

The Ministry of Eco Education Curriculum

Scoping Report

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Summary

This scoping report does not claim to be comprehensive, instead it intends to set out the broad picture of environmental education opportunities in the UK and build on this to outline an alternative school curriculum which places sustainability at the heart of education. The report starts by building a foundation of key facts around the climate and ecological emergency as well as outlining the importance of social justice as a key principle in responding to the climate crisis. The current environmental education landscape is explored through broad umbrella initiatives, as well as those specific to individual areas such as oceans and trees. Space is also set aside to provide a summary of some of the existing environmental education frameworks such as Education for Sustainable Development. The final section, and most important of the report, is an outline of an innovative co-created eco curriculum, bringing together the plethora of resources and opportunities available into a single coherent structure. The curriculum includes key themes, concepts and principles which manifest across broad enquiry questions. In parallel, the curriculum hinges on wider enrichment opportunities which develop learning beyond the classroom and embed nature within every aspect of a young person's school experience. The curriculum is a partnership of organisations working together to make a better and more sustainable world.

Version History

Version 1 - 1 June 2021

This is a working document and we intend to post updates. If you have any suggestions please contact Paul Turner - MinistryofEcoEducation@gmail.com.

Introduction

During the Covid 19 pandemic, the education system shifted from one predominantly based in schools to one where students were at home with a heightened focus on digitally mediated learning. Many students spent prolonged periods sitting in front of screens with information delivered to them. The pandemic could have been an opportunity for governments to pause traditional forms of learning and instead temporarily repurpose education to engage young people with their local environments, creating positive change and learning experiences in nature, supported by local communities. The pandemic instead highlighted the rigid framework of schooling and a fixation with standardised assessment and delivery of knowledge.

In some places, students formed alternative learning networks with their peers, local communities found alternative ways to support learning and public spaces became additional learning environments. These stories highlight the potential of learning as experiential, embroidered and co-created.

In 2019, millions of young people came together as part of the Youth Climate Strikes.¹ News of a young Swedish climate activist called Greta Thunberg spread round the world as she challenged world leaders to take immediate action in response to the climate and ecological emergency. In the UK, the UK Student Climate Network, organised more than 850 student-led events in 2019, drawing attention to the need for education reform to "teach young people about the urgency, severity and scientific basis of the climate crisis".² A recent survey by Teach the Future showed that "only four percent of students feel they know a lot about climate change, with almost seven in 10 respondents saying they would like to learn more about the environment."³

We live in a new geological epoch, the Anthropocene or the age of humans.⁴ There are now more mini Lego figures than people on earth.⁵ 60% of all land mammals are livestock, mostly cattle and pigs, 36% are human and just 4% are wild animals.⁶ Humans are the dominant force on earth. The broad educational system and more specifically the curriculum enacted in schools is not fit for purpose in the Anthropocene. We must act with the appropriate urgency and move to a zero carbon world with a regenerative society where living creates the conditions for life.⁷

¹ <https://www.nature.com/articles/d41586-019-02696-0>

² <https://ukscn.org/our-demands/>

³ <https://theecologist.org/2020/feb/05/rethinking-environmental-education>

⁴ <https://www.nature.com/articles/nature14258>

⁵ <https://twitter.com/ProfMarkMaslin/status/1310131348473106432>

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<https://www.theguardian.com/environment/2018/may/21/human-race-just-001-of-all-life-but-has-destroyed-over-80-of-wild-mammals-study>

⁷ <http://regenerativesociety.org/defining-regenerative/>

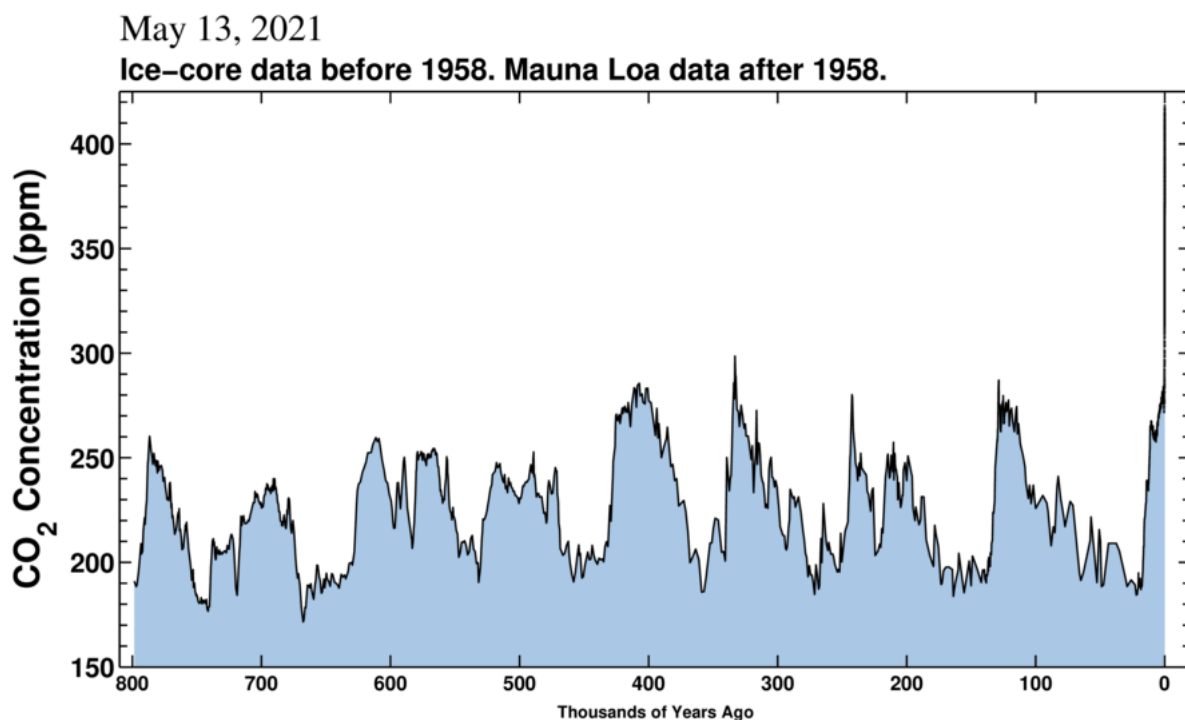
The Climate and Ecological Emergency

**The science is clear
We are facing an unprecedented global emergency
We must act now**

The opening sentences of Dr Emily Grossman's peer reviewed guide, 'Emergency on Planet Earth'⁸ unequivocally communicates the state of the world and the urgency in which we must respond.

The science is clear: the world is heating and the breakdown of our environment has begun. Even now, warmer temperatures are wreaking havoc, causing an increase in extreme weather, floods, storms and droughts - along with rising sea levels, heat stress in our oceans and degradation of our soils. Extreme weather events are having devastating impacts on agriculture and destroying homes, costing taxpayers billions of dollars and leaving millions of people in need of humanitarian aid.

Human activity has caused atmospheric carbon dioxide concentrations to rise from a pre industrial level of 290ppm to 420ppm. Over the last 160 years, global average sea surface temperatures have risen by 1.1°C. Since 1900, global average sea level has risen by more than 200mm.



The Keeling Curve showing CO₂ concentration over the past 800,000 years⁹

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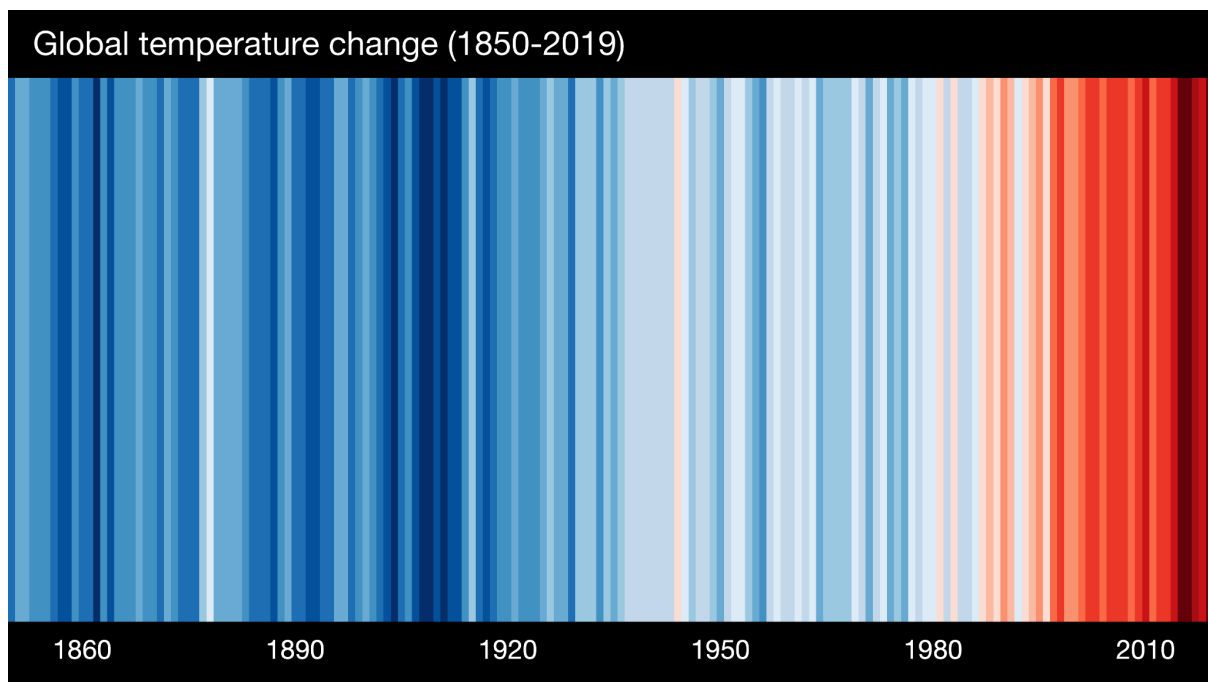
<https://docs.google.com/document/d/1QdWn7PCDqNUQvzmPaJPMEYqsXKAVcuE0MPxcJVdaKjw/edit?usp=sharing>

⁹ <https://keelingcurve.ucsd.edu/>

Around the world, biodiversity is being annihilated at a terrifying rate. Population sizes of thousands of species of mammals, birds, fish and reptiles have fallen by 60% since the 1970s. We are losing our crop-pollinating insects and soil-rejuvenating earthworms. Species are going extinct 100 to 1,000 times faster than they would be doing naturally. Many scientists say we are now entering the Earth's Sixth Mass Extinction event, with one million species threatened with extinction - many within decades.

In November 2019, a group of more than 13,000 scientists from 153 countries declared "clearly and unequivocally that the Earth is facing a climate emergency" and that without deep and lasting changes, the world's people face "untold human suffering".¹⁰

Ed Hawkins' 'Warming Stripes' provides a graphical representation of the rapid rate of change in global temperature experienced over the past 160 years.



Warming Stripes for GLOBE from 1850-2019¹¹

¹⁰ <https://scientistswarning.forestry.oregonstate.edu/>

¹¹ <https://showyourstripes.info/>

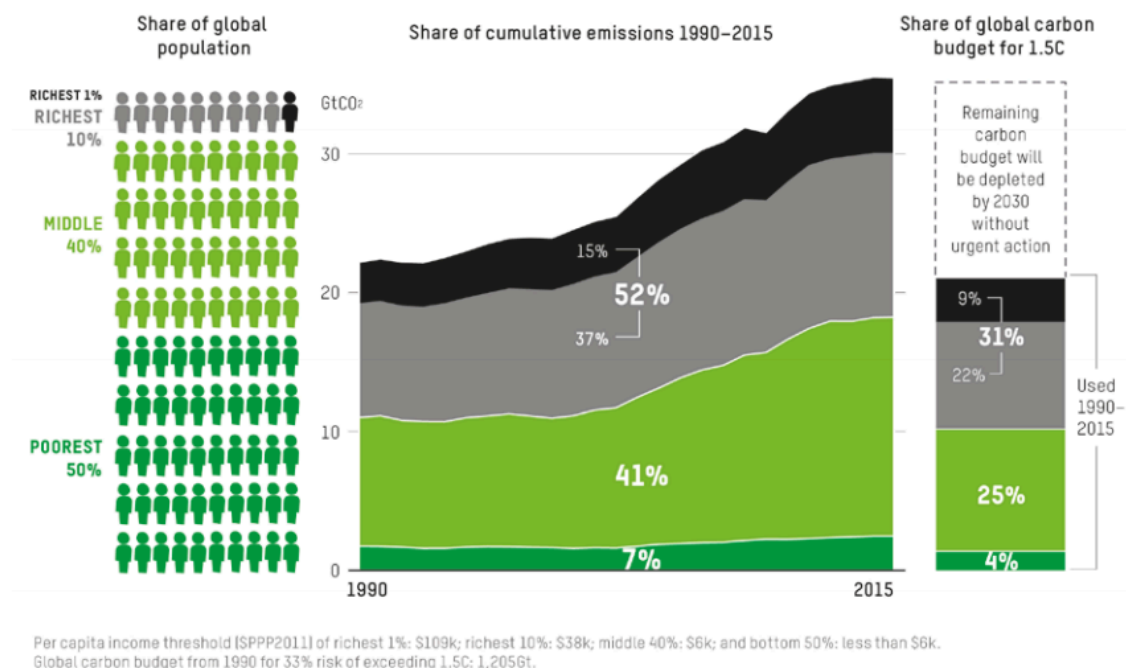
Climate Justice is Social Justice

We are increasingly recognising that any efforts to tackle the climate and ecological emergency must also respond to the structural inequalities inherent in society. Any eco school curriculum must explore ideas of social structures and processes as much as they do the natural environment as well as exploring the intersection of ideas such as gender, race and inequality. From a young age, children are aware of injustice and can apply ideas of fairness to people and the environment.

Many of these ideas come together in the concept of climate justice.¹² The following are key aspects of climate justice:

- 1) Climate justice begins with recognising key groups are differently affected by climate change.
- 2) Climate impacts can exacerbate inequitable social conditions.
- 3) Momentum is building for climate justice solutions.

