Climate Education in the Curriculum

From Early Years to Further Education in England

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Foreword

An increasing number of young people, like myself, are starting to feel the pressure that has been placed upon us through the inaction, ignorance and behaviour of previous generations. I feel that a deep-rooted responsibility to act to save species, to save lives, to save our planet has been unwillingly placed upon my generation's shoulders. However, this pressure I feel doesn't match the confidence I have in my knowledge and ability to play my part…

Like my peers, I have not been necessarily equipped with the knowledge to tackle these challenges that will continue to face us over the next years and decades of my life and career. I completed full-time education, spent years of my life in classrooms and behind a desk, yet somehow the curricula I learnt hardly taught me about the issues and solutions surrounding perhaps the most significant threat to humanity… The current curriculum studied by young people across England doesn't educate us on the climate and ecological emergency, and, depending on your subject preferences, you can nearly skip the relevant content entirely!

Therefore, I welcome the NCEAP Group's comprehensive report and hope that in the near future climate education, as demonstrated in the report, will be integrated across all subjects. The report has provided me with the positivity that - if implemented - future cohorts of young people will understand the issues facing our planet and also be equipped with the knowledge and skills to take desperately needed action.

Lisa Hoerning, Students Organising for Sustainability (SOS-UK)

Executive summary

Over recent years there has been much discussion both in England, in other nations of the UK and internationally on where and how Climate Education should be included in the curriculum. In this review, we focus on potential policy options that might allow the curriculum to include the quality Climate Education that young people have consistently advocated for. We focus on three non-mutually exclusive options:

- Where could Climate Education feature in the curriculum right now?
- With small changes to the curriculum, how could Climate Education provision be enhanced?
- Where could a more substantive rewrite of the curriculum be imagined?

Over recent years there has been substantive prior work on all areas that could be drawn upon by a future government seeking climate curriculum reform. We identify a number of positive and negative aspects of each of these approaches which place in tension the speed and complexity at which they could be implemented and the comprehensiveness of the resulting reform. We find, broadly, that all three of these options and hybrid approaches that incorporate aspects of all of them would be valid ways of tackling the urgent need for reform.

Although a substantive curriculum reform would be the 'gold standard' in the long term, significant and effective improvements could be achieved more rapidly with either of the other approaches, if teachers and schools were given support and incentive to implement them.

Introduction and the purpose of this report

Climate change poses an unprecedented challenge to the global community, being one of the most significant issues of our time. Its repercussions affect all aspects of sustainable development, including human health and well-being, food security, economic growth, natural resources, and biodiversity.

Inspired by young people, many countries have recently been considering how best to incorporate Climate Education into their educational curricula so that all citizens are best prepared to mitigate and adapt to the changing climate. Climate Education comes with unique and exciting opportunities. It provides not just the opportunity to acquire the broad knowledge that underpins our understanding of the climate system and the human role in shaping it, but also key life skills and insights into global citizenship since climate change is and will remain an interconnected global challenge. All governments also recognize the coming opportunity of the green industrial revolution. The Climate Change Committee (2023) estimated that by 2030 the Net Zero transition could create between 135,000 and 725,000 net new jobs in low-carbon sectors, such as buildings retrofit, renewable energy generation and the manufacture of electric vehicles for which school leavers will need appropriate skills and awareness.

In this report, as part of the work of the National Climate Education Action Plan (NCEAP) group, we seek to synthesise recent work that has sought to understand how climate change could already be implemented into the English National Curriculum (henceforth the curriculum), how small changes might allow greater climate literacy to be incorporated by educators and how more radical reform might improve things still further. We focus on England because education is a devolved matter and we seek to speak directly to the

Department for Education's Sustainability and Climate Change Strategy and its stated vision that 'the United Kingdom is the world-leading education sector in sustainability and climate change by 2030.'

Our aim is that this synthesis is useful to future governments who seek to consider how best to design interventions in curriculum policy that will help meet the overall aims of better Climate Education. We also believe that many of the recommendations are transferable to education systems in the other Nations of the UK.

We acknowledge that curriculum is only one part of the school system, with governance, the school estate, careers and interaction with the wider community being related and complementary components of delivering a whole-setting approach to climate change and sustainability.

