

Curriculum for a Changed Climate: A Tracked Changes Review of the Curriculum



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Introduction

What is Curriculum for a Changed Climate: A Tracked Changes Review of the Curriculum?

The project is a first-of-its-kind report to analyse the adequacy of climate education in the English National Curriculum for Key Stages 3 and 4. The report rewrites the curriculum, embedding sustainability and the climate crisis into a range of subjects from History to Science, to Design and Technology. Using a 'tracked changes' methodology the report suggests where and how the national curriculum can be amended to equip students with the knowledge and skills necessary to understand, and take action on, the climate crisis.

Teach the Future England has commissioned the report, which has been led by eminent academics. This has been done with input from teachers, educators and education experts, ensuring that the report is grounded in the realities of delivering the national curriculum and that the changes are feasible and deliverable, given adequate training is provided.

The report is a comprehensive guide for leaders, which outlines exactly how climate education can be integrated into the curriculum. This project clearly demonstrates that climate education shouldn't be siloed and restricted to certain subjects like Science and Geography. Instead, climate education should permeate the entire curriculum in order to equip students with the necessary tools to understand and deal with the climate crisis.

Many young people feel their education leaves them ill equipped to navigate the climate crisis. Without sufficient climate education, the onus is on them to educate themselves, which, at worst, results in misinformation and eco-anxiety. If the findings of this project are implemented, young people would be able to discuss and learn about our environment and sustainability in a safe, controlled environment, leaving them prepared for our ever-changing world.

**Maya Hoare
Teach the Future Volunteer Co-ordinator**

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Executive Summary

Why change the National Curriculum?

We need to ensure that all students are taught about the climate emergency and ecological crises in school. This means integrating these issues and sustainability more broadly across all subjects in the national curriculum. We therefore set out to adapt the secondary curriculum in England to ensure that it takes the climate and ecological crises seriously.

This is an important step in supporting wider educational change including the education of teachers, the assessment of students and the allocation of resources to support learning for a more sustainable world.

How we did it

Over forty subject specialists worked on this project, coordinated by a small team of sustainability education experts. We set about revising a range of subjects across the National Curriculum (Key Stages 3 and 4), tracking the changes as we made them. We looked at eight subjects in total.

The bulk of the work was carried out by Subject Specialist Teams comprising at least one teacher, a teacher educator and a researcher in each case. In this way we combined practical classroom experience with the wider academic context for each subject. A small group of academics formed a Reference Group to guide the process while others shared advice based on their experience in jurisdictions beyond England.

The results

Firstly, our Reference Group drafted the following ten guiding principles for our work:

1.	Build awareness of the interconnected nature of social injustice and the ecological crisis.
2.	Help students appreciate the interconnectedness of living and non-living things, of complex, non-linear interactions in time and space including within the human world.
3.	Recognise that sustainability is a pluriversal concept with no single definition and provide opportunities for different priorities in relation to sustainability to be revealed.
4.	Sustainability is interdisciplinary and transdisciplinary so it can be used to identify links, especially between Arts and Sciences.

5.	Take account of the impacts of eco-anxiety on student learning and wellbeing.
6.	Engender a sense of awe and wonder both in nature and in human ingenuity.
7.	Support the development of capabilities and dispositions for action principally through student-led action on locally relevant issues, working with others in the community.
8.	Encourage creative and critical thinking and a preparedness to confront an uncertain future.
9.	Provide opportunities for learning in/as/for/through the environment, particularly through different kinds of outdoor learning.
10.	Always allow for unforeseen learning e.g. emerging from pupils' own questions and the needs of the community.

We reviewed sustainability education elsewhere including meeting with researchers from other jurisdictions in the UK and beyond. We noticed how across Scotland, Wales and Northern Ireland, themes emerged that reflected our guiding principles; these include:

- **Encouraging active citizenship as a core purpose of the curriculum**
- **Presenting the curriculum as interconnected areas of learning rather than emphasising separate subjects**
- **Mentioning climate change explicitly as a crisis and an emergency that demands urgent attention**
- **Allowing greater teacher autonomy to translate the curriculum into classroom practice.**

Our work with this Jurisdictions Review Team reminded us that any curriculum is simply a text; it is part of a wider system for addressing sustainability in schools and beyond that needs to be complemented with other resources, not least a coherent programme of teacher professional development.