Oxfam recently released a report which identified the dramatic inequality in global carbon dioxide emissions. Most notably it communicated how more than 50% of global carbon emissions are produced by only 10% of the richest people in the world. Even more dramatically, annual emissions grew by 60% between 1990 and 2015. The richest 5% were responsible for over a third of this growth. The total increase in emissions of the richest 1% was three times more than that of the poorest 50%.¹³



Share of cumulative emissions from 1990 to 2015 and use of the global carbon budget for 1.5C linked to consumption by different global income groups¹⁴

¹² <https://yaleclimateconnections.org/2020/07/what-is-climate-justice/>

¹³

<https://www.oxfam.org/en/press-releases/carbon-emissions-richest-1-percent-more-double-emissions-poorest-half-humanity>

¹⁴

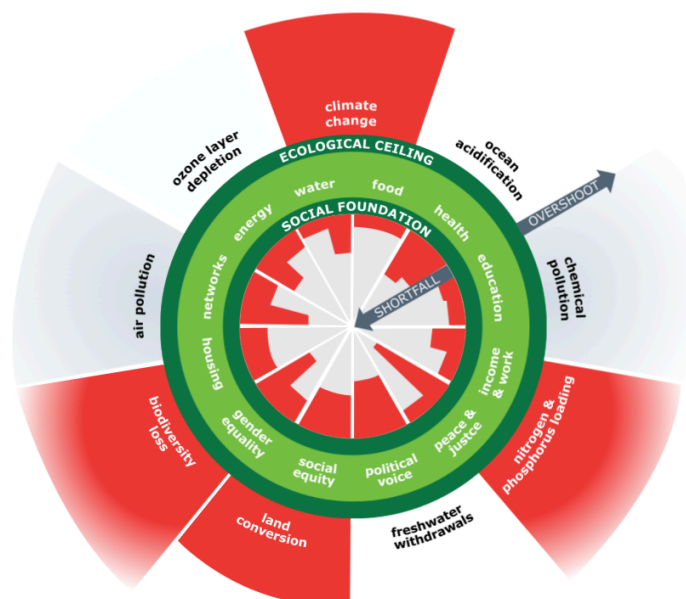
<https://oxfamlibrary.openrepository.com/bitstream/handle/10546/621052/mb-confronting-carbon-inequality-210920-en.pdf>

What is Nature?

A curriculum that labels itself eco-education and seeks to place nature at the heart of education should be clear on how it understands nature and ecology. The world consists of a multitude of things: human and other animals; other living things; and the habitats that these live in. Human animals have powers of language and technology that enable them to modify their habitats but there is nothing unnatural about the cities many of them live in or the technologies they develop. Nature refers to all living things and their habitats however modified by human activity. Ecology is the study of living things in relation to their habitat or environment.

The discrete things that comprise nature get their powers to act, their meaning and identity, from their relations to other things. Rather than view the world as a collection of things it is preferable to encourage children to see it as a collection of relations between things. Relations make people, other living things, and environments what they are and enable them to function. Nature is structured in ways that sustain all life as materials, energy and information flow between things. Biogeochemical cycles sustain life and place planetary boundaries on the development of human society. For example carbon and nitrogen can only be recycled at a certain rate and if too much is released into the atmosphere or soils, dangerous consequences result. Living sustainably means living within planetary boundaries.

Kate Raworth's 'Doughnut Economics'¹⁵ communicates the relationship between humans and our bio-physical limits. Humanity's 21st century challenge is to meet the needs of all within the means of the planet. In other words, to ensure that no one falls short on life's essentials (from food and housing to healthcare and political voice), while ensuring that collectively we do not overshoot our pressure on Earth's life-supporting systems, on which we fundamentally depend – such as a stable climate, fertile soils, and a protective ozone layer. The Doughnut of social and planetary boundaries is a playfully serious approach to framing that challenge, and it acts as a compass for human progress this century.



¹⁵ <https://www.kateraworth.com/doughnut/>

For most of human history people regarded themselves as part of nature and generally adopted an ethic of care for the rest of the living world. With the rise of modern science and technology, nature was placed in a separate realm from society and a host of dualisms entered language and thought (people/environment; subject/object; urban/rural; nature/society, etc). These shaped the design and delivery of the school curriculum where nature and society provided the content of different school subjects and dualism was fostered at the primary level by such everyday practices as the nature table, the nature walk, and such 'progressive' ideas as those that proposed children should be educated according to nature.

Modern society also removed people from everyday contact with plants, animals and the countryside as the economy was industrialised and habitats were urbanised. Such distancing (or alienation) from the less modified elements of nature was accompanied by a rise in the importance of the scientific and economic values of nature (as a source of profit making) at the expense of its ecological, aesthetic, spiritual, and existence values. Best practice in primary environmental education seeks to help children recognise these values and consider what should be the optimal balance between them.

Today the downsides of modern dualism are increasingly recognised. The rise of information and biotechnology is creating a world of hybrids, eroding dualism, and leading to a new understanding of both naturalism and humanism in a post-natural, post-humanist and post-modern world. The modern development paradigm focussed on growth needs to be replaced by a sustainable development paradigm focussed on sufficiency with primary education laying the following five foundations of a changed way of viewing nature and human progress.

Firstly, children should recognise that there is a real world of bio-physical structures and processes of which they and society are a part. This world imposes boundaries on society's development and to develop sustainably it needs to respect these boundaries. This requires changed forms of economy, politics and culture based on an ethic of care for all life (see the Earth Charter).

Secondly, children should be encouraged to see the natural in the social and the social in the natural: to see the world holistically with everything related to everything else. Things (a river, tree, elephant, town, school, person) are what they are and have agency by virtue of their relations to other things. Seeing the world primarily in terms of relations rather than things is at the heart of post-natural science, the new ecology, and contemporary nature writing.

Thirdly, children should develop ecological literacy. Ecology studies the relations between things in ecosystems (living things and their habitats). Amazonia and the school pond are ecosystems but so too is the city of Manchester. Ecosystems are more or less influenced by human activity but human influence is a factor in those often portrayed as 'natural', 'wild' or 'pristine'. Outdoor education is key to ecological literacy and eroding the distancing from the less modified elements of nature that urban and 'screen based' lifestyles encourage.

Fourthly, children should recognise that 'nature' is given meaning in media of all kinds. To assert that something is 'natural' is to place it outside society and beyond social influence: an ideological device used by advertisers, politicians and others.

Lastly, children should understand how society ascribes economic, scientific, ecological, aesthetic, spiritual and existence values to nature and that these are often placed in conflict by social development. Sustainable development rests on an ethic of care for all life and requires a global democracy with global citizens who exercise responsibility for others, including others distant in space and time and other species. Sustainability citizenship should be cultivated from an early age.

Nature Connectedness

Numerous reports highlight the trends in young people's relationship with nature.

- 75% of children spend less time outside than prison inmates¹⁶
- 90% reduction in the area that children explore and play in during their leisure time over the past 20 years¹⁷
- One in five children don't play outside on an average day at all¹⁸
- Four out of five children in the UK were not adequately connected to nature¹⁹
- Less than one in 10 children regularly played in wild spaces, compared to half of children a generation ago²⁰

There is also considerable research to support the benefits of time spent in nature.

- 79% of children felt more confident in themselves having spent time participating in outdoor activities.²¹
- Spending more time outdoors in both childhood and adolescence was associated with less myopia in young adulthood.²²
- 83% of children agree being in nature makes them very happy²³

Nature connectedness captures that relationship between people and the rest of nature. Nature connectedness is a measurable psychological construct that moves beyond contact with nature to an individual's sense of their relationship with the natural world.²⁴ The Nature Connectedness Research Group at the University of Derby led by Professor Miles Richardson recently published a report called "Nature and Me" which communicates the pathways to nature connectedness which provide a route for people to develop a new relationship with the natural world. This new relationship with nature can move beyond utility and control, beyond knowledge and identification. A new closer, healthier and more sustainable relationship with nature comes through noticing, feeling, beauty, celebration and care. The pathways are:

- **Senses** - tuning in to nature through the senses
- **Emotion** - feeling alive through the emotions and feelings nature brings
- **Beauty** - noticing nature's beauty

¹⁶ <https://www.persil.com/uk/dirt-is-good.html>

¹⁷

<https://www.gov.uk/government/statistics/monitor-of-engagement-with-the-natural-environment-pilot-study-visits-to-the-natural-environment-by-children>

¹⁸ <https://www.persil.com/uk/dirt-is-good.html>

¹⁹

<https://www.rspb.org.uk/globalassets/downloads/documents/positions/education/the-impact-of-childrens-connection-to-nature.pdf>

²⁰ <https://www.scribd.com/document/87203073/National-Trust-natural-childhood-report>

²¹

<https://www.ucl.ac.uk/ioe/news/2019/nov/spending-more-time-nature-can-improve-young-peoples-confidence>

²² <https://www.nature.com/articles/s41598-021-85825-y>

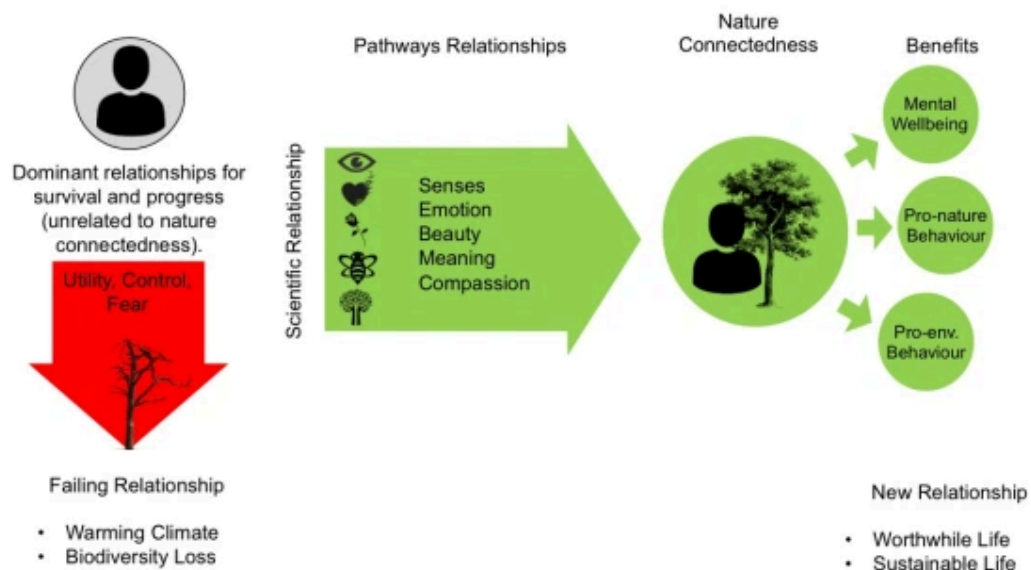
²³

<https://www.gov.uk/government/statistics/the-people-and-nature-survey-for-england-child-data-wave-1-experimental-statistics/the-people-and-nature-survey-for-england-childrens-survey-experimental-statistics>

²⁴ <https://www.derby.ac.uk/research/centres-groups/nature-connectedness-research-group>

- **Meaning** - nature bringing meaning to our lives
- **Compassion** - caring and taking action for nature

The National Trust recently published 'Nature and Me'²⁵ a summary of Miles Richardson's research from the Nature Connectedness Research Group at the University of Derby. The booklet begins with the framing of the climate emergency, wildlife loss and mental health crisis and explores the role of developing nature connectedness within the areas of management and planning, wellbeing and fitness, learning and education, conservation and recreation. As shown in the diagram below, the focus is on the 5 pathways to develop relationships. The booklet also touches on the 'teenage dip' further explained in a blog post from Miles²⁶. After the age of nine, levels of nature connection drop dramatically and do not recover for twenty years.



Richardson et al. 2020

A graphical summary of the types of human-nature relationships, nature connectedness and their outcomes. Key: Pro-env. = pro-environmental (carbon & resource use reduction); Pro-nature = pro-nature conservation (wildlife habitat creation).²⁷

²⁵ <https://findingnature.org.uk/>

²⁶ <https://findingnature.org.uk/2019/06/12/teenage-dip/>

²⁷ <https://findingnature.org.uk/>

Community

Rob Hopkins started the Transition Movement in Totnes in 2006. Transition Towns illustrate the potential impact of communities, when they come together to rebuild our world.

At the heart of an eco curriculum is the role of schools as a hub for their community. Schools act as a catalyst for wider societal change as well as much broader community and lifelong learning. Building learning deep into the core of a community is essential.

Building community resilience is another fundamental aspect of engaging schools with their local community. The Post Carbon Institute explores the six foundations for community resilience²⁸:

- ❑ **People** - The power to envision the future of the community and build its resilience resides with community members.
- ❑ **Systems thinking** - Systems thinking is essential for understanding the complex, interrelated crises now unfolding and what they mean for our similarly complex communities.
- ❑ **Adaptability** - A community that adapts to change is resilient. But because communities and the challenges we face are dynamic, adaptation is an ongoing process.
- ❑ **Transformability** - Some challenges are so big that it's not possible for the community to simply adapt; fundamental, transformative changes may be necessary.
- ❑ **Sustainability** - Community resilience is not sustainable if it serves only us, and only now; it needs to work for other communities, future generations, and the ecosystems on which we all depend.
- ❑ **Courage** - As individuals and as a community, we need courage to confront challenging issues and take responsibility for our collective future.

Engaging more directly with the local community also assists in fostering positive relationships and building human connections. The European Commission recently reported on research highlighting the reciprocal benefits of intergenerational relationships. Relationships between the elderly and the younger generation make us feel connected in several ways. They make us feel linked not only to each other, but also to something bigger, to the past and to the future. Thus, this connection leads to many benefits for all generations.²⁹

Communities offer the opportunity to share local knowledge and emphasise the importance of storytelling. Bobette Buster in her recent TEDx Talk 'The Radical Act of Storytelling'³⁰ discusses the potential of sharing both the destructive power of bearing the untold story, and the new storytelling tools now available to release long-buried stories, to generate healing and make movements that can transform our world. She calls us to cultivate storytelling, so that the living memory of tragic events cannot become buried or lost, and so that history cannot repeat itself. Storytelling within local communities has the potential to heal relationships and help develop a sense of identity and relationship with the world.

Communities also harbour local knowledge and skills which can be shared with schools.

