create more capacity and opportunities to be outside while also unplugging them.

As a father, my kids will enter into their local high school in a few years. Like most parents, we want our children to have more options to learn, express themselves and study climate change through an educational approach. As an outdoor educator and leadership instructor, it is time to rethink and reimagine our idea of leadership and our connections with nature. Education is the most powerful way to change society, create solutions and empower a generation.”

– **Jeff Willis**, father, outdoor educator, and optimist.

Educating in a Climate Crisis

Our Motivation

At this point, it's clear that climate change is *the* defining issue of our time.

The reality is that climate change poses a massive and rapidly worsening threat to life on Earth. The death and pain caused to non-human life is already incalculable. Even if it does not drive humanity to extinction, climate change will kill millions of people and cause the suffering of billions¹. Climate change is a problem so overwhelming that it begins to eclipse any possibility of action, any hope of solution, driving many into despair, ambivalence, or apathy.

At this point, it's also clear that we're not adapting to this crisis quickly or successfully.

A new approach to climate change is needed – *our future depends on it*. This doesn't mean a new approach to recycling. This doesn't even mean a new approach to fuelling our vehicles. The climate crisis needs us to think bigger. What we need is a new approach to leadership, to education, to how we prepare our children to meet a climate crisis future.

While many of humanity's failures to address the climate crisis are absurd, chief among them is our education systems' inability to meaningfully address the threat of climate change. In Canada, less than half of provincial and territorial curriculums include any climate change content². The situation is little different internationally: what countries that do include climate change in their curricula do so in a shallow and disconnected manner³. Simply put, our education system is failing to adequately prepare our children for the broken future they will inherit.

To change this, we need to get creative.

At Fireside, we know that education has the power to rewrite, reframe, and restore our relationship with the natural world that we are destroying. So, Fireside decided to do something

¹ The Uninhabitable Earth

² Canadians' Perspectives on Climate Change & Education: 2022

³ Education for Sustainable Development: A Roadmap

so common sense that it's radical. We began to work with passionate and gifted educators to give our children what they want and need: a progressive and comprehensive climate change education. This goes beyond simply teaching students what climate change is; knowledge does not equate to action. It also doesn't mean teaching our children how to solve climate change; we can't, we don't know how.

What we *can* do is provide our children with the concepts, skills, and experiences necessary to become resilient and adaptable, and enable them to build a sustainable future for our world. At its core, the World Bound project is about inspiring and empowering our youth to find hope in the most hopeless of circumstances. Through our pioneering World Bound curriculum, we intend to provide our children with the opportunity to be what they are: humanity's best hope for a better future. This is not an easy task, it requires smashing through the barriers of consumer capitalism, neoliberal politics, and increasingly fragmented communities. To do this, we need to understand what the problem of climate change actually means for our youth and their education.

A Wicked Problem

Climate change is not simply a series of technical problems like how to move away from fossil fuels, or how to limit animal agriculture. The deeper challenge of climate change lies in complexity and how we think about complexity. Observations in fields like mathematics, ecology, economics, and sociology, increasingly confirm that the relations of complex systems provide reality with its structure, not simplistic 'atomic' elements⁴. Instead, biological life, human consciousness, social structures, even the universe's physics, all emerge from interconnected, self-organizing, adaptive complex systems as phenomena that *are not predictable from the individual parts*⁴. The universe is not merely the sum of all objects. Societies are not merely the sum of the people in them. Our minds are not merely the sum of our neurons.

Nor is climate change merely the sum of chemicals in our atmosphere.

Climate change is itself complex because it emerges from interactions between a unique mixture of complex systems – the human brain, modern political and economic systems, and our planet's network of ecosystems – that are themselves poorly understood. This complexity turns climate change into a 'wicked problem': a problem that cannot be definitively described, is without a determinable end point, involves a high degree of interconnectedness, and resists optimal solutions⁵. This 'wickedness' is exacerbated by the fact we are rarely taught how to properly think and act in relation to complex systems. In fact, modern education, a product of the Industrial Revolution, was designed with a very different sort of problem in mind: how do we create a labour force capable of thriving in mechanistic, compartmentalized, assembly-line work environments⁶?

⁴ Complexity Theory and the Philosophy of Education

⁵ Dilemmas in a general theory of planning

⁶ Complexity Theory and the Philosophy of Education

The output of this system is curricula where subjects are taught disconnected from one another and are broken down into chunks of ‘facts’ to be memorized and regurgitated⁶. This is not a condemnation of educators – many of whom go above and beyond to prepare our children for their futures – but rather that the design of the modern education system itself makes it far too difficult to approach the complexity of life-defining issues in a way that is useful and relevant for our children. Fundamentally, modern education as it currently exists cannot prepare our children to understand and adapt to the complexity of climate change.

It’s little wonder that educators and students alike find themselves feeling lost and defeated by an uncertain future.

Uncertainty

Being unprepared for complexity creates a crippling degree of uncertainty, a profound challenge to our children in a climate change future. This may seem strange, as uncertainty – arising naturally from complexity – is a fundamental feature of life. Indeed, uncertainty is so fundamental that our brains evolved primarily to mitigate it by developing powerful predictive models of the world over a lifetime⁷. But even the best predictive models that statistics can create only offer partial certainty when applied to the complexity of the real world.

