

Reflection

Hello, and welcome to my presentation.

The digital scrapbook I have created captures a place in nature, that was local to the caravan park where my family and I would stay during school holidays in my childhood. I called it the fairy woods, as my grandmother would tell me that fairies resided in the trees and would spark my desire and love for exploring these woodlands.

Revisiting there enthralled a powerful sense of nostalgia, remembering many memories of how nature made me question, behave, and enjoy being in its presence. I made inquiries into how the shape and properties of leaves, like people and animals are a result of genetic make-up from their origins, and how trees in competition with their Neighbours for sunlight and nutrients and those who are not develop different attributes, determining their growth in a straight line or whether they curve and twist, which I found fascinating.

The main senses I remember experiencing as a child were the sounds of flowing streams, birdsong, and the pungent aroma of wild garlic growing. However, when I revisited, I could not smell the garlic as strong as I had remembered. I investigated why this was and discovered that this is a result of it being out of season as I had returned in the summer, and late winter to mid spring being the optimum season for the garlic to grow. This made me explore further what a wilting garlic flower looked like, and as I searched, I found, captured, and shared my images of the green and yellow leaves.

Another lesson I have learned through observing burrows in the ground, untouched bushes, brambles, and hedges, I captured wildlife, such as birds, flies, bees, and butterflies residing in them, blissfully enjoying life within. Therefore, the optimal way to conserve in this respect, whether it is the brambles, the trees, burrows, flowers, and landmarks is instead of making changes and adjustments to it to simply leave them alone, and their imperfections appreciated and celebrated for this biodiverse wildlife to thrive in their habitat.

As I was analysing the different types of bees pollinating the flowers, I was curious whether there were flowers that bees preferred and why, when I explored this, I discovered that they prefer flowers that are purple, pink, white, yellow, and orange in colour because of a shorter UV wavelength and are more rich in nectar and pollen. I realised this could be true when I noticed that the bees I had captured were more attracted to these colored flowers.

My aims to conserve as part of the John Muir Award, was to bring these aspects of the woodland that I had explored and discovered to my setting, to share these experiences with the Children I look after. Planting vegetables and herbs so that Children could explore and discover the different properties of leaves using their senses and understanding more cost-effective and healthy ways of food production and supporting their health and well-being. I observed children appreciating the reflections of the leaves and flowers, outlining their shadows with chalk on the floor in the colours of the flowers. I asked parents to bring in any old wellies they had so we could plant some flowers, bringing a symbol of enjoying nature with methods of beauty and attracting the wildlife that I had seen. I believe that this was an effective method of engaging the parents in the planning of our outdoor environment, and the children seeing parts of home in the setting enriched their sense of belonging.

Through observation of children watching the birds fly across the garden during outdoor play, I created an informal lesson through singing about birds and finding out from the children's which birds do they remember seeing, what did they look like and what color, so that they could share their memories and perspectives. When asked what we could do to help the birds, many answered that they would like to feed them, when realizing that birds require food for energy, like we do. Again through research, I found a simple method of creating bird feeders and gathered resources in a way that children could direct their own creation of birdfeeders using the ingredients offered, hung them on the fence and observed as birds would fly down and feed, and the children could get a closer look at the birds, and learn about new ones. The awe and excitement were visible on the face of every child observed.

My experience has enlightened me on what it truly means to be an enabling adult, where my skills of exploring and discovering aspects of nature have allowed me to be able to share this with children to inspire them. Conserving aspects of nature enhances sustainable development, and we can work together to overcome global issues in an age-appropriate and engaging way through inquiry. By fostering a sense of wonder and responsibility in young minds, we empower the next generation to become stewards of the environment they live in.

Evaluation.

The Well-being of Future Generations (Wales) Act 2015 is a pioneering piece of legislation that is admired globally. The aim of its design is to ensure that public bodies in Wales understand the long-term effects of the decisions they make and how they influence the outcomes of future generations (Samuellson, 2017). Bourn, Hunt and Bamber (2017) Edwards et al (2020) and Tarrozzi and Torres (2016) believe sustainable development and global citizenship of young Children is strongly reflected in this act, which endorses an equal, cohesive, and globally responsible society. Taylor (2020) and West et al (2018) suggest sustainable development refers to the nurturing of principles and practices that promote the well-being of people through their relationship with the planet, and how their efforts can make a positive change for future generations. Cutter-Mackenzie *et al* (2014) involves fostering an understanding and passion towards environmental stewardship, social responsibility, and economic sensibility from an early age and utilise these sustainable skills as they grow, which is highlighted in a model, shared by Siraj-blatchford and Brock (2017).

