



Curriculum and Assessment Review Call for Evidence – Wildlife and Countryside Link Response

November 2024

This response is on behalf of nature and animal welfare coalition Wildlife and Countryside Link ([Link](#)). Our evidence-led response sets out how embedding nature, climate and sustainability into the curriculum, and providing qualifications related to green-skills, can support young people’s wellbeing and a greener society.

Section 2: General views on curriculum, assessment, and qualifications pathways

Q.11: What aspects of the current a) curriculum, b) assessment system and c) qualification pathways should be targeted for improvements to better support and recognise educational progress for children and young people?

a) Curriculum

The curriculum must thread nature, climate and sustainability across all subjects to improve educational outcomes and contribute towards the delivery of environmental targets.

Learning about the environment and sustainability can complement the curriculum in all subjects by providing real-world context, as well as help to develop critical thinking, problem-solving, and creativity skills. These topics and skills are fundamental to both educational progress and an increasingly green-oriented job market.

At present, learning about nature, climate change and sustainability is restricted to science subjects and, to a lesser extent, geography and citizenship programmes. The Future Forum programme, run by the British Science Association, surveyed 1,000 pupils and reported that 68% of pupils felt that climate change education should be included across all subjects. In contrast to their enthusiasm, 57% of pupils surveyed said that they mostly learnt about climate change in science lessons and 47% said geography lessons.¹

Even science and geography subjects do not guarantee learning on climate change, nature, and sustainability. Geography is an optional GCSE subject and a report by the All-Party Parliamentary Group on Diversity & Inclusion in STEM² highlighted that science education is inequitable across GCSE options. Two-thirds of pupils opt for Double Award Science (two GCSEs combining all three science subjects). The Double Award has approximately one third less content, depth and breadth on climate

¹ British Science Association. (2024). Future Forum Climate change in secondary schools: young people's views of climate change and sustainability education.

² British Science Association. (2020). Inquiry on Equity in STEM education. Final Report.

and nature than the Triple Award. This weighting could lead to inequalities in climate education and reinforce inequalities in educational progress.

Outdoor learning boosts educational progress and should be more integrated in education.

Outdoor learning provides relevance and depth to the curriculum in ways that are difficult to achieve indoors.³ It encompasses the teaching of core curriculum subjects such as maths and English within school grounds or in the local area, as well as enabling experiential learning about nature itself. There is a growing body of evidence that highlights the value of outdoor learning for educational progress. In a previous report, the Natural Connections partnership revealed that 90% of staff found outdoor learning was useful for delivering the curriculum, and 72% said that taking lessons outdoors was good for their own mental wellbeing.⁴

In many countries, including Norway, Sweden and Denmark, outdoor learning is already part of the curriculum.⁵ The Scandinavian concept of outdoor learning, called Udeskole, targets children aged 7-16 and is characterized by compulsory and regular educational activities outside of school, either on private land, school grounds or public land.⁶ Danish and Swedish studies show that as a result of Udeskole, children showed significantly higher level of well-being, improved social relations and joy, and teachers benefited from a stress-reducing effect of teaching outdoors. In Victoria, Australia, outdoor learning is also included within the state-wide curriculum as a result of a government interdepartmental working group recognising its potential to fulfil several wider policy aspirations.⁷

It is positive to see that extra-curricular outdoor learning opportunities are increasing in the UK, such as forest schools, particularly in response to the pandemic.⁸ However, these opportunities to learn in nature are not compulsory; formal learning has not kept up with demand nor equitable delivery. In fact, there is a marked decline in outdoor learning experiences between the early years and the later stages of primary education.^{9,10} A 2018 report by Learning through Landscapes and Project Dirt highlighted that 87% of teachers (out of 600 surveyed) do not think there is enough learning outdoors and want more time to take lessons outside.¹¹ Although research has demonstrated that formal outdoor learning can engage all ages and is applicable across all subjects, many children spend as little as 16 minutes in nature a day, with 2019 research suggesting that at least 75% of UK children spend less time outdoors than prisoners.¹²

³ Marchant, E., Todd, C., Cooksey, R., Dredge, S., Jones, H., Reynolds, D., ... & Brophy, S. (2019). Curriculum-based outdoor learning for children aged 9-11: A qualitative analysis of pupils' and teachers' views. *PloS one*, 14(5), e0212242.

⁴ Waite, S., Passy, R., Gilchrist, M., Hunt, A. and Blackwell, I., (2016). Natural Connections Demonstration Project, 2012–2016: Final Report. Natural England Commissioned Reports

⁵ Waite, S. (2022). International views on school-based outdoor learning. In *High-quality outdoor learning: Evidence-based education outside the classroom for children, teachers and society* (pp. 301-319). Cham: Springer International Publishing.

⁶ Children and Nature Network. (2013). *Udeskole in Scandinavia: Teaching and Learning in Natural Places*.