²⁸ <https://www.resilience.org/six-foundations-for-community-resilience/>

²⁹ <https://epale.ec.europa.eu/en/content/benefits-intergenerational-relationships>

³⁰ https://www.youtube.com/watch?v=gE18wH9_e6U

There are a variety of ways schools might play an increased role at the centre of their community. These might include shared spaces, allowing community groups to use space within the school or manage outdoor spaces. Children might volunteer within the local community on a weekly basis or offer teaching to groups within the community.

Adventure

Matt Walker, adventurer and leadership expert, is quoted as saying “Adventure is the willingness to commit to an uncertain outcome with an open heart.”³¹ He says there are five key components of adventure: ‘high endeavor’, the ability to think big; ‘total commitment’, the willingness to embrace challenge; ‘an uncertain outcome’, a necessity to keep us engaged and aware; ‘tolerance for adversity’, the ability to remain resilient; ‘great companionship’ to make the journey not just possible but also worthwhile. He adds: “Adventure is not reserved for the extreme athlete or the daredevil. It is an attitude and lifestyle choice. It is an expression of your heart's intention and passion for life.”

This idea of Living Adventurously is an attitude of open mindedness and curiosity which Alastair Humphreys communicates and promotes through the concept of Microadventures. Alastair describes this as “Doing stuff that feels risky, exciting and uncertain and fun to you” as a part of your everyday routine.³² In Alastair's most recent Do Lectures talk he explains how anyone can embed adventurous approaches into their everyday life by choosing to make simple changes to our everyday routines.³³

Ideas of Living Adventurously have great potential to invigorate and shape an eco curriculum.

³¹ <https://www.suunto.com/en-gb/sports/News-Articles-container-page/The-Adventure-Mindset/>

³² <https://www.youtube.com/watch?v=R1Bo3rzMWNc>

³³ https://www.youtube.com/watch?v=glqpY_9Rj9s

Environmental Education Frameworks

Traditionally, 'Eco', 'Sustainability' and 'Environmental' ideas have been bound with the concept of '**Education for Sustainable Development**' (ESD). ESD is supported by the United Nations (UN) organisations and its agency, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) which describe ESD as "empowering learners of all ages with the knowledge, skills, values and attitudes to address the interconnected global challenges we are facing, including climate change, environmental degradation, loss of biodiversity, poverty and inequality."³⁴

In 2020, UNESCO launched the 'ESD for 2030' campaign which sets out a plan of action to accelerate ESD in the decade of action to deliver the Sustainable Development Goals (SDGs).³⁵ Many educators use the SDGs as a framework for structuring learning, explicitly linking topics and lesson ideas to specific SDGs.

Numerous books have been written which provide a detailed summary of the ideas around ESD including 'Environmental Education in the Primary School (Primary matters)' published in 1990 by Philip Neal, Joy Palmer and Philip Neale.

Hanna Sjogren in her article 'More of the same: A critical analysis of the formations of teacher students through education for sustainable development'³⁶ provides a useful summary of the critical reflections of ESD. Current discussion moves the framework beyond development and instead focuses on ideas of '**Education for Sustainable Lifestyles**' (ESL). The One Planet Network³⁷ is the UN network of the 10 Year Framework of Programmes on Sustainable Consumption and Production which has coordinated much of the development around ideas of ESL. The One Planet Network runs the Global Search for Sustainable Schools which is an exciting new project being run under the SLE Programme. Nine countries across the world are coming together to run national competitions that will ask students to submit plans for making their schools sustainable. The winning schools will be given grants to implement their ideas from the beginning of 2020, turning their dreams into reality with the support of experts from their country and around the world.³⁸ The One Planet World Network also manages a database of reports and teaching resources from a variety of global partners.³⁹

A variety of academics provide useful discussions of the state of environmental education including, Dr Melissa Glackin from King's College London in an interview with the charity traid.⁴⁰ Bill Scott at the University of Bath writes a regular blog which explores a variety of issues around environmental education.⁴¹ Whilst the ecologist recently published an article from Bonnie Welch summarising her thoughts around rethinking environmental education.⁴²

³⁴ <https://en.unesco.org/themes/education-sustainable-development>

³⁵ <https://unesdoc.unesco.org/ark:/48223/pf0000374802>

³⁶ <https://www.tandfonline.com/doi/full/10.1080/13504622.2019.1675595>

³⁷ <https://www.oneplanetnetwork.org/sustainable-lifestyles-and-education>

³⁸ <https://sustainableschools.vision/about/>

³⁹ <https://sustainablelifestyleseducation.org/>

⁴⁰ <https://www.traid.org.uk/environmental-education/>

⁴¹ <https://blogs.bath.ac.uk/edswahs/author/edswahs/>

⁴² <https://theecologist.org/2020/feb/05/rethinking-environmental-education>

The **UK National Association for Environmental Education (NAEE)** has been promoting environmental education in the UK for 50 years, supporting all those involved in its delivery, so that together we can understand and act on the need to live more sustainably in order to protect the future of our planet. In 2018, NAEE received a Green Apple award for its support of environmental education.

Sustainability and Environmental Education (SEEd) is an education charity, which uses capacity building and the catalysation of new audiences as its main social change approaches. They combine this with cross-sectoral learning, social learning, innovation, new collaborations, and scaling-up methods. The Sustainable School's Whole School Approach and the Sustainable Schools Alliance membership programme for schools is a project of SEEd and helps schools embed sustainability and learning for sustainability throughout the school. As Key Partners with UNESCO, SEEd have developed a backgrounder document on Whole School Approaches⁴³ to sustainability and environmental education..

The **World's Largest Lesson** is a programme from Project Everyone. Started in 2015, the initiative promotes use of the Sustainable Development Goals in learning so that children can contribute to a better future for all. The World's Largest Lesson produces creative tools for educators and action focussed learning experiences for children and young people that build skills and motivation to take action for the SDGs. Each year they create campaigns and challenges to keep student learning engaging and relevant as well as support these with local activations to make sure no one is left behind. In 2019 the programme reached 17.9 million children located in over 160 countries.⁴⁴



Transformative Teaching changes people by “fundamentally altering the way learners understand themselves and others, the way they engage in and contribute to their larger world.”⁴⁵

⁴³ <https://se-ed.co.uk/edu/wp-content/uploads/2016/10/Backgrounder-GAP-PN-2-1.pdf>

⁴⁴ <https://worldslargestlesson.globalgoals.org/about-us/>

⁴⁵ <https://www.opencolleges.edu.au/informed/features/4-big-things-transformational-teachers-do>



Theoretical underpinnings, basic principles, and core methods of transformational teaching.⁴⁶

Transformational teaching is an approach to classroom instruction that involves increasing students' mastery of key course concepts while transforming their learning-related attitudes, values, beliefs, and skills. The approach is rooted in social cognitive theory (e.g., instructors promote students' individual and collective efficacy), transformative learning theory (e.g., instructors challenge students' habits of mind and points of view), intentional change theory (e.g., instructors help students' realise their ideal self and vision for the future), and transformational leadership (e.g., instructors motivate and empower students to transcend self-interests to maximise their potential and achieve shared goals). These theoretical perspectives can be distilled into three basic principles, which include: facilitating students' acquisition and mastery of key course concepts, enhancing students' strategies and skills for learning and discovery, and promoting students' positive learning-related attitudes, values, and beliefs.⁴⁷

Similarly **Critical Pedagogy** is a philosophy of education and social movement that applies concepts from critical theory to education. Critical Pedagogy insists that issues of social justice and democracy are not distinct from acts of teaching and learning.

In the following extracts from an article for the Guardian⁴⁸ Taite Coles explains the need for critical pedagogy in education.

"Schools must develop a commitment to civic courage and social responsibility that ignites bravery in young people to realise they have the power and opportunity to challenge the status quo. School leaders have a duty to promote learning that encourage students to question rather than forcing teachers to lead drill-oriented, stimulus-and-response methodologies. Teachers must awaken the passions of their students and teach the knowledge and skills needed to direct and sustain it.

Students need the freedom and encouragement to determine and discover who they are and to understand that the system shouldn't define them – but rather give them the skills, knowledge and beliefs to understand that they can set the agenda. Educators must be prepared to embrace a radical pedagogy and believe that each school should be one of

⁴⁶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3498956/figure/F1/>

⁴⁷ <https://pubmed.ncbi.nlm.nih.gov/23162369/>

⁴⁸

<https://www.theguardian.com/teacher-network/teacher-blog/2014/feb/25/critical-pedagogy-schools-students-challenge>

freedom that provokes students to fight against the corridors of power and enforce equality for themselves and others.

Critical pedagogy is the only way to achieve this. The philosophy was first described by Paulo Freire and has since been developed by the likes of Henry Giroux, Peter McLaren and Roger Simon. Critical pedagogy isn't a prescriptive set of practices – it's a continuous moral project that enables young people to develop a social awareness of freedom. This pedagogy connects classroom learning with the experiences, histories and resources that every student brings to their school. It allows students to understand that with knowledge comes power; the power that can enable young people to do something differently in their moment in time and take positive and constructive action.

Education has the power to change social inequality by nurturing a generation with an educated mistrust of everything that has been indoctrinated before. This educational stance is one that we must all strive for as the moral purpose of education.”

Forest School is a child-centred inspirational learning process that offers opportunities for holistic growth through regular sessions. It is a long-term program that supports play, exploration and supported risk taking. It develops confidence and self-esteem through learner inspired, hands-on experiences in a natural setting.⁴⁹ Forest School arrived in the UK in 1993 after a group of nursery nurses at Bridgwater College in Somerset visited Denmark to look at the pre-school system. They noted the open air culture ‘friluftsliv’ which is seen as a way of life in Scandinavia and permeates early years education. In 1995 the college developed a BTech in Forest School. From 2000, Wales and local authorities in England took up Forest School and in 2003 a group of trainers supported by the Forestry Commission in Wales developed the Open College Network qualification. In 2002 the first national conference was held in the UK and in 2011 the Forest School Association was set up with clear principles and criteria.

The **Council for Learning Outside the Classroom** (CLOtC) is a charity existing to champion learning outside the classroom. The Learning Outside the Classroom (LOtC) website provides information, advice and guidance designed to help schools, educational practitioners and others working with young people to plan, run and evaluate exciting and challenging LOtC activities. The website collates a variety of environmental education resources.⁵⁰ The LOtC Quality Badge. This is a national accreditation recognising organisations that provide good quality educational experiences and manage risk effectively. Supported by the majority of Local Authority Outdoor Education Advisers, the LOtC Quality Badge makes it easier for anyone organising educational visits to gain approval and provides assurance that their chosen destination has met 6 nationally recognised quality indicators. The CLOtC annual conference in Blackpool hosted jointly with the Outdoor Education Advisers saw 300 delegates come together. In 2019/20, 116 new awards were made across all accreditation types. CLOtC's small staff team delivered face to face CPD with over 200 teachers, teaching assistants and LOtC providers.

The **Field Studies Council** is a company with the ambition to “create a world where everyone feels connected to the environment so they can enjoy the benefits it gives and

⁴⁹ <https://forestschoollassociation.org/what-is-forest-school/>

⁵⁰ <https://www.lotc.org.uk/resources/education-resources/>

make choices that help protect it”.⁵¹ The Field Studies Council provides educational courses to school groups and universities through its 19 field studies centres.⁵² The organisation also publishes a range of fieldwork related guides, most notably the series of identification cards. In 2019 the Field Studies Council worked with 163,907 learners, people who attended a course or event.

The consortium of **Development Education Centres** is a network of centres across the UK that support and deliver global learning. The Leeds DEC has created a variety of high quality teaching resources for specific subjects.⁵³ Similarly, the Cumbria DEC has resources for sale around specific books.⁵⁴

Tide Global Learning is a teachers’ network established in 1975 with the core notion of teachers and other education practitioners coming together to engage with the needs of learners in the context of global perspectives, human rights, sustainability and development issues. Tide publishes an online magazine called ‘The Elephant Times’.⁵⁵ Tide provides resources and publications to support teaching.

Global Dimension is the UK’s leading Global Learning platform, supporting a community of educators in bringing global connection, compassion, and conversation to life for their students. The Global Dimension website is powered by Reboot the Future, a small foundation with a vision of a compassionate and sustainable world powered by conversation and connection, with the Golden Rule at the core. The Golden Rule: Treat others and the planet as you would wish to be treated. The organisation provides quality assured teaching resources and run a variety of campaigns.

Kurt Hahn was a key figure in the development of experiential education. Kurt founded the Atlantic College, the first United World College, the Duke of Edinburgh’s Award, Gordonstoun, Outward Bound and Salem. Kurt Hahn had a vision of the kind of school he wanted to create. It would be a school designed to help children discover their interests and passions, not just prepare them for tests. And it would be a school devoted to character development. At Selm, Hahn developed a set of principles to guide education at the school; he called his principles the “Seven Laws of Salem.”⁵⁶

1. Give the children opportunities for self-discovery.

“Every girl and boy has a ‘grande passion,’ often hidden and unrealised to the end of life... It can and will be revealed by the child coming into close touch with a number of different activities.”

2. Make the children meet with triumph and defeat.

“Salem believes you ought to discover the child’s weaknesses as well as his strengths. Allow him to engage in enterprises in which he is likely to fail, and do not hush up his failure. Teach him to overcome defeat.”

3. Give the children the opportunity of self-effacement in the common cause.

⁵¹ <https://www.field-studies-council.org/about-us/>

⁵² <https://www.field-studies-council.org/wp-content/uploads/2020/10/2019-Reportaccounts-signed.pdf>

⁵³ <https://leedsdec.org.uk/climate-action-6/>

⁵⁴ <https://www.cdec.org.uk/use-our-resources/resources-for-sale/>

⁵⁵ <https://www.tidegloballearning.net/about/elephant-times>

⁵⁶ <https://www.apmreports.org/episode/2015/09/10/kurt-hahn-and-the-roots-of-expeditionary-learning>

“Even the youngsters ought to undertake tasks which are of definite importance for the community.”

4. Provide periods of silence.

“Unless the present-day generation acquires early habits of quiet and reflection, it will be speedily and prematurely used up by the nerve exhausting and distracting civilization of today.”

5. Train the imagination.

“You must call it into action, otherwise it becomes atrophied like a muscle not in use. The power to resist the pressing stimulus of the hour and the moment cannot be acquired in later life; it often depends on the ability to visualize what you plan and hope and fear for the future.”