Darling-Hammond (2015) states planning a nurturing environment where every Child that attends receives equal opportunities to quality education that allows them to develop to their highest potential. De Sousa and Halafoff (2017) and Stephen and Gadda (2017) believe Global citizenship from an early years' perspective concerns a sense of belonging to a wider global community, and how this is nurtured in young Children (Welsh Government Curriculum for Non-maintained Nursery Settings, 2022). This concept highlights the significance of supporting children's understanding of how to

respect and appreciate cultural diversity, interacting with nature and collaboration in duty to support the well-being of others, wildlife, and the planet (Beery, Chawla, and Levin, 2020) (Chawla, 2020). Offering a wide range of resources that introduce Children to various cultures, languages, traditions support their appreciation of diverse lives and perspectives, which encourages them to also develop empathy and respect towards biodiversity in wildlife (Adams *et al*, 2018) (Clayton and Myers, 2015). Torres (2017) suggests this sets a foundation of teaching children about socio-economic inequality issues in an age-appropriate manner, without the content of the issues becoming too complex in young Children.

Experiences in the outdoor learning environment such as reusable materials, conserving resources and caring for plants and wildlife fosters critical thinking and interdisciplinary learning, where Children can undertake an active role in making positive changes to the world that they live in a creative way (Hedefalk *et al*, 2014). Garcia-Berlanga *et al* (2018), Karyadi *et al* (2018), Meighan and Rubenstein (2018) and Palmers (2016) agree that the skills of social responsibility develop then to share this with others empowers them, instills a sense of confidence and motivation, and promotes physical wellbeing for all. Davis (2015) and Tinney and Merriman (2018) Highlight the significance of educating young Children age-appropriately about global issues, such as climate change, poverty, and human rights underpins the globally responsible Wales aspect of the act, where making small changes in the local environment can make an impact on a wider scale across the globe.

Dow and Downing (2016), Dymment *et al* (2013) and Srivastav (2019) agree that Climate change is one of the most profound challenges that is currently being faced by humanity today, that is manifested through rising temperatures of the planet. One catalyst contributing to this issue is deforestation, which is primarily occurring in the world's rainforests. These ecosystems, otherwise known as "lungs of the earth" are responsible in the maintenance of greenhouse gas reduction and securing biodiversity (Ansari *et al*, 2021). Trees and plants naturally absorb carbon dioxide during photosynthesis and release the oxygen for humanity to breathe (Tkemaladze and Makhashvili, 2016). Deforestation results in a rapid increase in greenhouse gases, such as carbon dioxide

and therefore reduces the amount of oxygen in the atmosphere (Jovine, 2021). Moreover, a vast range of species inhabit the rainforests, especially vital pollinators such as butterflies, bees, and some birds. Flowers, plants, and trees that are pollinated by species like these can result in further preservation and the production of fruits and seeds. Deforestation and habitat loss can lead to threats to ecosystems and food security (Abdel, 2022) (Ganie *et al*, 2021) and (Torezan-Silingardi *et al*, 2021).

During the John Muir Award, for the conservation section, the children actively engaged in planting flowers in old wellingtons, planting vegetables and creating bird feeders. These were creative activities offered to the Children to allow a hands-on contribution to environmental stewardship and climate change and is fostering these values of appreciating plants and wildlife (Doull and Ogier, 2023). Learning experiences of age-appropriate concepts, such as photosynthesis and the significance of plants in the world in this way are more memorable as they develop their sustainability skills in life (Christopher, 2019) (Howe and Collier, 2019). Moreover, learning experiences like this can interlink with UNESCO (2024)'s Sustainable development goals, where climate action is being undertaken, life on land is being nurtured and peace and justice is being stored with each activity (Bamber, 2021) (Sharma, 2020). The Knowledge Bank (no date)'s perspective on Education for Sustainable Development and Global states that actions that are undertaken through these types of learning experiences can contribute to making a difference to improve circumstances for future generations. Dower and Williams (2016) and Saggeidet and Heggen (2021) explore global peace, which is achieved through making these positive changes to the local environment enhancing the well-being locally, which contributes to the global well-being, which they perceive is a true reflection of global citizenship.

