AD

NSEAD's green issue

Heather Ackroyd and Dan Harvey on the climate emergency

Art and the Earth crisis

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Editorial

The Environment and Climate Emergency (E&CE) research group was formed in 2022. Initiated by Dr Emese Hall, we are hugely indebted to her for forming the group, and now guest editing this special issue of *AD*. The E&CE group aims for the 'Earth Crisis' to be embedded into art education – now, not tomorrow – and the artist authors in this issue show how they are achieving this. Thank you Emese, and every member of the E&CE group, for making this possible.

Sophie Leach, Editor, *AD*
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Welcome to this special issue of *AD* magazine, dedicated to highlighting art, craft and design education for the environment and climate emergency – or, as I now more typically say, thanks to Bridget McKenzie and Dr Miranda Matthews, the 'Earth Crisis'. Words matter. The language we use to describe what matters to us (or does not) matters. In the following pages, concern and care for life on planet Earth is described in many different ways by the contributing authors and, just as eloquently, through the artistic creations made by learners. You will find practical case studies and resources/ideas for working within a range of phases and contexts.

My heartfelt thanks to every author, not only for your submission but also for the educational work you engage with that demonstrates the role and value of art, craft and design education in raising awareness of Earth Crisis issues and promoting positive action. I would also like to extend my thanks to Dilys Finlay for kindly suggesting artists Ackroyd & Harvey for our interview piece and, of course, to Heather and Dan for generously sharing their time, expertise and wonderful artworks. I'm over the moon with the poster image as this was my first choice from the Ackroyd & Harvey collection and it will make an excellent discussion piece in your classroom, workshop or office space.

As artists and art educators, we know the transformative power of art, both in its making and viewing/appreciation; we are also aware that there is much untapped potential within our subject discipline for learning about the Earth Crisis. With a new Government now in Westminster, we can hope for more widespread support and recognition for the type of inspirational and impactful practices and initiatives showcased in *AD* 41.

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Poster
On The Shore (2021)
© Ackroyd & Harvey
and Ben Okri
Photo by James Knapp

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Beuys' Acorns (2021)
© Ackroyd & Harvey

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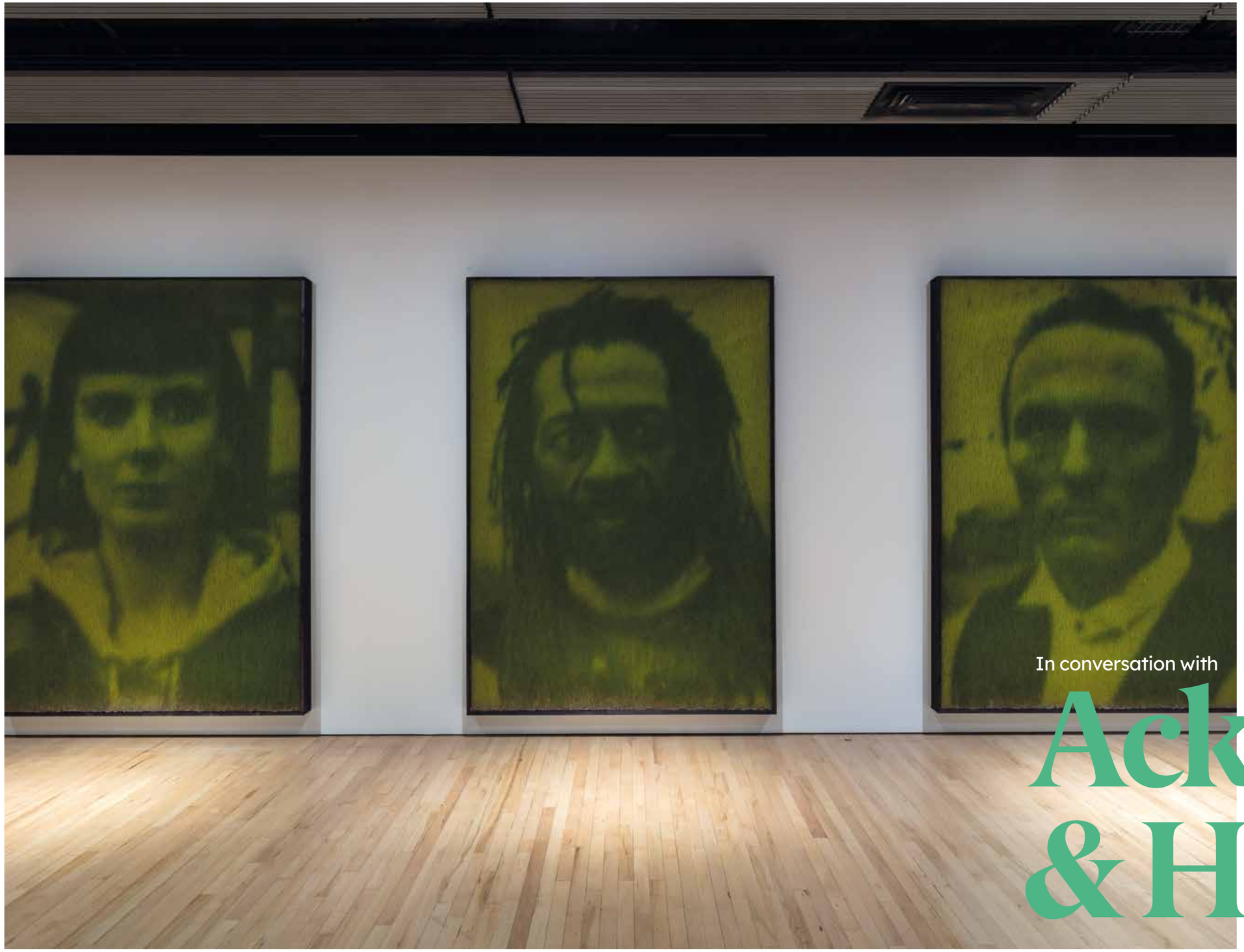


Left
Dear Earth Hayward
(2024) © Mark Blower

In conversation with

Ackroyd & Harvey

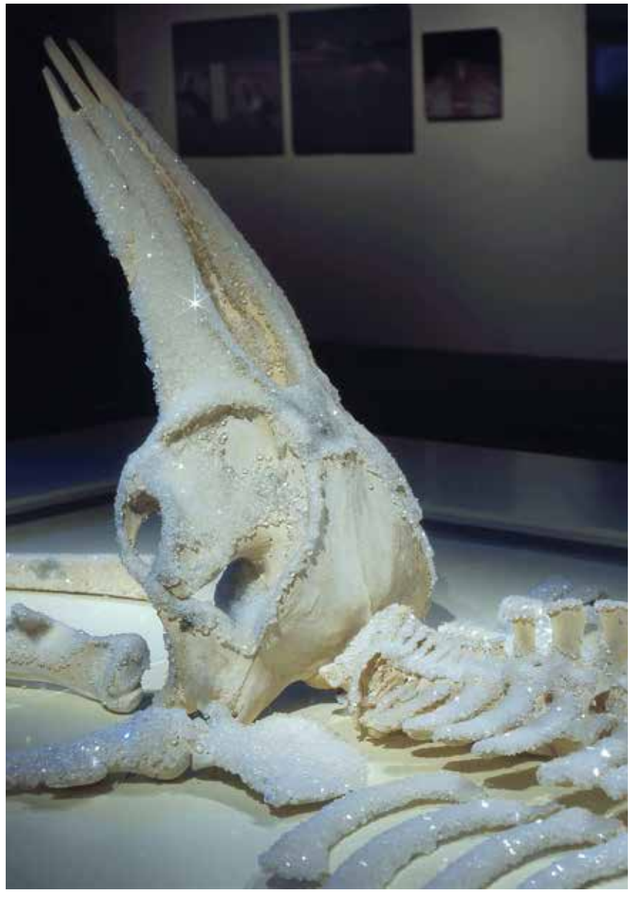
Heather Ackroyd and **Dan Harvey** are artists who have collaborated since 1990. Inspired by ecology, biology, history and architecture, their work references memory and time, as well as nature, culture and the climate emergency. Here, they talk to *AD*'s guest editor **Dr Emese Hall**

Emese Hall: What inspired you to pursue careers as professional artists?

Heather Ackroyd: I was going to be a nurse. I did art A-level at school and I'd been involved in amateur dramatics since the age of 14. My mother recommended this course in Combined Arts, the very first degree course offered of its kind in Cheshire, at a college that no longer exists. I suffered from extreme exam nerves and actually had to do my A-levels under supervision. This course was practice-based and I took to it incredibly well, meeting some very pivotal people. I realised that what we're doing now goes back to that foundational experience of bringing the visual arts and the performing arts together. It's still very present within our practice because we're working with living, growing materials that give a performative presence to the installations we make.

Dan Harvey: It's quite funny because, when I was younger, I thought I was going to be a vet. Being a vet and being a nurse are similar in some ways. But I realised that I just really enjoyed making things, and I was very lucky and privileged to have two parents who were both artists.

Below
Stranded (2006)
© Ackroyd & Harvey



My mother was a painter and my father was a sculptor, photographer and writer. I just slipped into an art foundation course and then to a degree course, and then took a few years out and then applied back to the Royal College of Art, where I was lucky enough to be accepted on an MA programme. I think I just enjoyed making things and wanting to use my hands, and to get messy.

How would you define the role of art in responding to the environment and climate emergency?

HA: Extinction Rebellion created an eruption of non-violent disruption, which in turn triggered equivalent movements declaring a climate and ecological emergency across the arts and culture. Culture Declares Emergency launched in 2019, followed by Music Declares Emergency, Architects Declare Emergency and the Gallery Climate Coalition amongst many others. Now, five years later, all these groups are still active and effectively working towards stories of change; carbon reductions in their respective industries and campaigning for the Government to tell the truth about the emergency; reversing biodiversity loss and reaching net zero greenhouse gas emissions by no later than 2030; and addressing global injustices and working towards systemic changes to protect all life on Earth. Hard Art, a cultural collective standing in solidarity in the face of climate and democratic collapse, launched this year. Key is the word 'collective' where communities are being created, armed with imagination, vision and the desire to make a difference for the greater good.

DH: I think the arts and culture is a very useful tool for communication and bringing about change. With my early work, I was using a lot of found objects – lots of bones and dead things – but the work was very much about life and somehow as time has gone on with our collaborative practice, working with things like photosynthesis. With some of the trips we did in the High Arctic looking at climate change, you end up creating work about things that interest you and that scare you too. Maybe through the creative process and through making things, one can communicate the situation and bring about some elements of change, at least within myself or within ourselves.

HA: Many artists are resistant to being given a role as a communicator, because by nature, they tend to be radical; they can be protective of their position and their authorship of material, but also want to break boundaries. I think art is really fascinating on that level as it has always had a strong rebellious spirit. Whether or not you're looking at Picasso or Van Gogh, or going back to the Impressionists, they were all breaking boundaries, right, left and centre, and it's still continuing now.

