

Delving into the natural world through art and science

Supporting STEM skills, creativity and nature connection through local wild places



ASCUS
ART & SCIENCE

“The Park is a central and much-loved wild place in Edinburgh, offering unique access to a wild, rugged landscape which supports an impressive array of wildlife a stone’s throw from the urban space. It is a local haven for thousands of people”



For young people from Edinburgh Montessori Arts School, connecting with their local wild place – Holyrood Park – has given opportunities for valuable skills development. Through engaging with ASCUS ART & Science, a non-profit organisation aiming to bridge the gap between art, design and the sciences, students have increased their scientific and creative understanding of our natural environment and its biodiversity.

STEAM (Science, Technology, Engineering, Art & Maths) in action

As part of the Unearthing Micro Life programme, young people worked towards their John Muir Award with the Four Challenges providing a structure to explore various themes through hands-on activities. The group learned about the importance of the park’s ecosystems through interactive games, walked a small section of the John Muir Way and had impromptu lessons on wildlife they encountered, such as stinging nettles - which evolved into sharing histories and stories, and giving students a taste of something they would otherwise try to avoid.



The pond at Wells O’ Wearie provided a focus for wildlife identification, discovering the creatures lurking beneath the surface, and deciphering water quality – with students realising that they, as citizens, can gather helpful data to inform the Holyrood Rangers about the health of the park. Time was spent analysing samples collected from the park in the ASCUS Lab, an open and publicly accessible lab in Edinburgh, with the young people learning to use microscopes and microbiology techniques to find new ways of seeing the biodiversity right on their doorstep.



Getting to know the park involved getting creative and finding ways to share nature’s beauty - with natural materials used to make plant prints, soil paintings, environmental art and poetry. Opportunities to take action enabled the students to realise the difference they could make, supporting the rangers with practical tasks such as cutting back gorse to create fire breaks.

Benefits achieved through wild places

In their own words, the ASCUS Art & Science team and their project collaborators - including learning ranger Rob May, artist Tina Scopa, and teachers at the Edinburgh Montessori Art School - reflect below on the project’s outcomes and the benefits realised by the young people involved.

Hands-on learning and team building - The young people benefitted from the interactive nature of the project, as many of the group struggle with traditional learning approaches. Students have had the flexibility and freedom to explore nature and the fact that it is different to their usual day in the classroom makes this programme effective. The conservation activity had the added benefit of group cohesion –

“Working in groups, students started singing songs and creating stories together with the facilitators while cutting back the gorse. They thoroughly enjoyed this activity and asked their teacher after the session if they could come back another day to continue working in the park.”

Human-nature interaction - The students’ approach of looking at things in the park has evolved so much since the first session. The fact that facilitators often had to try multiple times to get their attention as they were so immersed in what they were doing, really says something about how effective this programme has been in developing young people’s interest in wild spaces. A lot of the students are city kids and into gaming as a hobby, so an amazing benefit has been getting them out and connected with nature and its link with their lives - *“You leave a footprint in nature and nature leaves a footprint on you.”*



Introduction to art and beauty in nature - Throughout all activities there was much attention paid to the details of patterns and beauty in nature. During a foraging and plant identification task, the students commented on how pretty the weeds were and that they’d never noticed it before. In a task involving collecting plant samples, some wonderful textures were collected and discussed, with a student suggesting that they take a sample and use it for their digital art back in the classroom. The most awe seemed to arise from the fungi and bacteria grown in the petri dishes, with careful drawings taken and discussion on how to use these in artistic contexts.

Breaking down gender stereotypes - When in the classroom and stereotypes were discussed, misconceptions tended to be that STEM (Science Technology, Engineering & Maths) roles are for males who are often socially awkward and so smart that they wouldn't want to talk to beginner scientists like the students. Teacher Neeki Armani tries to highlight the contribution of women and minority groups to science in her lessons, but emphasises that seeing real people in their area of expertise during the programme has helped a lot. It has reinforced the interdisciplinary nature of STEAM (Science, Technology, Engineering, Art & Maths) with a real-world context and taken away any misconceptions regarding the stereotypes around the STEAM professions.

Nature as a safe space - When asked about green spaces and Covid-19 lockdowns, a student described being in nature as a place where they felt safe opposed to being indoors where they felt trapped. The sessions gave students the benefit of being at ease in an outdoor environment during very strange times.

This project was delivered in partnership between ASCUS Art & Science, Holyrood Park Ranger Service, Edinburgh Local, the University of Edinburgh, Edinburgh Montessori Art School, and funded by Edinburgh Local and Historic Environment Scotland. Find out more about the group’s activities via their [blog](#).

Looking to make connections with wild places, science and the arts through the [John Muir Award](#)?

- Visit [STEM By Nature](#) for resources to help embed nature as a source for learning across STEM subjects, including downloadable professional learning sessions relating to citizen science, climate action and the UN Sustainable Development Goals.
- See [Literacy & Nature](#) for ideas and inspiration about getting creative in wild places to support a range of literacy skills