The Reggio Emilia approach profoundly endorses outdoor learning as a component of fostering sustainable development and global citizenship, through using the environment as the third teacher (Haas and Ashman, 2014) (Little *et al*, 2020). Through self-directed learning in the environment, they can recognize the significance of conservation, monitor seasonal variations, and comprehend the life cycles of plants and animals (Brittain-Taudien, 2020) (Green, 2022) (Kolz, 2021). Friedrich Froebel who was

the founder of kindergarten had similar views, where Children should receive access to hands-on experiences, and endorses outdoor play as the foundation of where Children learn self-expression skills, connecting nature, play and education (Bradbury and Swailes, 2022) (Bruce, 2021) (Bruce *et al*, 2018) (Conkbayir and Pascal, 2014) (Franklin, 2023).

When Children are offered these opportunities to freely explore their environment, critical thinking skills, true creativity, and a deep connection with elements of the natural world is achieved, encouraging inquiry, problem-solving, curiosity, and wonder (Ernst and Burcak, 2019) (Lucas and Spencer, 2017) (Ostroff, 2016). This method of exploration and discovery in outdoor settings also instills a sense of responsibility and stewardship towards the environment and offers a rich, immersive context for the learning of ecology, which establishes sufficiency and fulfillment, and resilience, which all contribute to enhanced well-being (Hadland, 2020). Rudolf Steiner was another agreeing theorist in utilizing outdoor play and self-directed learning to determine capabilities that supports a child's holistic development, through establishing strong relationships with elements of nature (Newell, 2018).

In the Reggio Emilia and Steiner approach, practitioners inspire, facilitate and are collaborators and co-learners during children's self-initiated learning, rather than the directors in the educational process (Hargreaves, 2020) (Korkmaz and Yildiz, 2017). The voice of the child is respected through listening and engaging in the narrative of the play and the inquiries and offer further resources and answers to extend their investigations (Hirst, 2018) (John Muir Trust, no date) (Tinney, 2020). Acknowledging and valuing children's ideas contributes to strong physical and mental well-being and successful inclusive practice (Heimburg *et al*, 2021). When children and adults form these partnerships to explore and discover together, they cultivate a firmer appreciation of the natural world and its interconnectedness (Boyd *et al*, 2018) (Macquarrie *et al*, 2013) (Trott, 2019).

During my scrapbook and gardening with the children, they found some worms beneath the plant beds and questioned what we could do to feed them but stop them from eating

the vegetables, herbs, and flowers that we are growing. Through collaboration, I researched this topic and discovered I could create a worm farm with the Children in the setting, using soil and sand as natural resources, learning together, and using garden waste like leaves and cut grass and peel from fruit at snack time to renew the soil. Worm Composting Help (no date) states that composting like this and reusing waste limits the amount of methane gas being released into the atmosphere, which can contribute to sustainability. This underpins the collaboration way of working in the Well-being of Future Generations Act 2015, where a collective approach to gather information to support the well-being of our local environment was obtained and children's thinking on subject matter was valued (Engdahl, 2015).

A challenge of outdoor play, sustainable development and global citizenship in the current climate are Children's attitudes towards outdoor play. Greenwood and Hougham (2015), Prince (2016) and Wynes *et al* (2018) agree that the increasing use of technology for leisure is leading to complex outcomes, such as an increased use of energy contributing to the greenhouse gas increase and are not using the outdoors to educate themselves in nature. The temptation of digital technology is so apparent in children of all ages, that it is distracting them from recognizing the benefits and joy that learning in nature can offer, such as health through physical activity (Broda, 2023) (Cars and West, 2014) (Williams and Scott, 2019). The coronavirus pandemic and its disruptions to being connected with nature has only cultivated a stronger culture of indoor play habits and has led to a decline in outdoor play in some children, leading to inequalities in Child development (Dawwas and Dyson, 2021) (Rios *et al*, 2021).

Another challenge in securing sustainable development goals is the pressures practitioners experience to meet objectives for adult-directed learning indoors (Bento and Dias, 2017) (Jarvis *et al*, 2016) (Tremblay *et al*, 2015). The pandemic resulted in children missing access to education and practitioners catching up on undertaking these duties to secure positive academic outcomes, which again is neglecting that valuable time for outdoor learning.

To reduce these pressures practitioners face and to establish a balance between academic requirements and to achieve the full benefits of the outdoors, Play Policy

Wales (2022) and Unicef (2022)'s Article 31 in the United Nations Convention on the rights of the Child state that every child has a right and how learning opportunities can be enriched through play. Welsh Government Curriculum for Non-Maintained Nursery Settings (2022) has demonstrated how nature can be utilized as a classroom to teach different subjects that interlink with the developmental pathways. Samuelsen (2017) believes that a balance can be constructed, where children's engagement in hands-on experiences can be observed by practitioners to determine children's academic capabilities and for sustainable development can be carried out in both the indoor and outdoor learning environments. Welsh Government's Curriculum for Wales (2020) also explores a balance between implementing the skills of digital literacy in the outdoors, such as capturing nature to be able to analyze and discuss later. This can improve children's attitudes toward outdoor learning and play, and screen time can be monitored (Stanfel, 2023) (Yin *et al*, 2022).