As we move further from the Industrial Revolution, uncertainty about the future seems to be growing rapidly, especially among our youth. Climate change is one source of uncertainty, but there are others, like growing income inequality and joblessness, social polarization and instability, even the implications of artificial intelligence. Young people today have no idea what their futures will look like, and the possibilities are mostly bleak or terrifying. The result is the spread of mental health issues, social media and substance addiction, and isolation.

The great challenge of uncertainty is not that it exists, but that our inability to understand complexity creates an inability to work well with uncertainty. Typically, we are taught to avoid uncertainty by memorizing facts and absorbing cultural myths, which offer a shallow certainty that proves false for many. As the philosopher James Carse observes⁸: “To be prepared against surprise is to be trained. To be prepared for surprise is to be educated.” Our children are all too often *trained*, largely by being given generic answers and promises connected to a hypothetical future that does not reflect their own. This curriculum intends to *educate* children, to provide them with the tools to be prepared no matter what surprises the future holds. Of course, this is easier said than done. Certainty – impossible in any life problem that actually matters – is not the antidote to the poison of rampant uncertainty.

What our children need is hope.

⁷ Surfing Uncertainty: Prediction, Action, and the Embodied Mind

⁸ Finite and Infinite Games

Hope

Right now, for young people, hope seems to be desperately needed and in short supply⁹. This is not because the situation is inherently hopeless, but because how we think about hope is tied to our feelings about certainty and inevitability. Hope is often understood as an emotion that we feel when we trust that things will get better, hopelessness when we do not. Such hope is fragile and passive, tied to the inevitability of outcomes that too often appear outside of our control. Hope is not some abstract concept or uncontrollable emotion, but a concrete psychological state that can be taught and practiced. Psychologist Charles Snyder and colleagues¹⁰ describe this powerful form of hope as a way of *thinking* and *acting*, as “the perceived capacity to produce pathways to desired goals...along with the motivation to begin and continue the use of those pathways”.

True hope does not come from knowing that life will get better. The fact is that none of us, not even the youngest children, are likely to see the ‘end’ of anthropogenic climate change. So, we all must learn to find hope without any chance of certainty, without any surety of success. True hope, then, comes from understanding that change is always possible, identifying what kind of change we want to see, and knowing how we can play a role in that change. To give our children the kind of hope they need, we must create an educational environment that supports student well-being, teaching them to be resilient, adaptable, and capable of action in a profoundly complex and uncertain world. We must provide our youth the tools to envision a better future, and empower them to take action toward it. Teaching our children how to hope is essential for positive outcomes in youth wellbeing¹¹ and educational success¹², allowing them to reach their full potential and contribute to a prosperous, cohesive society.

The nature of complexity is relevant here as well, because changing socio-economic structure means changing a complex system. Complexity research tells us that permanent change in complex systems rarely come from one-off, top-down changes, but from changes in relationships between individual agents that can snowball until a new complex system takes shape¹³. As the failure of global climate agreements have shown, there is no simple top-down fix. This is both good news and bad news. The good news is that we are not powerless beings whose futures are determined only by the whims of presidents and billionaires. Each of us can play a direct role in healing the climate crisis by collectively transforming relations with ourselves, each other, and the natural world. Each of us has a real pathway to hope. The bad news is that fighting climate change requires coordinating vast networks of individual humans. Each of us must become capable of sacrificing personal comfort and convenience to spread meaningful, sustainable change as far around the world as possible. This isn’t a normal way of life for most of us. Such a profound evolution of human life requires a catalyst, a hopeful spark that sets the change in motion. To do this we need something different.

⁹ Canadians’ Perspectives on Climate Change & Education: 2022

¹⁰ Hope Theory: History and Elaborated Model

¹¹ Hope and emotional well-being: A six-year study to distinguish antecedents, correlates, and consequences

¹² Hope and Academic-related Outcomes: A Meta-Analysis

¹³ Complexity Theory and the Philosophy of Education

To do this we need World Bound.

Our Vision

“Climate change is redefining our idea of leadership, rather than leadership defining our idea of climate change.”

– **Jeff Willis**, founder of [Fireside Adventures](#) and [Vancouver Outdoor School](#)

To create hope we need a hopeful vision. Our vision is to create an educational framework that can be the hopeful catalyst in the lives of our children by using an integrated approach to environmental education that emphasizes community involvement, student leadership, and climate action. We want to take climate change education beyond the walls of the classroom, beyond the lone perspective of environmental science, to create a climate change curriculum that is holistic, flexible, and relevant to educators and students everywhere. Our intention is not to throw away or diminish educators. We believe education authorities have an important role to play in giving our youth space to immerse themselves in nature, build leadership skills, and deliver climate change education. We simply intend to provide a framework for reimagining environmental education that gives students the opportunity to excel in topics that matter most to them. To realize this vision, we have identified three actionable goals for enhancing teaching and learning, student engagement and community engagement, and environmental leadership.