6. Make games important but not predominant.

“Athletics do not suffer by being put in their place. In fact you restore the dignity of the usurper by dethroning him.”

7. Free the sons of the wealthy and powerful from the enervating sense of privilege.

“[R]ich girls and boys wholly thrown into each other’s company are not given a chance of growing into men and women who can overcome. Let them share the experience of an enthralling school life with sons and daughters of those who have to struggle for their existence. No school can build up a tradition of self discipline on vigorous but joyous endeavour, unless at least 30% of the children come from homes where life is not only simple but even hard.”

In a recent blog post for Se-ed, Dr Ksenija Kuzmina explores the purpose of **Education for Alternative Futures**⁵⁷, pointing out “the ongoing discourse of linking education to exams, individual progression, and job opportunities is reductionist and not fit for purpose. There is an implicit call to action – to revise the purpose of what education is and what it might be for. Education needs new narratives.” Ksenija outlines the importance of:

1. Activating young people to become environmental and social change makers at a local level
2. Supporting creativity and innovation
3. Facilitating enriched learning experiences
4. Enabling critical reflection

The Harmony Project takes its inspiration from HRH The Prince of Wales’ vision set out in his book ‘Harmony: A new way of looking at our world’. This vision goes on to explain that, “by turning to Nature as our teacher, we are better placed to tackle the challenges facing humankind.”⁵⁸

Created in 2018, The Harmony Project recognises the impact of human activity on the natural world, and humankind’s increasing disconnection from Nature. But the Project is founded on the strongly held belief that the solutions to these problems are close at hand. By learning from Nature about principles that maintain balance, well-being and Harmony – and

⁵⁷ <https://se-ed.co.uk/edu/purpose-of-education-for-alternative-futures/>

⁵⁸ <https://www.theharmonyproject.org.uk/about-us/>

from studying the teachings of timeless wisdom and traditions – we are able to create healthier and more sustainable systems, and ways of living and being.

The Harmony Project is embedded within the Sustainable Food Trust (SFT), a charity which is mindful of its deep-rooted educational purpose. The SFT's wider mission is to promote sustainable practice beyond food and farming, and to nurture a deeper understanding of the impact that the choices we make, and the actions we take, have at a local and a global level.

The Harmony Project envisions a way of living and being based upon a deep understanding of – and connection to – the natural world; a way of living and being, in every area of our lives, that is shaped by the application of principles of Harmony and by the timeless wisdom of great spiritual traditions.

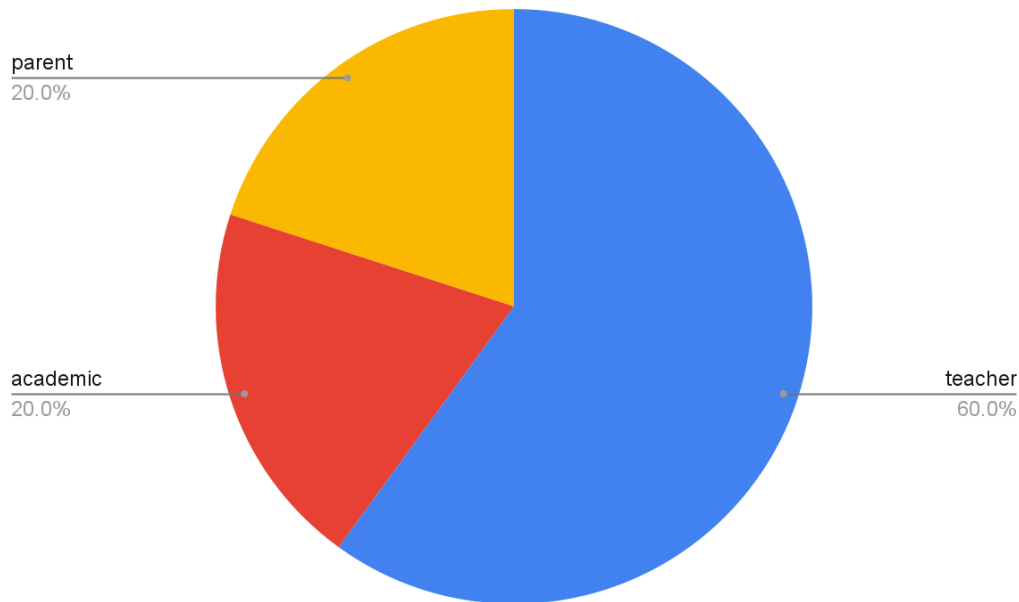
The Harmony Project aims to

- show how all life is connected and how principles of Harmony maintain a dynamic balance in Nature
- promote an understanding of how these principles can help us live and work in harmony with Nature and with one another
- support the adoption of an approach to learning that has principles of Harmony at its core, across diverse educational contexts
- develop a network of Harmony centres of excellence and Harmony Practitioners, who apply principles of Harmony to the ways in which they live and work
- research the impact of the application of Harmony principles and disseminate practice more widely to guide and inspire others to take action

Harmony provides guiding principles and fundamental approaches for an alternative curriculum.

'The Education We Need Now' Survey

To explore ideas from academics, teachers and parents, with an interest in an alternative education which places a greater emphasis on responding to the climate and ecological emergency, we carried out an online survey. The following diagram shows a breakdown of the roles of respondents.



The first question asked what "The aim of school is..." A highlight of the responses is listed below, they provide a sense of a more holistic and long term approach to education.

- prepare children for the future
- enable children to lead full, rich lives (as individuals, community members, citizens and workers), and equip them to understand, contribute to and reshape society.
- help kids to feel confident in themselves, give them an understanding of the world around them and resilience and tools for dealing with difficulties they might face. To help kids feel prepared for the life ahead of them.
- develop the minds of young learners.
- help children discover their potential in this world
- develop social skills, independence, team work, listening, communication (written and spoken), kindness, resilience and learn about the world around us (local to global).
- Prepare young people for the future and to open their eyes to the world beyond the classroom.

Question two asked "Schools would be better if ..." responses highlighted below convey the desire for a shift away from a culture of assessment.

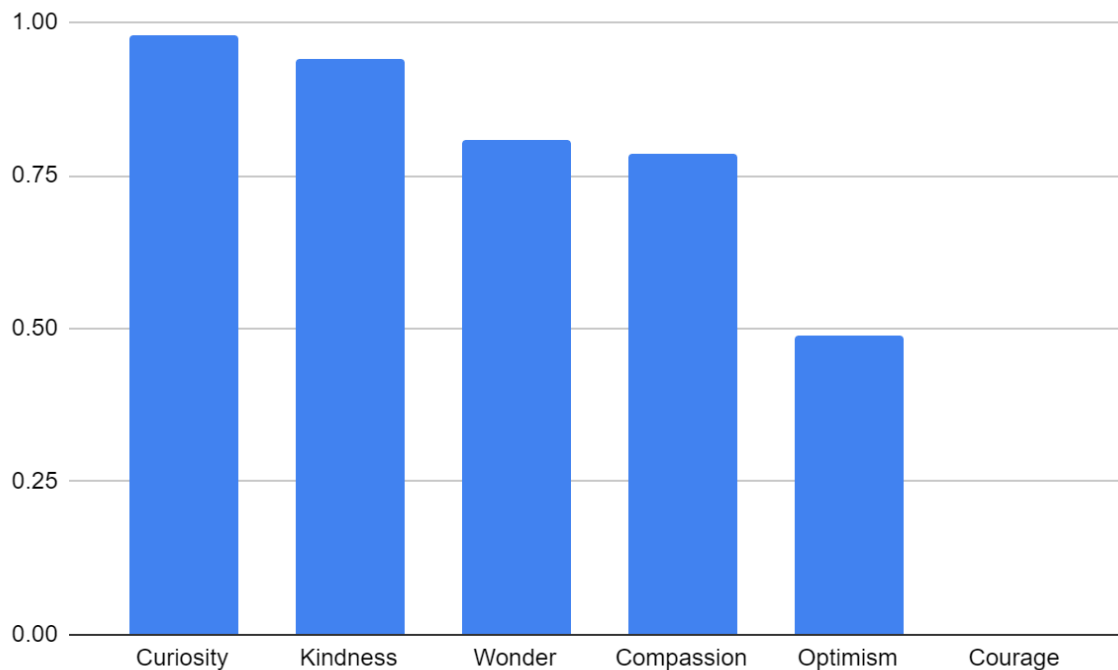
- there was less focus on exam results and "academic" subjects
- They were lower-stress environments and encouraged collaboration over competition.

- they were shaped around the present and future needs of young people.
- there was a LOT less focus on learning facts and being tested on knowledge of facts and a lot more focus on creativity, connection, understanding of self, connection with nature etc. Schools would be better if kids weren't expected to sit in a classroom most of the day and if there was flexibility for kids of multiple ages to mix; if kids felt respected and not made to feel subservient to teachers/taught not to question teachers; if creative subjects were valued equally in and of themselves alongside subjects such as maths; if kids weren't asked from a very young age 'what they want to be'...
- they connected children to nature and enabled them to develop relationships with and a value for the environment
- standardised testing was scrapped.
- There was less rigidity with how children have to learn.
- they tested less and were more integrated in their local community - using local experts, elders, local spaces and businesses for learning ie. food - growing, farming, cooking, waste.
- We threw out the national curriculum and exam factory identity and created places where students were nurtured to understand their place in the world and their effect on it.

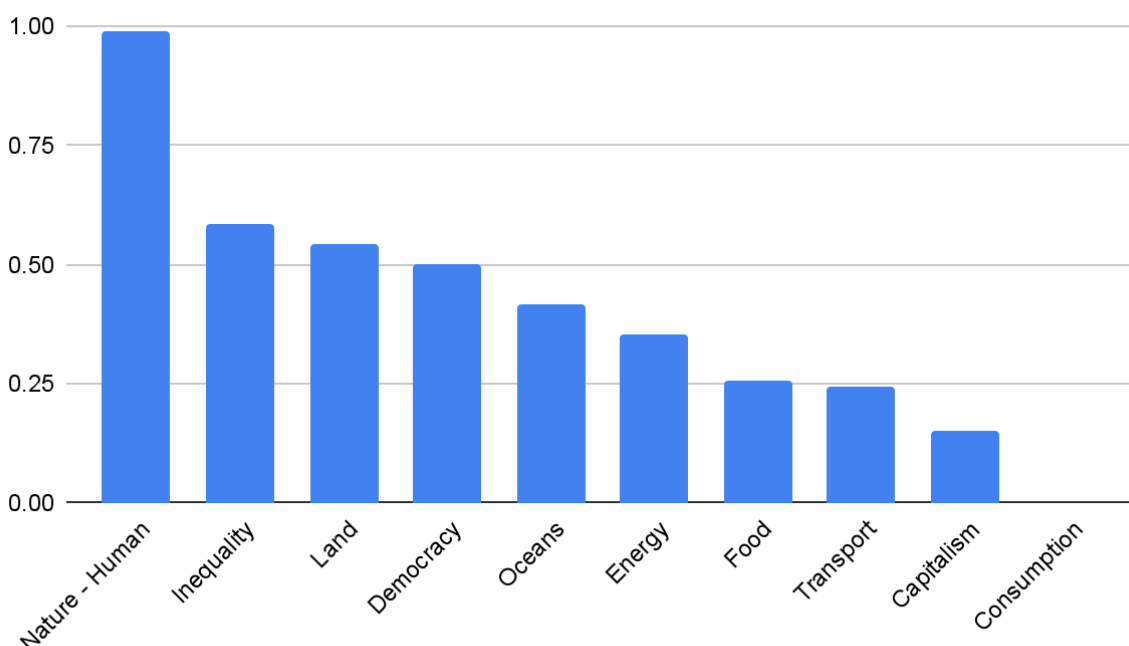
Question three asked respondents to imagine “If I could swipe the slate clean and start again, I would ...” Responses included:

- have no hierarchy of academic subjects and make everything based on life skills
- Look carefully at the mental health of young people and ask serious questions about how school can foster resilience.
- build learning primarily around cooperative learning, complex/real-world tasks and situations, intrinsic motivation, and create schools which are microcosms of a just and sustainable society.
- make them smaller, embed them in their communities, connect them intergenerationally, ensure they all have green and spaces to grow food
- increase practical learning and develop more enquiry based curriculums.
- Focus on environmental education as a theme which runs throughout subjects and topics.

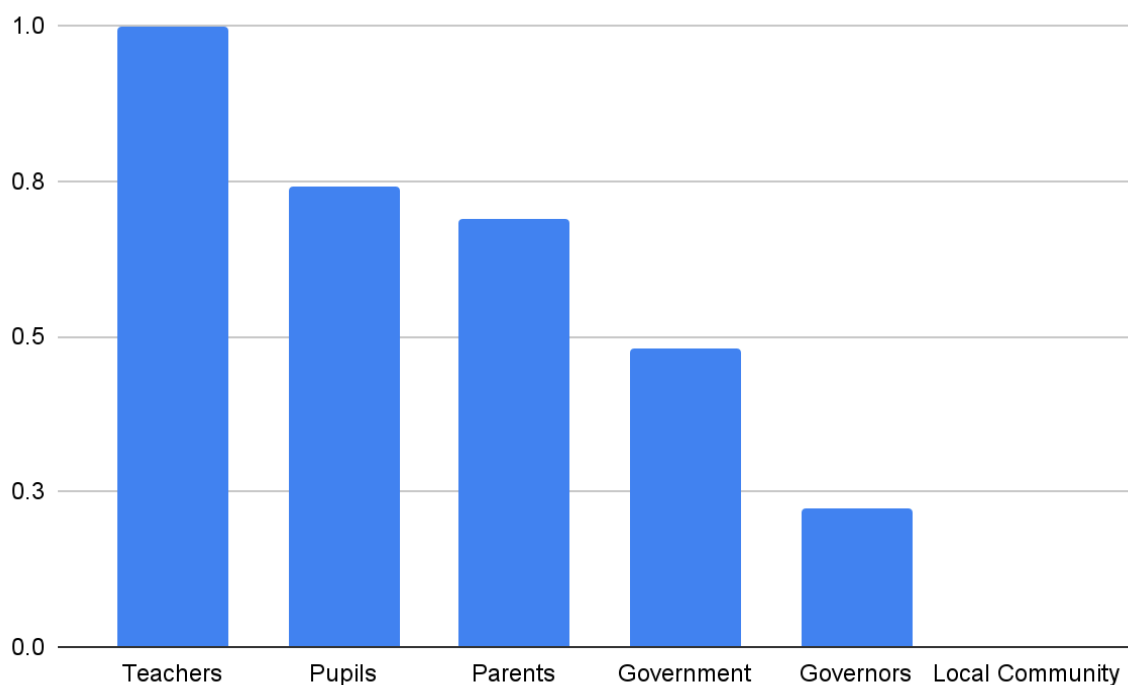
Further questions explored the importance of different values in education. Respondents ranked curiosity and kindness as the most important values which should be placed at the heart of education.