In conclusion, offering these experiences to Children to enhance sustainable development and global citizenship can promote mental and physical well-being that they require. It is significant that fostering these behaviors in Children to make slight changes in their environment can contribute to global well-being in their future and regain paradise.

Thank you for listening and I welcome any questions you may have.

Reference List.

Abdel, H. (2022) *Global Decline of Insects*. London: IntechOpen.

Adams, S., Savahl, S., Florence, M. and Jackson, K. (2018) 'Considering the Natural Environment in the Creation of Child-Friendly Cities: Implications for Children's Subjective Well-Being'. *Child Indicators Research*, 12(2), pp.545–567. doi: <https://doi.org/10.1007/s12187-018-9531-x>.

Ansari, N.-A., Agus, C. and Nunoo, E.-K. (2021) "Foundations of 'SDG15 – LIFE on Land': Earth, Forests and Biodiversity", *SDG15 – Life on Land: Towards Effective Biodiversity Management (Concise Guides to the United Nations Sustainable Development Goals)*, Emerald Publishing Limited, Leeds, pp. 7-48. doi: <https://doi.org/10.1108/978-1-80117-814-320211004>

Bamber, P. (2021) *Teacher Education for Sustainable Development and Global Citizenship: Critical Perspectives on values, Curriculum and Assessment*. London: Routledge.

Beery, T.-H., Chawla, L. and Levin, P. (2020) 'Being and Becoming in Nature: Defining and Measuring Connection to Nature in Young Children'. *International Journal of Early Childhood*, 7(3), pp.3–22. Available at: <https://researchportal.hkr.se/en/publications/being-and-becoming-in-nature-defining-and-measuring-connection-to-10>

Bento, G. and Dias, G. (2017) 'The Importance of Outdoor Play for Young Children's Healthy Development'. *Porto Biomedical Journal*, 2(5), pp.157–160. doi: <https://doi.org/10.1016/j.pbj.2017.03.003>.

Bourn, D., Hunt, F. and Bamber, P. (2017) *A Review of Education for Sustainable Development and Global Citizenship Education in Teacher Education*. [online] discovery.ucl.ac.uk. Available at: <https://discovery.ucl.ac.uk/id/eprint/10030831/>.

Boyd, D., Hirst, N. and Siraj-Blatchford, J. (2018) *Understanding Sustainability in Early Childhood Education across the UK*. Milton Park, Abingdon, Oxon: Routledge.

Bradbury, A. and Swailes, R. (2022) *Early Childhood Theories Today*. London: Learning Matters.

Brittain-Taudien, R. (2020) 'Look at My Leaves!': *Young Children's Artistic Entanglements with the Natural World*. [Dissertation] Available at: <https://www.proquest.com/openview/1e6c924f98d8fe3f1d435b33b80a1e65/1?pq-origsite=gscholar&cbl=18750&diss=y>.

Broda, H.-W. (2023) *Schoolyard-enhanced Learning: Using the Outdoors as an Instructional tool, K-8*. Portland, Me: Stenhouse Publishers.

Bruce, T. (2021) *Friedrich Froebel: a Critical Introduction to Key Themes and Debates*. London; New York: Bloomsbury Academic.

Bruce, T., Elfer, P., Powell, S. and Werth, L. (2018) *The Routledge International Handbook of Froebel and Early Childhood Practice*. Routledge.

Cars, M. and West, E.-E. (2014) 'Education for Sustainable society: Attainments and Good Practices in Sweden during the United Nations Decade for Education for Sustainable Development (UNDESd)'. *Environment, Development and Sustainability*, 17(1), pp.1–21. doi: <https://doi.org/10.1007/s10668-014-9537-6>.

Chawla, L. (2020) 'Childhood Nature Connection and Constructive hope: a Review of Research on Connecting with Nature and Coping with Environmental Loss'. *People and Nature*, 2(3), pp.619–642. doi: <https://doi.org/10.1002/pan3.10128>.

Christopher, K.-R. (2019) *The School Garden Curriculum: an Integrated k-8 Guide for Discovering science, ecology, and whole-systems Thinking*. Gabriola BC, Canada: New Society Publishers.

Clayton, S.-D. and Myers, G. (2015) *Conservation Psychology: Understanding and Promoting Human Care for Nature*. Chichester, West Sussex, UK: Wiley-Blackwell.