How we synthesised evidence

Our review is built on the complementary work of many different organisations who have set out to address different aspects of the role of Climate Education in the curriculum in England. The authors arranged the synthesis through a series of meetings organised by the NCEAP group during the latter half of 2023, culminating in an in-person meeting in Reading in January 2024. This draft synthesis was then reviewed and discussed by the NCEAP group meeting in March and published following that review.

Our work is based on prior research, encompassing various sources such as:

- The Natural History Museum (NHM) rapid evidence review (2022)
- Teach the Future Tracked Changes (2022) which commissioned academics and teachers across the country to rewrite the English national curriculum in a way that 'course corrects' and incorporates climate change, sustainability, and the environment into subjects across the board.
- Royal Meteorological Society, Opportunities for Enhanced Climate Education (2022) which asked climate change experts from a wide range of subject disciplines to look for links to climate change in the current English GCSE specifications and KS3 curriculum.
- The Sustainability and Climate Change Education (2022) report from Climate Adapted Pathways for Education (CAPE).
- NCEAP STEM based curriculum mapping group including TIDE, EngineeringUK, Sustainability Physics, and UCL which produced two comprehensive and structured STEM competency frameworks. 'Climate Science Mapping' focusses on the science underpinning Climate Change and also explores its impacts. 'Tackling Climate Change Mapping' addresses all the concepts needed to get the world to Net Zero.
- EAUC's 'Realigning Curriculum for the Future' series which aims to create collaborative networks of teaching staff who are working to embed Education for Sustainable Development into their curriculum, in the same subject across different institutions, through facilitated discussion and presentations.
- Education and Training Foundation's 'Leadership for ESD in the FE curriculum' research which showcases those who are already working to ensure their learners develop the relevant skills, knowledge, behaviours and agency to help them

contribute positively to sustainability goals through numerous case studies. It also contains a quantitative audit for explicit sustainability content found in qualification specifications.

- 'Environmental Education & the Sustainable Development Goals' produced by the National Association for Environmental Education (2019) which maps curriculum opportunities for the introduction of environmental education in the Primary curriculum.

In addition to these projects that seek to map opportunities across the whole curriculum, many organisations have produced resources specifically aligned to parts of the curriculum including those collated on the National Education Nature Park hub.

While beyond the scope of this synthesis, we recognise that being able to operationalise quality Climate Education for all depends on more than the curriculum specification itself. The crucial role of educator training and development is recognised in the DfE strategy and in the NCEAP. The University of Reading Initial Teacher Education Framework and Teaching for Sustainable Futures professional development programme at UCL are two examples of programmes aimed at equipping educators with the skills necessary to deliver quality Climate Education.

Our approach

Our discussions and the previous evidence highlighted the many different approaches that different prior work has taken to thinking about how and where Climate Education could or should feature in the curriculum across the whole range of subjects. The report is structured around three key questions reflecting the work we have attempted to synthesise:

- Where does or could Climate Education feature in the curriculum right now?
- With small changes to the curriculum how could Climate Education provision be enhanced?
- With a more substantive rewrite or reimagining of the curriculum how could Climate Education provision be enhanced?

In addition to our high-level commentary on these questions in the following sections, we also provide detailed mapping across key stage and subject in the appendices. We also summarise our collective view of the positive and negative aspects of a curriculum strategy that focusses on the current curriculum, on making small changes and on more substantive reform, at the end of each section.

We are, of course, aware that the distinctions between these different stages are unlikely to be as neatly and easily defined in practice and that hybrid approaches that sit between our three chosen options could equally be practical and possible. Nonetheless these questions help us understand what could be possible.

What do we mean by Climate Education?

Education for Sustainable Development (ESD) and Climate Education are interrelated but distinct, with Climate Education being one of the thematic areas of ESD. In this report, we focus primarily on Climate Education defining it as quality, fit for purpose education that supports students and young people to understand local and global environmental challenges and how to take individual and collective action to address them. Quality Climate Education has a holistic view of sustainability that encompasses how environmental challenges intersect with society. It covers the causes of, the impacts of and the solutions to climate change.

This definition is informed by the Mock COP, the Teachers COP and the Greening Education Partnership.