⁷ Waite, S. (2022). International views on school-based outdoor learning. In *High-quality outdoor learning: Evidence-based education outside the classroom for children, teachers and society* (pp. 301-319). Cham: Springer International Publishing.

⁸ AIM Qualification and Assessment Group. (2023). Forest School – the boom in outdoor learning – blog.

⁹ Waite S. (2008). Outdoor learning for children aged 2–11: perceived barriers, potential solutions. The Fourth International Outdoor Education Research Conference, La Trobe University.

¹⁰ Maller, C., & Townsend, M. (2006). Children's mental health and wellbeing and hands-on contact with nature.

¹¹ Outdoor Classroom Day. (2018). Project Dirt : The impact of outdoor learning and playtime at school – and beyond.

¹² Earthwatch Europe. (n.d.). Outdoor learning guide.



c) Qualification pathways

More green skills and qualifications should be available to 16-19 education, with appropriate awareness raised about the opportunities.

The environment sector continues to suffer from significant skills shortages, known as the green skills gap.¹³ This lack of skills poses a direct threat to the Government’s Mission delivery and its legally-binding targets under the Environment Act 2021 and the Climate Change Act 2008. Transitioning to a zero-carbon, nature-positive economy will require significant change across the economy and workforce and intelligent educational planning has a role to play in ensuring those needs are met.

According to the World Economic Forum, the global number of green roles has grown 8% per year for the last five years.¹⁴ However, this has not met demand - there are not enough employees and candidates with the skills needed to fulfil these crucial roles. As reported by Institute for Environmental Management and Assessment (IEMA), green job listings worldwide requiring at least one green skill grew nearly twice as fast (by 22.4% between 2022 & 2023) as the growth in green talent in the workforce (by 12.3%). The growth in jobs requiring environmental expertise is particularly acute in the UK; jobs requiring green skills now make up 30% of UK job listings.¹⁵

For the natural environment, the skills gap is clear in a number of areas, affecting the Growth Mission, Net Zero Mission, the NHS Mission and, of course, the Equal Opportunities Mission:

- (1) Planning and development: The shortage in green skills is well-documented for ecologists, namely those working in land use surveying and planning for consultancies or county councils. This shortage is set to worsen with the introduction of Biodiversity Net Gain (BNG) requirements; a lack of specialised consultants could be a central constraint to applying BNG in practice.¹⁶
- (2) Nature-positive land and sea management: To achieve a swift and fair transition to nature-friendly farming and fishing will need a range of new (and rediscovered) skills. These include land-management, animal husbandry, hydrology, and sustainable fisheries management. With an aging workforce and noted gaps particularly in horticultural skilled labour, success will depend on building a better skills base.
- (3) Nature-based healthcare: There is significant unrealised potential for improving health, saving money for the NHS, and reducing health inequalities through environmental social prescribing and increasing equitable access to nature. Integrating the necessary skills through formal education will help ensure that future integrated healthcare plans can draw on the benefits of nature-based solutions to better health.

The education sector has not yet fully grasped the potential of this new and growing job market for new pupils. Research conducted by EON reported that out of 2,000 16-24 year old pupils surveyed, 40% of respondents felt misinformed about the purpose of green jobs.¹⁷ Similarly, a survey of 1,200 secondary school and college pupils in the UK revealed that 57% have not been given guidance on

¹³University College of Estate Management. (2024). What is the green skills gap (and why does it matter)?

¹⁴ World Economic Forum. (2023). With green jobs booming, here's how to plug the sustainability skills gap

¹⁵Institute of Environmental Management and Audit. (n.d.). With Green Skills Gap looming – Green Jobs must be a key focus of the next government

¹⁶ Environment Analyst. (2023). BNG set to worsen ‘skills gap crisis’ in ecology.

¹⁷ EON Energy. (2023). The rise of ‘Hired Education’: Almost half of young people to choose green job over higher education



green job options at school.¹⁸ This emphasises a lack of awareness about the broad range of roles required to combat both the climate and nature crises. The research by EON also reported that 46% of those at school leaving age (16-18 years) would prefer employment in an environmental role rather than further or higher education through universities and colleges, and 44% consider apprenticeships to be the best route to do so.

To set young people up with the best possible foundations to thrive in education and in wider life and work, green apprenticeships to train young people in environmental skills are needed. This would kickstart delivery of environmental improvement and help build a workforce fit for a future green economy. Green skills are varied and could include all aspects of forestry (such as VETCert for veteran and specialist trees), invasive species control, practical restoration, energy efficiency, water conservation, sustainable agriculture, environmental protection, transportation planning, compliance inspections and more.¹⁹

Section 3: Social justice and inclusion

Q.12: In the current curriculum, assessment system and qualification pathways, are there any barriers to improving attainment, progress, access or participation (class ceilings) for learners experiencing socioeconomic disadvantage?