Environmental Education

The first goal is to place environmental education – both problems and solutions – front and center. Climate education cannot be one-dimensional, confined to the single viewpoint of Western science, or single subjects, like climate science or green economics. This means making complexity a clear and integral feature of our curriculum and preparing students for the climate crisis using a variety of modalities, and a variety of perspectives. Here, we – along with federal and provincial governments^{14, 15, 16} – draw upon Indigenous knowledge. Indigenous ways of knowing offer essential tools for providing learners with a holistic set of interconnected skills, knowledge, and experiences to build a well-rounded understanding of climate change’s complexity.

Climate Leadership

The second goal is to foster climate leadership, which we desperately need at all levels of society. World Bound plans to lead the way by taking charge implementing and promoting responsible environmental practices throughout our communities. Both through education and example, we intend to show learners, educators, parents, and community members how to live more sustainably, and become climate leaders in their own right.

¹⁴ Ontario First Nation, Métis, and Inuit Education Policy Framework

¹⁵ BC Curriculum Overview

¹⁶ Truth and Reconciliation Commission Final Report

Climate Action

The third goal is to engage students through climate action in both their schools and wider community. It is critical that any curriculum engages students directly and shows them how to play a role in shaping a healthy physical environment for themselves, and so foster greater well-being¹⁷. Our curriculum will make active environmental stewardship, through community and school projects, an essential form of learning.

Simply put, climate education needs to change. Our children need academic *and* real-world experience. Our children need theory *and* practice. Our children need to shape *and* be shaped by their education. Our children are capable of this, and our educators are capable of this. We simply have to work together to figure out *how*.

The World Bound Climate Change Curriculum will create this change using the following:

- Competency-driven, concept-based, and pragmatic content that aligns with mainstream curriculums' learning standards while drawing upon World Bound's Five Pillars of Learning (explained in greater detail below):
 - **Integrating** Climate Change Principles and Perspectives
 - **Exploring** Real-world Environments
 - **Volunteering** and Connecting in Communities
 - **Practicing** Life, Social, and Leadership Skills
 - **Sustaining** Climate Action
- Inquiry-based, experiential, and critical thinking approaches that allow students to demonstrate their understanding through personalized projects, expressive arts, reflection through written self evaluation, group discussion, and community volunteering.
- An outdoor, place-based course module framework that can be easily modified to be taught anywhere in the world, during either semestered school or our [multi-week World Bound outdoor leadership courses](#).

Our long-term vision is to adapt our long-standing experiential learning framework to create a curriculum that offers students a distinct 4-credit high school course that is specific to climate change, with over 120+ hours of instruction. We have carefully designed 20 foundational modules (with more to come) that allow students to experientially explore climate change in several different modalities. Our curriculum is designed to be compatible with mainstream educational standards, so that learners receive a high school credit in Climate Change and/or Outdoor Leadership. We also intend to support school districts, schools, and educators in integrating our curriculum into a regular school course load by making our modules compatible with other courses.

Upon completing this curriculum, we intend for our students to have the tools to engage in meaningful climate activism, including building collaborative relationships, holistic well-being,

¹⁷ Foundations for a healthy school: a companion resource to the K-12 school effectiveness framework

positive personal identity, divergent thinking, adaptability, problem-solving skills, and outdoor leadership competencies. These tools aren't just essential for preparing our children for a climate crisis future, they're tools that any healthy, confident, resilient human should have. They're tools that our children want and need.

Put simply, if this curriculum can become certified as a legitimate educational program, everyone wins.

Our Commitments

If we are going to do this, then when we talk the talk we need to be ready to walk the walk. Fireside's decade and a half of successfully walking the walk comes from our ability to make commitments and keep them. As we embark on this project, we have made sure to be specific about how we will hold ourselves accountable taking tangible climate action:

1. We commit to remaining humble, being open to feedback, being flexible and listening.
2. We commit to working with Indigenous communities, elders, educators, and knowledge keepers, and to educating others to do the same.
3. We commit to doing this work for children of the past, present, and future.
4. We commit to the wellbeing of all living beings.
5. We commit to taking action as an organization to lower our carbon output and minimize waste created on and off course.
6. We commit to calculating our food carbon footprint and aim to minimize it by 50%.
7. We commit to creating a "carbon offset" program, as we recognize we take airplanes and other forms of travel that contribute to greenhouse emissions. Caretakers and parents can donate to this program when they enroll their youth and the funds will be used to bring youth onto courses they otherwise would not have access to. This is specifically for Indigenous youth and youth that live in countries we travel to outside of Canada (such as Ecuador).
8. We commit to taking action.