To what extent are environmental and climate issues reflected in your work?

DH: There are such a variety of influences on why one creates things; what actually stimulates the ideas and that creativity within oneself has to stem from things that you feel passionate about. As one sees the sort of collapsing of the whole ecosystems that we have around us – and we've been talking with scientists now for the best part of 20 years about these changes – and you see so little action happening that I think it just becomes more and more imperative to be trying to change something. I think certainly the way I'm wanting to work now is very different than 20 years ago, whether that's an age thing or to do with the political situation at the moment, I'm not sure.

HA: A very high extent! I became fascinated with climate from the first big announcement by scientist James E. Hansen about the Greenhouse Effect in 1988. I was making a theatre work at the time and came across an ancient Persian text that spoke about a flying camel in the Garden of Eden. I began to think if we are going more into desertification, maybe we're going to have camel farms and be plodding around on camels - not quite understanding the dynamics that we're seeing now of flooding and storms too. *On The Shore*, our collaboration with author and activist Ben Okri, we placed water and words at the heart of the artwork. Over nine days in June 2021, we grew a huge banner of seedling grass in Tate's Turbine Hall with Ben's writing *Can't You Hear The Future Weeping? Our Love Must Save The World* stencilled in the grass. As the letters were removed, the words were revealed in fluorescent yellow. An artwork in two acts, the banner was ceremoniously lifted by eighteen performers, taken out of Tate and floated on the Thames. At this point, the work became direct action with the inspirational Writers Rebel calling for action on the climate and ecological emergency.

Right
89-91 Lake Street (1994)
© Ackroyd & Harvey

Can you identify a favourite project, and what was its inspiration?

DH: Over the 34 years that we've been collaborating, there are so many projects that we've been involved with that it's very hard to choose one favourite. There's a piece we did in Perth, Australia – *89-91 Lake Street* – where we had two abandoned houses that were due for demolition. We had a crystallised camel's skeleton and had red desert sand filtering through the old Bakelite light fitting and slowly covering a table and chair. Then there was another room full of burnt wood, as if all the moisture has been sucked out of these rooms and objects. Then we knocked a wall down between the two houses and the other side was full of moisture, grass-covered trees and branches and covered in clay, projecting shadows onto the wall. We had another room that was flooded and raining inside, so they were sort of mirror opposites of each other. Then there's the *Stranded* artwork we did in 2006 – the process of getting access to a beached whale, three days of flensing it on the beach and learning to understand the visceral nature and the bones of such a creature, and then we put it through this sort of chemical process after cleaning it all and crystallising it. I like the real process and the time element within that piece.

HA: Speaking of Australia, our recent large-scale photosynthesis portraits in grass for the 23rd Biennale of Sydney were a significant achievement for us, especially given the unprecedented flooding at that time and complications we

Above
Ice Lens (2005)
© Ackroyd & Harvey

faced creating work as the country emerged from lockdown. We worked with environmentalist Lille Madden and Uncle Charles 'Chicka' Madden, her grandfather and widely respected Gadigal Elder, to make the photographic content of a series of new photographic photosynthesis works in seedling grass including native species. Lille said: 'We need to fight for what we love and what we care about, that's what fuels me. We have to build on that love. We have an opportunity, right now, to take action on the climate crisis. First Nations voices need to be at the forefront, leading the way, because we've done so for millennia.' We're still in touch and Lille was part of SeedMOB, Australia's first indigenous youth climate movement led by Aboriginal and Torres Strait Island activists.

I personally also feel a strong connection to the people we worked with for the Dear Earth exhibition at the Hayward Gallery last year. Inspired by the 'commons' and soil, seed, air and water being the cornerstones of an ecological civilisation, we worked with London-based activists representing these elements. Soil was represented by Julian Lahai-Taylor from Grow Lewisham; seed by Helene Schulze of London Freedom Seed Bank; and water by Paul Powlesland, a boat-dwelling nature rights activist and barrister, and co-founder of Lawyers for Nature. Air was represented by two activists raising awareness of the disproportionate effect of air pollution on Black and Brown lives, musician and co-founder of LIVE + BREATHE Love Ssega and student Destiny Boka-Batesa, one of the teenage founders of the clean air campaign Choked Up. It was a really great experience, and we made strong connections and friendships through this exhibition.

Historically, I'd probably also mention *Dilston Grove*, when we grew a grass church in Southwark, because that was a piece that first came to our minds in 1990, but it took 13 years to actually bring it through and I think it really was something quite alchemic and magical.

As co-founder members of Culture Declares Emergency, can you please describe the movement's mission and how this resonates with your values?

HA: Interestingly, Culture Declares Emergency (CDE) has just revised the declaration[1]. CDE is using arts and culture to express the truth about the climate and ecological emergency to address deep-rooted injustices, and encourage regional and international hubs to create stories of change. This is about how are we adapting, how are we drawing on collective insights, imagination, knowledge, experience, tools and technology. It's also exploring and exposing dominant hierarchies that lead to violence, oppression and social injustice. For example, half of England is owned by less than 1% of the population.

DH: From being involved with groups like Extinction Rebellion, we realised that certain institutions couldn't actually engage with that level of nonviolent peaceful activism. The creation of Culture Declares Emergency was a way for these institutions and artists to have a voice and it's kickstarted groups like Music Declares Emergency, Architects Declare and Business Declares, so it's being fought from all directions and from different angles. We need people to have a voice to try and change this toxic system that we're living in.

HA: The vision is that the cultural sector is the leading contributor to the transformation of social and economic systems, to create a regenerative world in which biodiverse life is protected and the livelihoods of people are sustained with equality. The mission is to support and mobilise a global movement of declarers. There are collectives now in Uganda, in Germany and in America. We would love more people to become involved and there's a lot to be shared.

What exciting projects are on the horizon for you?

HA: *Beuys' Acorns* – getting the trees planted after 17 years of growing them in pots! We're aiming to plant 17 circles of seven trees, all grown from acorns collected from Beuys' incredible artwork *7000 Oaks*. We've got some great network partners and really good supporters. It's not a case of just digging a hole, putting the tree in and watering it as it grows; it's reciprocal between what the tree is doing for the community and how the community cares creatively for the tree.

DH: With the 2024 European City of Culture, Tartu, Estonia, we're working on a piece with the IUCN Red List. We're printing out a list of these endangered creatures, especially concentrating on some of the Estonian species, and having people overwrite them so that you bring these names out from the background. It's a way of communicating in front of this wall, which is a bit like a memorial wall.

HA: We're also working with Field Exchange in Ireland and that's around agroforestry. Ireland has suffered from intensification of agriculture, like England, and many species are being have been lost or are at risk. Agroforestry brings back trees which support the biodiversity, which supports the health of the land. There are a lot of hearts and minds to be won over. But this is the creative challenge!

ackroydandharvey.com

Reference
1. culturedeclares.org/declare

Art and the Earth crisis

Bridget McKenzie, founding director of the Climate Museum UK, offers an insight into how the organisation supports young people, and asks how artful learning can produce creative responses in the context of the climate change crisis

Above
Detail of *Make Climate History* mural, showing temporary warming after World War 2
© Bridget McKenzie

Left
Making collages in the We Breathe Together event
© Bridget McKenzie

Right
One of Kimberley Foster's artworks being interpreted in an Ecologies in Practice workshop
© Bridget McKenzie

Far right
A child drawing their desired future – a safe, warm and well-insulated home
© Bridget McKenzie

As an experimental museum with no building, the Climate Museum UK (CMUK) is a collective of creatives working in our local communities or online. Where the default mode of museums is to collect objects and display them through a range of thematic narratives, our mode is to engage people in 'activations' for change, using the arts and heritage as stimulus material.

We find that it is particularly challenging to enable meaningful empowerment for the young when the crisis – particularly climate change – is now impacting sooner than projected. This challenge raises questions like: what kinds of arts learning are radical enough to do justice to young people as the Earth crisis limits their expectations of safe futures? And, how do we design arts learning experiences that are truthful and collapse-aware, without shutting down creative potential through fear-based messages?

In CMUK, our attempts to address such challenges are guided by six principles, which we explore in monthly meetings as we share our practice. I describe three of these briefly in this article and illustrate how they are applied together in a sample of our projects.

Being planet-kind

One principle is to be planet-kind by default. This means we must centre the Earth and its troubles rather than treating it as one topic amongst others. Earth is a miraculous cosmic body, and the only one known to have a life-sustaining biosphere, so it should be the comprehensive grounding of all learning in theory and practice. The generic outcomes of cultural learning programmes and school curricula should include the ability to respond to and prevail in this worsening Earth crisis through acts of care, resilience and resistance. The eco-capacities that I suggest are needed include skills for regenerative design, peaceful collaboration and political change-making, as well as the understanding that comes with studying subjects such as geography and biology. Traditional curriculum subjects and academic disciplines were devised before the Earth crisis, assuming a certain stability in the conditions for human civilisation and the evolution of life, and are based on the universal acceptance of a narrative of human progress and expansion.

We aim to design projects that effectively address the Earth crisis by therapeutically supporting participants to express their feelings and explore environmental issues, while also going beyond this to maximise the social effect of activation for systemic change. It is common for experiences on environmental issues to conclude with tips for simple actions for individuals to carry out in their homes. However, these risk feeling superficial, ineffective or inaccessible, and can increase a sense of apathy or disempowerment. We want to increase the potential for collective action, critical awareness and motivation for longer-term commitment to pro-environmental efforts.

Participation and possitopian

The second principle to mention here is to be participatory. Rather than conveying messages or facts in a top-down way, we aim to support multi-way conversations about the Earth crisis. Conversations might start from an accessible place such as energy in our bodies, where food comes from or how one species connects to another, and we then use creative tools for participants to feel more calm, open-minded and optimistic. Once through these accessible doorways, we can offer prompts and resources for grasping more complex issues and solutions.

The third principle, being possitopian, is unique to the Climate Museum UK (CMUK) and is my own neologism. Being possitopian is about drawing on emerging realities and science, while also harnessing the full powers of the imagination. We encourage participants to face and imagine futures in lots of different ways, seeing from different perspectives, to get beyond apathy, despair or hard-line thinking about what lies ahead. This might mean visualising yourself in a greener, safer future place, and then adding a lens or a differently framed story to this, whereby your initial desirable scenario is challenged by a severe pollution or extreme weather incident. Alternatively, you might start by looking through the lens of how environmental factors are harming people, places and the climate, and then switching to the lens of tactics for stopping harm and achieving a more safe and stable future.