The rest of this section looks at the attempts of various international bodies to provide some structure to Climate Education. Each organisation is multi-faceted and we acknowledge that they provide far more than a framework but, in this section, we are only investigating those aspects that provide a Climate Educational framework for future curriculum mapping projects.

There are a number of examples of existing competency frameworks or tools which have provided evidence for our assessment including:

- The European Commission's Joint Research Centre (JRC) identifies a set of sustainability competences to feed into education programmes to help learners develop knowledge, skills and attitudes that promote ways to think, plan and act with empathy, responsibility, and care for our planet and for public health.
- The Greening Education Partnership (GEP) focusses on the development of a Quality Standard for Green Schools with a holistic approach to Education for Sustainable Development. Phase 2 of the Greening Curriculum Guidance is available. It is very wide ranging with an integrated ESD and Climate Education approach, based around the concepts of Environment (Climate Science, Ecosystems and Biodiversity), Society (Resilience Building, Climate Justice) and Economy (Carbon Economies, Sustainable Lifestyles). Their proposed curriculum structure can be found in Appendix 4.
- The Office for Climate Education (OCE) aims to organise strong international cooperation between scientific bodies, NGOs and educational institutions to educate present and future generations about climate change, to equip them with the tools of understanding and action to protect them from preconceptions, ideologies or irrationality, and to prepare them to live in a changing world.
- The Royal Meteorological Society (RMetS) have produced a tool which represents graphically the links between circa 280 climate change topics ranging from climate science, economics and social science to wider sustainability and social justice issues. Although the tool does not impose a hierarchy, it does provide a very comprehensive climate change lexicon for curriculum planners.
- From an industrial point of view, a number of organisations have attempted to map the skills that young people need to acquire to enter future jobs in the green economy (e.g. EngineeringUK, Thunder Said Energy).

Our summary of detail and structure of these frameworks is contained in the table below:

	Structure Low	Structure Medium	Structure High
Detail Low		JRC	
Detail Medium	OCE		GEP
Detail High	RMetS		

No pre-existing framework is both highly structured and highly detailed. The most comprehensive framework is provided by UNESCO's GEP and we take this as the primary basis for our assessment of the first two questions.

Climate Education as a separate subject

An alternative approach to those we explore in the report would be to introduce a new subject specifically about climate change to the curriculum. While some other countries have taken this approach, we think this misses the opportunity to demonstrate the relevance of knowledge and skills developed in all subjects to students' climate literacy (as well as a wide range of other contexts) and making best use of teacher expertise. In addition, especially if optional, it would result in greater disparity between young people. Students themselves want Climate Education to be incorporated across all subjects.

Where could Climate Education feature in the curriculum right now?

This option focusses on where, without changing the wording of the English National Curriculum or of exam specifications, climate change-related content could be integrated into taught provision leading to an improvement in what is currently being delivered in most settings. This includes places where climate change and related issues are explicitly mentioned, as well as places where, with support and without increasing the volume of content covered, teachers could demonstrate to students that what they are already learning is relevant to their understanding of and ability to communicate about climate change as well as preparing them for potential green careers. This might be through appropriate choice of contexts and case studies as well as other exemplification, assessment or stimulus materials.

Many organisations have undertaken research into this question [Appendix 1] although we note that they have a broad range of aims and definitions. For example, some focus exclusively on climate change, whereas others look more broadly at ESD. The most significant of the existing studies include the Natural History Museum's Rapid Evidence Report, as well as work carried out by the RMetS, NAEE, FED, and Common Seas. Between them, most levels (from EYFS to FE) and subjects have been reviewed. However, we note the following gaps in research:

- KS5/ FE: The diversity of routes and qualifications makes mapping at this level complex. Notable gaps include T Levels and Apprenticeships.
- At KS4, research has focussed on the National Curriculum and GCSE specifications and there are gaps such as the ASDAN courses.
- Careers: there is currently a lack of review of climate change opportunities presented by the Gatsby benchmarks.

- Extra-Curricula: there is currently a lack of review of the opportunities for Climate Education within extra-curricular provision in schools.
- The new Modern Language GCSE specifications.
- The forthcoming Natural History GCSE.