Becoming World Bound

Our ambition is right there in our name, *World Bound*. Climate change is a global phenomenon and so thinking and acting globally is essential. While we are a Canadian organization, our goal is to extend this framework as far around the world as possible. This coming summer we are leading three separate summer courses, on three separate continents:

- [World Bound Yukon](#), where our learners will travel from British Columbia to the Yukon to train wilderness and leadership skills on a 700 kilometer canoe trip down the Yukon River, practice creative thought and self-reflection by create an expressive art project, and learn about climate change first-hand in a region that is an unparalleled example of nature's beauty and the devastation of human-driven climate change.
- [World Bound Ecuador](#), where our learners will adapt to wonderful and challenging new environments from the Andes to the Amazon, learn directly from Indigenous

communities who resist climate change by combining their traditional knowledge with Western climate science, and participate directly in community improvement projects that help people whose ways of life are threatened by deforestation, illegal gold mining, and a changing climate.

- [World Bound Italy](#), where our learners will travel between the iconic tourist destinations of Venice and the Alps while challenging themselves to create less than half of the average tourist's carbon footprint, learning sustainable agriculture from alpine farmers, and meeting with the climate leaders who are driving Italy's Green Transitions.

Each of these excursions explicitly involves educators, activists, and businesses that are deeply tied to the places our learners visit. Furthermore, despite our current Canadian focus, the intention behind our curriculum is that it will be open and flexible enough to be taken and applied by anyone who is interested in preparing youth for a climate crisis future.

Our mission is to drive large-scale change by creating a global World Bound network made up of caring, motivated people applying and adapting our curriculum to a variety of educational, cultural, and natural environments. The foundation of this adaptability is our five Pillars of Learning.

World Bound's Five Pillars of Learning

"Schools have a vital role to play in preparing our young people to take their place as informed, engaged, and empowered citizens who will be pivotal in shaping the future of our communities, our province, our country, and our global environment."

– Ontario Ministry of Education ('Shaping Our Schools, Shaping Our Future')

As we began to explore solutions to the lack of climate change education, we started not with academic research but by consulting with youth, teachers, outdoor educators, parents, and many others about what they needed from a climate change curriculum. These insights helped us realize that we needed to articulate the basic educational tenets of our curriculum. The result was our five guiding Pillars, a set of interlinked principles that form a holistic guide for climate change education. These Pillars are intended to be actionable – not theoretical – methods for achieving our three goals of environmental education, leadership, and action.

These Pillars were created to uphold an educational environment where learners can acquire knowledge from multiple perspectives, deeply internalize that knowledge by connecting it to their own experiences, and be empowered to transform their knowledge and experiences into life-long action. Each Pillar is a synthesis of several core concepts that make them highly flexible, ensuring that some element of each Pillar will be present in all our course modules. This interconnected structure is motivated by three goals:

1. To strengthen holistic learning by interweaving the crucial practices, perspectives, and concepts of each Pillar across all our modules and lessons.

2. To create built-in opportunities for both educators and students to make new and creative connections between skills, concepts, and practices. Ideally, students and educators will move toward complexity by making as many connections as possible, without becoming chaotic or incomprehensible. These new connections can be used to motivate our modules' evolution, making them clearer, more effective, or more relevant.
3. To allow our Pillars to be made compatible with a variety of related subjects in mainstream curriculums. The holism and interdisciplinarity of our curriculum allows it to become a central point of cross-curricular connections in a network of environmental knowledge. When providing climate education, it is essential that as many cross-curriculum connections are made as possible so that students receive environmental education that is both broad and deep.

As our Pillars developed, we began looking at a variety of other organizations, including the BC and Ontario Ministries of Education, Learning for a Sustainable Future, the Association of Canadian Deans of Education, and UNESCO. We realized that our Pillars had synthesized what these organizations had observed that educators, parents, and students both wanted and needed. The details of each Pillar, and their connection to these other organizations, are given below.

Pillar One: Integrating Climate Change Principles and Perspectives

Climate change is an immensely complex problem without easy answers. Climate change education must meet complexity with complexity by providing our children with an integrated curriculum of interdisciplinary information, complementary knowledge systems, and heterogeneous viewpoints^{18, 19, 20, 21}. Our youth cannot rely on a single perspective on climate change, but must be introduced to many different forms of knowledge and taught how to synthesize them. Our goal is to make space for learners to develop into flexible, nuanced, and creative thinkers who understand the important relationships between action and reflection, local and global issues, and individual needs and desires. An important part of this is Two-eyed Seeing, a symbiosis of Western and Indigenous knowledge systems that draws upon the strengths of each to mitigate the other's weaknesses²². Another essential component of this Pillar is exposing learners to a variety of international and local perspectives, with a particular emphasis on social justice.

¹⁸ Canadians' Perspectives on Climate Change & Education: 2022

¹⁹ Accord on Education for a Sustainable Future

²⁰ Connecting the Dots: Key Strategies that Transform Learning for Environmental Education, Citizenship, and Sustainability

²¹ Shaping Our Schools, Shaping Our Future

²² Two-Eyed Seeing in the Classroom Environment: Concepts, Approaches, and Challenges

Core Concepts

Climate Sciences

Despite the promising growth of climate change knowledge, there is still a profound need and want for more climate science education^{23, 24}. Climate change is a scientifically observable process, and scientists around the world have been studying it for decades. Modern climate science is a critical resource for understanding climate change as a scientific phenomenon that affects the health and sustainability of individuals, communities, and ecosystems. It is essential that our youth are taught the science of what climate change is, how it works, and what can be done to stop it. Core climate science topics include:

- Weather and climate research
- Greenhouse gasses
- Human and natural emission sources
- Carbon sinks
- Understanding and evaluating climate change statistics and climate models (ie. PICC RCP models)
- Renewable energy and green technology
- Anthropogenic impacts on the Earth

We will meet each participant where they are at and support them in forming opinions, ideas, and solutions based on the scientific method and modern climate science. Our intention is that learners leave this course with a solid scientific foundation and an understanding that climate change is an evidence-based, measurable phenomenon.

