



Digital Stories to Promote
Environmental Sustainability
Education in Schools



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Practice toolkit for digital and sustainability tools in school

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Introduction to the PESES toolkit

Digital skills and sustainability are a big part of a student's educational journey. This innovative toolkit blends the paths of sustainable education and digital education. The tools that have been highlighted in this toolkit are useful for educators and students alike to find the right tools to help them understand and promote a more sustainable lifestyle. You will find a variety of tools with different purposes and objectives to make sustainability an intricate part of the education journey.

Toolkit Highlights:

There are many tools that you will find in this toolkit and all of them aim to bring different insight to the connection between education and sustainability. The following are the general highlights that the tools in this toolkit has:

- **Project-Based Learning Tools:** Engage students in hands-on, sustainability-themed projects that fuse digital skills with environmental consciousness, resulting in tangible solutions and outcomes.
- **Interactive Quizzes and Assessments:** Assess students' understanding of sustainability concepts through engaging digital quizzes that make learning a dynamic and interactive experience.
- **Virtual Eco-Expeditions:** Transport learners to diverse ecosystems through virtual reality experiences, fostering a deeper appreciation for nature's intricacies and the urgency of preservation.
- **Digital Storytelling Workshops:** Equip educators with the know-how to guide students in crafting impactful digital narratives that resonate with sustainability principles and drive meaningful change.
- **Collaborative Online Platforms:** Foster a sense of global citizenship by connecting classrooms across borders through online platforms, enabling students to share insights, experiences, and solutions to shared sustainability challenges.

Sections of the toolkit:

To make searching for the right tool easy to find, we have divided the tools into the following 5 sections. Click on each one to learn more about the tools inside the section.

1. [Sustainability in Learning Context:](#)
This section aims to understand how sustainability becomes a cornerstone in education. Discover pedagogical approaches that seamlessly weave ecological awareness into subjects, fostering a generation of learners equipped to tackle real-world challenges.
2. [Sustainability in Young Learners' Lives:](#)



Strategies to engage young minds in sustainable practices. Explore examples that empower students to grasp the significance of environmental awareness and adopt sustainable behaviors early in life.

3. **[Sustainability and Digital Tools:](#)**

From interactive simulations to virtual field trips exploring ecosystems, these tools create immersive experiences that breathe life into sustainability education and make it fun for students.

4. **[Digital Storytelling in Schools:](#)**

Tools that help ease the understanding and use of Digital Storytelling in schools. Explore the power of storytelling to convey environmental messages, evoke empathy, and spark action. Witness how compelling narratives, enriched with digital elements, have the potential to ignite positive change within communities and beyond.

5. **[Sustainability and Digital Storytelling:](#)**

Tools where sustainability and digital narratives intertwine. Uncover tools and techniques to empower educators and students to craft compelling narratives that revolve around sustainability themes. Whether it's creating multimedia presentations, videos, or animations, storytelling has become a potent vehicle for driving eco-conscious messages.



1. Sustainability in Learning Context:

Resources	Description
1. Terms and Definitions on Climate Change	<p>The glossary resource aims at providing teachers and students with a good and solid background on the key concepts and terminology of climate change and sustainability. The two pages of key terms and their definitions are designed to give a general overview of the most common words and expressions used when referring to climate change and environmental challenges. This resource can be used in different ways, and teachers can decide to add more terms to this glossary as the learning develops. In this case, students will be provided with an updated and useful small dictionary that can be changed and used over their years of studies.</p>
2 Games to engage young people with Climate Change	<p>The video resource presented here is an important input for all those teachers who want to use alternative methods to introduce their students to environmental and sustainability issues during their teaching hours. The video created by Paul Keating begins by describing how games are powerful educational tools that can help students learn about current and critical issues. During the presentation, Paul refers to the different types of games that are on the market and explains how these games can be used by teachers in their lessons and for different subjects, as they are adapted to different topics, such as climate change but also social issues. The presentation concludes with hints and tips on how to create a climate change game step by step.</p>
3 Paper: "Education for Sustainable Development: A Systemic Framework for Connecting the SDGs to Educational Outcomes" by Vasiliki Kioupi and Nikolaos Voulvoulis	<p>The activity of this resource consists of a reading of Vasiliki Kioupi and Nikolaos Voulvoulis' paper on education and sustainable development. You will need to have a log in to access the article on Research Gate. The idea behind this paper is to redefine Education for Sustainable Development as the vehicle that can bring about that social and structural change towards a more sustainable future. For this transition to take place, we need to intervene in education, which is seen by the authors as a systemic tool for transformative social change.</p>
4 The Global Goals Food Project - Every Plate Tells a Story	<p>The activity of this resource consists of a lesson guide on 'Every Plate Tells a Story' with accompanied worksheets</p>