Another question asked respondents to rank a variety of topics which might be part of an eco curriculum. The human-nature relationship was placed highest by a considerable margin. It might be interpreted that the human-nature relationship underpins people's understanding of many of the other aspects.



The final question asked respondents “Successful change in schools requires the engagement of a variety of stakeholders. Who is most / least important?” The rank order is interesting to consider with Teachers, Pupils and Parents ranked highest and governors and the local community lowest.



Responses from the survey provide guidance for the creation of an alternative eco curriculum. These responses also support the findings of other investigations carried by organisations and give further weight to the views held more broadly by the environmental education community.

Minchinhampton CofE Primary Academy

Minchinhampton CofE Primary Academy is a school based in the Gloucestershire village of Minchinhampton. The school is led by Mr Nick Moss and educates around 340 children between the ages of 3 and 11. Minchinhampton is the first school to be part of the Ministry of Eco Education project and initiated the project with their forward thinking and enthusiasm for engaging with environmental activism.

Nick describes the school community; “We are all passionate about learning, strongly committed to the school’s vision and the place is run through with positivity, creativity and kindness.” Nick goes on to describe the school’s belief in “education should be about self-empowerment for people, self-empowerment now and for a lifetime.”⁵⁹

The School’s vision is ‘We cherish all the people in our school’. The school’s aim for students is ‘Life in all its fullness’. For the school this means people who are flourishing:

- people who have the wherewithal to shape their own life well;
- people who take a delight in learning;
- people who are compassionate, who appreciate the value and preciousness of each and every person and all life on earth;

hence people who help to make the world a better place.

The school has seven common threads running through its curriculum, all drawn from the contextual features of its community. These are:

- spirituality and core values
- a sense of community
- drawing on strengths and interests
- the appreciation of difference
- environmental activism
- creativity and the appreciation of beauty
- wellbeing

For a number of years, Minchinhampton has prioritised environmental themes within its curriculum. Since 2019, the school has had a working group consisting of parents, staff and governors meeting regularly to discuss environmental themes. The group developed initial curriculum ideas and crafted a statement of pupil and learning outcomes.⁶⁰

Desired outcomes for our Eco-activists: Pupils who are environmentally aware and confident to speak their truth and act to make the world a better place, both in their personal habits and through environmental activism. Pupils who understand there are 4 main areas we need to tackle to improve sustainability and save the environment:- Energy, Transport, Food, Giving the land back to nature. Pupils who show a personal commitment to improving these 4 areas as well as a commitment to reaching out and convincing others.

Learning outcomes from units taught: Learning as well as outcomes will be predominantly oracy based: we need our young people to ‘speak their truth’ with confidence and

⁵⁹ <https://www.minchacademy.net/>

⁶⁰ <https://www.minchacademy.net/blog/2020/11/04/curriculum-exemplar-eco-project/>

persuasively. The focus on oracy will include philosophy for children, debating, public speaking, storytelling, drama. Outcomes will always include 'taking action' to make a difference. Behind our approach there will be a commitment to reaching out to and appreciating very different points of view as well as evaluating the quality/ accuracy of available information.

The group also outlined a number of key principles:

- There is a solution
- We must be committed to reaching out to and appreciating very different points of view as well as evaluating the quality/ accuracy of available information.
- Pupils centred- pupils fully involved in the planning and implementation
- Change must start with us/ our own habits
- Tap into people's strengths

Staff Survey

Staff at Minchinhampton took part in an online survey to collect ideas around a co-created eco curriculum. The purpose of the survey was to capture the perspectives of the staff as well as their knowledge and personal interests. Staff were asked the following questions;

1. My name is ...
2. My role is ...
3. What book would be great to use to inspire a lesson or topic? Why?
4. Is there someone in the world you think is an inspiring character and whose ideas should form part of the curriculum? Who? What is it about them?
5. What film or tv programme or documentary stopped you in your tracks and inspired you to tell others about it? Why?
6. What activity should every school child experience before they're 11? Why?
7. What topic have you taught and thought "this worked great" - why?
8. What is missing from the current curriculum?
9. What type of activities do Minch pupils respond to best?
10. Rank these areas [Nature Human Relationship][Energy][Food][Transport][Oceans]
11. Rank these values
[Courageous][Inquisitive][Perseverance][Compassionate][Honest][Trustworthy][Responsible][Enthusiastic]
12. Rank these skills [Creativity][Critical Thinking][Collaboration][Communication]
13. When a child leaves Minch they should be ...
14. How would you rank your confidence in teaching about the climate and ecological emergency?
15. The only way we'll combat climate change is through structural changes to society tackling issues such as inequality.
16. Without whole scale system wide change, individual actions are pointless. Climate change is a perception problem just as much as it's a science problem.
17. How hopeful are you that the world will respond effectively to the climate crisis?
18. My eco super power is ...
19. What skills or knowledge would you personally like to develop?

Student Survey

Students also participated in class discussions and responded to a number of questions to explore their ideas about nature and education.

1. What do they think about learning more about the environment and spending more time in nature?
2. Where is their favourite place? Why?
3. What's important in life? Why?
4. What would they like to learn more about? Why?
5. What activities would they like to do more of in school? Why?

Green Britain Foundation

The Green Britain Foundation serves to encourage and empower people to live more sustainably and reduce their personal carbon footprint, while also using the power of football and education as well as other outreach activities to improve the lives of people. The Green Britain Foundation is funding the development of the Ministry of Eco Education and associated curriculum to provide young people with the education they need now to move the world to a zero carbon society.

The Green Britain Foundation is the charitable arm of Ecotricity, Britain's greenest energy supplier on a mission to end fossil fuels and fight climate change. As an energy company, Ecotricity explains "the best way we can do this is to end the use of fossil fuels by giving people an alternative - green energy."⁶¹

Ecotricity and the Green Britain Foundation were founded by the award-winning environmentalist and green entrepreneur Dr Dale Vince, OBE. Dale Vince is part green entrepreneur and part climate activist. He started the first renewable energy company in Britain over 25 years ago, set up the electric highway to put electric charging stations in every motorway service station before anyone was buying electric cars and is the chairman of the world's greenest football club and a UNFCCC ambassador for sport. He is passionate about education and wanting to support our children's understanding of the issues and more importantly, getting them inspired to be a part of the green industrial revolution.

⁶¹ <https://www.ecotricity.co.uk/our-story/our-mission>

UK Primary Education

As of 2018/19 there were around 32,770 schools in the UK. Of these, 3,714 were nurseries or early-learning centres, 20,832 were primary schools, 19 were middle schools and 4,188 were secondary schools. There were 2,408 independent schools, 1,257 special schools and 352 pupil referral units.⁶²

There were more than 10.3 million full and part time pupils at school in the UK. 8.8 million in England, 468,838 in Wales, 693,251 in Scotland, 338,957 in Northern Ireland.

There were 506,400 full-time teachers in the UK. 216,500 work in primary schools, 208,300 work in secondary schools, 61,500 work in independent schools and 16,700 work in special schools. 30.5% of these teachers are male, and 69.5% are female. However, at primary school level, this rises to 82.4% female.

National Curriculum England

The Early years foundation stage (EYFS) statutory framework is the standards that school and childcare providers must meet for the learning, development and care of children from birth to 5.⁶³ The EYFS was recently altered with an updated version from Sept 2021. The framework uses the term 'environment' 7 times with 2 of these referring to the natural environment whilst the others are associated with safety and suitable learning space. The section 'Understanding the World' contains the most direct references to eco education. Children are expected to 'Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps;' other references include "Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter."

All other aspects of the EYFS framework have the potential to be engaged through the environmental lens.

The key stage 1 and 2 national curriculum is broken down into 12 compulsory subjects and 3 optional.⁶⁴ The key stage 1 and 2 national curriculum was last updated in 2013 for implementation in 2014. The framework is broken down into bullet points of statutory requirements and more detailed notes and guidance of non-statutory suggestions.

⁶²

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/657907/SFR64_2017_Tables.xlsx

⁶³

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/974907/EYFS_framework_-_March_2021.pdf

⁶⁴ <https://www.gov.uk/national-curriculum/key-stage-1-and-2>

Compulsory	Optional
<input type="checkbox"/> english <input type="checkbox"/> maths <input type="checkbox"/> science <input type="checkbox"/> design and technology <input type="checkbox"/> history <input type="checkbox"/> geography <input type="checkbox"/> art and design <input type="checkbox"/> music <input type="checkbox"/> physical education (PE), including swimming <input type="checkbox"/> computing <input type="checkbox"/> ancient and modern foreign languages (at key stage 2)	<input type="checkbox"/> personal, social and health education (PSHE) <input type="checkbox"/> citizenship <input type="checkbox"/> modern foreign languages (at key stage 1)

In Year 1 the curriculum is divided into 'working scientifically', 'plants', 'animals, including humans', 'everyday materials' and 'seasonal changes'. In particular, children are expected to have been taught ideas such as:

- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
- identify and describe the basic structure of a variety of common flowering plants, including trees
- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- identify and name a variety of common animals that are carnivores, herbivores and omnivores
- observe changes across the four seasons
- observe and describe weather associated with the seasons and how day length varies

The Key stage 1 and 2 curriculum document refers to the 'environment' 27 times.

One of the most interesting sentences in the curriculum is found in the Year 4 'Living things and their habitats' section; 'recognise that environments can change and that this can sometimes pose dangers to living things.'

David Attenborough and Jane Goodall are references on page 168 of the curriculum, as examples of naturalists and animal behaviourists who might be studied.

There is no reference to climate change or the climate and nature emergency in the key stage 1 and 2 national curriculum.

Different curriculums operate in both Wales and Scotland though the general progression and themes are similar. In Wales subjects such as Geography have a single document which outlines the curriculum from age 7 to 19 for specific subjects.⁶⁵ In 2016, Wales appointed

⁶⁵

<https://hwb.gov.wales/api/storage/6fce280a-8132-4969-b821-a7313a2be719/geography-in-the-national-curriculum.pdf>

Sophie Howe as the Future Generations Commissioner for Wales.⁶⁶ Wales has undergone a curriculum review⁶⁷ which will be implemented from September 2022, the curriculum is based around four purposes and looks to:

- help practitioners to develop a more integrated approach to learning
- Support schools to design their own curriculum and assessment arrangements
- ensure assessment and learners' progression are intrinsic to a setting or school's curriculum

Scotland operates the Curriculum for Excellence (CfE) implemented in 2010.⁶⁸ An interesting aspect of the CfE is its intent to foster four capacities in all young people:

1. successful learners
2. confident individuals
3. responsible citizens
4. effective contributors

These capacities convey a desired attitude and ethos towards the world.

Sustainability is a key theme in the CfE recognising it as a cross-curricular approach to build a socially just, sustainable and equitable society. The CfE goes on to describe 'An effective whole school and community approach to learning for sustainability combines global citizenship, sustainable development education and outdoor learning to create coherent, rewarding and transformative learning experiences.' A number of documents provide further support and guidance for this aim including:

- ❑ Learning for sustainability action plan⁶⁹
- ❑ Vision 2030+ report⁷⁰
- ❑ Building better schools: investing in Scotland's future⁷¹
- ❑ Education Scotland: self-evaluation and improvement framework for learning for sustainability⁷²
- ❑ Learning for sustainability: report by One Planet Schools Working Group⁷³
- ❑ National Improvement Hub: learning for sustainability⁷⁴

⁶⁶ <https://www.futuregenerations.wales/team/sophie-howe/>

⁶⁷ <https://gov.wales/curriculum-wales-overview>

⁶⁸ <https://www.gov.scot/policies/schools/school-curriculum/>

⁶⁹ <https://www.gov.scot/publications/learning-for-sustainability-vision-2030-action-plan/>

⁷⁰

<https://education.gov.scot/improvement/self-evaluation/Vision%202030+%20Report:%20Concluding%20Report%20of%20the%20Learning%20for%20Sustainability%20National%20Implementation%20Group>

⁷¹ <https://www.gov.scot/publications/building-better-schools-investing-scotlands-future/>

⁷²

<https://education.gov.scot/improvement/self-evaluation/Whole%20school%20and%20community%20approach%20to%20learning%20for%20sustainability%20%28LfS%29%20-%20Self-evaluation%20and%20improvement%20framework>

⁷³

<https://education.gov.scot/improvement/Documents/One-planet-schools-report-learning-for-sustainability.pdf>

⁷⁴

<https://education.gov.scot/improvement/learning-resources/A%20summary%20of%20learning%20for%20sustainability%20resources>

Ofsted

With the introduction of the new Education Inspection Framework, Ofsted are now asking schools to explain the intent, implementation and impact of their curriculum.⁷⁵

The Ministry of Eco Education Curriculum enables schools to communicate clearly about their curriculum intent, implementation and impact. In particular, the curriculum supports statements such as “leaders take on or construct a curriculum that is ambitious”, “the knowledge and cultural capital students need to succeed in life”, “teachers present subject matter clearly, promoting appropriate discussion about the subject matter they are teaching”, “the curriculum extends beyond the academic, technical or vocational. It provides for learners’ broader development, enabling them to develop and discover their interests and talents”, “the curriculum and the provider’s wider work support learners to develop their character – including their resilience, confidence and independence – and help them know how to keep physically and mentally healthy.”