Indigenous Knowledge

Indigenous communities across the globe have developed invaluable knowledge systems that are inherently tied to environmental guardianship and living well upon the land. Teaching our youth about Indigenous knowledge is not simply about social justice, but is a critical counterbalance to the Western scientific perspective, emphasizing place-based learning, holism, and developing a sense of personal responsibility for how we engage with our communities and the natural world.

The Truth and Reconciliation Commission's Final Report states that "**education is...the key to reconciliation**" (p.235). This is something that educational institutions at all levels are acknowledging^{25, 26, 27}, and that we are acting upon. Our curriculum is fundamentally shaped by the voices and ideas of Indigenous youth, educators, and elders from various communities. We are guided by the Vancouver School Board Aboriginal Enhancement Agreement, First Nations Education Steering Committee and First Nations Schools Association, Martin Brokenleg and

²³ Canadians' Perspectives on Climate Change & Education: 2022

²⁴ Education for Sustainable Development: A Roadmap

²⁵ Accord on Education for a Sustainable Future

²⁶ BC Curriculum Overview

²⁷ Ontario First Nation, Métis, and Inuit Education Policy Framework

others in “Circle of Courage” as well as teachings that have been shared with us through Indigenous educators, elders, knowledge holders and SD22 and SD42 Aboriginal Education. Furthermore, we wholeheartedly endorse and adhere to the following First Peoples Principles of Learning²⁸:

- Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors.
- Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).
- Learning involves recognizing the consequences of one’s actions.
- Learning involves generational roles and responsibilities.
- Learning recognizes the role of Indigenous knowledge.
- Learning is embedded in memory, history, and story.
- Learning involves patience and time.
- Learning requires exploration of one’s identity.
- Learning involves recognizing that some knowledge is sacred and only shared with permission and/or in certain situations.

We want to hold space for Indigenous learners to reclaim and develop positive personal identities by upholding the above principles and values. We are asking the people who have been caretakers of this land to guide us and provide feedback and endorsement for our modules. Our goal is to give both Indigenous and non-Indigenous learners space to experience different types of learning and knowledge together. In a time of reclamation, resurgence, and reconciliation, collaboration rather than separation are essential. We strive to have modules that incorporate Indigenous knowledge taught by Indigenous instructors, elders, and/or knowledge keepers.

Intercultural and Local Perspectives

Addressing climate change requires helping our youth to connect an overwhelming global phenomenon to local experiences, both near and far. Doing so allows learners to understand how both climate change affects both our own communities and ecosystems, as well as those around the world. A Vancouverite’s local perspective and experience is not the same as an Amazonian Indigenous person’s local perspective and experience, but both are important and ultimately related. It is essential to create relationality, and thus social justice, by exposing learners to perspectives that are different than their own, as the impacts of climate change are often disproportionately negative for minority and disadvantaged communities²⁹. These connections are intended to be made, in part, through our World Bound Expeditions, which bring youths face-to-face with local people in novel contexts like the Yukon, Ecuador, and Italy.

²⁸ First Nations Education Steering Committee’s First Peoples Principles of Learning

²⁹ Accord on Education for a Sustainable Future

Pillar Two: Exploring Real-world Environments

Authentic climate change education requires getting our children out of the classroom and connecting to the world outside³⁰. This involves acting upon what many educational institutions are beginning to acknowledge: that learning can take place anywhere, and that educators should and must create exploratory and creative learning environments^{31, 32}. Many important climate change lessons can only be learned by leaving the comfort of our homes and schools to explore the communities and outdoor environments beyond them. Getting out into the wider world challenges our youth to embrace uncertainty and complexity, and become comfortable being uncomfortable.

Core Concepts

Outdoor Experiential Education (OEE)

Fighting climate change doesn't just mean learning about the natural world, but going out to meet it. Simply put, more climate change education needs to take place outdoors³³. We must challenge our youths to leave distraction and convenience behind and immerse themselves in the ecosystems we hope to save. Many incredible thinkers and leaders – such as Outward Bound creator Kurt Hahn – have made profound contributions to developing youths into capable adults through outdoor experiential education, and we draw upon them here. This curriculum is designed to be adapted to 'the outdoor classroom', whether that's a three-week summer course or an afternoon in a nearby park.

Community and Place-Based Learning

Meaningful climate education and transformative experience begins at the level of the local community^{34, 35}. Our youth must learn to engage with their local context. If we don't know and care deeply about our community, we cannot make choices that make a real difference. This means building a curriculum that can turn the community into a classroom, and show students the real-world connection between their knowledge of climate change and its local impact. Our curriculum aims to achieve this through community excursions, projects, and introducing learners to a variety of local climate leaders and activists.

