

Best Practice Guidance

Science Education, the Environment and Sustainability

Context

Since the 1970s public awareness of, and concern for, the environment has grown and deepened. Substantial steps have been taken to address problems such as air and water pollution, the thinning of the ozone layer and acid rain. However, we still have a long way to go and we find ourselves faced with a series of 'wicked' problems such as biodiversity loss and climate change. These problems will never be solved as such but their impact will be mitigated through interdisciplinary approaches. Science plays a key role in addressing environmental challenges and contributing to the development of a world that is more sustainable than it is at present.

The position of ASE

- All students should be supported to develop their environmental literacy throughout their time in school.
- Science education has a key role in promoting better understanding of environmental issues and in empowering students to develop the skills and competences required to contribute to protecting and improving the environment for humans and other animals.
- Science teacher education should address issues of environmental literacy and sustainability.
- Science education in out-of-school settings provides unique opportunities to develop environmental literacy and to promote sustainable lifestyles.

Best practice should seek to include

An acknowledgement that environmental issues can only be effectively addressed using interdisciplinary whole school approaches.

- Sustainability should be practised in schools as well as simply taught. Guidance on developing sustainable practices abounds (see, for example, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/187037/DFE-32056-2012.pdf).

- The National Association for Environmental Education's reports for [Primary](#) and [secondary schools](#) illustrate how the curriculum provides opportunities for schools, teachers and children to explore a range of the world's most serious issues. Their latest [journal](#) (Spring 2018) reviews STEM and Environmental Education
- The '[Beacons Guides to Climate Change](#)' offer a concise, unbiased and up to date summary of the facts and arguments about this critically important subject. These guides are available free for personal and educational use.
- Opportunities to use out-of-the classroom resources should be encouraged. The Council for Learning Outside the Classroom (<http://www.lotc.org.uk>) provide curriculum links, resources and a Quality Badge scheme for providers.
- An awareness that, as a society, our existing lifestyles are unsustainable (<https://www.wwf.org.uk/what-we-do/area-of-work/promoting-sustainable-living>)
- The global dimension to these issues is important and should incorporate international initiatives such as the [Sustainable Development Goals](#)
- Up-to date science knowledge for these complex issues. The [Royal Society](#) has produced a good summary of climate science evidence, that fits the scientific consensus on these issues
- [Urban Science](#). This is a new EU project and the UK partners 'Wild Awake' leads the consortium from six European countries. It is delivering a means to teach pupils how science can develop solutions for sustainable cities, motivating them to view the positive benefits of science to the urban environment. Resources coming soon

Finding support:

- The organisation Sustainability and Environmental Education [SEEd](#) goal is to broaden and deepen the practice of education for sustainability and environmental education. SEEd uses policy informed by practice to influence government and other organisations. SEEd are the founding member, manager and chair of the Sustainable Schools Alliance.
- The SSA is composed of 17 representatives from organisations across the UK, including the ASE, who are working to embed sustainability into formal and non-formal education. Activity includes collaboration on the [National Sustainable Schools Conference](#) and a regular blog series featuring contributions from board members, including [this one](#) from the ASE about the 2018 conference