In almost all the curriculum areas where studies have been conducted, it has been found that opportunities exist for demonstrating that what students are already learning is linked to their understanding of climate change. The sole exception is GCSE PE. However, we also note the significant absence of recommendations for students with SEND.

The studies highlight that explicit mention of climate change is mostly found in Secondary Geography, Chemistry, Design Technology and Food Studies. However, opportunities are implicit throughout all other subjects' content at all levels. It may be easier for teachers to imagine, plan and implement some of these opportunities at EYFS and Primary key stages, where cross-disciplinary and interdisciplinary teaching is more often found. Some optional GCSE subjects offer students the specific competencies needed to take appropriate climate action (both adaptive and mitigative) in their future careers and personal lives.

We also note that the Gatsby careers benchmarks include skills developments which provide a way for Climate Education to enter the curriculum. We are not aware of any attempt to map Climate or Green skills against these benchmarks, but this could be a very useful addition to the curriculum mapping that has already been completed.

There are examples of multi-academy trusts (e.g. REACH2, Herts Academy Trust) and local authorities (e.g. Brighton and Hove, Morecambe Bay and Leicester) as well as several organisations such as the Ministry for Eco Education and Keep Britain Tidy (Eco-Schools) who have successfully improved Climate Education within the framework of the current curriculum. The National College also provides a range of webinars on Climate Education across curriculum areas in Primary and Secondary for members.

Positive aspects

- Modifications to teaching practice can be implemented rapidly and widely.
- Many classroom resources and teacher-support materials already exist, mapped to the current curriculum.
- No political or other mandate is needed for the change.
- Modifications may be less overwhelming to teaching professionals than curriculum change.
- These modifications may drive wider innovation.
- Promoting such modifications could encourage teacher professionalism, by communicating trust in educators to improve their practice rather than by being prescriptive.
- Risks are low in knowing "we can do something now", whilst minimising disruption and cost.
- Modifications will raise the profile of the need for greater changes, when possible, to further enhance Climate Education.
- Strengths lie in improving provision of knowledge.

Negative aspects

- There is significant potential for unequal and inconsistent approaches and implementation.
- May distract from the need to have a holistic approach to progression and sequencing across levels, interdisciplinarity (by which we mean that one subject can use a word or concept knowing that it has already been taught in another subject) and pedagogy, resulting in missed opportunities for wider change.
- Potential for widening equalities gaps given the focus of the setting or community and the resources that the school has available, particularly for teacher CPD.
- Relies upon the capacity of educators and education settings to innovate in a resource and time constrained system.
- May not be enough to meet even minimal requirements in terms of breadth of content or depth of teaching to develop competencies for students' personal and professional lives.
- Lines of accountability for provision would be less clear where this is not dependent on content entering into the assessment, regulatory or inspection regimes.
- Has the potential for exacerbating climate anxiety/apathy or for not addressing the anxiety/apathy that already exists if not included as a fully integrated approach with significant CPD intervention and quality assurance approaches for teaching resources.
- It may also miss opportunities to fully link curriculum learning to careers, as required by Gatsby Benchmark number 4.
- May not address the large skills gaps relevant to the growing green economy.
- May not address the soft skills gaps for developing local and global citizenship, including cooperation, collaboration, critical thinking, empathy, justice, local-indigenous knowledge.

Communication and teacher support would be key to achieving modifications of this sort. A targeting of resource providers to encourage them to include more quality-assured climate-based examples and classroom materials could help to deliver this, as well as working with the examination boards. Building on the RMetS review, the AQA have, for example, looked at ways in which teachers of Trilogy Science GCSE can cross reference and sequence their teaching relevant to climate change across physics, chemistry and biology topics to increase student awareness of the holistic nature of the subject.

The option of promoting and resourcing climate change teaching opportunities within the current curriculum is a valid choice which could, with adequate support and incentivisation (e.g. through inspection and assessment), lead to rapid and significant improvements in the climate literacy of school leavers.

With small changes to the curriculum, how could Climate Education provision be enhanced?

There are a multitude of opportunities to enhance current curriculum specifications to better include Climate Education topics and the skills needed for the future green economy [Appendix 2].