Expeditions

If there's one thing we know at Fireside, it's the transformative potential of the expedition. Expeditions into unfamiliar territory provide challenging and exciting opportunities for learners to build upon old skills, and learn new ones, through novel experiences. While familiarity and

³⁰ Connecting the Dots: Key Strategies that Transform Learning for Environmental Education, Citizenship, and Sustainability

³¹ BC Curriculum Overview

³² Shaping Our Schools, Shaping Our Future

³³ Accord on Education for a Sustainable Future

³⁴ Connecting the Dots: Key Strategies that Transform Learning for Environmental Education, Citizenship, and Sustainability

³⁵ Education for Sustainable Development: A Roadmap

routine can be useful, giving our youth opportunities for adventure in the wider world can be a powerful tool for creating adaptable and resilient people. Ultimately, expedition experiences allow youths to return profoundly changed and ready to become climate change leaders in their communities.

Pillar Three: Volunteering and Connecting in Communities

The threat of climate change grows quickly, and World Bound recognizes the need for immediate action. To change the world for the better, we must all volunteer our time and energy to carry out meaningful work that helps solve real-world problems. Volunteering offers a particular challenge because it does not bring personal profit, and instead asks us to give something up so that the lives around us are made better. Crucially, we must teach our youth that volunteering – and activism in general – does not take place solely behind a keyboard. Instead, this work takes place in actual communities, addresses specific issues, and requires determination and *effort*. This means going beyond simply telling you they need to act. Students must be mentored by activists and be given the opportunity to play an active role in shaping their communities and future. Engaging students in this way means actively participating in sustainable projects, providing a strong student voice in local decision-making, and involving themselves in their school and local community. Individual action is not enough, youths and their communities must work together and take collective action. Our curriculum is designed not just to teach our youth the importance of volunteerism, but to support them in acting *right now*, through project-based learning in their schools and wider communities.

Core Concepts

Self-sacrifice

As climate change worsens, an ever-growing number of people – particularly young people – are willing to make changes in their lifestyle to mitigate the effects of climate change³⁶. However, willingness to change is not enough. All of us, but especially younger generations, must make sacrifices that will fundamentally redefine how we live. Of course, this is more easily said than done. We exist in a socio-economic environment that rewards competition and selfishness, creates apathy through comfort and convenience, and diminishes our ability to give through stagnating wages and cost-of-living crises. The antidote to this is self-sacrifice, the act of giving up some of our own comfort, convenience, even stability, in order to improve our community as a whole. We recognize that this can be difficult, even terrifying, but it is non-negotiable. Together, we must find ways to create a future where self-sacrifice is not prohibitively costly, but an integral, even joyful part of our social fabric.

³⁶ Canadians' Perspectives on Climate Change & Education: 2022

Humanization and Authentic Relationships

To even want to help others, we need to know who they are and care about their well-being. Volunteerism requires empathy, the ability to see other people, whether near or far, as human beings whose lives matter. When we humanize others and build authentic relationships with them, we are driven to help even when helping is hard. Teaching humanization is essential because often the people most in need of help are the people most dehumanized, whose lives are characterized by injustice, marginalization and oppression³⁷. Humanizing the people we work with and for – even those who stand in our way – creates a powerful commitment to volunteering, and a deeper awareness of how best to tackle the challenges of climate change.

Project-based Learning

Good volunteer work is difficult and means creating and carrying out meaningful projects. Climate change curriculum must teach our youth not just why volunteerism is important, but how to plan and execute helpful, sustainable projects in the community. Our curriculum incorporates community-focussed projects, giving learners the tools to identify local problems, generate realistic and long-term solutions, create actionable project plans, creatively acquire the resources and labor needed, adapt to obstacles that may arise, and see their projects through to completion. Once these skills have been learned, they will be invaluable in carrying out climate action beyond the classroom.

Pillar Four: Practicing Life, Social, and Leadership Skills

Environmental education doesn't only mean teaching students about the environment. There is a growing awareness that preparing our children for a climate change future means fostering greater resilience and adaptability³⁸. Fundamentally, holistic education is healthy education, and climate change curriculum must promote physical, intellectual, and emotional well-roundedness in our youth^{37, 39, 40}. Resilience and adaptability come in part from competence – the ability to navigate complex situations by utilizing pre-established skills and attitudes – that is created by building relevant skills – the ability to perform specific tasks³⁹. Skill-building of all kinds teaches discipline and humility, which build into a healthy sense of self-confidence and self-reliance, through competence. Building student competence means providing them space to learn, practice, and apply valuable skills that are essential for preparing youths for life and work in an increasingly complex society^{39, 40, 41}. Our curriculum aims to provide learners with a variety of practical life skills, both 'hard' and 'soft', to support them in transitioning from awareness to action as people who can "think critically, feel deeply, and act wisely"³⁹.