Place Based Education

A number of schools across the world, including the US and UK, shape their curriculum around ideas of place based education (PBE). PBE immerses students in local heritage, cultures, landscapes, opportunities and experiences, using these as a foundation for the study of subjects across the curriculum. PBE emphasises learning through participation in service projects for the local school and/or community. Promise of Place is one organisation in the US which coordinates work around PBE.⁷⁶ In particular, their website collates a variety of resources around PBE. A particular strength of PBE is the opportunity it provides educators to develop authentic ways to connect their curriculum to real life. The place-based approach brings students into their communities to learn necessary content and skills by working to meet the needs of local agencies and organisations. Students are more engaged because they know they are doing real work, teachers are reinvigorated by creating exciting learning opportunities, and the school takes on a more active role in the community.⁷⁷

Project Based Learning

Project Based Learning (PBL) is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge. Project based learning is employed by a variety of schools and creates deeper learning opportunities with greater student control and autonomy.

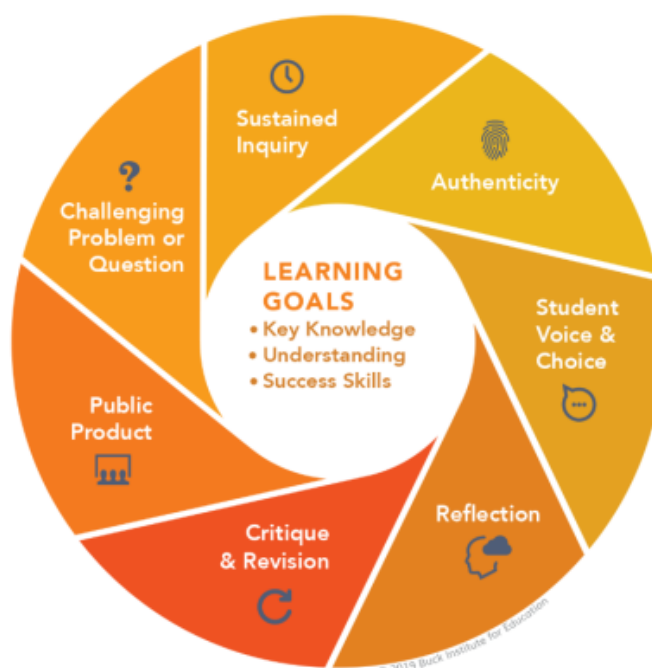
⁷⁵

<https://www.gov.uk/government/publications/education-inspection-framework/education-inspection-framework>

⁷⁶ <https://promiseofplace.org/>

⁷⁷

<https://rowman.com/ISBN/9781475830613/Bringing-School-to-Life-Place-Based-Education-Across-the-Curriculum>



The key aspects of project based learning.⁷⁸

Teacher Training

There are a number of routes into teaching and as such the provision of training around sustainability is mixed. Teachers can enter the profession via a Postgraduate Certificate in Education, School Direct (fee-funded), School Direct (Salaried), Postgraduate Teaching Apprenticeship, Teach First and Undergraduate Teacher Training.⁷⁹

A number of training providers and universities including the University of Plymouth and Buckinghamshire embed environmental education in their teacher training courses. The quality and length of this training varies.

In Scotland, the devolved government has committed to, “Ensure that Learning for Sustainability continues to be embedded within initial teacher education.”⁸⁰

Much of the training around eco education is run by charitable organisations primarily as charged for, short courses varying from a few hours to a few days.

AimHi has developed a live and empowering four-part, online climate and nature course appropriate for educators.⁸¹ The course teaches everything you need to know about climate, nature and how to make a difference. The course employs the organisation's innovative online communication techniques and shares a positive and empowering message.

⁷⁸ https://my.pblworks.org/resource/document/gold_standard_pbl_essential_project_design_elements

⁷⁹ <https://getintoteaching.education.gov.uk/ways-to-train>

⁸⁰

<https://www.gov.scot/binaries/content/documents/govscot/publications/factsheet/2019/06/learning-for-sustainability-vision-2030-action-plan/documents/learning-for-sustainability-vision-2030-action-plan/learning-for-sustainability-vision-2030-action-plan/govscot%3Adocument/Learning%2Bfor%2BSustainability%2BAction%2BPlan.pdf>

⁸¹ <https://www.aimhi.co/climate-course>

UK Environmental Education Organisations

The next chapter explores the current picture of environmental and sustainability opportunities for schools in the UK. There is great potential in bringing together the variety of opportunities, already on offer, under one holistic curriculum to help amplify their impact and embed them within learning for every student.

Broad Initiatives

Eco Schools is a global programme engaging 19.5 million children across 67 countries, making it the largest educational programme on the planet. Introduced in 1994, Eco-Schools is operated globally by the Foundation for Environmental Education and is managed in England by Keep Britain Tidy. The Eco-Schools programme consists of three structural elements – The Seven Step Framework, the Eco-Schools Topics and assessment for the international Eco-Schools Green Flag. To be successful the programme requires support from school leaders and active involvement from staff, as well as a long-term commitment and the willingness to involve students in decision-making. The Eco-Schools Seven Steps methodology is a series of carefully engineered measures to help schools maximise the success of their Eco-School ambitions. While the Seven Steps are the most important aspect of the Eco-Schools programme, schools also work on topics to help give the programme even more structure; marine, biodiversity, energy, litter, global citizenship, healthy living, school grounds, transport, waste and water.

Eco Schools is well known throughout the UK and has great success, the programme currently has more than 20,100 schools registered in England, more than 80% of schools.

Let's Go Zero 2030 is a campaign to unite schools around the goal of becoming carbon zero by 2030. The campaign is run by Ashden (a UK-based climate solutions charity) in partnership with Global Action Plan, and a coalition of sustainable schools organisations. The campaign currently has more than 300 schools signed up. By joining the campaign, a school is publicly declaring that they want to be zero carbon by 2030, and that it wants the UK government to enable schools in the UK to take more action on this issue. The campaign is about showing aspiration. We know that being zero carbon is currently beyond the reach of most schools, but by working together and with the government we believe it is achievable by 2030. To be part of the campaign, schools are expected to be taking action to reduce their carbon impact, measuring this where feasible, and have 'next step' actions planned for the following year. They can indicate the steps they are taking from a checklist on the sign-up form. By joining the campaign, schools commit to telling their students, communities and suppliers that they are part of Let's Go Zero and aim to be zero carbon by 2030.

The Let's Go Zero campaign has great potential bringing organisations and schools together as well as conveying the intention of schools to reduce their carbon emissions.

Nature Friendly Schools is a project funded by the Department for Education and Natural England, with support from the Department for Environment, Food and Rural Affairs (DEFRA). The project is led by the Royal Society of Wildlife Trusts⁸², working in partnership

⁸² <https://www.wildlifetrusts.org/>

with Young Minds, Groundwork, the Sensory Trust, the Field Studies Council and Wildlife Trusts.

The project aims to develop teachers' confidence and ability to drive forward outdoor learning in schools, giving thousands of school children from some of the most deprived areas in England the opportunity to get closer to nature. It is hoped these experiences will benefit their wider learning, health and wellbeing, and care and concern for the environment. The project aims to fuel creativity and a sense of adventure, allowing pupils to experience the job that nature can bring, removing the inequity that currently exists.

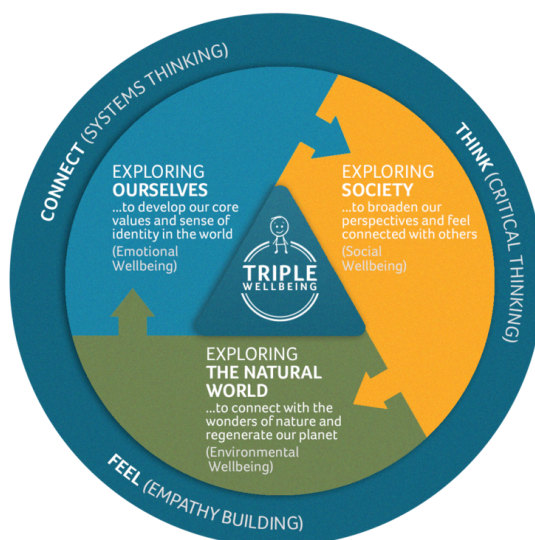
Aspects of the project involve pupils benefitting from at least two hours learning outdoors every week, experiencing wildlife on their doorstep but also further afield. This includes long term changes such as the creation of new nature areas within their school grounds or the opportunity to visit local nature reserves or parks.

The Nature Friendly Schools initiative is part of a wider commitment from the government as part of its 25 Year Environment Plan⁸³ which includes £10 million of funding for the DfE to deliver the Children and Nature Programme, which includes - Nature Friendly Schools, Growing Care Farming and Community Forest Woodland Outreach.

The Nature Friendly Schools initiative is a superb initiative bringing together a wide variety of highly experienced organisations. It is important to recognise the focus on the most deprived areas of the country and the relatively modest aspiration of 2 hours a week.

Our Bright Future is a partnership of 8 organisations led by the Wildlife Trusts. The initiative is a 5 year programme which aims to empower young people to become skilled and engaged citizens. To date, the programme has engaged more than 115,000 young people helping them to gain more than 6,200 qualifications.⁸⁴

Thoughtbox is a not for profit, membership community providing educators with a whole-school approach to social, emotional & global learning. Thoughtbox has worked with more than 2500 schools and 1.7 millions children across 56 countries. Thoughtbox has developed a distinctive 'triple wellbeing' approach which frames their work.



⁸³ <https://www.gov.uk/government/publications/25-year-environment-plan>

⁸⁴ <https://www.ourbrightfuture.co.uk/about/>

The Duke of Edinburgh's Award started in the UK in 1956 following the request of Kurt Hahn to HRH The Duke of Edinburgh. The Award is framed around four sections which involve helping the community/environment, becoming fitter, developing new skills, planning, training for and completing an expedition and working with a team on a residential activity. The Award is available for young people between the ages of 14-24. Annually nearly 300,000 young people start the DofE programme with around 160,000 completing Awards each year.⁸⁵ Awards are achieved through a variety of providers including schools, colleges, universities, youth clubs, businesses, housing associations, young offender institutions and voluntary organisations.

Some organisations choose to mirror the Award for younger students and some primary schools organise their own version including volunteering, skills, physical and an expedition.

The Duke of Edinburgh's Award has great potential to mobilise thousands of young people to engage with nature through volunteering, developing skills and the expedition.

National Citizen Service exists to “engage, unite and empower young people, building their confidence so they can go out there and achieve their dreams, no matter where they’re from or what their background is.” The programme is designed for 16 and 17 year olds. Young people pay to attend a 4 week programme, delivered by a local provider near where they live. The programme is broken down into 3 phases i) residential ii) skills festival iii) social action. More than 500,000 young people have completed the programme to date.⁸⁶

Green Jobs

There is currently little provision for the support and guidance on students taking up green employment. Some schools are looking to provide information around this, the Youth Climate Summit, organised by Transform Our World, interviewed a number of people around this topic. The recorded videos are a valuable resource and can be found on their youtube site.⁸⁷

Conservation

National Parks, Areas of Outstanding Natural Beauty and other protected areas make up approximately 26% of land in England. The UK government recently communicated an ambition to protect 30%.⁸⁸ A number of organisations currently provide conversation opportunities for young people.

The National Trust manages 780 miles of coastline, over 248,000 hectares of land and over 500 historic houses, parks and nature reserves.⁸⁹ The National Trust is the UK's largest farm owner, with more than 1,500 tenant farmers. More than 27.9 million people each year visit places looked after by the Trust. The organisation provides volunteering opportunities for young people in the gardens and parks the Trust manages. Volunteers under the age of 18

⁸⁵ <https://www.dofe.org/about/>

⁸⁶ <https://wearencs.com/about-ncs>

⁸⁷ <https://www.transform-our-world.org/youth-climate-summit-2020>

⁸⁸ <https://www.gov.uk/government/news/pm-commits-to-protect-30-of-uk-land-in-boost-for-biodiversity>

⁸⁹ <https://www.nationaltrust.org.uk/features/information-to-journalists>

must be accompanied by an adult. Building relationships between the National Trust and local schools offers the opportunity for young people to build relationships with local places and develop their identity within their community.

The scale of the National Trust in both land and people provides an opportunity to engage large numbers of young people in volunteering through conservation as well as actively engaging with and developing a relationship with their local environment.

The John Muir Trust is a conservation charity dedicated to the experience, protection and repair of wild places. The charity defines wildness not as a place but as an experience. Since 1997, the John Muir Award has engaged 387,500 young people to connect and care for wild nature through direct, practical action to benefit themselves and their environment. The Award is broken down into four challenges which require young people to show enthusiasm and commitment towards nature over a specific time period.

The John Muir Award provides an opportunity for young people to engage with and care for a piece of nature of any scale from a window box to a whole school site. The Award is inclusive, accessible and non-competitive, though should challenge each participant. It encourages awareness and responsibility for the natural environment through a structured yet adaptable scheme, in a spirit of fun, adventure and exploration.

Throughout the UK are a variety of **Country Parks and Nature Reserves** owned by local councils, charities and private organisations. These open spaces are often used by schools as learning environments and often have trained staff to provide guided learning.

Gardening

Gardening provides a whole variety of benefits for children including; sensory development, encourages healthy eating, teaches responsibility and patience, helps with other learning, and develops social skills.⁹⁰

The **Royal Horticultural Society** runs a national campaign for school gardening which includes the School Gardener of the Year competition and School Gardening Awards. The purpose of the campaign is to inspire and support schools to provide children with gardening opportunities to enhance their skills and boost their development. Registering for the programme is free and provides access to more than 140 teaching resources. In 2010, 11,500 primary schools had signed up to the awards. A report from the national foundation for educational research highlighted the impact of school gardening on learning.⁹¹ Key findings included;

- Greater scientific knowledge and understanding.
- Enhanced literacy and numeracy, including the use of a wider vocabulary and
- Greater oracy skills.
- Increased awareness of the seasons and understanding of food production.
- Increased confidence, resilience and self-esteem.

⁹⁰ <https://www.earlylearningfurniture.co.uk/blog/benefits-of-gardening-with-kids.aspx>

⁹¹ <https://www.nfer.ac.uk/media/2135/rhs01.pdf>

- Development of physical skills, including fine motor skills.
- Development of a sense of responsibility.
- A positive attitude to healthy food choices.
- Positive behaviour.
- Improvements in emotional well-being.

