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This *Journal of Emergent Science* is a special issue on the theme of sustainability. Following the most recent United Nations climate change conference (COP26, in Glasgow in November 2021), there has been renewed interest in what educators should do to try to address the climate emergency. For example, the English government's new *Sustainability and Climate Change Strategy* (Department for Education, 2022) sets out an agenda for increasing understanding of climate change and connections to nature through initiatives such as a national education nature park and climate leaders awards. The *Our Shared World* coalition argue for 'engaged active citizenship', utilising the United Nations Sustainable Development Goal (SDG) for education (specifically Target 4.7) as a call to action for sustainable development (Bourn & Hatley, 2022).

The climate emergency is a complex and 'wicked' problem, something that cannot be solved with a narrow view of causes and solutions. Sustainable development is often represented with three dimensions, or pillars, to reflect the reciprocal nature and influence of the environment, social cultural co-operation, and economy. Such a model emphasises the interconnectedness of the 'system', which requires 'systems thinking', to consider the issues and solutions as a whole. In education, this requires us to look at sustainable development in a cross-curricular or transdisciplinary way, rather than in subject silos. This resonates with early childhood education pedagogy, which is concerned with development of the whole child.

This issue begins with a Research Review from **John Siraj-Blatchford**, exploring the concept of 'emergence', whereby the interactions in a 'system' lead to outcomes that are greater than their constituent parts. He considers emergence as both a way of explaining the need for systems thinking in science and sustainability, and also to explain the way that children learn, informing emergent science education.

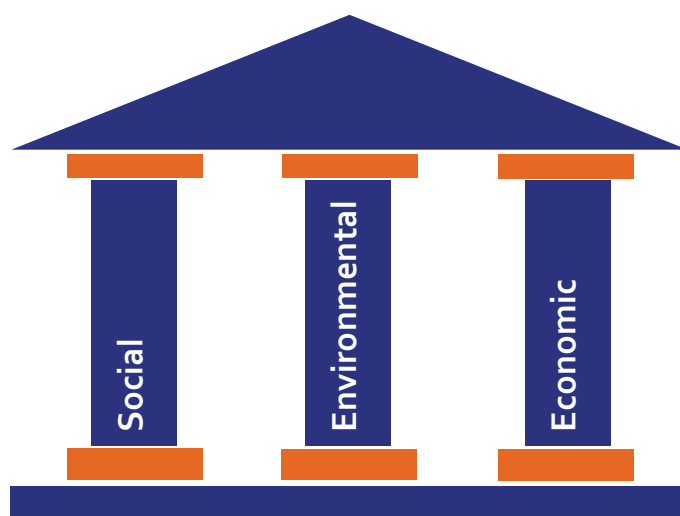


Figure 1. Three pillars of sustainability.

The next two articles explore an emergent approach within the context of particular topics. **Dianne Yewman** provides an action research case study from her nursery in England, looking at the use of *SchemaPlay* in the context of electricity. **Şebnem Feriver and Emre Göktepe** consider systems thinking as a way of supporting children's understanding of water in a Turkish pre-school.

In her article, **Amy Strachan** returns to the SDGs to consider their place and use within primary science, whilst **Meghna Nag Chowdhuri et al** describe the Primary Science Capital Teaching Approach, a social justice framework that aims to help children feel that science is 'for them' and so feel able to act on issues that matter to them.

Our global interconnectedness has become starkly explicit in recent years, making sustainable development a core priority of education. The articles in this issue provide ways to think about learners and pedagogy when considering big ideas such as emergence and systems thinking, together with practical examples of how to implement transdisciplinary approaches to support the development of global awareness in the children whom we support.

References

- Bourn, D. & Hatley, J. (2022) *Target 4.7 of the Sustainable Development Goals: Evidence in Schools in England. Research for Our Shared World*. DERC Research Paper no. 22. London: UCL Institute of Education. Available at: <https://bit.ly/osw-report>
- Department for Education (2022) *Policy paper: Sustainability and climate change: a strategy for the education and children's services systems*. Available at: <https://www.gov.uk/government/publications/sustainability-and-climate-change-strategy/sustainability-and-climate-change-a-strategy-for-the-education-and-childrens-services-systems>
- Our Shared World* <https://oursharedworld.net/>
United Nations Sustainable Development Goals (SDGs) <https://sdgs.un.org/goals>

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