³⁷ Accord on Education for a Sustainable Future

³⁸ Canadians' Perspectives on Climate Change & Education: 2022

³⁹ 21st Century Skills and Competences for New Millennium Learners in OECD Countries

⁴⁰ Finding Common Ground: Character Development in Ontario Schools

⁴¹ BC Curriculum Overview

Core Concepts

Hands-on Skills

In an increasingly digital world, it is more important than ever to teach our children to use and trust their bodies. This doesn't mean turning them into professional athletes or master crafts-people. It means helping them internalize the reality that a healthy body creates a healthy mind. Training hands-on skills is an important part of shaping people who are productive, self-motivated, and care about their physical well-being⁴². The discipline that comes from training our youth to work with their bodies, is vital for their long-term success. Hands-on skills include:

- Outdoor and Wilderness Skills
- Agricultural, Foraging, and Cooking Skills
- Physical Literacy Skills
- Applied Sustainable Technology Skills

Thinking Skills

The way we think about the world affects what we do in it. In today's knowledge society, thinking skills are essential⁴³, not least because the information and media environment surrounding climate change is extremely messy and without clear-cut solutions. Reflecting this, a growing number of educators and parents are expressing the need to provide our children with the thinking skills to untangle climate change facts, theories, and opinions⁴⁴. Youth must be taught both how to search for, evaluate, and organize information, but also how to creatively restructure and model this information⁴³. Our climate change curriculum strives to create an educational environment in which youth can be inquisitive and learn to think critically and divergently⁴⁵. Thinking about the problem of climate change requires precision, flexibility, and creativity in order to avoid bias, communicate effectively, and make the best decisions possible. Teaching youth how to train their minds gives them the confidence that they are capable of finding solutions to difficult problems, and that these solutions will be well-reasoned and nuanced. Essential thinking skills include:

- Information Literacy Skills
- Divergent Thinking Skills
- Critical Thinking Skills
- Reasoning Skills
- Risk Management Skills

⁴² BC Curriculum Overview

⁴³ 21st Century Skills and Competences for New Millennium Learners in OECD Countries

⁴⁴ Canadians' Perspectives on Climate Change & Education: 2022

⁴⁵ Connecting the Dots: Key Strategies that Transform Learning for Environmental Education, Citizenship, and Sustainability

Collaborative Skills

Individuals do not change the world, no matter how smart or powerful, at least not for the better. In isolation, none of us can make a difference in the fight against climate change but together we can have a profound impact on our future. Collaboration is inherent to successful advocacy⁴⁶, and parents, students, and educators alike want education that teaches how to take collective action⁴⁷. Collaboration involves working flexibly and adaptably within a group, as well as learning to communicate knowledge to others effectively⁴⁸. While mainstream curriculums are also acknowledging the need to create cooperative individuals who can work respectfully with different viewpoints^{49, 50}, the skills of collaboration are all-too-often neglected and rarely taught directly. Our curriculum fills this gap by teaching our youth explicitly and concretely *how* to collaborate. Collaborative skills include:

- Social Skills
- Leadership and Team-building Skills
- Group Decision-making Skills
- Dialogue and Debate Skills

Personal Development Skills

An essential part of transformative education is creating individuals who have the capacity for creativity, flexibility, self-motivation, and positive self-image^{47, 51}. However, research shows that many people feel that climate change is causing, or worsening, a variety of mental health problems and feel that climate change education must do more to address this⁴⁶. Helping our children understand who they are, what they want, what they need, and what internal challenges they must overcome, is integral to their becoming both a healthy person and an effective agent of change. Without this awareness, the challenges of climate change will seem insurmountable, leading to worsening mental health and apathy. Our curriculum provides learners with the skills to become resilient and adaptable individuals by utilizing many tools, from many knowledge systems. Personal development skills include:

- Social-emotional Learning (SEL) Skills
- Self-reflection Skills
- Individual, Family, and Life Goal-setting Skills
- Public Speaking Skills
- Solo Experiences and Sit Spots

⁴⁶ Accord on Education for a Sustainable Future

⁴⁷ Canadians' Perspectives on Climate Change & Education: 2022

⁴⁸ 21st Century Skills and Competences for New Millennium Learners in OECD Countries

⁴⁹ BC Curriculum Overview

⁵⁰ 21st Century Skills and Competences for New Millennium Learners in OECD Countries

⁵¹ Finding Common Ground: Character Development in Ontario Schools

Pillar Five: Sustaining Climate Action through Solution-focussed Approaches

Too often our youths are left with questions at the end of their education; at best, ‘What now?’, at worst ‘So what?’. Answers typically include going to university or getting a job, responses that not only seem shallow compared to the threat of climate change, but increasingly do not reflect reality. Our youth want to be educated so that they can make a difference in their families, communities, and the wider world⁵² but mainstream curriculums are not set up to do this. The fact is, climate change doesn’t end when school does. We must create a learning environment that supports our youth in finding better answers to their question, by including them in the design, delivery, and continuation of learning, and working with them to pursue advocacy and collective action beyond the classroom^{53, 54, 55}. This curriculum intends to include concrete steps to support learners in applying what they have learned beyond the classroom and taking meaningful climate action as they move forward in their lives. Our goal is for every student to leave this curriculum with at least one real-world, goal-oriented connection through which to further take climate action. This includes joining environmental activist organizations; finding employment in green industries, climate education, or as climate consultants; collaborating to create their own community-based framework for climate action; or even becoming a collaborator as we move the World Bound vision forward.