The 'Curriculum for a Changing Climate' project commissioned by student-led Teach the Future England shows how the existing curriculum can be amended to equip students with the knowledge and skills necessary to understand, and take action on, the climate crisis. The Tracked Changes project has been led by academics, with input from teachers, educators and education experts, who were guided by ten principles grouped under the themes of Interconnectedness, Optimism and Solutions-driven approaches, and Transformative Learning. Guides published as of April 2024 cover ten subjects at KS3 and KS4 (GCSE) levels: Art and Design, Business, Design and Technology (D&T), Economics, English, Geography, History, Modern Foreign Languages, Maths, and Science, and recently completed eleven subjects at Primary level (KS1 and KS2), which additionally include Computing, Music and Physical Education. Versions of more radically transformed curriculums for Economics and Maths for KS3 and KS4 have also been produced. The campaign has secured some funding to start the review of some A-level subjects (KS5). In almost all cases, it is possible to make relatively small changes to the curriculum that allow a significant improvement in Climate Education.

In conjunction with curriculum change, significant improvements could be achieved through making the DfE's Sustainability and Climate Change Strategy a requirement rather than guidance, with compliance assessed by Ofsted.

Positive aspects

- Whilst a full curriculum overhaul would take years to bring about, a small changes model could be delivered very quickly. Given the urgency of improving Climate Education, approaches that can proceed more quickly should be prioritised.
- Changes to curriculum will appear as minor amends, whilst the core framework will remain familiar and accessible to educators. This will overcome many of the barriers which may be foreseen by senior leaders, and teachers are more likely to be receptive to the changes.
- Only minor alterations to Initial Teacher Training (ITT) required, or to the day-to-day teaching in schools.
- Some settings will be able to implement these recommendations already, particularly at EYFS, KS1/ 2 and 3, in Academies and the Independent Sector.

Negative aspects

- Such changes will lead to even more content in a curriculum which is arguably already overloaded.
- May not be enough to meet requirements, in terms of either breadth of Climate Education content or depth of teaching, and not address future skills gaps.

- A criticism of the approach of working within the existing National Curriculum is that there is not enough alignment of Climate Education concepts between subjects or cross-curricular learning – it is not a holistic approach.
- Some changes are easier to deliver than others and will be harder for some subject specialists to deliver without appropriate ITT and continuing professional development.
- A moderate reform like this may be less attractive to some political end educational leaders with a desire for a comprehensive change.

Where could a more substantive rewrite of the curriculum be imagined?

Some studies have identified opportunities for a substantive rewrite of the curriculum to enhance current subject specific curriculum specifications to better include Climate Education topics and the skills needed for the future green economy [Appendix 3].

More generally, the Greening Education Partnership and COP28 Declaration on the Common Agenda for Education and Climate Change has put more substantive Climate Education curriculum reform and development high on the international agenda. Substantive review of curriculum in relation to Climate Education could be part of a wider curriculum reimagining as has occurred in Wales through the Curriculum for Wales and in Scotland in the Learning for Sustainability Action Plan as part of Scotland's Curriculum both of which thread broader sustainability concerns throughout the curriculum. Alternatively, an approach that more narrowly reviews the curriculum in the context of Climate Education has been attempted in, for example, Italy and New Zealand as mandatory additional parts of the curriculum.

We note that the DfE's Sustainability and Climate Change Strategy recognises that "Green jobs will not be niche. We anticipate that sustainability and climate change will touch every career" and commits "...to inspire young people to choose career paths that support the transition to net zero". Also, the Gatsby Career Guidance Benchmarks call for "Linking curriculum learning to careers". Therefore, if this approach is preferred, we recommend starting from the key concepts, skills students will need for their future careers.

A clear focus on green careers would help align educational reforms to the desperately needed future green workforce.

The NCEAP STEM mapping group has done substantive mapping of key knowledge areas within the STEM subjects that could be used as the basis of a structured curriculum redesign. The RMetS climate change concept map also provides another substantive tool for Climate Education curriculum planning.

Any substantive reform of the English curriculum should be informed by Greening Curriculum Guidance being produced by GEP [Appendix 4] which draws on a number of youth-led declarations. It should be regulated by Ofqual.

Positive aspects

- This approach would be well aligned with other countries for example through GEP.
- A fundamental change to the curriculum would be the gold standard way of ensuring a plan for delivery of the necessary Climate Education for young people.