The Curriculum Aims

Turning to the National Curriculum itself, we considered its two current aims. The first of these suggests that pupils should be introduced to “the best that has been thought and said.” The idea that ‘the best’ can be the same for all pupils at all times is highly contentious so we modified this aim, echoing the original wording as closely as possible, to make it more inclusive while also reflecting the importance of the natural world that sustains us all:

The national curriculum provides pupils with an introduction to essential knowledge that they need to be educated citizens. It introduces pupils to what has been

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considered to be the best that has been thought and said, encouraging them to question this from different cultural, political, environmental and social perspectives, and helps engender a respect for our place in the natural world and an appreciation of human creativity and achievement in all its diverse forms.

The second aim states that there is more to learn beyond the statutory curriculum; we saw no need to change this.

The Subjects

A principal output of the project is a series of curriculum documents that mirror the national curriculum but clearly show where they have been modified to reflect the climate and ecological crises and sustainability more broadly.

As with the aims, we decided to stay as close as possible to the original text. Our specialist teams felt that the existing curriculum provided a fair coverage of the required knowledge and skills associated with their subject but also agreed that the curriculum neglected sustainability. It tends to be written in a way that is remote from the natural world and fails to see social, economic and environmental concerns as intimately inter-related.

The following lines give a flavour of some of the key changes that we made within each subject.

English

We emphasise the role of criticality more directly; stories and poetry are a lens for critiquing society and we recommend that teachers seek authors who present a diversity of perspectives and address the root causes of inequality and ecological destruction. Reflections on linguistic imperialism provide direct links to History.

Science

As well as understanding processes, we focus on the practical implications of these, including the effects on – and of – our actions. The Scientific Method is understood in relation to values and its universality is critiqued. Knowledge is interconnected within Science, the wider curriculum and students' lives.

Geography

This acknowledges the accelerating nature of climate change and biodiversity loss; creative expression is included to address emotional responses. The labels 'physical' and 'human' geography that reinforce an artificial separation between human activity and the rest of the natural world have been removed.

Art and Design

Working sustainably as well as creatively requires awareness of the provenance of materials and their safe disposal. Art can interpret ideas from other areas of the

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curriculum and include community collaboration. A diversity of artists including Indigenous perspectives are researched, often highlighting sustainability issues.

Design Technology

Sustainability is considered at all stages of the design process: the circular economy is highlighted, as is the need to involve end-users in the design process. Cooking takes account of the impact of different foodstuffs. Existing links to Mathematics and Science are expanded to other subjects.

History

Human-environment interactions are among the historical themes as History embraces a wider understanding of our changing relationship with the planet over time. Indigenous perspectives on Europe's colonial past and issues of land ownership and the environment are included, as is the Anthropocene.

Religious Studies

Human-environment relationships as viewed by the major religions are considered as well as Indigenous religions, which often feature a more holistic view of the world, of mental health and of the spiritual element of human-nature connectedness, all of which has implications for our own society.

PSHE & Citizenship

Here we advocate for an active approach to learning, suggesting models such as action competence to support children who want to investigate local environmental issues and make positive change in their communities. Rights and responsibilities at individual and corporate level are also featured.

For more information

To read the full report and see the curriculum documents complete with tracked changes, visit: www.teachthefuture.uk.

What students think

"Embedding climate change within the national curriculum would have largely increased my awareness of the issue and the urgency with which it must be addressed. Raising understanding of climate change early on, within education, will encourage students to communicate openly with each other, whether this be identifying possible responses or simply sharing concerns. Breaking these barriers and supporting each other from a young age would have been extremely beneficial for myself as I now navigate growing up in a world where such honest conversations and awareness can be rare in the everyday, without actively searching for those who are like-minded."

**Katherine, 22
Gateshead, England**

"It's imperative that students learn about the environmental impacts of the materials and practical skills they come across. Without this, current students have little concept of which materials they are most likely to use or be encouraged to use in their future design careers. Including this in the national curriculum would give future students an innate ability to create more sustainable, future-proofed products. In addition, students would be much more adept at critically evaluating whether a company's sustainability commitments are surface level or truly impactful.

Requiring future students to consider and attempt to implement the principles of circular economy when designing and making their product will further educate them on the importance of material choice and drive them to confront how their product will be disposed of. This critical stage in a product's life cycle is often overlooked or under considered by students under the current curriculum."

**Izzy, 20, on Design and Technology
Yorkshire, England**

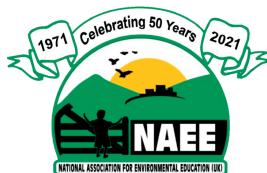
"I think this project is great as it shows how climate education needs to go beyond carbon emissions and recycling to empower students to participate and engage with the climate crisis."

**Maya, 22
Coventry, England**

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With thanks to all the teachers, educators, education experts and students who fed into this report, as well as to The Edge, National Association for Environmental Education (NAEE) and Students Organising for Sustainability (sos-UK) for all their support.



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