Embedding climate change education in the primary curriculum

▲ **Figure 1** Outdoor learning is part of the Eastwood curriculum

Mark Whittaker outlines the importance of taking learning outside the classroom and using a knowledge-first approach to planning and teaching

As the impacts of climate change become more visible and tangible, primary educators must play a leading role in shaping a curriculum that aligns with engaging with this agenda. During my year working alongside colleagues across England, through a professional development programme I undertook – CAPE *Climate Wise Schools* (Teacher Development Trust, 2023), it became clear to me how influential educators can be in embedding climate change education into everyday teaching and learning.

Children and young people are not only inheriting the consequences of climate change, but they are also the future stewards of our planet. Embedding climate change in education is no longer optional: it is essential. According to the Intergovernmental Panel on Climate Change (IPCC, 2023), education is a key tool in climate adaptation, equipping young people with the skills and knowledge to respond to environmental challenges. If we are to prepare pupils to thrive in an increasingly unpredictable world, climate education must be central to our pedagogy and curriculum planning.

NSAT and the Green Curriculum

At Northern Star Academies Trust (NSAT), one of our core priorities is to empower children and young people to become changemakers for a sustainable future. NSAT promotes a Green Curriculum that weaves climate change through subject areas, supports outdoor learning, and nurtures environmental stewardship. This approach enables children to engage in real-world learning, better understand climate issues and take meaningful action within their communities.

I co-chair NSAT's Green Futures Board, alongside a colleague from one of our secondary schools. This platform brings together leaders from across our schools to share ideas, challenges and opportunities for embedding climate education. One standout project involved a secondary art teacher collaborating with a primary colleague to create artwork inspired by climate and the local environment – a powerful example of cross-phase enrichment.

This work has contributed to a tangible shift in culture across NSAT. Climate literacy is beginning to be part of the ethos of our schools. Staff training days now include climate-change workshops. Class assemblies

and school newsletters regularly highlight green initiatives. With assistance from specialist colleagues from across other trusts, and using the skill set of staff across NSAT, there is a growing awareness among all stakeholders, including governors and parents, who are more engaged in the journey. The growing awareness and participation signal a shared commitment to this vital cause as something that is of great importance.

The role of outdoor learning

Outdoor and experiential learning is central to our approach. At my school, Eastwood Community School in Keighley, West Yorkshire, outdoor learning is not a bolt-on but a key part of the curriculum. Over time, we have developed an outdoor learning centre and appointed a dedicated manager. This provision links directly to curriculum objectives: from habitats in science to map skills in geography and local heritage studies. These curriculum links make this more meaningful and coherent, sequenced to meet the curriculum and learner needs, ensuring that the potential of outdoor learning does not become diluted.

The mental health benefits of outdoor learning are well-documented. It improves wellbeing, fosters resilience, and enhances ecological literacy (Waite *et al.*, 2016). UNESCO also reports that such education increases environmental awareness, teamwork and self-efficacy. Kellert (2002) notes that emotional connection to nature is a strong predictor of pro-environmental behaviour – an outcome we consistently observe at Eastwood.

▲ **Figure 2** Developing hinterland knowledge of the seasons

One particularly successful partnership has been with Let's Learn Moor, based at the Bolton Abbey Estate (https://basc.org.uk/lets-learn-moor). This initiative educates children about countryside conservation, moorland restoration and the importance of protecting biodiversity. These experiences strengthen curriculum links, while nurturing children's sense of place and responsibility.

In addition, teachers have observed significant incidental learning, from spontaneous scientific inquiry during nature walks to rich descriptive writing sparked by seasonal changes. Skilled outdoor educators are key to maximising this potential. Our next step is to provide further training for all staff to plan and deliver high-quality outdoor learning linked explicitly to the current themes mapped out.

Empowering teachers and schools

Teachers from across NSAT who have been involved with Climate Adapted Pathways for Education (CAPE, www.capealliance.org.uk), and other organisations such as Learning through Landscapes (https://ltl.org.uk), and NSAT's Green Futures Board, tell me that they feel more empowered to drive curriculum change. Each school's development plan now includes a focus on the green curriculum and climate change. Leaders are encouraged to review existing practice, identify meaningful links to climate themes and embed these across subjects.