Socioeconomic inequalities in nature and climate education

Learning about the environment and sustainability can help to develop critical thinking, problem-solving, and creativity skills, fundamental to both educational progress and an increasingly green-oriented job market. A report by the All-Party Parliamentary Group on Diversity & Inclusion in STEM²⁰ highlighted that science education is inequitable across socioeconomic backgrounds. Around 80% of pupils from disadvantaged backgrounds take the Double Award (two GCSEs combining all three science subjects); 14% more than their peers from more advantaged background. The Double Award has approximately one third less content, depth and breadth on nature and climate than the Triple Award. Furthermore, approximately 8% of schools in England, mostly situated in disadvantaged areas, do not enter any pupils for Triple Award Science. These statistics from the report by the All-Party Parliamentary Group on Diversity & Inclusion in STEM highlight the inequalities in climate education and reinforce inequalities in educational progress.

Socioeconomic inequalities in accessing and engaging with nature in education

There is a multitude of evidence that accessing and engaging with nature improves attainment, progress, access or participation in children, which many pupils from low socioeconomic backgrounds are missing out on (see Textbox 1). A report by WWF revealed that state schools with a low percentage of free school meals (used as a proxy measure for deprivation) are 2.9 times more likely to provide daily opportunities to experience nature than state schools with a high percentage of free school meals.²¹

¹⁸ Speakers for Schools. (n.d.). Latest Green Skills survey reveals that more than half of young people lack guidance on green job options at school

¹⁹ United Nations Industrial Development Organization. (2022). What are green skills?

²⁰ British Science Association. (2020). Inquiry on Equity in STEM education. Final Report.

²¹ The Ecologist. (2024). Poorer pupils suffer 'nature gap'.

Barriers to providing outdoor time in education include financial challenges within schools.²² Out of 235 primary schools in England that were surveyed by Durrell Institute for Conservation and Ecology, 60.4% of schools reported that a lack of budget for school trips, particularly a budget for the cost of transport hire, limited the number of school-organised visits to natural sites.²³

Recent analysis has shown that private schools have access to ten times as much greenspace on their school grounds than public schools.²⁴ This level of access to greenspace for private school pupils can help maximise associated mental, physical and cognitive benefits of accessing nature. The same benefits should be available to state school pupils.

Textbox 1

Benefits of accessing and engaging with nature on attainment, progress, access or participation in children

Findings from the Natural Connections Demonstration Project demonstrated that 92% of participating schools agreed that spending time in nature helped children to engage with their learning, 85% agreed that it had a positive impact on behaviour, and 95% felt that nature as part of lessons made learning more enjoyable.²⁵

Children and young people who regularly connect with natural environments have been found to have higher achievement (in comparison to their peers or projected attainment) in reading, mathematics, science, and social studies. These children exhibit a greater motivation for studying STEM subjects. Longer term and 'progressive' experiences in nature result in the greatest benefits, and children with below-average achievement have tended to make progress in learning outcomes to the greatest degree.²⁶

Access to green space was associated with improved mental well-being, overall health and cognitive development of children. It promotes attention restoration, memory, focus, competence, supportive social groups, self-discipline, moderates stress, improves behaviours and symptoms of ADHD and is associated with higher standardised test scores.^{27,28} Analysis on school standardised test data collected between 2006 and 2021 from 905 public schools revealed a consistent positive association between school "greenness" and test performance in English and Math.²⁹

²² Butcher, M. B., Haakenstad, M. K., Noonan, C. J., & Fyfe-Johnson, A. L. (2023). Identifying Challenges and Solutions to Early Childhood Education and the Perceived Importance of Outdoor Time: A Mixed Methods Approach in a Socioeconomically Diverse Population. *International journal of environmental research and public health*, 20(24), 7166.

²³ Walker, E., Bormpoudakis, D., & Tzanopoulos, J. (2021). Assessing challenges and opportunities for schools' access to nature in England. *Urban Forestry & Urban Greening*, 61, 127097

²⁴ The Guardian. (2024). Revealed: students at top private schools have 10 times more green space than state pupils

²⁵ Natural England. (2016). Natural Connections Demonstration Project, 2012-2016: Final Report and Analysis of the Key Evaluation Questions (NECR215).

²⁶ Natural England. (2022). Links between natural environments, learning and health: evidence briefing (EIN063).

²⁷ McCormick, R. (2017). Does access to green space impact the mental well-being of children: A systematic review. *Journal of pediatric nursing*, 37, 3-7.

²⁸ Chawla, L., Keena, K., Pevec, I., & Stanley, E. (2014). Green schoolyards as havens from stress and resources for resilience in childhood and adolescence. *Health & place*, 28, 1-13.