For example; in a workshop on air pollution at the Horniman Museum & Gardens in October 2022, we used a selection of handling objects to expand people's thinking on air pollution. Participants were invited to draw out and label links between the objects, linking pollution with climate change, animal agriculture, lifestyles and respiratory health. We then invited participants to visualise the safe, clean and green future they would work for, and to discuss this while making collages on large scrolls of wallpaper printed with trees. These collaged scrolls were then hung in the museum's conservatory to create a forest of future hopes.

> 'If we put both the arts and the Earth crisis at the heart of learning experiences, we can create opportunities for diverse perspectives to generate new possibilities of expression and action'

Our new project Make Climate History uses the warming stripes relating to rising global temperatures. We are piloting this initially in Bromley and Norfolk, and hope to offer it to schools and other larger groups. In February 2024, we participated in the Norwich Science Festival, inviting families to explore how human activities have warmed and changed the climate. Using library books, a timeline resource and conversation, participants created a mural of stripes across the glass wall of the Millennium Library, with annotations and drawings of past climate events and future visions.

Norfolk is at high risk from climate change with low-lying land and the fastest eroding coastline in Europe. There have been multiple flood warnings since October, many rural communities are struggling and farmers are anxious about sodden fields affecting their crops. We heard children echo their parents' experiences and describe them as their own lived experiences. They asked why adults had let global temperatures rise so fast, as 2023 was at 1.5 C above the pre-industrial global average and ocean temperatures are at extreme highs. They also expressed worries about how pollution affects soil, air and water, pollinators and marine life. They wanted to know how they could help, so we offered some resources about the solutions and invited them to create a second artwork to visualise themselves in a chosen future year when their world is greener, safer and kinder.

Goldsmiths collaboration

For the Ecologies in Practice research project, we collaborated with Goldsmiths' Centre for Arts and Learning to explore arts-led methodologies for engaging young people in the Earth crisis. We worked in three pairs of practitioners to explore different art forms in eight sessions with schools. The pairing I formed with artist Kimberley Foster focused on dialogue around her assemblage artworks and my collection of handling objects, and aimed to spark conversations around provisional and complicated ideas. Our artefacts offered the potential for rich dialogues about the excesses of mass production and waste. Kimberley's artworks stirred feelings of empathy, leading participants to ask questions such as: 'If trees could speak, what would they say?' and 'Are shells living things that can hear?' The artworks were stimuli for shifting perspective, so that things all around us become animated and extraordinary, with ecological connections made visible. You can learn more about this project on the website ecoartslearning.net.

Although young people must grow their knowledge of the causes, impacts and solutions of the Earth crisis, the risk of overly factual education is that it overwhelms and creates a paralysis of imagination through anxiety or apathy. If we put both the arts and the Earth crisis at the heart of learning experiences, we can create opportunities for diverse perspectives to generate new possibilities of expression and action. We hope that our projects and learning resources help young people and those who work with them have the best opportunities for such experiences.

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Climatemuseumuk.org
Bridgetmckenzie.uk

Edge Effects

Inspired by nature, and creating the opportunity for collaboration, conversations and actions, the Edge Effects project shapes artist residencies in schools. **Kirsty Lowry**, artist and curator for Schools and Teachers at Whitechapel Gallery; **Zenab Bhuta**, PPA art teacher and art lead teacher at Vicarage Primary School; and **Hazel Lopatkin**, artist and head of art at Plashet School, share how the project works

Edge Effects is a participatory project that draws inspiration from nature to shape an ongoing series of artist residencies in schools. The project is a collaboration between Whitechapel Gallery, Vicarage Primary School and Plashet School in East London.

Over 300 children and young people have taken part in the workshops, and an accompanying exhibition ran at Whitechapel Gallery, London, from January to May 2024. Collaborations, conversations and actions resulting from the project continue to grow.

Workshops in school gardens and classrooms in the autumn of 2023 adopted a slow approach, guided by principles of permaculture to develop awareness and care for our natural environment. Permaculture is a creative design process that takes inspiration from nature to create regenerative solutions for us, our communities and our planet.

Above
(Almost) Ikebana (2023)

Johanna Tagada Hoffbeck with 11 to 14-year-old students at Plashet School

Paper cups, natural pigments, dried flowers, seedheads and grasses

1 The Japanese practice of Ikebana is a disciplined art form in which nature and humanity are brought together through a slow, meditative consideration of plants' shape, line and form. The artist guided students through some of the key principles of this practice to explore the beauty and sculptural qualities of plants.

2 The Gardening Drawing Club, founded by Johanna Tagada Hoffbeck in 2021, is an ongoing series of participatory interactions with people, plants and gardens. For Edge Effects, the artist created a warm invitation to children to stop, look and draw; to take notice of the tree leaves, branches and berries found on the periphery of their school site. The resulting collection of drawings are a poetic illustration of time spent in careful observation of nature.

Left and above
Tree Drawings (2023)

Johanna Tagada Hoffbeck with eight to 10-year-old pupils at Vicarage Primary School

Pencil on recycled sugar paper

3 Using foraged natural material, including wild grasses from open land close to the school, and leaves fallen from municipal planting, the artist guided students to weave using simple, yet ancient, basket making techniques. The repetitive rhythm of stitching and coiling, gathering fibres in your fingers and coercing them into shape, creates a meditative experience. Entwined in this act of making and handling of raw materials from the local landscape is the experience of connecting to the land.

4 The geographical, spiritual and medicinal histories of oak, hawthorn and rosemary, all growing on the school site, were captured by pupils in notes, sketches and poetic compositions. This collection of individual botanical meditations is gathered in a beautifully bound book.

‘In taking time to observe a leaf, to listen and learn from its stories, we ask: might an oak tree or a blade of grass impart their valuable wisdom if we look for long enough?’

Above
Wild Baskets (2024)

Kirsty Lowry with 13 to 14-year-old students at Plashet School

Mixed grasses, cordyline leaves, pine needles, nettles, cotton and linen thread

Right
Botanical Notes (2023)

Sonya Patel Ellis with nine to 10-year-old pupils at Vicarage Primary School

Book of works in pencil on recycled sugar paper

The ethos of the project was guided by the first principle of permaculture: to observe and interact. We could argue that all creative practice, problem solving or cultural change occurs by first observing. This is where the curiosity gets nurtured and the understanding is formed; looking, listening and questioning. If we start to notice, we are more likely to care and we must care if we are to take responsibility for how we live on this planet. Each of the Edge Effects workshops took place within the usual school timetable, testing ways to carve out space for this form of inquisitive investigation and creative knowledge acquisition within the fast pace of the school day.

Edge Effects have collaborated with artists who explore the potential of permaculture principles and ethics, centred around Earth care, and environmental and social justice, as a fundamental part of their practice. When art education incorporates contemporary practice, the learning remains vital and relevant – Edge Effects follow artists’ approaches in developing an understanding of how to creatively critique and respond to current urgent issues. Such projects can advocate for the essential role of art, craft and design in schools, but this isn’t about siloed subjects, jostling for priority position in the curriculum timetable. Taking a creative approach to explore our place in this world is inherently transdisciplinary.

So, as urgent as it is timeless, Edge Effects is a project about our stewardship of the planet and the promotion of a mindful understanding of our place in nature. In taking time to observe a leaf, to listen and learn from its stories, we ask: might an oak tree or a blade of grass impart their valuable wisdom if we look for long enough?

With enduring thanks to Art Matters London.
whitechapelgallery.org/exhibitions/edge-effects

E&CE bookmarks

The NSEAD Environment and Climate Emergency (E&CE) research group are collecting a range of resources for learning about environmental issues, in order to grow a ‘one-stop-shop’ for art educators to help embed sustainable practice and inspire a love of nature. Here, **Susan Ogier**, senior lecturer at University of Roehampton, lists a few

Below
HOPE (2017) by
Geza Sallai (b.1967)
© Corbenic Poetry Path

The resources listed below are for all learning phases – from early years to adults. It is an evolving endeavour as new research, imaginative examples and inspiring projects are shared.

Art UK
Art UK’s learning resources has a whole section on climate change and the environment, with activities and suggestions aimed at aged seven and above – although they can be adapted for any age. Themes include weather, natural disasters, animals, climate and the wild.
artuk.org/learn/learning-resources/climate-change-and-the-environment-resources

InSEA – Climate Literacy for Art Educators
Five visual essays, published by the International Society of Education through Art (InSEA), explore the arts as a vehicle for developing awareness and understanding of the changing climate. The essays share reflective international climate-change perspectives and sustainable pedagogies
insea.org/wp-content/uploads/2022/05/IMAG_issue_13.pdf

Art 2030
The inspiring artworks on this Danish site are specifically linked to the United Nations Sustainable Development Goals.
art2030.org/about

Climate Museum
Rather than occupying a physical space, this is an experimental museum that exists as a series of events. Climate Museum UK recognises the contribution of arts and culture in developing and encouraging a groundswell of activism, to promote imaginative and creative responses to the climate emergency.
ecoartslearning.net/about

Mother Natured
For anyone working with children, these resources offer creative ideas to engage young people with the wonder of nature.
mothernatured.com

Craft School
This year, the Craft Council’s Craft School initiative, which is an effort to platform the importance of making for primary and secondary schools, have teamed up with the Eden Project.
edenproject.com/learn/crafts-council-partnership-material-world

WWF
The World Wildlife Fund (WWF) believes that ‘schools can play a key role in addressing climate change and nature loss, while inspiring and equipping the next generation to be responsible stewards of our planet’. Watch the video and create your own film or documentary.
wwf.org.uk/save-our-wild-isles

WWF also offer help with planning art projects to help address the challenging issues facing our planet: **wwf.org.uk/get-involved/schools/resources/climate-change-resources**

Further resources
There are many other galleries that have teaching resources to help initiate and explore climate change, such as the Royal Academy and the Natural History Museum.
royalacademy.org.uk/page/cilmate-teaching-resource

Plastic free schools
Surfers Against Sewage will help you commit to a plastic free art department
plasticfreeschools.org.uk

Looking for books?
NSEAD’s Art Educator blog includes book reviews by Emese Hall.
nsead.org/publications/blog/nsead-summer-book-club-art-and-the-climate-emergency

Co-authored with Karin Doull and Susan Ogier, *Teaching Sustainability and Climate Change in the Primary Curriculum* (2023, Sage) is a practical book with creative and sustainable ways to teach about climate change.

Art and learning with nature

Debi Keyte-Hartland, independent artist educator and early childhood consultant for Creativity and Innovation in Education, discusses the unique ecological curriculum of a West Midlands nursery school, inspired by the pre-schools of Reggio Emilia

Madeley Nursery School, in Telford, West Midlands, is an outstanding early years setting for children aged two to five, led by head teacher Louise Lowings. The maintained nursery has a unique ecological curriculum based on contextual relationships between children, their ideas and their encounters with the world. It also fosters an approach to learning *with* nature (as opposed to *about*, *in* or *for*) that helps children build awareness of the relationship with living, interacting systems, and helps develop their ecological identity. This approach enables the children to develop a deep understanding of the place where they live and go to school, helping them to be ethical citizens of the world, and capable of discussing their thoughts and actions, which develops their sense of self in relation to each other, the community and the wider ecosystem.

