**Chapter 1 – Sustainable Learning**

**Chapter Overview**:

This is first chapter of an eight-chapter (eight-week) learning module with the objective to ensure that year 5/6 students understand the importance of the **energy transition** which will be ongoing over their lifetimes. The energy transition involves: (i) transition from high-carbon-emission energy resources (i.e. coal/gas) to low-carbon (i.e. wind/solar) solutions; (ii) electrifying transportation (i.e. electric vehicles, trains, bikes, buses); (iii) highly efficient home appliances; and much more! Because human energy usage is so vital for our day-to-day functions in today’s world, this teaching package is faceted around energy. The idea is to provide a holistic learning experience to the students to understand how energy fundamentally underpins our universe.

This first chapter draws upon the science of learning[[1]](#footnote-1), and accounts for the growing concern about the impact of eco-anxiety on children’s wellbeing[[2]](#footnote-2). Throughout this module we will follow the engage, build, consolidate model of learning. This might be through using all three in one session or through iterating between them across the sessions.

* **Engage:** What’s in it for me? Or WIIFM? engagement usually means making the learning relevant and relatable; or it means create dissonance through surprising the learner with some unexpected. It can also be about involving physical, embodied movement.
* **Build:** Once the learners are engaged they are ready to explore new information in relation to what has sparked their interest. Here is where book work, slides, experiments and so on can be useful.
* **Consolidate:** This is the phase where we concretise the learning so that it becomes memorable.

**Preliminary knowledge for educators**: *what is eco-anxiety and how can we mitigate against it?*

<https://www.bath.ac.uk/announcements/rise-of-eco-anxiety-affecting-more-and-more-children-says-bath-climate-psychologist/>

<https://www.hfehmind.org.uk/news/eco-anxiety-and-young-peoples-mental-health/>

Barratt Hacking, E., Scott, W. and Lee, E., (2010) Evidence of Impact of Sustainable Schools. Other. Department for Children, Schools and Families (DCSF).

Teaching about climate change can be very worrying for the educator as much as for the students, so it is a good idea to look at some good news stories before you start:

1. <https://www.globalcitizen.org/en/content/8-crazy-inventions-that-can-save-the-planet/>
2. <https://architizer.com/blog/inspiration/collections/pollution-solution/>
3. <https://www.livescience.com/7992-top-10-craziest-solutions-global-warming.html>
4. Carbon reduction, batteries: <https://www.bresslergroup.com/blog/innovative-technology-for-climate-change-7-solutions/>
5. Behavioural: <https://www.unenvironment.org/news-and-stories/story/five-ways-behavioural-science-can-transform-climate-change-action>
6. Behavioural: <https://behavioralscientist.org/fight-climate-change-with-behavior-change/>
7. Behavioural: <https://rare.org/wp-content/uploads/2019/02/2018-CCNBC-Report.pdf>
8. Farmers: <https://www.bbc.co.uk/news/uk-49044072>
9. Algae: <https://qz.com/1718988/algae-might-be-a-secret-weapon-to-combatting-climate-change/>
10. <https://thehappynewspaper.com/?v=79cba1185463>

**Essential questions:**

* What do you already know about climate change?
* How does it make you feel?
* What does it mean to “live sustainably”?

**Enduring understandings:**

* Discover what you already know about Sustainability and Climate Change
* Create and use your personalised eco-diary

**Vocabulary:**

Climate Change, sustainability

**Outline: Chapter 1 outline (total run time = approximately 45 min)**

Spend the session working out what the students already know, how they feel, and what they would like to know more about. Keep a record of what is discussed so that you can return to this at the end of the topic and show how what they have learned has addressed some of these questions.

This can be done by starting in small groups to think about environmental degradation: what is it is, and means, what forms it takes and so on, and then sharing that with the class. Using A3 paper, in the groups to record their own group’s thoughts first in one colour and then adding to this the ideas from the rest of the class in another colour might work.

Remember to try to elicit not just what it is known but also how it makes them feel and bearing in mind that you will be focusing on energy, aim to include some causes of degradation, particularly those that are relevant to energy usage.

Acknowledge the concerns and worries they may have and talk about how you are going to be thinking about ways they can work on solving some of these problems both now and in the future. (Voicing concerns and taking time to talk about them can help to dispel them, particularly if it is linked to tangible actions)

Begin this process by getting them to make a notebook where they can write down ideas each session on how they can begin to make small changes personally.

Making a notebook or sketch pad:

Materials: scrap paper, card, ribbon, string, scissors, ruler, holepunch

1. have a range of pieces of scrap cardboard and paper available (take the opportunity to reuse and repurpose paper and card for this activity – modeling the principles of sustainability is central to supporting children in their efforts to live more sustainably)
2. get students to gather about 10 sheets of paper and one sheet of cardboard
3. cut the paper to approximately the same size and stack them,
4. Fold them down the middle and punch 3 holes along the fold
5. Stitch them together with the string or ribbon

Look here for some advice: <https://www.wikihow.com/Make-a-Notebook#Making-a-Simple-Hole-Punched-Notebook>

1. Decorate the front cover with something like ‘my sustainability journey’ or a drawing that expresses their love for the planet

End the session by introducing the Sustain/Ed Changemaker (Vinisha Umashankar <https://www.bbc.co.uk/newsround/59078448> 2 min 40 s video). She is a great example of a young person who is working on solving one of the problems that is brought up in the session.

Get the students to write down in their notebook how they might help this person in their own way to solve the problem that the innovator is working on. (this could be with small personal changes, or it could be by influencing policy makers or it could be an idea for a future career – you might want to do a short explanation of the different categories of action that people are taking to inspire change)

1. <https://impact.chartered.college/article/howard-jones-applying-science-learning-classroom/> [↑](#footnote-ref-1)
2. <https://www.bath.ac.uk/announcements/rise-of-eco-anxiety-affecting-more-and-more-children-says-bath-climate-psychologist/> [↑](#footnote-ref-2)