- Potential to equip young people for their future lives and local and global citizenship.
- Develop a national workforce capable of exporting their skillsets to help the rest of the world.
- Curriculum learning can be directly linked to careers with a solutions-focussed approach.
- Potential for a curriculum which is open to continuous update with current examples of understanding, applications and developments.
- Opportunity to replace existing classroom resources with up-to-date ones which are of higher quality and relevance.
- Potential for an interdisciplinary or even cross-disciplinary approach within some or all subjects and levels.
- Coherent progression in Climate Education from early years to higher education.
- The framework is aligned with what is required for a future green workforce.
- Nationally curated material will deliver quality education to all socio-economic groups and optimises resources for SEND as well.
- Potential for a curriculum which is open to regionalisation and framing within a local, relevant context for learners.
- There are some subject areas where it is more difficult to deliver on quality Climate Education with no or minor changes to the current curriculum, for example, Economics. Where this applies, a full rewrite of the curriculum framework would be necessary. In fact, the 'Curriculum for a Changing Climate' project has already produced examples of such transformed curriculums for KS3 and KS4 Maths and Economics.

Negative aspects

- Long-term curriculum reform is complex, expensive, time consuming, and needs sufficient commitment from all stakeholders, including the qualification and assessment sector.
- Time required both for development and deployment and for staff/leaders to develop provision may be too much.
- Not many classroom resources or training resources for teachers aligned to the new curriculum will be available initially, which will particularly impact non-expert teachers. However, many organisation and partnerships are well-placed to develop and supply these.
- Curriculum reform doesn't always achieve its stated aims.
- Curriculum reform risks alienating teachers.

Glossary of Acronyms Used

ASDAN Award Scheme Development and Accreditation Network
CAPE Climate Adapted Pathways for Education
COP Conference of Parties
CPD Continuing Professional Development
DfE Department for Education
EAUC Environmental Association for Universities and Colleges
ESD Education for Sustainable Development
ETF Education and Training Foundation
EYFS Early Years Foundation Stage
FE Further Education
FED Foundation for Education Development
GCSE General Certificate of Secondary Education
GEP Greening Education Partnership
ITT Initial Teacher Training
JRC European Commission's Joint Research Centre
KS[1,2,3,4,5] Key Stage [1,2,3,4,5]
NAEE National Association for Environmental Education
NCEAP National Climate Education Action Plan
NHM Natural History Museum
OCE Office for Climate Education
RMetS Royal Meteorological Society
SOS-UK Students Organising for Sustainability UK
STEM Science Technology Engineering and Maths
TIDE Transition through Inclusion and Diversity for Equity
UCL University College London

Appendix 1: Mapping climate into the current curriculum

Now - what could be taught within the current curriculum	Communication and Language	Physical Development	Literacy	Understanding the World	Arts and Design	Personal, Social, Emotional, Health, Relationships	Mathematics/ Statistics	English	Science
Early years	NHM Rapid Evidence Review (NHM RER)	NHM RER	NHM RER	FED	NHM RER	NHM RER	NHM RER		
KS1/ equivalent						FED	NAEE	NAEE NHM RER	Common Seas FED NAEE NHM RER
KS2/ equivalent							NAEE	Common Seas NAEE NHM RER	Common Seas FED NAEE NHM RER
KS3/ equivalent					NAEE NHM RER RMetS unpublished		NAEE RMetS unpublished	NAEE NHM RER RMetS unpublished	Common Seas FED NAEE NCEAP STEM NHM RER RMetS unpublished
KS4/ level 1/ level 2/ equivalent					NAEE NHM RER RMetS Opportunities report	RMetS unpublished for some Cambridge nationals	NAEE RMetS Opportunities report	NAEE NHM RER RMetS Opportunities report	AQA for trilogy science (publication imminent) FED NAEE NHM RER RMetS Opportunities report
A level and other level 3 qualifications					Education and Training Foundation FED	Education and Training Foundation	Education and Training Foundation	Education and Training Foundation	Education and Training Foundation FED RMetS unpublished - some Cambridge advanced nationals