'The research projects with children and educators as co-researchers are part of daily nursery life and provide opportunities for observation of natural phenomena directly, and investigation of subjects such as the rain, spiders, trees or composting'

Madeley values and considers the arts as activators of relational and mutual learning *with* nature, which encourages the children's collaboration through the expressive arts and creative research. The arts serve as languages of communication through which children come to know and express the vitality of their garden through the drawings they make, clay work produced and photographs taken, as well as the games they invent and play in the nursery garden. This vitality – of both the garden and the children's ideas as expressed through their creativity and critical thinking – is defined as an energising presence that belongs to art, education and nature, in which children's attitudes of deep care, empathy and attention build relationships of solidarity *with* nature.

The nursery's approach to the arts, and to teaching and learning, has been inspired by the pre-schools of Reggio Emilia, Italy, where aesthetics is recognised as a generative factor in children's thinking. Vea Vecchi, an artist-teacher, described in her book *Art and Creativity in Reggio Emilia,* the schools' approach to learning as being a kind of 'transdisciplinary fertilizer, full of vitality, capable of welcoming different ways of thinking'. These qualities of vitality or liveliness are what Madeley educators cultivate with their children, and which exist in their arising ideas and experiences that are expressed through modalities of art, often within long-term research projects based on encounters in their garden and local area.

The research projects with children and educators as co-researchers are part of daily nursery life and provide opportunities for observation of natural phenomena directly, and investigation of subjects such as the rain, spiders, trees or composting. These projects are emergent and unfolding, co-designed with the children's own working theories which often explore their environmental and ecological concerns.

One such example was designing a range of flood escape ladders for the garden's woodlice community. The children had been concerned for these crustaceans from the threat of localised flooding of the nearby River Severn, whose flood defences had been activated and raised. The ladders featured lights, safety rafts and lifts for the woodlice who could not see well, and for the elderly who would find climbing very difficult. What might appear as sweet sentiments of young children, underestimates their complex thinking as expressed theories of environmental concern and impact on localised ecosystems (the woodlice). Their critical thinking about the safety of an entire community drew on their understanding of being part of a nursery school which is situated in the heart of sheltered accommodation for the retired and elderly.

Educators' observations and knowledge of children's learning recognise how they perceive the world in its entirety and make sense of this holism without breaking it down into isolated, separated parts. Thus, educators in Madeley work with children's knowledge-building processes in ecological and systemic ways that do not separate out educational disciplines or programmes. Nor do they put learning about the environment and climate emergency as an additional activity tagged onto an already full and mandated curriculum. Rather, this becomes a transversal value running throughout all policy, curriculum and pedagogy at the heart of all practice. The aim is to activate the ecological curriculum through the daily life of the school and all its projects.

What has been crucial in building this sustainable, ecological education paradigm at the nursery has been recognising wellbeing as both pertinent to both the children and what lives in the garden. Children have written to local authority gardeners to stop using weedkillers and pesticides, and to mow the lawn less to increase biodiversity. Environmental sustainability and care are embedded as an ethical and daily duty, and as an interrelated whole in which the arts and creativity coexist with logic and science, imagination and knowledge.

Learning and activating the arts as generators and amplifiers to build children's ecological identities, and awareness of the environment, has created a foundation for action and a strong empathetic sense of children's relationships with nature. It is an approach of acting with the world in which wellbeing is extended to all members of the delicate ecosystems beneath the children's feet – the woodlice, grasses, ants, trees and soil. Being attentive to learning with nature enables a mutual flourishing with implications for approaches in the curriculum that build greater coherency between children's ecological enquiries, experiences and theories which, in turn, increase their critical, creative and communication competencies. The languages of art are vital to young children who are developing core communication and language skills. The languages of art enable the rights of all children, as addressed in the United Nations Convention on the Rights of the Child, to participate and express their point of view in environmental matters that affect them, and to which society can listen, learn from and respond. ●

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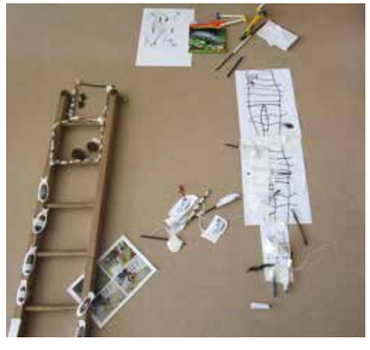
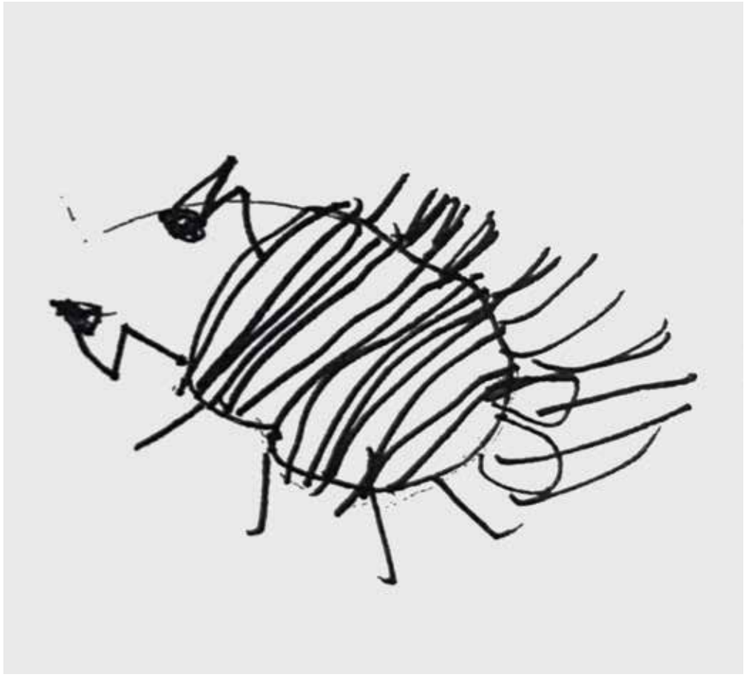


Below and right
Observation and drawing of the woodlice community © 2024 Madeley Nursery School

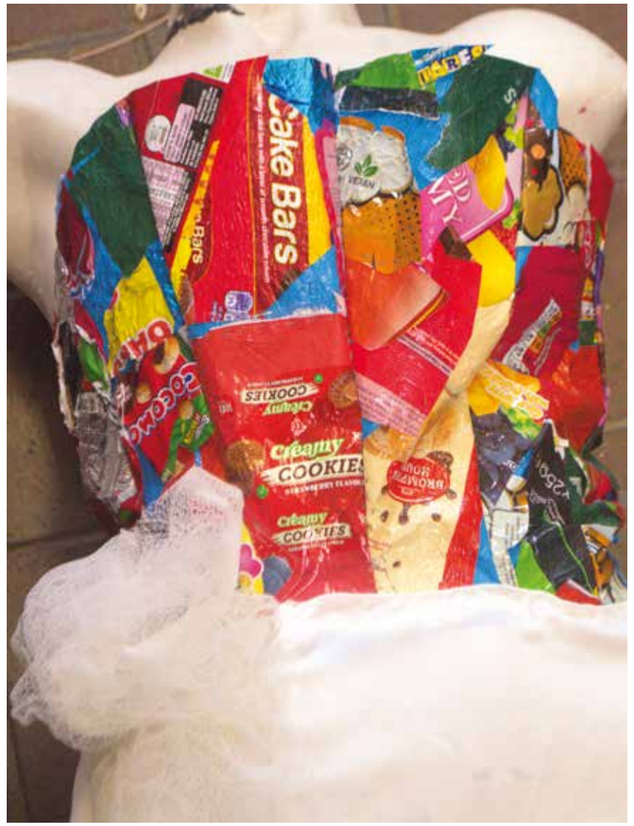
Opposite (below)
Work in progress of children's ladder designs for woodlice to escape the flooding of the River Severn © 2024 Madeley Nursery School



Young people, art and climate change

Having noted that many 16 to 18-year-old art students produce work based on environmental issues, **Louise Diver**, art teacher at Holy Trinity CofE Secondary and Sixth Form in Crawley, West Sussex, asks what draws them to this subject matter and is their work having a positive impact?

Many of our 16 to 18-year-old art students have, or are, producing work that focuses on environmental issues. They have arrived at this common theme from different starting points and of their own volition – sustainability is important to me and my teaching practice, but I have not consciously influenced them. They have chosen to focus on the negative aspects of climate change or pollution – largely waste, rubbish and plastic pollution.



‘Do our students feel so overwhelmed by waste, rubbish and excess that it is seeping into their art?’

Opposite
Student Chleo’s ‘fox clay’

Above
Detail of a dress created by sewing ‘fabric’ made from waste plastic

Ingrid in year 13 (aged 18) is interested in textiles and drawn to the tranquillity and beauty in nature. Following a trip to see El Anatsui’s *Behind the Red Moon* at Tate Modern, she decided to construct a dress from crisp packets. El Anatsui’s hand-sewn recycled materials have specific meanings and links to the past – trade routes and colonialism. Ingrid melted the crisp packets into sheets of ‘fabric’ with an iron before sewing them together. Her choice of material highlights waste and an excess of ‘stuff’ by turning rubbish into something beautiful. Like El Anatsui’s work, the rubbish is not disguised.

I am interested in this choice because it is in stark contrast to much of Ingrid’s other work, which depicts a perfect, beautiful version of nature, untouched by human hands and often viewed through a window – separate from the human world. She admits that she ‘is not an outdoors person’. She doesn’t want to ‘be in nature’ but does want to look at it. When asked why she wants to tackle the issue of littering, Ingrid says: ‘It’s important. I just hate seeing rubbish everywhere and knowing that it is killing animals.’ This is relevant to young people; it is not such an abstract concept as melting ice caps thousands of miles away but is a lived experience growing up in Crawley. By making art or clothing from crisp packets, she can become part of the solution.

The growing problem of waste

The choice to make a dress links to the growing problem of fast fashion. The fashion industry has a huge negative impact on the environment, causing 8-10 per cent of global emissions, using huge amounts of water, land and oil, as well as contributing to landfill. Could clothing made from crisp packets be the future?

Chleo chose to explore urban creatures, looking at foxes and their symbiotic relationship with our waste. Foxes, like seagulls, have adapted to become urban animals, reliant on human detritus. She planned to create a sculpture from clay and discarded tin cans, twisted into beautiful forms. Unlike Ingrid, she turned the cans inside out, so that the bright colours and branding do not detract from the form.

Tanya began her project with a fascination with sharks and whales. She constructed these in clay, which led to thoughts of the sublime and plans to make something akin to Damian Hirst’s *The Physical Impossibility of Death in the Mind of Someone Living*. This evolved through many iterations to a chicken wire whale filled with rubbish. What is she trying to say with this? Like the others, she talks about waste and littering.