Coastal. (2019) *Robin - Spideog - All Kinds of Sad Songs*. [image] Available at: <http://www.coastal.ie/ireland-nature/birds/robin-spideog/>.

Conkbayir, M. and Pascal, C. (2014) *Early Childhood Theories and Contemporary Issues : an Introduction*. London; New York: Bloomsbury Academic.

Cutter-Mackenzie, A., Edwards, S., Moore, D. and Boyd, W. (2014) *Young Children's Play and Environmental Education in Early Childhood Education*. Cham Springer International Publishing.

Darling-Hammond, L. (2015) *The Flat World and education: How America's Commitment to Equity Will Determine Our Future*. 2nd edn. New York: Teachers College Press.

Davis, J.-M. (2015) *Young Children and the Environment : Early Education for Sustainability*. 2nd edn. Port Melbourne, Victoria: Cambridge University Press.

Dawwas, E.-B. and Dyson, K. (2021) 'COVID-19 Changed Human-Nature Interactions across Green Space Types: Evidence of Change in Multiple Types of Activities from the West Bank, Palestine'. *Sustainability*, 13(24), p.13831. doi: <https://doi.org/10.3390/su132413831>.

Doull, K. and Ogier, S. (2023) *Teaching Climate Change and Sustainability in the Primary Curriculum*. SAGE publications: Learning Matters.

Dower, N. and Williams, J. (2016) *Global Citizenship : a Critical Introduction*. 2nd edn. New York, Ny: Routledge.

Dow, K., Downing, T.-E. (2016) *The Atlas of Climate Change: Mapping the World's Greatest Challenge*. United Kingdom: University of California Press.

Dyment, J.-E., Davis, J.-M., Nailon, D., Emery, S., Getenet, S., McCrea, N. and Hill, A. (2013) 'The Impact of Professional Development on Early Childhood Educators' Confidence, Understanding and Knowledge of Education for Sustainability'. *Environmental Education Research*, 20(5), pp.660–679. doi: <https://doi.org/10.1080/13504622.2013.833591>.

Edwards, D.-B., Sustarsic, M., Chiba, M., McCormick, M., Goo, M. and Perriton, S. (2020) 'Achieving and Monitoring Education for Sustainable Development and Global Citizenship: A Systematic Review of the Literature'. *Sustainability*, [online] 12(4), p.1383. doi: <https://doi.org/10.3390/su12041383>.

Engdahl, I. (2015) 'Early Childhood Education for Sustainability: the OMEP World Project'. *International Journal of Early Childhood*, 47(3), pp.347–366. doi: <https://doi.org/10.1007/s13158-015-0149-6>.

Ernst, J. and Burcak, F. (2019) 'Young Children's Contributions to Sustainability: the Influence of Nature Play on Curiosity, Executive Function Skills, Creative Thinking, and Resilience'. *Sustainability*, 11(15), p.4212. doi: <https://doi.org/10.3390/su11154212>.

Franklin, A. (2023) *Playful Learning: The Disposition of Architecture as Pedagogy*. [Undergraduate Thesis] Available at: https://digitalcommons.kennesaw.edu/barch_etd/264/.

Ganie, S.-A., Nisar, T., Rehman, S.-A., John, A., Paray, M.-A., Lone, J.-A., Bano, P. and Khurshid, R. (2021) 'Pollination Ecology: Natural History, Perspectives and Future Directions'. *Springer eBooks*, 26(1), pp.119–174. doi: https://doi.org/10.1007/978-3-030-66877-8_6.

García-Berlanga, O., Simó Noguera, C.-X., Suay i Lerma, F. (2018) 'Outdoor Academic Debate as a Tool to Stimulate Critical Thinking and Scientific Orientation: a Pilot Experience'. *@Tic Revista D'Innovació Educativa*, 21, 67-74.

Green, K.-T. (2022) *Environmental Awareness in Early Years Education: a Systematic Content Analysis on Research from Different Countries*. [Doctoral Thesis] Available at: <https://harvest.usask.ca/items/6389f002-57e7-47f6-bffc-67c8b8bb2116>.

Greenwood, D.-A. and Hougham, R.-J. (2015) 'Mitigation and Adaptation: Critical Perspectives Toward Digital Technologies in Place-Conscious Environmental Education'. *Policy Futures in Education*, 13(1), pp.97–116. doi: <https://doi.org/10.1177/1478210314566732>.

Haas, C. and Ashman, G. (2014) 'Kindergarten Children's Introduction to Sustainability through Transformative, Experiential Nature Play'. *Australasian Journal of Early Childhood*, 39(2), pp.21–29. doi: <https://doi.org/10.1177/183693911403900204>.