²⁹ Wu C.-D., McNeely E., Cedeño-Laurent J.G., Pan W.-C., Adamkiewicz G., Dominici F., Lung S.-C.C., Su H.-J., Spengler J.D. Linking Student Performance in Massachusetts Elementary Schools with the "Greenness" of School Surroundings Using Remote Sensing. *PLoS ONE*. 2014;9:e108548.



Q.13: In the current curriculum, assessment system and qualification pathways are there any barriers to improving attainment, progress, access or participation which may disproportionately impact pupils based on other protected characteristics (e.g. gender, ethnicity)?

Ethnic inequalities in nature and climate education

Ethnic minority pupils are less likely to engage in science and environmental subjects, and so lack a comprehensive nature, climate and sustainability education. Around 80% of pupils from disadvantaged backgrounds take the Double Award in science, of which a large proportion are ethnic minority pupils. This is particularly the case as people of colour and minority ethnic families are 2.5 times, or more for Pakistani and Bangladeshi families, more likely to live in poverty compared to their White counterparts.³⁰ The Double Award in science provides one third less content, depth and breadth on nature and climate than the Triple Award, exacerbating ethnic inequities in educational progress and a much-needed connection to nature. Similarly, minority ethnic pupils make up 23% of Geography GCSE entries, compared to 37% representation of all secondary school pupils. Fewer ethnic minority pupils also opt for Geography A-Level than would be expected. These statistics reinforce that a sound nature and climate education is neither consistent nor equitable across all pupils.³¹

The ethnic inequalities in environmental and science education have repercussions for qualifications and Higher Education. Ethnic minority representation across Higher Education environmental subjects ranges from 6% across the UK, compared to representing 26% of all pupils at Higher Education level.³² Similar evidence is also reported by SOS-UK and NUS, reporting a 14%³³ and 12%³⁴ bias towards White pupils. The narrowed representation of ethnicities in Higher Education continues into the environmental job market, which is the second least ethnically diverse sector. Employees identifying as Black, Asian or from another ethnic minority represent only 5% of the workforce in 2021, compared to 13% across all UK professions.³⁵ The growing evidence reinforces that a limited science and environmental education for ethnic minority pupils has an effect on both interest and skills needed to enter the STEM workforce.

Ethnic inequalities in accessing and engaging with nature in education

There is growing evidence that schools with a higher percentage of ethnic minority pupils have lower access to nature than schools with a lower percentage of ethnic minority pupils. For example, Natural England found that children from minority groups have fewer opportunities to participate in outdoor learning programmes.³⁶ People of colour and minority ethnic pupils are twice as likely to be eligible for free school meals compared to the national rate.³⁷ State schools with a high percentage of free school meals (i.e., likely to have greater proportion of people of colour and minority ethnic pupils) are

³⁰ Runnymede Trust. (2022). Falling faster amidst a cost-of-living crisis. poverty, inequality and ethnicity in the UK.

³¹ Royal Geographic Society. (2020). Geography of Geography: the evidence base.

³² Earthwatch Europe. (2024). Removing barriers to increased diversity in the environmental sector through education.

³³ Students Organising for Sustainability.(2022). Racial diversity in environment professions.

³⁴ National Union for Students. (2018). Race, inclusivity and environmental sustainability A scoping study.

³⁵ Wildlife and Countryside Link. (2022). Route map towards greater ethnic diversity.

³⁶ Lovell R 2106. Links between natural environments and learning: evidence briefing, Natural England Access to Evidence Information Note EIN017, Natural England.

³⁷ Department for Education. (2022). Outcomes by ethnicity in schools in England Topic Note.



2.9 times less likely to receive daily opportunities to experience nature than state schools with a low percentage of free school meals.³⁸

Much of the evidence that reveals the socio-economic inequities to a nature education (i.e., evidence to Q.12 above) is applicable to people of colour and minority ethnic pupils. This is because they are 2.5 times more likely to live in deprived areas – or more for Pakistani and Bangladeshi families - that lack greenspace for schools to access.³⁹ People of colour and minority ethnic pupils consequently miss out on benefits provided by engaging with nature to attainment, behaviour and overall wellbeing, as outlined in Textbox 1.

Q.22: Are there particular curriculum or qualifications subjects where a) there is too much content; not enough content, or content is missing?