Is litter an obvious choice, as it is so visible in our environment, or a means to use recycled material to make art? Do our students feel so overwhelmed by waste, rubbish and excess that it is seeping into their art?

It isn’t surprising that young people are so focused on plastic pollution. It is estimated that, in 2023, there were 171 trillion pieces of plastic in the ocean. Plastic has been manufactured throughout the last century and has allowed for medical and technological advances. However, half of all plastics ever manufactured were produced in the last 15 years. Most plastic still exists and could take up to 400 years to break down.

Plastic pollution

We only need to look outside to see plastic pollution. I recently walked along Shoreham Port in West Sussex, and while the sea was clear and full of wildlife, there were clusters of rubbish washed up on the beach and blown down from the city. This is depressing as an adult, but for children and young people, it can be overwhelming. Another student, Jeroes, has chosen to make drawings about ocean plastic, showing the contrast between beautiful crystal seas teeming with wildlife and rubbish wreaking havoc below the surface because it makes him ‘angry to see people dropping litter’. In the past, he has made work that highlighted the problem of disposable vapes.

Many of these works incorporate waste into production, already making a positive impact by reducing landfill that tiny bit, and limiting the use of new resources. By bringing attention to the problem, young people are raising awareness for adults who can make a difference. They are telling us that it is important and that they can be part of the solution. When it comes to the summer exhibition, there will be a strong environmental theme. It will send a message to visitors that this is what they care about and this is what they want to see action on.

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Embedding climate education in ITE

Far left and left
Bodices and 'plastic tailoring' made by art and D&T PGCE trainee teachers, in collaboration with art and D&T subject leaders from the University of Reading and the head of faculty (Lynn Hawkins) at Furze Platt Senior School

Opposite
Hive 1, made in 2023 for the climate and sustainability education development, in a cross curricular day between art and design/science D&T

Melanie Jay, PGCE course leader in art and design at the University of Reading, considers how working collaboratively can embed climate and sustainability education into secondary initial teacher education

There is little doubt that we are at a tipping point with our changing climate, and with so many young people feeling frustrated and let down by the generations who have gone before them, it is time for action in schools. There is clear evidence that young people are suffering with eco anxiety, yet there is much we can do as facilitators for learning to support and encourage our students to contribute to a better environment, and to collectively support the bigger picture by promoting hope with action.

Within the Secondary PGCE at the University of Reading, art and design, and design and technology (D&T), were identified as subjects already working with the climate and sustainability agenda, but often individually rather than collaboratively. Both subject leaders have always strived to develop beginning teachers who successfully communicate, collaborate and cooperate, alongside being creative and innovative practitioners who promote sustainable futures.

Over recent years, the subject leaders, working with the faculty leader for art and design and D&T at Furze Platt Senior School in Maidenhead, have planned and delivered workshops which have developed ways of working with sustainable textiles. Trainee teachers have transformed discarded materials by melting, cutting and fusing, to turn them into garments and accessories. The trainees have worked with natural dyes to colour their own fabric and used these within the structure of the garments. This approach to reusing, recycling and repurposing has been the first step towards the trainees becoming resourceful and thoughtful practitioners within the art and D&T classrooms. To further enrich and embed this way of working, additional collaboration has been developed between secondary PGCE art, D&T and science trainees. Focusing on Stirling's (2021) principles of collaborative learning – thinking creatively for future scenarios, participatory learning and critical reflection – the team of tutors has delivered cross-curricular days, which explore plastic pollution, discarded materials and the impact on endangered native UK species. More than 50 secondary trainees from these three subjects are brought together to think creatively, to collaborate, to reflect and to produce a visual statement which raises awareness of the issues.

The science trainees bring ecological science knowledge, which is further supported and developed by the D&T trainees' knowledge of the properties of plastics and problem solving. The art trainees bring creativity and the desire to produce a visual statement which could raise awareness, and encourage an audience to respond and react. This not only provides trainees with new knowledge and skills to be able to take into schools, but a new approach to working with colleagues from other subjects also enriches the learning experience. Trainees are required to plan a scheme of work (SoW) or a whole-day experience for a group of students to explore the theme in a creative way. Trainees are required to create a piece of exemplary artwork to support the SoW, producing supporting scientific information, and underpinning the work which will enrich and embed students' knowledge.

> 'Our hope is that all our trainees and ECTs will be empowered to move their young learners from climate education and climate action to climate justice'

On presenting their outcomes, the trainee teachers reflected on how refreshing it was to be able to collaborate with trainees outside of their subject specialism. Student Domenic Sidonio stated that: 'Participating in the climate education project proved to be a profoundly rewarding and enjoyable experience, where the collaborative effort to instil a deeper understanding of environmental sustainability and material renewability among trainee teachers yielded remarkable results. The project, designed to equip young educators with the knowledge and tools to integrate climate education into their teaching practices, was met with cross-curricular enthusiasm.'

As students move on and become early career teachers (ECTs), they can successfully deliver elements of climate and sustainability education to the young people with whom they are working.

Sidonio continues: 'As an ECT, I have incorporated climate education into my own curriculum to highlight and discuss the importance of material selection and product disposal. The Climate and Sustainability Education project has enabled me to recognise the importance of understanding how climate change can be taught across all subjects through various mediums and at different intensities.'

The cross-curricular work with art, D&T and science has been expanded to work with more schools in our ITE partnership. This enables us to work with former trainees and their students to raise awareness of climate and sustainability issues, alongside developing new knowledge and skills in the hope of ensuring a sustainable future for us all. We share a common concern and commitment to embedding climate and sustainability education within our programmes. Our hope is that all our trainees and ECTs will be empowered to move their young learners from climate education and climate action to climate justice.

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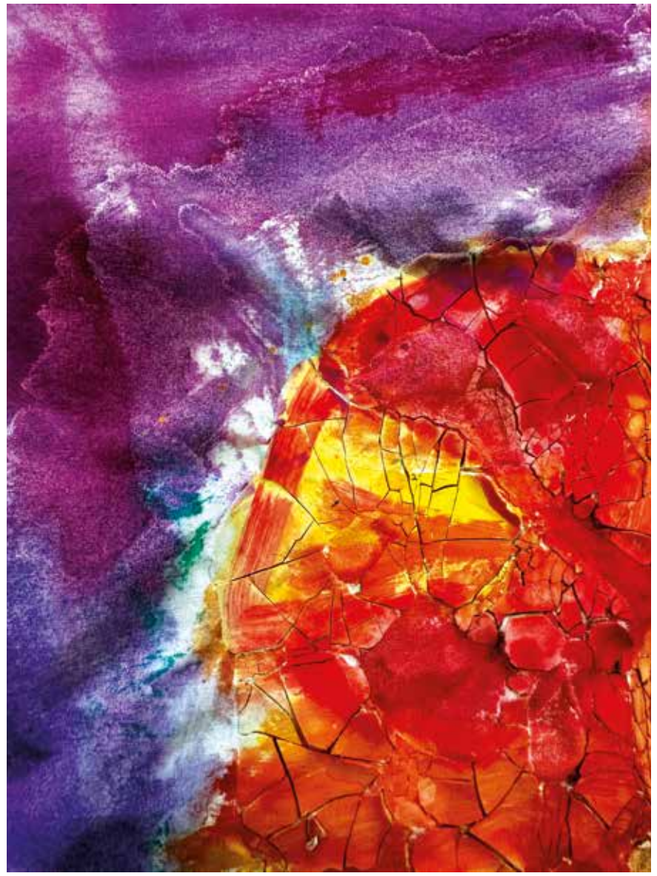
Below
'Flour' batik on cotton sheeting, for cloak designs for this year's performing arts show *Dreams*

Opposite
Insects using wire, cellophane and recycled materials

Clare Boreham Kerr, art and design, and D&T lead at Benton Dene School, discusses how the school's adapted art, design and technology curriculum allows for haptic and visual sensory exploration, whilst focussing on using natural, recyclable and biodegradable materials

Balancing act: Material reality



In the Great North Museum (GNM) in Newcastle upon Tyne, there is a small but significant shrimp on display. Its name is *Eurythenes plasticus*, a species of deep-sea amphipod first discovered in 2020 by researchers from Newcastle University. Despite living at the bottom of the Mariana Trench, which every Octonaut-loving child knows is one of the deepest places in the ocean, it had consumed a fragment of plastic. The shrimp is a stark reminder of how microplastics now pollute all areas of the globe.

I have always had an interest in natural history and ecology, and much of my own art when I was studying fine art at Newcastle University in the 1990s had a focus on the natural world. We were also the only department, besides the chemical engineers, who had to have a materials 'health and safety lecture' due to the range of dangerous materials art students were known to use. Consequently, I have always been aware that some art, D&T and textile materials are problematic for the environment.

The environmental sustainability of materials has presented me with niggling dilemmas when designing our curriculum. As we are a primary SEND school, with a high proportion of autistic children, it is important that our adapted art and design, and D&T curriculum allows for a great deal of haptic and visual sensory exploration, with a focus on developing and adapting for fine motor skill differences. We also include a strong element of awe and wonder for which sensory stimuli can be very motivating, as well as flexible and open-ended content where pupils can include their own ideas and themes. Other subjects and specific SEND programmes, such as Attention Autism, are approached with creativity and a focus on real and representative stimuli, which naturally includes art and crafts. Consequently, a very wide range of art and D&T materials are accessed across the whole school and our pupils' needs take priority over ecological concerns.

> 'The concept of natural versus manmade materials is also a feature of the science curriculum which children can find hard to understand, so reinforcing these concepts regularly is supportive'

Using reclaimed/recycled materials

As with many schools, budgets have been squeezed in the last decade and so cost has added an extra layer of prioritisation when ordering materials. For example, the cheapest textiles are usually synthetic. There are easy wins, however; using the cheaper pottery clay over air drying clay, which can contain nylon fibres, has reduced waste and expense, and it may be rehydrated and reused. 'Eco materials' can be reclaimed/recycled or biodegradable; a bonus if they are both. We are lucky to receive donations of recycled and reclaimed materials via parents or staff who have links to local factories. Large 'offcuts' of card from the local Lindt chocolate factory are very useful for paint and print activities, as well as being flexible for easy cutting, folding and construction.

There is a focus on making with natural and biodegradable materials in D&T through linking to some history topics. Willow from the willow garden is used to make wattle and daub, and materials such as wire, twine, string, split pins and card are included across many units. The concept of natural versus manmade materials is also a feature of the science curriculum which children can find hard to understand, so reinforcing these concepts regularly is supportive.