GROW is a not for profit organisation working in schools to promote mental well-being, physical health, and a more hands on relationship with nature by delivering programmes centered around four key pillars:

- Ground - Food and Farming
- Think - Philosophical Thinking
- Flow - Yoga and Mindfulness
- Thrive - Extra-curricular (Boxing, Forest School and more)

GROW has an ambition to make the programme a feature of the national curriculum by 2030.

Trees

Trees cover 12% of UK land area, whilst of Europe's total land area, forest cover makes up 47%.⁹² Trees are fundamental for a healthy earth system and provide services such as locking away carbon, as well as improving our health and wellbeing.

The Woodland Trust provides hundreds of thousands of free trees for schools and communities each year. The organisation provides two delivery periods per year, one in March and the other in November. Schools apply for tree packs, indicating a type of tree they would like. Trees arrive as bare root whips along with stakes and tree guards. The Tree Tools for Schools programme supports schools in planning, planting and caring for their tree pack. In addition to the free trees, the Woodland Trust also runs the Green Tree Schools Award which has around 12,000 schools taking part completing environmental projects to earn certificates for their pupils.

The Tree Council is a charity bringing together people with a shared mission to care for trees and our planet's future. They inspire and empower people with the knowledge and tools to create positive, lasting change at a national and local level. The Tree Council trains Tree Wardens, enabling people to play an active role in conserving and enhancing the trees and woods in communities. As well as training, the Tree Council provides funding for tree, orchard and hedge planting projects in addition to their Orchards for Schools free tree packs.

There are numerous opportunities for schools to receive free tree packs for planting each year and the appropriate training and information to care for and manage these trees.

Oceans

Our ocean covers over 70% of our planet. It provides more than half the oxygen we breathe and absorbs nearly a third of our carbon emissions. Every year, between 8 and 13 million tonnes of plastic enters our ocean. A third of our seas are called 'protected' – but they're not;

⁹² <https://www.woodlandtrust.org.uk/blog/2017/12/why-do-we-need-trees/>

in practice, less than 1% of our seas are well-managed.⁹³ Our oceans are in crisis and through the interconnected nature of the climate and ecological emergency require our attention.

The Marine Conservation Society and Surfers Against Sewage, stand out as two organisations who have progressed ocean education at a national scale. Both organisations organise annual Beach Cleans, providing schools with the equipment and support to organise their own local beach clean.

The **Marine Conservation Society** is a UK-wide community of ocean lovers all working together towards a shared vision of a sea full of life, where nature flourishes and people thrive. The organisation describes its activities as “fighting for our ocean through people-powered action, with science on our side. We defend habitats and species, working with communities, businesses and governments.”⁹⁴ The Marine Conservation Society has a number of high profile education programmes which run annually, these include Beach Cleans, Ocean Superheroes, Seashore Safaris, Go Plastic Free, Stop the Plastic Tide and Ocean Acidification.⁹⁵

Surfers Against Sewage is a marine conservation charity working with communities to protect oceans, waves, beaches and marine life. It was created in 1990 by a group of Cornish surfers from the villages of St Agnes and Porthtowan on the north coast of Cornwall. Surfers Against Sewage has a network of 215 regional reps and in 2019 organised 1,530 beach cleans. For schools Surfers Against sewage have a number of educational programmes including Plastic Free Schools and Ocean School.

Encounter Edu is a company which designs and delivers sponsored STEM and global learning programs transforming education inside and outside the classroom. Many of their programmes have a particularly strong oceans focus including Frozen Oceans. The resources are designed to facilitate immersive learning experiences, a good example is the street view style tours of the world’s coral reefs. A particular strand of the organisation is connecting school children with researchers in the field with more than 125,800 engaging with academics as part of live audiences.⁹⁶

Sea Shepherd UK is an international non-profit marine wildlife conservation organization. Established in 1977, its mission is to end the destruction of habitat and slaughter of wildlife in the world's oceans in order to conserve and protect ecosystems and species. Sea Shepherd UK uses innovative direct-action tactics to investigate, document, and take action when necessary to expose and confront illegal activities on the high seas. By safeguarding the biodiversity of our delicately balanced ocean ecosystems, Sea Shepherd UK works to ensure their survival for future generations. Recently, Sea Shepherd UK launched an education site⁹⁷, developed by a group of volunteers, offering teaching materials, student activities, videos and opportunities to engage with speakers.

⁹³ <https://www.mcsuk.org/ocean-emergency/>

⁹⁴ <https://www.mcsuk.org/about-us/what-we-do/>

⁹⁵ <https://www.mcsuk.org/what-you-can-do/fun-learning/>

⁹⁶ <https://encounteredu.com/about>

⁹⁷ <https://education.seashepherd.org.uk/>

Food

The School Food Plan published in 2013 provides little direction for the sustainability of school food and instead focuses on the nutritional importance of food from a human perspective. One sentence stands out; “eating in school should be a pleasurable experience: time spent sharing good food with peers and teachers.”⁹⁸ Highlighting the social importance of sitting down with people to share food and conversation.

The **National Food Strategy**, independent review, is currently being carried out and will have a much greater emphasis on balancing the demands of food production and nutrition with its impact on the planet. The initial report suggests “Intensive farming practises have caused serious damage to the environment and the food related disease is costing the NHS billions and drastically harming the lives of millions. Food security, too, is a growing concern: population growth, climate change, the global increase in meat eating are intensifying resource competition between nations.”⁹⁹ When the second part of the report is published later this year, it is likely to provide much more direction on the procurement of food for the public sector and give schools much greater instruction to improve the sustainability of the food they provide. Image schools where the majority of the food is plant based.

The **Soil Association** is the UK's leading membership charity campaigning for healthy, humane and sustainable food, farming and land use. The Soil Association runs the Food for Life programme providing a wealth of resources and activities for schools to affect long term change around food. The Soil Association also offers the Food for Life Schools Award which is a great way for schools to demonstrate that they are doing fantastic work to provide healthy school meals, great lunchtimes and food education that has a positive impact on both pupils and the wider community.

The Vegetarian Society carried out a survey to inform its response to the National Food Strategy. The findings suggest “The government should ensure vegetarian cooking and nutrition is taught in all schools, alongside the environmental impact of meat, fish and dairy. 82.4% of respondents to the survey agreed that vegetarian cooking and nutrition should be taught in all schools. 90.2% of respondents believe that the environmental impact of meat and fish should be taught and 89.2% of respondents believe the environmental impact of dairy should be taught.” Respondents also suggested “The public sector should be leading the way in promoting and providing vegetarian and vegan food. 40.4% of vegetarians and vegans believe that food provided in the public sector should be vegetarian and vegan, unless someone requests a meat or fish option. In addition, 37.6% of vegetarians and vegans believe that only vegetarian and vegan food should be served in the public sector.”¹⁰⁰

Love Food Hate Waste is a campaign developed by WRAP which aims to raise awareness of the need to reduce food waste and help us take action. It shows that by doing some easy practical everyday things in the home we can all waste less food, which will ultimately benefit our purses and the environment too. Love Food Hate Waste organises an annual Food Waste Action Week and provides a variety of resources suitable for schools.

⁹⁸

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/847621/School-Food-Standards-Guidance-FINAL-V3.pdf

⁹⁹ <https://www.nationalfoodstrategy.org/>

¹⁰⁰ <https://vegsoc.org/comment-opinion/national-food-strategy/>

Birds

The Big Garden Birdwatch¹⁰¹ highlighted that 16 of Britain's top 20 garden birds have declined in number.

The **Royal Society for the Protection of Birds (RSPB)** is the UK's largest nature conservation charity, established in 1889, on a mission to create bigger, better, more joined-up spaces to save our wildlife, and our shared home. The RSPB runs a number of national school campaigns including the Schools Wild Challenge and Big Schools' Birdwatch. The organisation also provides advice for trips and educational outreach as well as teaching resources through its website.

Travel

Travel has sometimes been a neglected element of sustainability initiatives within schools. Many schools have continued to organise school trips which rely on long haul flights and felt reluctant to challenge the travel habits of parents and staff. In the UK only 2% of school children cycle to school.

A number of organisations work nationally to promote **Active Travel** including Sustrans and Living Streets. Organisations have Active Travel Officers often funded by local authorities who work with individual schools around increasing the number of students walking and cycling to school. A number of national campaigns are run at a variety of times of year including the Big Pedal, Walk to School Week and Bike to School Week.

Flight Free UK began life in February 2019 inspired by the Swedish Flygfritt (flight free) movement. The organisation runs the Flight Free Pledge which asks people to stay grounded for a year in order to reduce their carbon footprint, re-discover the joys of overland travel, and begin to shift the social norm away from aviation. The campaign has lots of potential for school communities to sign up to live flight free.

School Trips play a vital role in immersing young people with nature. The recent pandemic paused these opportunities but once again schools are carrying out day and residential trips to engage young people with the world around them.

Across the UK there are a network of **Environment Centres**, many of these are council run whilst others are independent or part of charitable organisations. Environment Centres provide the opportunity for local outdoor learning led by trained professionals as well as longer residential visits.

¹⁰¹

<https://www.theguardian.com/environment/2021/apr/09/sixteen-of-britains-top-20-garden-birds-have-declined-in-number-annual-survey-finds>

Energy

Energy costs are often the second highest expenditure in schools, after the staff wage bill. Energy costs per pupil range from £26 to £64 in secondary schools and between £16 and £51 in primary schools.¹⁰²

Energy in Schools¹⁰³ was a recent UK government initiative which had four main goals:

- Help schools reduce energy consumption.
- Help schools reduce energy costs by switching to time-of-use⁴ (ToU) tariffs which are tailored to the way schools use energy throughout the day and by reducing dependence on energy brokers.
- Improve pupils' and teachers' understanding of climate change, energy and computing.
- Empower pupils to lead the way via an 'Energy Champions' training programme to support whole-school behaviour change.

There are a number of organisations who've been working with schools to shift them to renewable electricity contracts and instal solar panels on school buildings. Most recently, Ashden has launched the **Let's Go Zero 2030** campaign which is explored earlier in the report.

Campaign Groups

The last few years have seen the growth of a number of young climate and environmental campaign groups bringing young people together to amplify their voice and communicate their concerns for the world.

#FridaysForFuture is a movement that began in August 2018, after 15-year-old Greta Thunberg and other young activists sat in front of the Swedish parliament every school day for three weeks, to protest against the lack of action on the climate crisis. Greta posted what she was doing on Instagram and Twitter and it soon went viral. The organisation has since helped organise more than 14 million young people to take part in climate strikes across the world.

Teach the Future describes itself as "an inclusive, well organised and persistent campaign by secondary and tertiary education students to greatly improve education on the climate emergency and ecological crisis in the UK."¹⁰⁴ The English campaign has two parent organisations, UK Student Climate Network (UKSCN)¹⁰⁵ and Students Organising for Sustainability UK (SOS-UK)¹⁰⁶. The Scottish campaign has two parent organisations, FFF Scotland and NUS Scotland. The Welsh campaign has one parent organisation, UKSCN

¹⁰²

<https://www.gov.uk/government/publications/school-procurement-buying-a-multi-functional-device-mfd>

¹⁰³

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/933637/18-007974-01-EnergyInSchools-evaluation-case-study.pdf

¹⁰⁴ <https://www.teachthefuture.uk/about>

¹⁰⁵ <https://ukscn.org/>

¹⁰⁶ <https://www.sos-uk.org/>

Wales. The campaign is led by a team of over 40 young volunteers and advised by an adult advisory board. The group has organised a number of high profile campaigns and events and campaign for:

- A government commissioned review into how the whole of the English formal education system is preparing students for the climate emergency and ecological crisis
- Inclusion of the climate emergency and ecological crisis in English teacher standards
- An English Climate Emergency Education Act
- A national climate emergency youth voice grant fund
- A national Youth Climate Endowment Fund
- All new state-funded educational buildings should be net-zero from 2020; all existing state-funded educational buildings net-zero by 2030

UK Youth Climate Coalition (UKYCC) established in 2008, with a mission to mobilise and empower young people to take positive action for global climate justice. The group is open to 18-29 year olds who volunteer and collaborate to work towards creating a vision of a just, sustainable world in which current and future generations enjoy and protect a healthy environment.

Reading Books

Nature has always played a fundamental role for creatives of all types including poets and authors. Over the last few years schools have sought to incorporate a greater proportion of literature with environmental themes. Many authors have developed supporting materials and resources linked to their books to help teachers better engage their students with their themes in school.

Author **Robert McFarlane** has launched a variety of teaching resources¹⁰⁷ linked to his books *The Lost Words*, *The Lost Spells* and *Spell Songs* which provide creative activities to explore the language and imagery of nature.

Nature Connectedness

A variety of initiatives look to develop young people's sense of a relationship with nature, many of these are focussed around specific activities which target certain age groups or work within time bound periods of the year.

National Trust - 50 things to do before 11¾

In 2012, behaviour change¹⁰⁸ created 50 things to do before you're 11¾ for the National Trust. The initiative is designed to encourage a new generation of sofa-bound children to rediscover the joys of den-building and tree climbing, with an ultimate aim to reconnect young people with nature and the environment. The activities encourage children to explore and be active in nature.

¹⁰⁷ <https://www.thelostwords.org/resources/>

¹⁰⁸ <https://behaviourchange.org.uk/case-studies/50-things-to-do-before-youre-11-and-3-quarters>

Mission: Explore

Mission: Explore make curious, creative and critical activities that help young people to explore, play and learn outdoors. The series of books were developed by The Geography Collective, a group of Guerilla Geographers: grown ups enthusiastic professionals who encourage kids to re-discover the world and bring enthusiasm and excitement into learning. Young explorers can independently complete fun and adventurous missions through research, analysis and observation of our surroundings. Packed with colourful drawings, basic training and advice to safely carry out the activities, these books are fun and motivate children (and grown ups) to get to know and care about the environment, learn and improve skills, explore, try new things and get involved. The books in the Mission: Explore series include Geography Collective, On the Road, Camping and their latest one Food.

Wildlife Trust - 30 Days Wild

The 30 Days Wild initiative is an annual campaign to get people to engage with nature every day in June.

Evaluations of the project in 2015, 2016 and 2017 all found that those who took part were found to have sustained increases in happiness, health, connection to nature and pro-nature behaviours.