Hadland, C. (2020). *Creating an Eco-Friendly Early Years Setting*. New York: Routledge.

Hargraves, V. (2020) *The Steiner Approach*. [online] THE EDUCATION HUB. Available at: <https://theeducationhub.org.nz/the-steiner-approach/>.

Hayward, B. (2012) *Children, Citizenship, and Environment: Nurturing a Democratic Imagination in a Changing World*. London; New York: Routledge, Taylor & Francis Group.

Hedefalk, M., Almqvist, J., & Östman, L. (2014) 'Education for Sustainable Development in Early Childhood Education: a Review of the Research Literature'. *Environmental Education Research*, 21(7), 975–990. <https://doi-org.ezproxy.uwtsd.ac.uk/10.1080/13504622.2014.971716>

Heimburg, D. von, Langås, S.-V. and Ytterhus, B. (2021) 'Feeling Valued and Adding Value: a Participatory Action Research Project on Co-creating Practices of Social Inclusion in Kindergartens and Communities'. *Frontiers in Public Health*, [online] 9. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8107371/>.

Hirst, N. (2018) 'Education for Sustainability within Early Childhood studies: Collaboration and Inquiry through Projects with Children'. *Education 3-13*, 47(2), pp.233–246. doi: <https://doi.org/10.1080/03004279.2018.1430843>.

Howe, A. and Collier, C. (2019) 'Sowing the Seeds – a Thematic Approach to Plant Life in Early Years Education'. In: *Teaching Science and Technology in the Early Years* (3–7). 3rd edn. London: Routledge, p.17.

Jarvis, P., George, J., Holland, W. and Doherty, J. (2016) *The complete companion for teaching and leading practice in the early years*. 3rd edn. London; New York: Routledge/Taylor & Francis Group.

John Muir Trust (no date) *Share*. [online] www.johnmuirtrust.org. Available at: <https://www.johnmuirtrust.org/john-muir-award/get-involved/four-challenges/share> [Accessed 10 Jul. 2024].

Jovine, R. (2022) *Light to Life: the Miracle of Photosynthesis and How It Can save the Planet*. United Kingdom: Short Books.

Karyadi, B., Ruyani, A., Sipriyadi and Johan, H. (2018) 'Impact of outdoor learning by step Introduction, Exploration, and Interpretation (IEI) Based on Environment on

Students' Critical Thinking'. *Journal of Physics: Conference Series*, 1116(5), p.052036.
doi: <https://doi.org/10.1088/1742-6596/1116/5/052036>.

Kolz, K. (2021) *Garden-Based Learning in a Reggio Emilia Inspired Swedish Preschool with a Permaculture Garden*. [Case Study] Available at:
https://gupea.ub.gu.se/bitstream/handle/2077/70629/gupea_2077_70629_1.pdf?sequence=1&isAllowed=y.

Korkmaz, A. and Yildiz, T. (2017) 'Assessing Preschools Using the Eco-Schools Program in Terms of Educating for Sustainable Development in Early Childhood Education'. *European Early Childhood Education Research Journal*, 25(4), pp.595–611.
doi: <https://doi.org/10.1080/1350293x.2017.1331074>.

Little, H., Elliott, S. and Wyver, S.-R. (2018) *Outdoor Learning Environments: Spaces for Exploration, Discovery and Risk-Taking in the Early Years*. Sydney: Allen & Unwin.

Lucas, B. and Spencer, E. (2017) *Teaching Creative Thinking : Developing Learners Who Generate Ideas and Can Think Critically*. Carmarthen (Wales): Crown House Publishing.

MacQuarrie, S., Nugent, C. and Warden, C. (2013) 'Learning with Nature and Learning from Others: Nature as Setting and Resource for Early Childhood Education'. *Journal of Adventure Education and Outdoor Learning*, 15(1), pp.1–23. doi:
<https://doi.org/10.1080/14729679.2013.841095>.

de Souza, M. and Halafoff, A. (2017) *Re-Enchanting Education and Spiritual Wellbeing*. London; New York: Routledge.

Tarozzi, M. and Torres, C.-A. (2016) *Global Citizenship Education and the Crises of Multiculturalism*. Bloomsbury Publishing.

Meighan, H.-L. and Rubenstein, E.-D. (2018) 'Outdoor Learning Into Schools: A Synthesis of Literature'. *Career and Technical Education Research*, [online] 43(2), pp.161–177. doi: <https://doi.org/10.5328/cter43.2.161>.