Insect sculptures

Cornelia Hesse-Honegger's UK exhibition of scientific illustrations, detailing how insects were affected by radiation around Chernobyl, was launched at the GNM in the 1990s and made a lasting impression on me. With this in mind, we use wire, paper, salvaged textiles and cellophane (which is non- toxic and biodegradable) to make large insect sculptures in year 6 (aged 10-11), linked to Hesse-Honegger's huge insect drawings and Louise Bourgeois's spider sculptures. We discuss our choice of materials and their impact on pollution in the natural world.

Our annual performing arts show, combining all arts and technology subjects, is written and performed by the pupils, who also make scenery, costumes, masks, puppets, props, with model backdrops which are projected onto the stage. This makes great use of any junk materials and is an opportunity to make very individual pieces. Our young prop makers particularly love covering masks and puppets in shiny decor: this is one balancing act where glitz will trump eco concerns. The plot often includes some giant jewels that need to be 'rescued' and we are now all a dab hand at using coloured cellophane layered over tin foil; biodegradable but, being a common plot theme, also reusable in future shows.

Serendipitously, turning to recycled and natural materials prompts an emphasis on 3D making within the curriculum, which has supported an approach that meets many aspects of our pupils' motor and visual learning needs; offering a rich diversity of sensory opportunities. Many occupational therapy programmes focus on 3D manipulation before moving to finer 2D work, and junk modelling is an excellent vehicle for haptic learning.

We at the chalk face can only do what time and budget allows when it comes to curating eco-focused art and design provision. A local warehouse once coordinated usable waste from local factories so schools could visit the treasure trove to fill a bin bag for a few pounds. This closed over a decade ago and is greatly missed. Within school, we are currently making new links with local factories to re-develop our store cupboard to be a version of this, but it takes a lot of time and organisation. We are lucky to have shared vision and support amongst keen colleagues, as well as a teaching assistant with weekly time to do this. ●

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Sustaining the art of hope

Henrietta Patience, lecturer of Art and Design Secondary and Primary PGCE Goldsmiths, University of London, has been exploring themes of sustainability and ecology with young artists through a series of enrichment sessions at Leigh Academy Blackheath in Southeast London. Here, she explains the process

School students are becoming increasingly aware of the climate crisis and uncertainties for the future of the planet. The media bombardment of doom-laden imagery and narratives can be overwhelming and might lead to climate anxiety. Students may feel frustrated and disempowered with the limited opportunities that the curriculum currently offers to engage with and develop knowledge and understanding of climate change. Despite the Department for Education's 2022 policy paper *Sustainability and Climate change: a strategy for the education and children's services systems*, with its focus on preparing young people with green skills for green jobs and the green economy, there remains little reference throughout the National Curriculum. Prompting students to take action are organisations such as Teach the Future, a campaign for climate education to permeate the entire curriculum. It is led by young people across the UK and supported by the student-led charity Students Organising for Sustainability (SOS) UK.

Art and design, both as a school subject and within broader social contexts, has the capacity for liberation, drawing inspiration from human experience. Through evoking emotions, raising awareness and inciting action, art holds the transformative power to shape individuals and society. It plays a formative role in nurturing confidence and empowerment, particularly in tackling complex issues. It is important for students to be aware of the impact that crises such as global warming will have on their lives, but equally crucial is instilling a sense of hope and resilience. Even when on a modest scale, art can equip students with the tools to explore solutions and address environmental challenges.

I have been exploring themes of sustainability and ecology with students aged 14-16 through a series of enrichment sessions which ran across two terms at Leigh Academy Blackheath in South East London. In a bid to encourage students to explore and interact with their outdoor environment, and reconnect with nature, students were asked to design a living artwork for their school grounds that would promote ecology and biodiversity. One of the privileges of running an extracurricular session is the freedom from the often restrictive nature of a timetabled lesson. The sessions allow a time for connection, cross-pollination and finding hopeful ways of thinking and doing, including tangible experiences with nature, while observing how ecology interconnects and thrives. Often, secondary school grounds are neglected educational resources that can offer physical and mental health benefits at a time when many teenagers' connection with nature is at an all-time low[1].

Opposite
Finished liveable artwork in the school grounds

Below
Finished liveable artwork in the school grounds

Right
Students collaborating and creating their liveable artwork using terracotta

'Even when on a modest scale, art can equip students with the tools to explore solutions and address environmental challenges'

Working collaboratively in small groups, students photographed and documented wildlife, insects and plants found in the proposed site. They also collected natural materials to bring back to the classroom to make recordings of their site through plaster reliefs, inspired by the Boyle Family's three-dimensional casts of the earth's surface, which record and document random sites with great accuracy. These sessions presented opportunities for interdisciplinary learning and supported the design process. To understand more about supporting a healthy ecosystem, students worked with the school's STEAM ambassadors to seek advice on their use of materials and design, and to look at how insects and wildlife might interact with their work. Conversations continued throughout the making process and students discovered a surprisingly wide variety of invertebrates, including woodlice, nesting mason bees, ladybirds, lacewings, funnel web spiders and centipedes. This knowledge exchange also encouraged the building of relationships across subjects and year groups.

Inspired by the 3D-printed tiles along Hong Kong's coastline, which are designed to revive marine life, students worked with terracotta. This medium was also chosen for its sustainable qualities as terracotta is natural, recyclable, long-lasting and weatherproof. Some students chose to add colour to their designs by using underglaze, which is cheap, non-toxic and only requires a single firing. The completed artworks now adorn the school grounds, enriching the environment both visually and ecologically. Their presence is intended to spark discussions and invite the audience to become co-creators in the narrative. As time progresses, these artworks will undergo transformation and growth, a journey that students can document and archive. The outcome remains undetermined, full of hope and potential.

Over time, students will hopefully witness the nurturing of a healthy and thriving environment, of which they are temporary stewards, leaving behind a legacy for future generations.

Furthermore, the project has encouraged agency among students, empowering them to influence their surroundings and potentially shape their future decisions as they assume greater responsibilities. While it's crucial for students to understand that their concerns are valued and taken seriously, we should also remember that hope and envisioning a brighter tomorrow are just as important. ●

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Reference
1. Dasgupta, P. (2021), *The Economics of Biodiversity: The Dasgupta Review*. London: HM Treasury

Dressed in code

Artist teacher **Sarah Blackie**, and the former head of art at Lodge Park Academy in Corby, explains how encouraging art projects with environmental themes has enabled students to gain a deeper awareness of climate change, whilst gaining first-hand experience of the creative industries

Below
A pattern created from repeating the calligram on the right, by a GCSE art student

Opposite
A calligram on the theme of climate change, by a GCSE art student

As art and design educators, we are passionate about our subject and believe in its importance within the school curriculum. We know how art allows students to learn about the world and their place in it, inspiring numerous artists, makers and designers through scientific achievements, and influenced by historical, cultural, social and political factors.

In the last few years, I've delivered projects with various environmental themes covering landscape, organic forms and architecture. However, after having increasing concerns regarding the climate crisis, I felt there was a need to encourage my students to explore the theme more deeply. To further this, we set up a collaboration between our GCSE Art, Craft and Design students and the Cambridge-based clothing company DressCode Shirts, with the aim to create patterns which referenced data associated with the climate crisis. The winning design would then be rendered onto a shirt for production.

'As part of their research and development of ideas, students collected images, facts and information about climate change, with many creating calligrams to record the information gathered'

In 2021, COP26 took place in Glasgow, and the UK media was awash with images of protesters and work by artists such as Jenny Holzer, Mary Ellen Carroll and Steuart Padwick, all of whom were using the occasion to build support for action against climate change. One Saturday morning, whilst reading the newspaper, I spotted a photo of a delegate wearing a shirt decorated with climate warming stripes. I was excited by how data had been visualised to convey global warming trends to non-scientists.

I discovered the shirt was made by a company called DressCode Shirts. I first contacted them in the hope that someone at the company would be willing to give a talk to our students. I sent some images of digital patterns created for a previous environment project and cheekily asked if Dresscode would be interested in collaborating. Imagine my excitement when Andy Boothman, CEO of DressCode Shirts, replied with a very positive yes.

We devised a project brief and arranged for Andy to meet the students. He shared examples of the 'climate code' shirt, and then he and the students had a healthy discussion about the climate challenge, the need to change our habits, and embrace new ideas and technologies. They discussed the issues surrounding 'fast fashion', the negative impact on the environment and how DressCode Shirts were positively taking these issues into consideration by using sustainable materials, environmentally friendly inks and supporting the 'more trees' initiative – where a tree is planted for every shirt purchased.

The project required students to find statistics about climate change they felt were important and to express the message typographically. It could be numbers written as words, the creative use of letterforms or replacing letters with numbers. Students were encouraged to explore the visual hierarchy of the message and the connected emotion and/or action. We even discovered a font called 'Climate Crisis' that shows the melting of the glaciers over time.

In using data as the primary source, students explored how a range of artists and designers had created similar artwork – Nathalie Miebach, Jason Salavon and Peter Crnokrak – and spoke with science, geography and maths teachers for additional information. This, of course, helped other heads of department and senior leaders gain some understanding of how art could contribute towards learning in other subjects.

As part of their research and development of ideas, the students collected images, facts and information about climate change, with many creating calligrams to record the information. They produced mood boards and contextual study pages about data art, typography, environmental art, fashion and pattern. I was amazed by the depth of research completed and the knowledge students gained from the exercise.

Over the following three months, students became experts in an aspect of the climate crisis. Whilst some focused on the significance of the number 1.5 in relation to global warming, others focused on creating patterns, inspired by issues such as the decline in the bee population, the rise in sea levels, the warming of the oceans, and greenhouse gas emissions associated with land clearing and food production. One student called Ruta – whose design was selected for production – discovered that, due to global warming, not only are birds choosing to migrate earlier, but their bodies are changing (wings becoming larger and bodies decreasing in size). Using a photograph she had taken of a bird in flight, Ruta created a repeat pattern, choosing to digitally manipulate the image so that the body gradually changed. Taking inspiration from the way DressCode incorporate designs onto shirt cuffs, she did something similar by using typography that stated the change in migration. She then placed this around the collar.

This was a hugely popular and successful project which enabled students to gain a deeper awareness of climate change, whilst also gaining first-hand experience of the creative industries and creating a good body of work for their GCSE coursework. Students learnt how to design with a real client and audience in mind and improved their understanding of visual communication.

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dresscodeshirts.co.uk/blogs/news/climate-education-art-design-and-communication

Making art partnerships in schools

Above
Students build a landscape in terracotta, whilst supported by artist educator Nicole Sheppard

Opposite
An A-Level student experiments with monoprint technique, whilst learning about patterns in nature

A partnership project with environmental themes was delivered by artist educators through a series of one-day school workshops in Jersey. ArtHouse Jersey education officer, **Anna Shipley**, describes the project and considers its impact

In May 2019, elected politicians in Jersey voted to declare a climate emergency and, in 2020, they agreed a carbon neutral strategy. A citizens assembly on climate change informed a carbon neutral roadmap. In 2021, the island's first youth parliament selected 'climate action' as one of its key campaigns and worked towards raising the profile of environmental issues and to drive change.