Nature can complement the existing curriculum and form vital additional qualifications

There is a myriad of attainment, social, mental and physical wellbeing benefits for engaging with a nature education.⁴⁰ Nature, climate change and sustainability must be threaded through the whole curriculum to complement all subjects and help pupil develop skills such as critical thinking. For example, wildlife can be used as inspiration in art lessons whilst also teaching about diversity, a nature journal can be produced in English, applying data sets in Maths to climate change modelling, a circular economy can be taught in economics classes, and sustainability taught in D&T classes, to name a few options for integrating nature more widely. This would help build a cross-curricula focus on systems-thinking and media literacy skills to enhance understanding of the nuanced social side of sustainability, climate and environment issues. At present, learning about nature, climate change and sustainability is restricted to science subjects and, to a lesser extent, geography and citizenship programmes. For example, 57% of 1,000 pupils surveyed said that they mostly learnt about climate change in science lessons and 47% said geography lessons.⁴¹

Spain provides a strong example of integrating nature through the curriculum via the regional government of Catalonia and the Vocational Education and training (VET) school of Manresa. With the support of local agro-ecological farms, a fifth of the existing curriculum was updated with new content linked to biodiversity, efficiency in the use of water, energy saving, use of renewables in farms, reduction of emissions, and overall sustainable tourism and conservation of rural heritage.

In the UK, a valuable qualification subject would be a Natural History GCSE, as long as the GCSE is integrated as part of a broad and balanced curriculum. A Natural History GCSE would educate pupils on the global challenges related to nature, boost skills to adapt to and combat the environmental crises, as well as provide further benefits such as outdoor learning and experiments. Environmental qualifications, when properly integrated into the wider curriculum, can help fill the green skills gap and prepare pupils for the UK economy's green transition.

³⁸ The Ecologist. (2024). Poorer pupils suffer 'nature gap'.

³⁹ Runnymede Trust. (2022). Falling faster amidst a cost-of-living crisis. poverty, inequality and ethnicity in the UK.

⁴⁰ Wildlife and Countryside Link. (2024). A new statutory requirement for access to and engagement with nature within education.

⁴¹ British Science Association. (2024). Future Forum Climate change in secondary schools: young people's views of climate change and sustainability education.

Section 5: Curriculum and qualification content

Q.24: To what extent does the current curriculum (including qualification content) support pupils to positively engage with, be knowledgeable about and respect others? Are there elements that could be improved?

Spending time in nature has shown to improve socio-emotional skills in children and young people, including relationships with and respect for peers. The curriculum should integrate more access to and engagement with nature.

Spending time in nature is vital to a child's holistic development.⁴² Nature's role in a child's socio-emotional development is underpinned by nature being treated as a living and diverse being. Spending time in and engaging with nature therefore helps children develop skills such as empathy, respect, appreciation of diversity, caring and connection.⁴³ These skills are directed both towards the environment, for example by asking permission to handle plants and insects, and handling them with care, and other people.⁴⁴

Integrating time to engage with nature in education offers a setting for collaboration, teamwork, and communication among children. Children who regularly play outside are generally more self-aware and have greater awareness of others' feelings.⁴⁵ Spending time in nature, in and out of school, has also been shown to promote positive association with self-determination and self-regulation,⁴⁶ prosocial behaviour (i.e., behaviours that benefit others), and social cohesion.⁴⁷

From schools participating in the DfE's 'Children and Nature' programme, 94% of participating schools agreed that spending time in nature had a positive impact on children's mental health, wellbeing, and resilience. Children with good self-esteem and mood are better able to engage with their peers, teachers, and subject matter. Outdoor learning has also been shown to improve the moods of teachers and teaching assistants.⁴⁸

A study of 138 eight to ten year olds found that children's connection to nature at school was directly associated with higher overall socio-emotional learning skills, including self-awareness, self-management and relationship skills with peers.⁴⁹ Engagement and connection with nature has also

⁴² An Darach. (2024). Nature as a Classroom: How Outdoor Education Enhances Learning and Development in Children.

⁴³ Carter, D. (2016). A Nature-Based Social-Emotional Approach to Supporting Young Children's Holistic Development in Classrooms with and without Walls: The Social-Emotional and Environmental Education Development (SEED) Framework. *International Journal of Early Childhood Environmental Education*, 4(1), 9-24.

⁴⁴ Bowers, E. P., Larson, L. R., & Parry, B. J. (2021). Nature as an ecological asset for positive youth development: Empirical evidence from rural communities. *Frontiers in psychology*, 12, 688574.

⁴⁵ NprEd, (2014). Kids And Screen Time: What Does The Research Say?

⁴⁶ Sprague, N. L., Bancalari, P., Karim, W., & Siddiq, S. (2022). Growing up green: A systematic review of the influence of greenspace on youth development and health outcomes. *Journal of exposure science & environmental epidemiology*, 32(5), 660-681.

⁴⁷ Shanahan, D. F., Bush, R., Gaston, K. J., Lin, B. B., Dean, J., Barber, E., & Fuller, R. A. (2016). Health benefits from nature experiences depend on dose. *Scientific reports*, 6(1), 28551.

⁴⁸ Kiviranta, L., Lindfors, E., Rönkkö, M. L., & Luukka, E. (2024). Outdoor learning in early childhood education: exploring benefits and challenges. *Educational Research*, 66(1), 102-119.