The Wild Network is a new, wilder way of organising and a different way of taking action, collectively. It is a not-for-profit organisation powered by Wild Labs and Green Lions. The Wild Network has created a new form of network, a broad and diverse collection of 30,000¹⁰⁹ mums, dads, guardians, community workers, activists, policy-makers, doctors, care givers, creatives, play-workers & educators and 2,000 organisations from corporates, to NGOs to hundreds of grassroots interventions with interests across nature, education, health and play. The organisation brings a community together through a range of programmes specifically designed to overcome the barriers to Wild Time using the structure in the diagram below.



¹⁰⁹ <https://thewildnetwork.com/about/>

Eco Councils / Groups

Schools have increasingly established groups of students from across the school community to lead on environmental initiatives. For a number of years these have been manifestations of the eco schools initiative whilst in the last couple of years they have been linked with student enthusiasm and interest from the youth climate strikes.

More recently schools created connections and networks within their local area which developed into the **UK Schools Sustainability Network**. The network provides support for young people to explore environmental ideas within their school community. Regular meetings are organised across the network and annual events such as the Youth Climate Summit¹¹⁰ which brought together environmental organisations from across the UK in a week-long online conference.

Social Media

Over the last few years a number of people have used social media as a tool to communicate science and connect with youth audiences.

Maddie Moate is a BAFTA-winning presenter and YouTuber, passionate about curiosity. She is the host of the BAFTA-nominated CBeebies TV series “Maddie's Do You Know?”, BBC Earth's “Earth Unplugged” and Fully Charged's YouTube series 'Maddie Goes Electric'. Maddie's online videos are perfect for primary audiences and offer “a curiosity box full of family content”. Packed with films about science, wildlife, travel and engineering, she takes her audience on educational adventures and inspires them to #staycurious.¹¹¹ Along with her partner Greg Foot, Maddie recently ran a series of live broadcast videos called ‘Let's Go Live’. Maddie's videos provide a wealth of resources to enrich lessons.

The **Self Isolating Bird Club** was born out of the recent lockdown and involved a variety of live broadcast videos from bird enthusiasts. The videos helped bring together a community of bird watchers and the facebook group has more than 65,000 members. The content has great potential to be integrated into lessons. The project has now morphed into People for Wildlife.¹¹²

Documentaries

Streaming culture has given rise to a new generation of documentary lovers. School teachers are increasingly using clips from or entire documentaries as teaching resources. These environmental documentaries are often years in the making and help communicate the wonder of nature but also the damage caused by human activity.

For decades, Sir David Attenborough has been seen as the master of environmental documentaries. After one of the hottest years on record, David looked at the science of climate change and potential solutions to this global threat in the programme ‘Climate

¹¹⁰ <https://www.transform-our-world.org/youth-climate-summit-2020>

¹¹¹ <https://www.maddiemoate.com/>

¹¹² <https://peopleforwild.life>

Change - The Facts'. This was followed by 'Extinction - The Facts', with a million species at risk of extinction, David explored how the crisis of biodiversity has consequences for us all, including putting us at greater risk of pandemic diseases.

Greta Thunberg has also been involved in a number of documentaries including 'I Am Greta' and 'A Year To Change The World'. Both are intimate and emotive documentaries which follow Greta and her family through their journey at specific times over the last few years, communicating the successes and challenges of the extraordinary circumstances she was projected into.

An alternative wave of documentaries are much harder hitting and as result sometimes less appropriate for a young audience. An example of these documentaries include 'Seaspiracy' where viewers are faced with eye-watering facts and statistics surrounding our mistreatment of the world's oceans. From unsustainable fishing and the dumping of plastics to despicable modern slavery used to provide cheap seafood year-round, the documentary is an unflinching indictment of current practices.

Eco Curriculum Framework

The following chapter outlines key aspects of the proposed curriculum.

Principles

The Ministry of Eco Education Curriculum is a new lens through which to educate children with sustainability woven into the fabric of every topic and each lesson. The curriculum is cross curricular in nature, transcending traditional ideas of subject disciplines. The framework connects subject elements of the Primary National Curriculum through broad environmental themes so that schools can achieve both the Primary National Curriculum as well as a holistic environmental education appropriate for the Anthropocene. The curriculum is holistic in nature with clear aims for all elements of school life including the content, pedagogy and assessment.

Four key principles

- **Enquiry** - learning through discovery and experience
- **Adventure** - attitude to the world
- **Balance** - a way of thinking about the human-nature relationship
- **Systems Thinking** - seeing the complexity and connections

Process

Before beginning the journey of shifting the school curriculum, it is important to understand the key milestones within the process and the optimum chronology to create successful change.

Step 1) Community Consultation / Surveys

The first phase initiates conversations with key stakeholders in the school community including, staff, students, parents and governors. Sharing ownership and allowing everyone to feel part of the process from the beginning increases the impact and success. This is also the phase to use conversations and surveys to explore people's strengths and weaknesses as both opportunities to incorporate into the curriculum as well as aspects to target further training and support. By the end of this phase the school community will have an understanding of the aims of the curriculum and a shared language to communicate the journey.

Step 2) Curriculum Mapping / School Grounds Mapping / Staff Training

Once the school community is in support of moving to the Ministry of Eco Education curriculum, the next step is to begin mapping out the current situation and plotting a path forward. This includes both the academic curriculum, wider school structures and school grounds. A variety of checklists and templates guide schools through this stage and signpost key organisations which can provide assistance.

Step 3) Launch Event / Initial Trial

At first, schools might choose to incorporate a handful of topics within their curriculum and engage with the broader enrichment and philosophy of the curriculum. To build momentum and excitement, there's the opportunity to launch the curriculum with a focussed week of

events. This might include an opening assembly, a school fete or specific events for parents and the wider community. This week might fall at the beginning of the term when the curriculum is first being taught. A targeted initial trial also allows staff to explore and understand the guiding ethos and approach, this might be supported by support and training from organisations.

Step 4) Reflection / Feedback

At regular intervals, from individual lessons to termly and annually reviews, the framework provides opportunities to gather the community's reflections and feelings about the curriculum. Action can then be taken to shift course, adapt and build on successes whilst also continuously communicating with the school community.

Step 5) Growth

When the school community feels confident with the key principles of the curriculum there is then the opportunity for greater freedom and creativity. An example of this might be teachers creating their own topics using the framework or taking up opportunities to embed a greater number or more advanced enrichment learning activities.

Content

To create a suitable structure for the content, the curriculum employs 7 key themes, common across many environmental education frameworks, which contain the main aspects of the climate and ecological emergency.

Key Themes

- Energy
- Transport
- Food
- Water
- Nature
- Waste
- Society

Key Concepts

Across the curriculum are a variety of key concepts which transcend topics and help students to develop a higher order conceptual approach to their thinking. The key concepts include:

- Action
- Human-Nature Relationship
- Community
- Identity
- Jobs
- Equality
- Futures

These concepts provide the focus for topics and help give direction to the lessons, helping teachers and students understand the lens through which they're investigating the world. More detail will be provided about the definition and meaning of each of these themes and concepts.

Enquiry Questions

The framework employs an enquiry based learning approach made popular by educators such as Margaret Roberts¹¹³. Enquiry based learning has four key principles including; 1) question driven encouraging questioning attitudes towards knowledge 2) Students study data and sources of information as evidence 3) Students make sense of information for themselves in order to develop understanding 4) Students reflect on their learning. Enquiry based learning provides a continuum for learning with teachers directly guiding or more student self-direction. The enquiry questions are provocative and broad in nature, providing a real world hook or motivation for learning. The questions look to reveal the structures and processes at work within society and understand why sustainability is not already at its core. As a consequence, the questions provoke critical thought and the exploration of radical alternatives.

Theme	Enquiry Question	Possible Topics
Energy	What is truly renewable?	Nuclear / Greenwashing / Renewable Obligation Certificates
Energy	Is carbon a magic ingredient?	Carbon / Climate Change
Energy	How should we heat our homes?	Gas / Electricity / Hydrogen / Efficiency / Insulation
Energy	Are we addicted to fossil fuels?	Oil / Coal / Gas
Energy	What does it take to make a cup of tea?	Production / Electricity
Transport	Should everyone get an electric car?	Comparison of forms of travel / Impact of electric cars
Transport	Would the world be better without tourists?	Impact of tourism / international travel
Transport	How can places be liveable?	Human Scale Travel
Food	Should we all go vegan?	Exploring different diets
Food	Where should we get our food?	Seasonality / Location / Rate your Plate
Food	Why are some people hungry?	Inequality / Food Systems

¹¹³ <https://www.geography.org.uk/Curriculum-Making-Through-Enquiry>

Nature	Does it matter if species go extinct?	Extinction / Focus on Bees
Nature	How should we use land?	Land Ownership / Land Use
Nature	Is the climate breaking down?	Climate Change / Extreme Weather
Nature	What happens at night?	Natural Rhythms / Cycles
Nature	Is Nature the answer?	Nature Based Solutions / Biomimicry
Nature	How biodiverse is Minchinhampton?	Biodiversity / Identification
Nature	Where have all the trees gone?	Deforestation / Wood Wide Web
Nature	How important is soil?	Erosion / Farming
Nature	Let's all go on a deep time walk	Deep Time / Society
Water	Why are rivers polluted?	Water Treatment / Water Companies
Water	Do we live on a blue planet?	Weather / Oceans
Water	Why is all the ice disappearing?	Ice Melt / Tipping Points
Waste	Does anything ever go away?	Circular Economy / Indigenous Knowledge
Waste	Do we live on a plastic planet?	Plastic Pollution
Waste	Who made my clothes?	Product Lifecycle / Global Division of Labour
Society	How many people is too many?	Population / Carrying Capacity
Society	What are the commons?	Concept of the Commons / Air / Water / Land
Society	How much stuff is enough?	Consumerism / Capitalism
Society	What do we need for a meaningful life?	Happiness / Happy Planet Index / GDP
Society	What is the future of democracy?	Citizen's Assemblies / Direct Democracy
Society	Is social justice climate justice?	Inequality / Race / Gender

Pedagogy

The climate and nature emergency has far reaching implications for the “how” we teach as well as the “what”. The curriculum envisions knowledge as socially constructed. The teacher uses their expertise not to transmit knowledge but instead to guide learning. The curriculum is based on constructivist views of knowledge and theory of learning which encourage a critical, questioning attitude towards knowledge. Critical theory plays a key role in ensuring children consider a range of perspectives and views, developing competences for democratic debate and deliberative democracy.

Lesson activities involve considerable discussion, both between the teacher and the class but also more importantly between children as well. Topics might last 8-12 lessons with the beginning of topics framed by the broad enquiry question to begin students on their journey. Lessons might begin with an eye catching image or stimulus to capture the students’ imaginations. Throughout lessons students will interrogate real world data and information. Stories will play a key part in learning.

To counter the distancing of ourselves from the rest of nature, the curriculum normalises pockets of time spent outside. With outside not just being ideas of green ‘nature’ but also the built environment of quality playgrounds and wider community spaces. Throughout lessons, students use the outdoor environment as a space for learning. As a result, learning occurs across a variety of environments, not just whilst sitting in rows within a classroom.

Assessment

Many of the problems with the current education system are driven by the narrow focus on terminal examination and standardised assessment. Within the Ministry of Eco Education Curriculum, students are given the opportunity to develop extended and collaborative projects with real world audiences and meaningful feedback. Assessment is then integral to the learning process and feedback is used in a purposeful way to improve a student’s performance within a particular learning journey.

Wider Enrichment

Running alongside the enquiry questions is a structure of wider enrichment which ensures learning occurs across the school day and in a variety of places, not just within the four walls of a classroom.

Learning Journal

The Learning Journal acts as a handbook to guide the students through the year and provides opportunities for reflection. At the heart of the learning journal is a calendar which provides information around the natural rhythms and cycles of a year. The booklet also includes diagrams, photographs and information to help students identify plants and animals. As well as information, the booklet includes a variety of mini activities in the style of ‘Mission:Explore’ which critically engage young people with the world around them. Activities also include provocations to create poems, illustrations and creative responses to the world.

School Day / Week

The curriculum emphasises natural rhythms and looks for opportunities to embed these within the school day and week. An example of this might be shorter days in the winter with activities linked to darker mornings and afternoons. In contrast, the summer offers the opportunity for more daylight and longer days. Festivals such as Beltane and the Spring and Summer equinoxes could become particular focuses for the curriculum. Prolonged and structured time in nature could become normalised with daily opportunities to see, smell and listen to aspects of the natural world. Experiences such as barefoot walks and forest immersion could be timetabled.

School Grounds

Mapping the school grounds offers the opportunity to establish a holistic plan to manage the space to prioritise nature and increase biodiversity. Rewilding opportunities could be explored and specific areas partitioned off for certain year groups to take responsibility for. Through curriculum topics students could manage land and witness the return of nature.

Community Engagement

Another aspect of the curriculum is the idea of building in multiple occasions where members of the local community visit the school within a specific topic or conversely where students visit the local community. An example of this might be a beach clean within the school day as part of a plastics topic or visiting a conservation area to participate in land management.

Adventure

Adventure forms a key focus for the curriculum and runs as a strand throughout. Whilst also living adventurously everyday and building adventure into specific curriculum topics, outdoor knowledge and skills appropriate to camp and explore safely are explicitly developed. These experiences could culminate in a celebration event and camp out at the end of the student's primary experience. This might be thought of as a rite of passage for the community.

Greening All Aspects of School Life

For the curriculum to have the greatest impact it is important for all aspects of school life to shift to be sustainable and zero carbon. This also runs deeper and connects with curriculum topics so that the school and local community can be used as case studies to explore. Many organisations help schools to do exactly this and the framework provides a checklist for schools to work through and analyse their own impact. Examples include:

- ☐ **Energy** - 100% Renewable Electricity
- ☐ **Travel** - Flight Free / Shift to electric minibuses / Active Travel
- ☐ **Food** - Mainly plant based / Engage with local sourcing
- ☐ **Nature (School Grounds)** - No Mow May / Promote Biodiversity
- ☐ **Waste** - Weigh Food Waste / Plastic Free / Anaerobic digester
- ☐ **Uniform** - Organic Cotton / Ethical supply chain
- ☐ **Procurement** - Nature based cleaning products

Schools might choose to follow the approach of "Use Less, Waste Less" and whatever you do use make sure it's from sustainable sources.

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