Now - what could be taught within the current curriculum	Design and Technology	History	Geography/ Geology	Music	Physical Education	Ancient/Modern Foreign Languages	Religious Education	Citizenship	Computing
Early years									
KS1/ equivalent	Common Seas NAEE		Common Seas FED NAEE NHM RER					Association for Citizenship Teaching (ACT) FED NHM RER	
KS2/ equivalent	Common Seas NAEE NHM RER		Common Seas FED NAEE NHM RER		FED			ACT FED NHM RER	
KS3/ equivalent	Common Seas FED NAEE NHM RER RMetS unpublished	FED NAEE RMetS unpublished	Common Seas FED NAEE NCEAP STEM NHM RER RMetS unpublished	NAEE RMetS unpublished	FED NAEE NHM RER RMetS unpublished	NAEE RMetS unpublished	NAEE	ACT FED NAEE NHM RER RMetS unpublished	NAEE RMetS unpublished
KS4/ level 1/ level 2/ equivalent	FED NAEE NHM RER RMetS Opportunities report RMetS unpublished for some Cambridge nationals	NAEE RMetS Opportunities report	FED NAEE NHM RER RMetS Opportunities report	NAEE RMetS Opportunities report	NAEE NHM RER RMetS unpublished for GCSE RMetS unpublished for some Cambridge nationals	NAEE RMetS Opportunities report	NAEE RMetS Opportunities report	NAEE NHM RER RMetS Opportunities report	FED NAEE RMetS Opportunities report RMetS unpublished for some Cambridge nationals
A level and other level 3 qualifications	Education and Training Foundation RMetS unpublished - some Cambridge advanced nationals	Education and Training Foundation	Education and Training Foundation FED	Education and Training Foundation	Education and Training Foundation	Education and Training Foundation	Education and Training Foundation	Education and Training Foundation	Education and Training Foundation RMetS unpublished - some Cambridge advanced nationals

Now - what could be taught within the current curriculum	Business	Economics	Engineering	Food	Psychology	Sociology	Drama	Film/Media Studies	Careers (Gatsby for example)
Early years									
KS1/ equivalent									
KS2/ equivalent									
KS3/ equivalent									
KS4/ level 1/ level 2/ equivalent	NAEE RMetS Opportunities report RMetS unpublished for some Cambridge nationals	NAEE RMetS Opportunities report	RMetS Opportunities report RMetS unpublished for some Cambridge nationals	RMetS Opportunities report	RMetS Opportunities report	RMetS Opportunities report	RMetS Opportunities report	RMetS Opportunities report	
A level and other level 3 qualifications	Education and Training Foundation FED (for National Extended Diploma in Business)	Education and Training Foundation	Education and Training Foundation RMetS unpublished - some Cambridge advanced nationals	Education and Training Foundation	Education and Training Foundation	Education and Training Foundation	Education and Training Foundation	Education and Training Foundation	Education and Training Foundation

Appendix 2: Mapping where small changes could be made

Soon - small changes in the current curriculum which would allow for better climate change education	Communication and Language	Physical Development	Literacy	Understanding the World	Arts and Design	Personal, Social, Emotional, Health, Relationships	Mathematics/ Statistics	English	Science
Early years	FED	FED	FED	FED	FED	FED	FED		
KS1/ equivalent					FED		FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate
KS2/ equivalent					FED		FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate
KS3/ equivalent					FED Teach the Future: curriculum for a changing climate	Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate
KS4/ level 1/ level 2/ equivalent					FED Teach the Future: curriculum for a changing climate	FED	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate
A level and other level 3 qualifications									

Soon - small changes in the current curriculum which would allow for better climate change education	Design and Technology	History	Geography/ Geology	Music	Physical Education	Ancient/Modern Foreign Languages	Religious Education	Citizenship	Computing
Early years									
KS1/ equivalent	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED		FED Teach the Future: curriculum for a changing climate
KS2/ equivalent	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED		FED Teach the Future: curriculum for a changing climate
KS3/ equivalent	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED	FED	FED Teach the Future: curriculum for a changing climate	FED	FED	FED
KS4/ level 1/ level 2/ equivalent	FED Teach the Future: curriculum for a changing climate	Teach the Future: curriculum for a changing climate	FED Teach the Future: curriculum for a changing climate	FED	FED	FED Teach the Future: curriculum for a changing climate	FED	FED	FED
A level and other level 3 qualifications									