⁴⁹ Lanza, K., Alcazar, M., Chen, B., & Kohl III, H. W. (2023). Connection to nature is associated with social-emotional learning of children. *Current Research in Ecological and Social Psychology*, 4, 100083.



been found to elicit feelings of social support, connectedness to peers, and social skill development.⁵⁰ The curriculum should integrate more access to and engagement with nature to build these advantages for children both in and out of school.

Q.26: In which ways do the current secondary curriculum and qualification pathways support pupils to have the skills and knowledge they need for future study, life and work and what could we change to better support this?

Secondary curriculum must thread nature and climate across all subjects due to their relevance to a healthy and sustainable future for all.

The nature and climate crises are global societal issues that affect everyone, particularly young people. Children and young people must be equipped with the skills to understand, adapt and combat these crises in order to build a healthy and sustainable future. Research conducted by SOS-UK reported that out of 2,000 adults surveyed, 76% and 78% thought it is important to prepare young people for climate change and nature crises, respectively, at school.⁵¹

At present, learning about nature, climate change and sustainability is restricted to science subjects and, to a lesser extent, geography and citizenship programmes. The Future Forum programme, run by the British Science Association, surveyed 1,000 pupils and reported that 68% of pupils felt that climate change education should be included across all subjects. In contrast to their enthusiasm, 57% of pupils surveyed said that they mostly learnt about climate change in science lessons and 47% said geography lessons.⁵²

To help young people thrive in life and work, nature, climate and sustainability should be threaded through every subject at school, and teachers must receive appropriate training and support to do so. This would help build a cross-curricula focus on systems-thinking and media literacy skills to enhance understanding of the nuanced social side of sustainability, climate and environment issues. Conversations, questions and challenges about nature’s decline and climate change could arise in any lesson within the school day, and all teachers should be equipped with a minimum standard of knowledge and capability to support children in their exploration of the subject, at each stage of learning.

Time spent learning in outdoor spaces should not be restricted to nature-based activities alone. Lessons across all subjects should include time spent learning outdoors, not just for the proven benefits to aiding learning and retention, but to support the inclusion of nature, climate, and sustainability across the curriculum.

Secondary curriculum and qualification pathways would be improved with the launch of a Natural History GCSE, as long as the GCSE is integrated as part of a broad and balanced curriculum. A Natural

⁵⁰ Mygind, L., Kurtzhals, M., Nowell, C., Melby, P. S., Stevenson, M. P., Nieuwenhuijsen, M., ... & Enticott, P. G. (2021). Landscapes of becoming social: A systematic review of evidence for associations and pathways between interactions with nature and socioemotional development in children. *Environment international*, 146, 106238.

⁵¹ Students Organising for Sustainability. (n.d.). Perspectives on young people, education and environmental issues survey research with the UK general public.

⁵² British Science Association. (2024). Future Forum Climate change in secondary schools: young people's views of climate change and sustainability education.



History GCSE would educate pupils on the global challenges related to nature, boost skills to adapt to and combat the environmental crises, as well as provide further benefits such as outdoor learning and experiments. Environmental qualifications, when properly integrated into the wider curriculum, can help fill the green skills gap and prepare pupils for the UK economy's green transition.

Q. 27: In which ways do the current qualification pathways and content at 16-19 support pupils to have the skills and knowledge they need for future study, life and work and what could we change to better support this?

More green skills and qualifications should be available to 16-19 education, with appropriate awareness raised about the opportunities.

The nature and climate crises are global societal issues that affect everyone, particularly young people. Children and young people must be equipped with the skills to understand, adapt and combat these crises in order to build a healthy and sustainable future. Research conducted by SOS-UK reported that out of 2,000 adults surveyed, 76% and 78% thought it is important to prepare young people for climate change and nature crises, respectively, at school.⁵³

The environment sector continues to suffer from significant skills shortages, known as the green skills gap.⁵⁴ According to the World Economic Forum, the global number of green roles has grown 8% per year for the last five years.⁵⁵ However, there are not enough employees and candidates with the skills needed to fulfil these crucial roles. As reported by Institute for Environmental Management and Assessment (IEMA), green job listings worldwide requiring at least one green skill grew nearly twice as fast (by 22.4% between 2022 & 2023) as the growth in green talent in the workforce (by 12.3%). Jobs requiring green skills now make up 30% of UK job listings.⁵⁶

To set young people up with the best possible foundations to thrive in life and work, green apprenticeships to train young people in environmental skills are needed. This would kickstart delivery of environmental improvement and addressing the current economic crisis and building a workforce fit for a future green economy. Green skills are varied and could include all aspects of forestry (such as VETCert for veteran and specialist trees), invasive species control, practical restoration, energy efficiency, water conservation, sustainable agriculture, environmental protection, transportation planning, compliance inspections and more.⁵⁷

Beyond green apprenticeships, horizontal adaptation of all apprenticeships is needed to include nature, climate and sustainability elements. For example, elements related to sustainability are introduced in all apprenticeship programmes at national level in Austria. More specifically, the Vocational School for Mechanical and Electrical Engineering of Pleven in Bulgaria is being supported to develop a draft update of apprenticeship curricula for electricians at upper secondary level, integrating skills for the green transition.⁵⁸

⁵³ Students Organising for Sustainability. (n.d.). Perspectives on young people, education and environmental issues survey research with the UK general public.