At COP26, the government of Jersey pledged to improve climate education and learning. The Jersey Youth Parliament presented a set of recommendations to the States Assembly on 22 July 2022. Poignantly, this was the hottest day on record on the island with a temperature of 39.7 degrees Celsius. Amongst the parliament's recommendations were suggestions for improving environmental education on the island.

Making Art Partnerships in Schools (MAPS) is a project delivered by the charity ArtHouse Jersey, as well as artist educators and the local education authority. Inspired by Bringing Live Arts to Students and Teachers in Ireland, MAPS seeks to enhance the profile of creative skills and creative industries, increase wellbeing, provide unique learning experiences and raise public awareness of arts in education. In 2023, the scheme adopted an environmental focus.

Six Jersey-based artists completed the training and development designed and facilitated by senior adviser for curriculum Kate Sugden, senior art teacher Jacque Rutter, and myself. The location on the north coast provided rich opportunities to engage with and respond to the local environment through drawing, printmaking, sculpture and land art.

During this time, the artists moved between student and educator roles to observe and reflect on the learning process. The group used foraged materials from the surrounding area to construct 3D 'nests' that provided stimulus for mark making, photography and discussion. The facilitators discussed sustainability, and each artist was provided with a sketchbook and basic resources to document their experiences. Participants also visited the enormous, illuminated sculpture *Floating Earth* by Luke Jerram, temporarily installed on a reservoir. They reflected in different roles as artist, student, audience and educator, and considered key art concepts such as scale.

Devising themed workshops

We supported the artists in devising workshops on the themes highlighted by Jerram's work, including patterns in nature, reflections, perspective, space, waste, recycling, equilibrium and life on Earth. Fortuitously, these topics aligned with their own practice and supported strong, cross-curricular links with visual arts, science, history, maths, PSHE, citizenship and English. The artists created space for students to collaborate, connect, communicate with peers and make choices. These components were identified by the LEA as being vital to better support students following the Covid pandemic. The workshops, for students aged five to 18, were taken up by 36 classes across 20 institutions.

'In Jersey, primary education settings offer greater flexibility for cross-curricular learning which will be beneficial to future environmental education, although there is also a clear need for the curriculum to be linked between relevant subjects in secondary education settings'

Workshop resources were shared with all local schools via an online platform, to extend reach. We guided the MAPS artists to adapt their workshops so that they could be delivered across different key stages. Although not all explicitly referred to the environment or climate emergency, the approach of facilitated enquiry-based learning encouraged curiosity and discovery. Students were able to find out about local habitats and species, and innovative uses of waste and emerging materials, as well as human impacts on the island's landscape throughout our history.

The MAPS workshops raised issues to be considered further. In Jersey, primary education settings offer greater flexibility for cross-curricular learning which will be beneficial to future environmental education, although there is also a clear need for the curriculum to be linked between relevant subjects in secondary education settings. In this context, the role of the artist educator may become that of a facilitator, supporting teaching staff who already hold in-depth curriculum knowledge to aid cross curricular delivery.

ArtHouse Jersey

ArtHouse Jersey is a charity that supports well-resourced workshops. MAPS reached 1,000 students who each created physical objects in the form of prints, sculpture, textiles, photographs, cyanotypes, ceramics or sketchbooks. Many of these artworks were exhibited in school and later by ArtHouse Jersey.

Some useful questions that might help us in the future include; What is the intended final use of each creation? What will happen to this work once the workshop has finished? And, are educators modelling resourceful practices? Within schools, we might consider if we, as professionals and role models, value what happens to the work through our own actions. This is an area that artist educators and teaching staff can better explore together when devising effective environmental education resources and workshops. The island's geography provides rich opportunities for field trips where time-based land art might be explored further in collaboration with performing arts.

ArtHouse Jersey gathered feedback from students, artists and teachers, as well as making workshop observations. While the artists valued the experience of sharing their own practice, teachers said they gained confidence in working with new materials and exploring a creative process in place of an output-driven approach. Many students said activities were enjoyable, whilst others broadened their understanding of art as a subject because they had been introduced to new materials and creative experiments.

Under the green light –

a darkroom for the future

Tabitha Jussa, technical demonstrator and visiting lecturer for Photography, and **Tracy Piper-Wright**, senior lecturer in Photography, both at University of Chester, discuss the environmental challenges of traditional photographic darkroom developing

Above
Noting results from Caffenol experiments – to be a viable alternative, Caffenol has to perform well across film and paper

Most photography is now digital and nearly everyone has a camera (phone) to document their world. However, despite the convenience of digital, there is something timeless and magical about making photographs on film and developing them in the darkroom.

Darkroom photography by its very nature is a slower process than digital. From taking film photographs to the process of making prints, there are no shortcuts to a process that has remained largely unchanged for centuries. In this way, darkrooms can become a counterbalance to the fast-paced rush of life – a haven of relative calm at school, university and into adulthood. It can be a place where you can become hyper-aware of every passing second. Time seems to lengthen, as does your breathing as you bathe in the tranquillity of the darkroom's dim and red-tinged light. But, as we wake up from our darkroom dream, and our eyes adjust to daylight, we might notice that our lungs feel a bit tight as we breathe in the fresh air and our hands feel a little sore. What's going on?

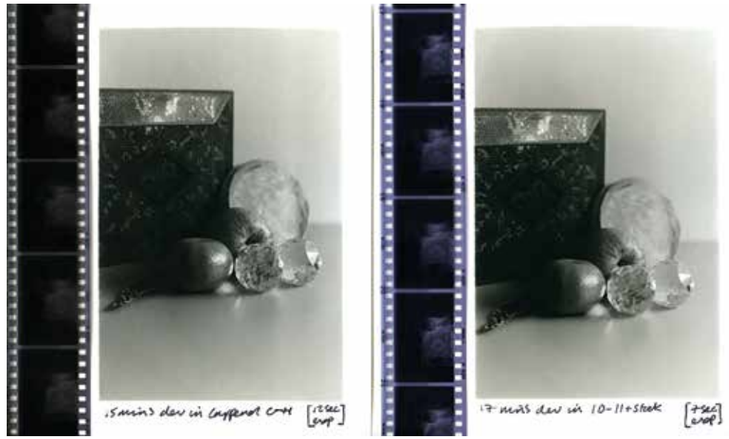
Traditional film and darkroom photography relies on chemicals – two acids and one alkaline. The developer ('dev') is an alkaline solution that brings negative images to life. The 'stop' and the 'fix' are acid solutions that immediately halt the development of the image on film and paper. The results are beautiful hand-printed black and white photographs, and several litres of spent chemicals.

Film photography is not an environmentally friendly art form, and the process has barely changed since photography's inception back in 1839. These three harsh chemicals carry hazardous substance labels and users must ensure they are disposed of correctly and not straight into the water system. Although the acrid smell, for some, becomes synonymous with the darkroom and the calming nature of this creative process, we should be aware of the harmful airborne toxins that can cause respiratory issues and shouldn't be inhaled over a prolonged period. In addition, they are known to cause skin allergies on contact.

The digital photography industry alone was expected to leap from $47.59 billion in 2022 to $50.71 billion in 2023, yet the industry continues to limit darkroom users with the same hazardous chemicals, with no plans to provide a more sustainable or environmental alternative.

The photography industry has tried to convince users that digital photography is a more sustainable option and has reduced production of these chemicals, resulting in a global shortage. However, the notion that digital photography could somehow offer a more environmentally conscious solution is not the case. The carbon energy required to maintain data farms to store digital data alone is staggering.

How can we, as darkroom dreamers, continue photography in this way? Should we continue? The answer must be no. We must, collectively, find a darkroom for the future.



Caffenol as a solution

At the start of the University of Chester's current academic year, what had seemed like a theoretical proposition suddenly became a reality when stocks of film developer became critically short worldwide. Finding an alternative became a necessity and one solution is Caffenol.

> 'The digital photography industry alone was expected to leap from $47.59 billion in 2022 to $50.71 billion in 2023, yet continues to limit darkroom users with the same hazardous chemicals, with no plans to provide a more sustainable, environmental alternative'

Caffenol is a tried and tested method of alternative development, purportedly used as far back as WWII when chemicals were short. In 1995, it was developed more convincingly by Dr Scott Williams at the Rochester Institute of Technology, New York. The active ingredients of Caffenol are phenol-rich substances such as tea, red wine and some plants, but the basic formula can be made from washing soda crystals, coffee and vitamin C. If Caffenol is used as your developer, you negate the need to use acid as your stop and use fresh water in its place. This simple swap to Caffenol removes two hazardous chemicals, leaving only the need for fix to end the process. It's a huge reduction in chemical usage and a positive transition towards a greener, more sustainable darkroom.

And there are smaller and, on the surface, less obvious changes that can be made in the darkroom, which nevertheless have a cumulative impact.

A traditional washing regime during film development is a continuous flow of water. Film manufacturer Ilford recommend a B&W film wash time of 10 minutes of running water, which equates to six litres per minute – a total of 60 litres of fresh water per film. At Chester, we have abandoned this technique and utilise one where clean water is added to the film tank, agitated and discarded. This is repeated three times, reducing water consumption to only 900ml for each 35mm film.

Other environmental measures we have introduced include providing students with aprons and cloth rags, so they can wipe their hands when moving from wet to dry areas in the darkroom. This has removed the need for paper towel wastage.

Fix, however, is where the real challenge lies. You could use a very time-consuming process using salt and water, but the practical application required is restrictive within an educational setting. It appears that the large chemical manufacturers are unwilling to invest in much needed and in-demand environmentally aware alternatives. However, small companies such as Zone Imaging have begun to tap into this challenge. Photography labs are working alongside scientists to develop viable alternatives with a greatly reduced hazard rating to both us and the environment.