Professional development continues to be a key focus. Building staff knowledge and confidence to deliver meaningful climate change education is essential for long-term impact. We are working to ensure all teachers understand the vital role they play in embedding sustainability across the curriculum. This culture shift is ongoing and must be approached through small, incremental steps. As with any significant change, sustained progress relies on a shared vision and consistent support.

We also work with local and national organisations to enhance provision. Many groups employ former teachers who are passionate about environmental education, providing additional expertise. Governors have been instrumental in connecting us with businesses whose Corporate Social Responsibility (CSR) programmes have funded allotment development,

and volunteering projects. The essential element in the success of partnerships has been taking the time to ensure that they are meaningfully linked to the curriculum need.

Pupil voice and agency

Eastwood's Eco Council, led by pupils and supported by staff, exemplifies student-led change. Initiatives such as walking buses, community allotments, and anti-idling campaigns are driven by children's ideas. These initiatives foster a sense of agency and highlight how young people can influence their immediate environment. According to Chawla and Derr (2012), early exposure to environmental education fosters pro-environmental attitudes and behaviours, something we see in action daily.

In one project, the Eco Council led an audit of school energy use and presented their findings to governors, prompting upgrades to lighting and heating systems. In another, pupils campaigned for a local recycling point, collecting signatures and engaging with local councillors. These experiences build confidence, civic engagement and real-world problem-solving skills.

We know that these do not bring about a great deal of mitigation of the effects of climate change, but alongside the coherent curricular approaches, they enable the children and young people to feel they are involved in collective action and are being listened to.

Farm twinning: connecting to the land

Farm twinning has been a major success across the NSAT. Children visit working farms, learning about sustainable agriculture, food miles and biodiversity. These hands-on experiences – from milking cows to cooking from scratch – deepen understanding of food systems and land management. Many farms share how they have adapted traditional methods into more sustainable practices, which helps children see climate solutions in action.

At one farm, pupils explored renewable energy sources used to power the dairy, while at another they took part in rewilding projects to restore native habitats. These experiences are invaluable in fostering a sense of interdependence between people, food and the environment. As one child put it, '*I didn't know farms could help fight climate change*'.

▲ **Figure 3** Children working on the school allotment

Curriculum Implementation and Impact

Using the EEF's *A school's guide to implementation* (Sharples *et al.*, 2024), we have approached climate education systematically. We asked: '*How can we make this work within an already full curriculum?*'

Rather than bolt on extra content, we reviewed our existing plans and identified where climate education naturally fits. Science and geography were obvious entry points, but with support, including tools from *Google*, we expanded opportunities across the

▲ **Figure 4** Learning about animal husbandry on a working farm

curriculum. Our curriculum maps now highlight links to climate change where appropriate, without forcing it where it doesn't fit.

Research supports this approach. Monroe *et al.* (2019) found that early climate education increases knowledge, builds confidence and supports long-term behaviour change. Stevenson, Peterson and Bondell (2019) argue that the most effective climate education is interactive, localised and action-based. The DfE's *Sustainability and climate change strategy* (2022) affirms that climate literacy is a core competency for the 21st century.

We are beginning to track the impact of our work through pupil voice, lesson observations and staff surveys. Early signs are encouraging: children demonstrate a richer vocabulary around climate issues, increased empathy for nature and stronger motivation to act.

Looking ahead

The journey is ongoing. Our next step is to develop all teachers' confidence in making explicit curriculum links to outdoor and climate-based learning. Small, intentional steps, rather than wholesale overhauls, have brought the greatest success. We have learned that climate change is not an add-on: it is a lens through which we must view the whole curriculum.

We are also exploring ways to assess learning in this area meaningfully, focusing on skills such as collaboration, systems thinking and ethical reasoning. As we build our pupils' climate literacy, we are preparing them not just to pass exams, but to lead change in their communities and beyond.

By working with nature, empowering pupils and embedding climate education across subjects, we are equipping children to value the planet and protect it for the future. As educators, we hold the responsibility, and the opportunity, to lead this change. If we don't do it, who will?

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