⁵⁴ University College of Estate Management. (2024). What is the green skills gap (and why does it matter)?

⁵⁵ World Economic Forum. (2023). With green jobs booming, here's how to plug the sustainability skills gap

⁵⁶ Institute of Environmental Management and Audit. (n.d.). With Green Skills Gap looming – Green Jobs must be a key focus of the next government

⁵⁷ United Nations Industrial Development Organization. (2022). What are green skills?

⁵⁸ Cedefop. (2024). Greening Apprenticeships Policy Brief. From Grassroot Initiatives To Comprehensive Approaches.

Section 6: A broad and balanced curriculum

Q.32: Do you have any explanations for the trends outlined in the analysis and/or suggestions to address any that might be of concern?

We note the following trends between 2009/10 to 2022/23:

- Increase in Geography GCSE entries by 18%, an increase in Biology GCSE entries by 8%, and an increase in Chemistry GCSE entries by 7%.
- Increased uptake of STEM subjects at A-level, including a 1.8% increase in both Biology and Chemistry A-Level entries, as well as a 0.7% increase in Geography A-Level entries.

Increases in entries of STEM and geography subjects may reflect the growing awareness of the importance of the environment to one's own future, and the desire to learn about and prepare for the nature and climate crises. A survey of 3,000 children, conducted by Save the Children, reported that 70% of children had climate anxiety and were concerned by the state of the world they would inherit.⁵⁹ An awareness amongst pupils of the growing green job market may also be driving the growth. More focus by schools on increasing awareness and opening up entry routes into this market is likely to result in further growth.

A study by SOS-UK in 2018 revealed that only 4% of the 2,990 pupils across Year 5 and Year 6, secondary school and sixth form felt that they knew a lot about climate change. SOS-UK produced follow up research in 2020 and 2021, where 71% of pupils across Year 5 and Year 6, secondary school and sixth form reported that they were interested in learning more about the environment.⁶⁰ Results from the Children's People and Nature survey, run by Natural England, suggest that 78% of surveyed 8-15 year-olds agreed that looking after the environment was important to them, and 81% said they wanted to do more to look after the environment.⁶¹ One way in which young people can do this is to choose science and geography GCSEs and A-Levels, which may explain the increase in entries of these subjects.

Q.33: To what extent and how do pupils benefit from being able to take vocational or applied qualifications in secondary schools alongside more academically focused GCSEs?

Pupils benefit from the option of vocational and applied qualifications in environmental skills because they match pupil aspirations. Research by EON reported that 46% of those at school leaving age (16-18 years) would prefer employment in an environmental role rather than further or higher education through universities and colleges, and 44% consider apprenticeships to be the best route to do so.⁶²

Green vocational and applied qualifications provide pupils with skills that match the dynamic job market. Based on a study by Bower Collective on environmental careers, 14 out of 44 roles studied accepted work experience, apprenticeship or certifications (i.e., non-Higher Education qualifications) as minimum requirements for employees. These 14 roles have had a market growth rate between 52% and 675% over the last 5 years, and remain in high demand.⁶³

⁵⁹ Save The Children. (2022). Survey Reveals Scale Of Climate Anxiety Among British children on eve of COP27.

⁶⁰ Students Organising for Sustainability. (2023). New research indicates support for the Climate Education Bill

⁶¹ Natural England. (2021). The Children's People and Nature Survey for England: Summer Holidays 2021 (Official Statistics).

⁶² EON Energy. (2023). The rise of 'Hired Education': Almost half of young people to choose green job over higher education

⁶³ Bower Collective. (2021). The most promising careers for young people in the environmental sector.



Section 8: Qualification pathways

Q.47: To what extent does the range of programmes and qualifications on offer at each level meet the needs and aspirations of learners?

a. Level 3 (A-levels and diplomas)

At its core, education must set young people up for life, including the provision of skills needed in the job market. According to the World Economic Forum, the global number of green roles has grown 8% per year for the last five years.⁶⁴ However, there are not enough employees and candidates with the skills needed to fulfil these crucial roles. As reported by Institute for Environmental Management and Assessment (IEMA), green job listings worldwide requiring at least one green skill grew nearly twice as fast (by 22.4% between 2022 & 2023) as the growth in green talent in the workforce (by 12.3%).