Soon - small changes in the current curriculum which would allow for better climate change education	Business	Economics	Engineering	Food	Psychology	Sociology	Drama	Film/Media Studies	Careers (Gatsby, for example)
Early years									
KS1/ equivalent									
KS2/ equivalent									
KS3/ equivalent									
KS4/ level 1/ level 2/ equivalent	Teach the Future: curriculum for a changing climate	Teach the Future: curriculum for a changing climate	Teach the Future: curriculum for a changing climate			FED			
A level and other level 3 qualifications									

Appendix 3: Mapping where a more substantive rewrite could be imagined

Later - preparing for a new curriculum	Communication and Language	Physical Development	Literacy	Understanding the World	Arts and Design	Personal, Social, Emotional, Health, Relationships	Mathematics/ Statistics	English	Science
Early years				FED		FED			
KS1/ equivalent				FED		FED PSHE foundation			Primary Curriculum Advisory Group report
KS2/ equivalent						PSHE foundation			Primary Curriculum Advisory Group report
KS3/ equivalent						PSHE foundation	Teach the Future: curriculum for a changing climate		NCEAP STEM
KS4/ level 1/ level 2/ equivalent						PSHE foundation	Teach the Future: curriculum for a changing climate		NCEAP STEM
A level and other level 3 qualifications					FED		FED		FED

Later - preparing for a new curriculum	Design and Technology	History	Geography/ Geology	Music	Physical Education	Ancient/Modern Foreign Languages	Religious Education	Citizenship	Computing
Early years									
KS1/ equivalent									
KS2/ equivalent									
KS3/ equivalent									
KS4/ level 1/ level 2/ equivalent									
A level and other level 3 qualifications									

Later - preparing for a new curriculum	Business	Economics	Engineering	Food	Psychology	Sociology	Drama	Film/Media Studies	Careers (Gatsby, for example)
Early years									
KS1/ equivalent									
KS2/ equivalent									
KS3/ equivalent									
KS4/ level 1/ level 2/ equivalent		Teach the Future: curriculum for a changing climate							
A level and other level 3 qualifications									

Appendix 4: Curriculum structure UNESCO – Greening Education Partnership

Domain: ENVIRONMENT
Key concept 1: Climate Science
1.1. Weather, Climate and Climate Change
1.2. Greenhouse Gases
1.3. The Carbon Cycle
1.4. The Water Cycle
1.5. Avoiding Pollution and Conserving Resources
1.6. Renewable Energy
1.7. Science and Climate Change
Key concept 2: Ecosystem and Biodiversity
2.1. Natural Environments: Ecosystems and Biodiversity (Land and Ocean)
2.2. The Evolution of Biodiversity Through Time and in the Future
2.3. Ecosystems, Biodiversity and Ecosystem Services
2.4. Human Relation to Nature: Domestication and Agriculture
2.5. Human-Induced Biodiversity Loss and its Consequences
2.6. Reconnecting with Nature and Protecting Nature

Domain: SOCIAL
Key concept 3: Resilience Building
3.1. Social Impacts of Climate Change
3.2. Navigating Climate Impacts: Strategies for Safety and Resilience
3.3. Climate Anxiety and Constructive Coping
3.4. Strength in Interconnectedness
3.5. Urgency and Community Action
3.6 Tacking Climate Mis/Disinformation
Key concept 4: Climate Justice
4.1. Contemporary Manifestations
4.2. Social Determinants
4.3. Historical Economic and Political Processes
4.4. Transformed Futures

Domain: ECONOMY
Key concept 5: Post-Carbon Economies
5.1. Economic Growth and Development
5.2. Post-Carbon Economy and Everyday Life
5.3. Climate Change and Economics
5.4. Energy Consumption and Carbon Emissions
5.5. Our Roles in a Post-Carbon Economy
Key concept 6: Sustainable Lifestyles
6.1. Engagement with Nature
6.2. Renewable Energy Use
6.3. Responsible Consumption
6.4. Sustainable Living Spaces
6.5. Sustainable Mobility
6.6. Sustainable Diets
6.7. Sustainable Waste Practices