The global shortage of darkroom chemicals should now be seen as a positive for the future of darkroom photography. As individuals gather and collectively question these traditions, beginning to replace them with viable, less volatile alternatives, we darkroom dreamers can see that our creative futures can be bathed in a more calming, cathartic red light, albeit with a green tinge. ●

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Above left
Comparison of Caffenol developer and traditional ID11 on film and paper

Above right
Testing different formulae and development times for Caffenol

Below
Caffenol are phenol-rich substances such as tea, red wine and some plants, but the basic formula can be made from washing soda crystals, coffee and vitamin C

Left
SOUP: Translucent / Ingredients; translucent plastic debris
@ Mandy Barker

Additives; includes single-use food packaging - ham sachet, turkey packaging, biscuit moulding, various containers and plastic bottles, helium balloon, fishing reels and line, and the inside of an oil platform helmet

Below
Learners at Barrhead High School taking part in outdoor learning, using the sun to make cyanotypes of plastic waste

Learning for sustainability

Right
INDEFINITE – 450 Years/Plastic Bottle
© Mandy Barker

90% of marine rubbish found on coastlines worldwide is related to single-use plastics; bottles, tops, straws, food packaging and general packaging. Over 111 different species of seabirds are known to ingest plastics, many of which are found to be pieces or parts of plastic bottles

Caroline Carter, art and design teacher with strategic responsibility for interdisciplinary learning and sustainability at Barrhead High School, East Renfrewshire, discusses how learning opportunities around sustainability can tackle the urgent real-world problems that are relevant to young people today

Learning for Sustainability (LfS) is embedded into Scotland's Curriculum for Excellence (CfE) and its policies; therefore, it is an entitlement for all learners and the responsibility of all educators. With the recent publication of Education Scotland's refreshed action plan *Target 2030: A Movement for People, Planet and Prosperity* (2023), there is a renewed energy and urgency across the sector to ensure that all school settings are sustainable by 2030 – an ambitious but necessary goal which can only be achieved through a huge collective effort. Here at Barrhead High School, a secondary school based in East Renfrewshire just outside of Glasgow, we are developing Interdisciplinary Learning (IDL) opportunities for our young people around LfS themes that tackle these important real-world problems that are so relevant to young people today.

In 2022, Professor Kenneth Muir, an independent advisor to the Scottish government, said: 'The current generation of learners see climate change as one of the most significant issues facing their futures and, as such, must be recognised as a key driver influencing the future of our education system.'

This statement comes at a time of review and anticipated change in the Scottish curriculum. In *The Independent Review of Qualifications and Assessment* (2023) report, there is a focus on meeting learners' needs in this fast-changing world. As part of a Scottish Diploma of Achievement for senior phase learners (aged 15-18), proposals include project learning which closely aligns with IDL. This emphasises the importance of developing deep learning through connecting disciplinary knowledge to solve real-world problems, and cooperative learning to help develop learners' qualities, such as teamwork, leadership and creativity.

Developing a relevant IDL programme

In preparation for the anticipated curricular developments, we at Barrhead High School are developing an exciting and relevant IDL programme for our lower school (aged 11–14) that poses LfS related problems, questions or challenges to show learners disciplinary interconnectedness. In doing so, we aim to give them opportunities to create new knowledge and develop their transferable skills.

With several projects at various stages of development, I will highlight one current project based around the theme of the Circular Economy – one sustainable solution to the climate emergency – which emphasises the importance of looking after the world's resources on a local and global scale. Still in its pilot phase, it involves partner presentations, links with industry, creative and enterprise workshop activities, and links across curricular areas and outdoor learning.

Our Circular Economy IDL working group is made up of practitioners from expressive arts, social subjects, business and administration, and design and technology. This mix of expertise provides rich areas for collaboration during designated partnership curriculum development days. As an art and design teacher with a prior career of 25 years in the creative industries, I welcome this opportunity to work beyond subject silos in a way that closely reflects the world of work.

As a holistic discipline, art and design helps develop learners' creative and critical thinking, problem-solving and communication skills, and encourages a growth mindset through risk taking and learning from mistakes. These are skills and qualities that are valued in the workplace. It has therefore been important to develop external partnerships to help young people make these connections. Partnerships for this IDL project include Ocean Plastic Pots, Renewable Parts Ltd, Ostrero and Young Enterprise Scotland.

> 'By encouraging learners to be curious and playful with materials and ideas, I hope we can show the value of creativity and creative thinking beyond the confines of the art and design curriculum in which 'technical' skills are often perceived to demonstrate a learner's creativity'

Ostrero is a circular economy advocacy group which delivers workshops, talks and consultancy, to raise awareness and grow the circular economy in Scotland. They have committed to working with us over a three-year period as part of the IDL project and as part of a pilot project they are running, which is helping schools work towards becoming zero-waste. Our learners took part in their creative workshop. Led by skilled craftspeople, they were introduced to the concept of the circular economy, given a design brief showing the circular design principles and had access to high-quality reclaimed materials. There was a genuine buzz and excitement in the classroom as groups of learners responded to the challenge by demonstrating their creativity, problem solving, teamwork and communication skills, creating exciting ideas and products ranging from an extendable golf club with changeable heads, glasses with changeable lenses to reversible bags and fashion garments made from Glasgow's COP26 banners.

By encouraging learners to be curious and playful with materials and ideas, I hope we can show the value of creativity and creative thinking beyond the confines of the art and design curriculum in which 'technical' skills are often perceived to demonstrate a learner's creativity. Here, everyone has a chance to be creative and innovative which are key assets in this digital age.

Cross-curricular work around ocean plastic

To highlight the power of art as activism, the art department has teamed up with the geography department to deliver a cross-curricular unit of work around the theme of ocean plastic waste. Here, the learning intention is to use disciplinary knowledge and skills to create issue-based artworks. Learners are introduced to the powerful photographic work of British artist Mandy Barker, who works closely with scientists to highlight the issue of plastic debris found in the world's oceans. Using mixed media and cyanotype prints, learners produce collaborative artwork, one of which was recently used by the school's Eco Club to promote their recycling initiative.

The knowledge and skills developed during the year will take learners to their final challenge provided by Young Enterprise Scotland – The Circular Economy Challenge to design a 'circular' product or service where everything has value and nothing is wasted. Through their own market research and local case studies showing the circular economy in action, we hope they will feel inspired to think outside of the box and come up with some exciting and future-facing ideas. These young people are the future, and by raising awareness and developing solutions for real-world problems, we hope they will recognise their own individual creativity and the positive difference they can make by working together.

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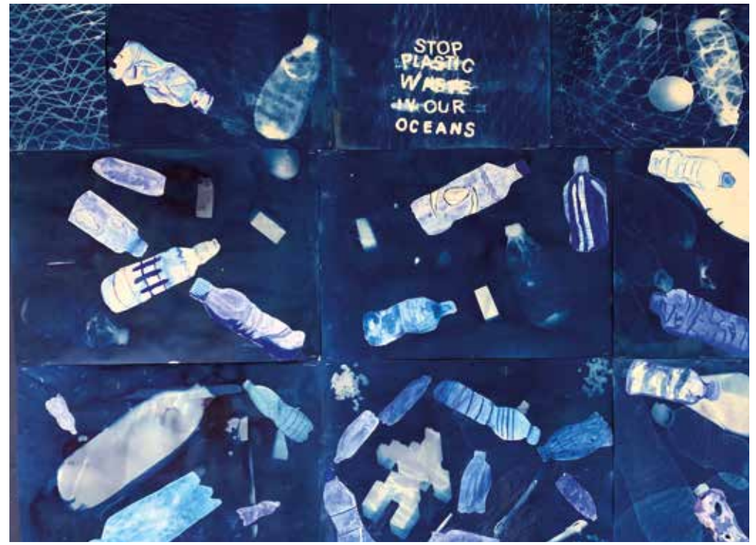

Above
Examples of collaborative artwork collage using cyanotype prints, watercolour, and pen and ink, produced as part of a cross-curricular unit of work between geography and art to highlight issues of plastic waste in our oceans

Right
Deadstock textile donations

Exploring the Re-Use Exchange

The Re-Use Exchange is a free service where unwanted materials are donated and used by students. **Carla Fallen,** technical coordinator and studio workshop manager for the Foundation Programme at Camberwell, Chelsea and Wimbledon and University of the Arts in London, explains how it began

I started my current role at Camberwell, Chelsea and Wimbledon (CCW) in 2013 and I absolutely love my job and the students. My week is split into two days as a print technician and three days in my managerial position, and I enjoy the combination of roles.

Working here has encouraged me to keep developing and learning as a creative. I grew up thinking that I hated learning. I'm someone who failed their A-levels twice and assumed it wasn't for me, but really it just wasn't the right environment. Now I find myself in a role where I learn so much every day.

Looking back, I've always had the 're-use' bug. When I was 18 or 19, I used to sell vintage clothes – I'd pick them up at jumble sales, get them washed and then sell them at fairs. I went to work in a little theatre as I wanted to pursue a career in costume. Studying costume at Wimbledon was the best thing I ever did, and I worked with costume in film and TV production for 15 years. In 2007, after having my kids, I came across a job at Wimbledon for a fashion, textiles and performance technician, and knew the combination of fashion, theatre and teaching was perfect for me.

Claire McCormack, programme director for Foundation Art and Design at CCW, came up with the idea for the Re-use Exchange back in 2013, as she had always been extremely interested in material re-use. She sourced some funding and the Re-Use Exchange was born, albeit on a smaller scale than it is today. At first, we relied on student donations and odd bits donated by colleagues, but over the following years I gradually managed the space with donations from industry. I now coordinate the project with the support of two more technicians, Manda Helal and Jason Allcorn. With the help of Jocelyn Foye, office manager in the development team, we now have a solid pipeline.

'We had a huge donation of materials from the Barbie movie – as you can imagine, lots of hot pinks!'

We source the materials for the Re-Use Exchange in many ways. We will have calls from all sorts of people and organisations who have materials they don't want to go to waste and who know art students will make effective use of them. We also have a lot of regular donators, like a tiemaker who donates beautiful silks. It's really a win-win situation. People do not want waste and know their donations will support learning.

It's an incredibly good thing to be more considerate about how we dispose of things. I have found that often people really do not want to throw things away, but they simply do not know what else to do. Providing options to prevent waste needs to be a priority.

I hate throwing things away and we all absolutely love being able to give students something for nothing. Many are working full-time and studying, so helping level the playing field gives us great satisfaction, while the quality of materials makes such a difference to the final product.

A colleague and I picked up some lovely stuff from the National Theatre, and we had a huge donation of materials from the *Barbie* movie – as you can imagine, lots of hot pinks! Jenny Beavan, who is a three-time Oscar-winning costume designer, was the first costume designer I ever worked with. She donated a lot of materials from Disney's *The Beauty and the Beast* film, and I invited her to speak to some students just before her Oscar win for *Mad Max: Fury Road*. We have also had bits donated from *The X Factor*, and big organisations like John Lewis and the NHS.

I've met so many interesting and amazing people by operating the Re-Use Exchange. I love chatting with the students and the people who donate materials. I remember spending an entire afternoon with a couple of students from Hawaii, and it was just so fascinating to get to sit down and chat with them about their culture and how they were finding the UK. Working so closely with students and seeing the incredible things they go on to create is very inspiring.

Another satisfying thing about running the Re-Use Exchange is that it encourages my own practice. I have recently started making clothes again because I am surrounded by such amazing materials and talented students – it's hard not to be inspired.

Sometimes I get worried we are running low on materials and then we will get a call, and someone has 100 rolls of materials to give away. Other times I'll have to turn things down because we do not currently have the space to store it all – I'd love to be able to expand.

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Left
A variety of donated materials

Above
A costume constructed wholly from deadstock textiles

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Peace

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