Whilst there is a good range of Level 3 programmes available at colleges for environmental protection, these are not sufficiently communicated with pupils. Research conducted by EON reported that 40% of pupils surveyed were misinformed about the purpose of green jobs.⁶⁵ Similarly, a survey of 1,200 secondary school and college pupils in the UK revealed that 57% have not been given guidance on green job options at school.⁶⁶

In addition, learners aspire to boost their green skills. In 2020 and 2021, SOS-UK reported that 71% of pupils surveyed across Year 5 and 6, secondary school and sixth form were interested in learning more about the environment.⁶⁷ Research by EON reported that 46% of those at school leaving age (16-18 years) said they would prefer employment in an environmental role to further or higher education through universities and colleges. The same research by EON reported that 44% of pupils surveyed consider apprenticeships to be the best route to gain employment in an environmental role.⁶⁸

Contrary to learner aspirations and interest in apprenticeships, the Department for Education (DfE) returned £96 million in unspent apprenticeship levy funds to the Treasury in 2022-23. In total, the DfE has returned £2.2 billion in unspent funds since the levy was introduced in 2017. These funds could have been usefully spent increasing access to green jobs, through a National Nature Service or similar scheme.⁶⁹ In 2023, over 337,000 people started an apprenticeship, which is 4% lower than 2022. However, only 48% of this cohort finished their apprenticeship scheme.⁷⁰

More green skills apprenticeships are needed to both support the needs and aspirations of learners, as well as meet the UK's nature and Net Zero targets. Green skills are varied and could include all aspects of forestry (such as VETCert for veteran and specialist trees), invasive species control, practical

⁶⁴ World Economic Forum. (2023). With green jobs booming, here's how to plug the sustainability skills gap

⁶⁵ EON Energy. (2023). The rise of 'Hired Education': Almost half of young people to choose green job over higher education

⁶⁶ Speakers for Schools. (n.d.). Latest Green Skills survey reveals that more than half of young people lack guidance on green job options at school

⁶⁷ Students Organising for Sustainability. (2023). New research indicates support for the Climate Education Bill

⁶⁸ EON Energy. (2023). The rise of 'Hired Education': Almost half of young people to choose green job over higher education

⁶⁹ Wildlife and Countryside Link. (2023). Nature 2030. Five urgent reforms to meet natural environment targets in the next Parliament.

⁷⁰ Politics Home. (2024). Plugging the skills gap: Reforming the apprenticeship levy to grow a green economy



restoration, energy efficiency, water conservation, sustainable agriculture, environmental protection, transportation planning, compliance inspections and more.⁷¹ Equally, all apprenticeships should integrate nature and sustainability throughout. In Greece, an update of apprenticeship training guides will result in green modules for all curricula of the post-secondary apprenticeship scheme. The new modules will typically include one part on environmental values and the culture of sustainability, and one on specific skills linked to a sustainable economy.⁷²

b. Level 2 (GCSEs)

Growing evidence highlights that pupils want an improved education on the environment and how to protect it. In 2020 and 2021, 71% of pupils across Year 5 and Year 6, secondary school and sixth form reported that they were interested in learning more about the environment.⁷³ Results from the Children’s People and Nature survey, run by Natural England, suggest that 78% of surveyed 8-15 year-olds agreed that looking after the environment was important to them, and 81% said they wanted to do more to look after the environment.⁷⁴

The needs and aspirations of pupils to learn about the environment could be partially met with the launch of a Natural History GCSE, as long as the GCSE is integrated as part of a broad and balanced curriculum. The GCSE is an opportunity to educate pupils on the global challenges related to nature and climate, boost skills to adapt to and combat the environmental crises, as well as provide further benefits such as outdoor learning and experiments. Environmental qualifications, when properly integrated into the wider curriculum, can help fill the green skills gap and prepare pupils for the UK economy’s green transition.

Wildlife and Countryside Link (Link) is the largest nature coalition in England, bringing together 86 organisations to use their joint voice for the protection of the natural world and animals.

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The following organisations support this response:

- Born Free
- British Ecological Society
- Chester Zoo
- Institute for Fisheries Management
- National Trust
- Plantlife
- RSPB

⁷¹ United Nations Industrial Development Organization. (2022). What are green skills?

⁷² Cedefop. (2024). Greening Apprenticeships Policy Brief. From Grassroot Initiatives To Comprehensive Approaches.

⁷³ Students Organising for Sustainability. (2023). New research indicates support for the Climate Education Bill

⁷⁴ Natural England. (2021). The Children’s People and Nature Survey for England: Summer Holidays 2021 (Official Statistics).



Seal Research Trust
The Mammal Society
The Wildlife Trusts
The Woodland Trust
Wildfowl and Wetlands Trust
ZSL