Neven, J. (2019) *Wild Garlic*. [image] Flickr. Available at:

<https://www.flickr.com/photos/enneafive/33892434878> [Accessed 8 Jul. 2024].

Newell, H.-E. (2018) 'Braiding Identities in Nature through Preschool'. *Inquiries and Essays*, 3(1), p.9. Available at:

<https://cedar.wvu.edu/cgi/viewcontent.cgi?article=1026&context=s2ss>

Ostroff, W.-L. (2016) *Cultivating Curiosity in K-12 Classrooms*. ASCD. Available at:

<https://files.ascd.org/staticfiles/ascd/pdf/siteASCD/publications/books/Cultivating-Curiosity-in-K-12-Classrooms-sample-chapters.pdf>

Palmer, S. (2016) *Upstart: the Case for Raising the School Starting Age and Providing What the Under-sevens Really Need*. Edinburgh: Floris Books.

Play Wales (2022) *Current Play Policy in Wales - Play Wales*. [online] play.wales.

Available at: <https://play.wales/play-policy-legislation/current-policies/#:~:text=Play%20Sufficiency%20Duty&text=As%20a%20result%2C%20the%20government> [Accessed 11 Jul. 2024].

Prince, H.-E. (2016) 'Outdoor Experiences and Sustainability'. *Journal of Adventure Education and Outdoor Learning*, 17(2), pp.161–171. doi:

<https://doi.org/10.1080/14729679.2016.1244645>.

Rios, C., Neilson, A.-L. and Menezes, I. (2021) 'COVID-19 and the Desire of Children to Return to Nature: Emotions in the Face of Environmental and Intergenerational Injustices'. *The Journal of Environmental Education*, 52(5), 335–346.

<https://doi.org/10.1080/00958964.2021.1981207>

Sageidet, B.-M. and Heggen, M.-P. (2021) *Global Citizenship and the Sustainable Development Goals*. In: Leal-Filho, W., Azul, A.-M., Brandli, L., Lange Salvia, A., Özuyar, P.-G. and Wall, T. Reduced Inequalities. Encyclopedia of the UN Sustainable Development Goals. Springer, Cham. https://doi.org/10.1007/978-3-319-71060-0_45-1.

Samuelsson, I.-P., Park, E. (2017) 'How to Educate Children for Sustainable Learning and for a Sustainable World'. *IJEC* 49, 273–285. <https://doi.org/10.1007/s13158-017-0197-1>

Sharma, N. (2020) *Value-Creating Global Citizenship Education for Sustainable Development Strategies and Approaches*. Cham: Springer International Publishing AG.

Siraj-Blatchford, J. and Brock, L. (2017) *Education for Sustainable Citizenship in Early Childhood*. Schemaplay Publications.

Srivastav, A., Srivastav, N.-N. and Nishida. (2019) *The Science and Impact of Climate Change*. Singapore : Springer Publishing.

Stanfel, A. (2023) *Nature's Vital Role Balancing Outdoor Play in Digital World*. [online] Available at: <https://www.creativesystems.com/natures-vital-role-balancing-outdoor-play-in-a-digital-world/> [Accessed 11 Jul. 2024].

Stephen, C. and Gadda, A. (2017) *Nurturing Citizenship in the Early Years*. Glasgow Centre for Population Health. University of Stirling. Available at: http://www.gcph.co.uk/publications/738_nurturing_citizenship_in_the_early_years

Taylor, A. (2020) *Beyond Stewardship: Common World Pedagogies for the Anthropocene*. In: *Urban Nature and Childhoods*. London: Routledge, p.14.

The Knowledge Bank (no date) *The Seven Key Themes of ESDGC Education for Sustainable Development and Global*. [online] p.2. Available at: <https://www.t2group.co.uk/download/brochure/The%20Seven%20Key%20Themes%20of%20ESDGC.pdf>.

Tinney, G. (2020) *The Harmony Debates: Exploring Practical Philosophy for a Sustainable Future*. [online] Available at: <https://repository.uwtsd.ac.uk/id/eprint/1544/1/Harmony%20Debates%20Glenda%20Tinney.pdf>.

Tinney, G. and Merriman, E. (2018) Early Years Education and Education for Sustainable Development and Global Citizenship (ESDGC) - Two Sides of the Same Coin? *Wales Journal of Learning and Teaching in Higher Education*, [online] 1(1).