Core Concepts

Community Integration and Creation

Directly showing youth how to bring their skills and knowledge to the community is an irreplaceable element of climate education and activism⁵⁶. Our curriculum is expressly designed to support youths in understanding and acting upon their responsibilities in their families, communities, nation, and planet⁵⁷. Of course, this is not easy and it can often be difficult for learners to find ways of integrating their newfound abilities into their communities. Sometimes, all that is needed is guidance toward local projects, jobs, or activist groups. However, a major challenge that society faces is the erosion and fragmentation of community, and so it is essential to teach youth how to take a leading role in creating new groups, communities, and projects.

Human Connectivism

As with the natural world, human society is fundamentally relational and networked. It is critical to show our youth how to understand and use these networks of interdependence. In part, this means forming links between youth-led and youth-focussed organizations and the wider networks of climate action⁵¹. Our curriculum seeks to make connections between our learners

⁵² Connecting the Dots: Key Strategies that Transform Learning for Environmental Education, Citizenship, and Sustainability

⁵³ Education for Sustainable Development: A Roadmap

⁵⁴ Canadians’ Perspectives on Climate Change & Education: 2022

⁵⁵ Accord on Education for a Sustainable Future

⁵⁶ Education for Sustainable Development: A Roadmap

⁵⁷ BC Curriculum Overview

and their peers, activists, educators, indigenous leaders, and many others, both locally and around the world. Our ultimate goal is to establish an enduring World Bound community that connects past and present students to a pre-established network of relationships, ensuring that no matter where they are, they have a community to support them in climate action.

An Epic Life-long Journey

Our species is at a turning point. For all of us, our efforts against climate are a life-long endeavor. But, this endeavor is an epic one, nothing less than the struggle for the future of our species, for hundreds of years of future generations. Many agree that climate change should change the way people behave through empowerment⁵⁸, which is as much about how we understand our role in this struggle as it is about skills and knowledge. Our curriculum seeks to instill an awareness in our youth that they are embarking on a grand journey that is unlike any that humanity has experienced before. They are learning, training, and becoming the kinds of people who will have history books written about what they did. Thus, education is a fundamentally hopeful act, even when the likelihood of a happy ending seems unlikely.

World Bound's Modules

Making the Pillars Concrete

At the end of the day, a useful curriculum is not made up of big ideas and abstract concepts but of actionable information. Our World Bound Modules provide this actionable material, using the above Pillars to address specific climate change subjects that we feel are integral for the transformative educational environment we imagine. While some modules may be more closely tied to one Pillar, our intention is to integrate as many of the Pillars into each module as possible. Each module will have explicit links to other subjects and courses in mainstream curriculums, to better establish a network of knowledge that creates strong connections between World Bound and other educational institutions.

We currently have 21 modules, with more on the way. Our goal is for each module to have a handful of associated lesson plans, for a range of age groups, to offer a starting point for educators in delivering climate education. While there is not enough room here to explore each module in detail, a list is provided below to get a feel for the general subject matter that we plan to include in this curriculum:

1. Joining the Climate Change Resistance
2. Sustaining the Climate Change Resistance
3. Thinking Divergently and Convergently About Climate Change
4. Repurposing Ideas of the Past for Present and Future Solutions
5. Cognitive Biases and Resistance to Climate Action

⁵⁸ Canadians' Perspectives on Climate Change & Education: 2022

6. Indigenous Science and Perspectives on Climate Change
7. Western Climate Science and Climate Change
8. Human Geography and Environmental Discrimination
9. Adapting to an Uncertain Future Using Social-emotional Learning
10. Cultivating Relationships to the Land
11. What is My Climate Change Story?
12. Solo Immersion
13. Situational Leadership and the Way of the Twenty-First Century Youth Leader
14. Understanding the Relationship Between Competition and Collaboration
15. Debate, Compromise, and the Global Politics of Climate Change
16. Wilderness and Survival Skills
17. Renewables and Climate Change Adaptation
18. Foraging for Food and Medicine
19. Land-based Learning and the Medicine Wheel
20. Personal Consumption and Circular Economies
21. Indigenous Food Sovereignty

Conclusion

The creation of the World Bound Climate Change Curriculum is the result of tremendous research, experience, and expertise contributed by the project team and countless advisors and collaborators. Our curriculum is explicitly designed to reflect the reality that putting youth engagement and leadership front and centre is essential both for environmental education and for climate action. The core of this is a place-based, community-focussed framework that provides relevant and meaningful environmental education for real people in diverse communities. It is our hope that this framework will be used to create and enact a pioneering, purpose-built Climate Change Curriculum that enables the consistent, province-wide implementation of environmental education.

Please join us in improving this course to create a revolutionary framework for climate change education, and give our children hope for a better world.