Available at:

[https://repository.uwtsd.ac.uk/id/eprint/912/1/Tinney,%20Glenda%20and%20Merriman,%20Eileen%20\(2018\)%20Early%20years%20education.pdf](https://repository.uwtsd.ac.uk/id/eprint/912/1/Tinney,%20Glenda%20and%20Merriman,%20Eileen%20(2018)%20Early%20years%20education.pdf).

Tkemaladze , G.-S. and Makhashvili, K.-A. (2016) 'Climate Changes and Photosynthesis'. *Annals of Agrarian Science*, [online] 14(2), pp.119–126. doi:

<https://doi.org/10.1016/j.aasci.2016.05.012>.

Torezan-Silingardi, H.-M., Silberbauer-Gottsberger, I., Gottsberger, G. (2021) *Pollination Ecology: Natural History, Perspectives and Future Directions*. In: Del-Claro, K., Torezan-Silingardi, H.M. Plant-Animal Interactions. Springer, Cham.

https://doi.org/10.1007/978-3-030-66877-8_6

Torres, C. (2017) 'Education for Global Citizenship. *Oxford Research Encyclopedia of Education*'. Retrieved 10 Jul. 2024, from

<https://oxfordre.com/education/view/10.1093/acrefore/9780190264093.001.0001/acrefore-9780190264093-e-91>.

Tremblay, M.-S., Gray, C., Babcock, S., Barnes, J., Bradstreet, C.-C., Carr, D., Chabot, G., Choquette, L., Chorney, D. and Collyer, C. (2015) 'Position Statement on Active Outdoor Play'. *Int. J. Environ. Res. Public Health*, 12, 6475-6505.

<https://doi.org/10.3390/ijerph120606475>.

Trott, C.-D. (2019) 'Reshaping Our world: Collaborating with Children for Community-based Climate Change Action'. *Action Research*, 17(1), pp.42–62. doi:

<https://doi.org/10.1177/1476750319829209>.

UNESCO (2024) *UNESCO and Sustainable Development Goals*. [online] Unesco.org.

Available at: <https://www.unesco.org/en/sdgs>.

UNICEF (2022) *UN Convention on the Rights of the Child (UNCRC)*. [online] UNICEF. Available at: <https://www.unicef.org.uk/what-we-do/un-convention-child-rights/>.

Well-being of Future Generations (Wales) Act 2015. [online] Available at: <https://www.futuregenerations.wales/about-us/future-generations-act/>.

Welsh Government (2020) *Science and Technology: Introduction - Hwb*. [online] hwb.gov.wales. Available at: <https://hwb.gov.wales/curriculum-for-wales/science-and-technology/>.

Welsh Government (2022). *A Curriculum for Funded Non-maintained Nursery Settings*. [online] Available at: <https://hwb.gov.wales/api/storage/b1801d78-38c3-4320-9818-d9996c21aef8/220914-a-curriculum-for-funded-non-maintained-nursery-settings.pdf>.

West, S., Haider, L.-J., Masterson, V., Enqvist, J.-P., Svedin, U. and Tengö, M. (2018) 'Stewardship, Care and Relational Values'. *Current Opinion in Environmental Sustainability*, 35, pp.30–38. doi: <https://doi.org/10.1016/j.cosust.2018.10.008>.

Wikimedia Commons (2010) *English: Eastern Grey Squirrel (Sciurus Carolinensis) in Florida*. [online] Available at: https://commons.wikimedia.org/wiki/File:Eastern_Grey_Squirrel.jpg.

Williams, R.-T. and Scott, C.-D. (2019) 'The Current State of Outdoor Learning in a U.K Secondary Setting: Exploring the Benefits, Drawbacks and Recommendations'. *ABC Journal of Advanced Research*, 8(2), pp.109–122. doi: <https://doi.org/10.18034/abcjar.v8i2.537>.

Worm Composting Help (no date) *Worms Against Climate Change*. [online] Available at: <https://www.worm-composting-help.com/worms-against-climate-change.html#:~:text=12000%20compost%20worms%20can%20recycle>.

Wynes, S., Nicholas, K.-A., Zhao, J. and Donner, S.-D. (2018) 'Measuring what Works: Quantifying Greenhouse Gas Emission Reductions of Behavioural Interventions to Reduce Driving, Meat Consumption, and Household Energy Use'. *Environmental Research Letters*, 13(11), p.113002. doi: <https://doi.org/10.1088/1748-9326/aae5d7>.

Yin, S., Kasraian, D. and van Wesemael, P. (2022) 'Children and Urban Green Infrastructure in the Digital Age: a Systematic Literature Review'. *International Journal of Environmental Research and Public Health*, 19(10), p.5906. doi: <https://doi.org/10.3390/ijerph19105906>.