	<p>and posters for students to tackle the Sustainable Development Goals (SDGs). This lesson provides a guided activity for teachers to explain the Global Goals to their students, while interacting with them through a series of educational tools and guided dialogues. Teachers can prepare for this lesson with a series of tools that are provided within the workbook, in order to deepen their understanding of the subject content and start gathering ideas for their activities.</p>
5 WWF Climate Change Resource Pack	<p>The WWF Climate Change Resource Pack is an informative and educational activity for teachers that are willing to explore the topic of climate change during their lessons. The resource starts with an introduction to climate change, what it is, why it's happening, and why it is important to teach to students. After the brief introduction, teachers can find some activities to develop in their classes, with the help of the online resources available on the website. A PowerPoint presentation is also available for teachers to use when introducing the topic to their students, before conducting the activities. The teacher guide concludes with some considerations to be mindful of when explaining climate change to students.</p>
6 Greening Your Mobile Phone	<p>The "Greening Your Mobile Phone" activity is divided into two parts. The first part is a video called "mobile phones and Sustainability" and can be found in the above link. This video shows the steps from the production of mobile phones to their disposal, highlighting the impact this has on the environment. The second part of the resource consists of a table that students have to fill in with possible solutions to make their mobile phones more sustainable. Students can work on this activity individually or in small groups and can then present their findings to the classroom. This resource is interactive and simple and gets students thinking about the social and environmental cost of their phone and ways to improve this at a global level.</p>



2. Sustainability in Young Learners' Lives

Resources	Description
1. Promoting greener schools with digital storytelling	The gain is first and foremost in supporting teachers to develop new teaching methods in line with the times. Teachers will thus be more skilled in adopting diverse innovative methods in their work, such as problem-based learning, student participation, digital storytelling etc.
2. Let's Go Zero 2030: Schools working together to be zero carbon	<p>By joining the campaign, a school is publicly declaring that they want to be zero carbon by 2030, and that it wants the UK government to enable schools in the UK to take more action on this issue.</p> <p>This campaign is about showing aspiration. We know that being zero carbon is currently beyond the reach of most schools, but by working together and with the government we believe it is achievable by 2030.</p> <p>To be part of the campaign, schools are expected to be taking action to reduce their carbon impact, measuring this where feasible, and have 'next step' actions planned for the following year. They can indicate the steps they are taking from a checklist on the sign-up form.</p> <p>By joining the campaign, schools commit to telling their students, communities and suppliers that they are part of Let's Go Zero and aim to be zero carbon by 2030. We can provide the Let's Go Zero logo for schools to do this.</p>
3. Whose voices? Whose knowledge? Children and young people's learning about climate change through local spaces and indigenous knowledge systems	<p>Three schools (two primary schools and one high school) participated in the Dawkins Park project activities.</p> <p>Thirteen stakeholders attended a one-day workshop that involved one Year 7 secondary school teacher of Torres Strait Islander heritage, two non-Indigenous Year 7 secondary school teachers, five non-Indigenous Year 6 primary school teachers, two Aboriginal Australian Liaison Officers of Gumbaynggirr Country, one local council staff member and one environmental education consultant. At this workshop, the overall design and timeframes of the project were agreed upon.</p>
4. Critical environmental education in tertiary English language teaching (ELT): A collaborative digital storytelling project	To address the two research questions, an instrumental case study was conducted. The instrumental case study refers to investigating a particular case as a mean to some larger goals. The study aimed to understand how a collaborative DST (Digital Storytelling) project promoted the critical environmental awareness of prospective



	<p>teachers in the HEI. It spanned over one academic semester. Triangulation was gained by distributing a questionnaire to the students, conducting an informal interview, observing some classes, and analyzing students' digital stories. The role of the author was a teacher-researcher.</p>
5. Blue shirts green shorts	<p>The main activities in this project are below:</p> <ul style="list-style-type: none"> • To encourage students in using foreign languages in conversation with emphasis on English • To improve their communication skills with students of different cultural background • To promote the integration of new strategies such as Personalized and Adaptive Learning, Digital Story Telling, Video-Based Learning, Gamification and Project-Based Learning in their school curriculum. • To promote Content and Language Integrated Learning in the domain of Environmental Education. • To improve the level of ITC competences and skills. • To develop tolerance, mutual understanding, active citizenship, critical thinking, cultural and linguistic comprehension.
6. Helping teachers with sustainability curriculum	<p>Articulate the importance of teaching sustainability and different teaching methods and topics where it is naturally integrated</p> <p>Identify resources available to help teachers gain training to become more familiar with green school and climate science concepts</p> <p>Recognize the impacts that a successful sustainability program can have on students, the school and the broader community</p> <p>Describe the biggest challenges and opportunities that exist in preparing teachers to be more confident in teaching about sustainable schools.</p>



3. Sustainability and Digital Tools

Resources	Description
1. Gaming Green: The Educational Potential of Eco – A Digital Simulated Ecosystem	Outlining how the use of video games in education is becoming increasingly popular and how they are consolidating their position in the modernized digital classroom. To understand the educational impact of games on the environment. To show how an eco-game can promote environmental awareness.
2. Best FREE Web Tool for Teachers!	During the video, the most important free programs are presented, which can be useful to any teacher when teaching. It shows how to use how to create relevant files. Among the useful programs mentioned are googling programs which are completely free. The useful information that is found is how to organize your work, how to create relevant videos, how to organize your digital units in the system.
3. Software Tools Help Increase Efficiency, Reduce Climate Impact	Presenting digital tools that have a huge potential to help achieve key energy goals. The use of these tools and data has the potential to reduce overall electricity demand by 25% by 2025, reduce greenhouse gases by 19%, increase wind farm capacity by 20% and improve solar energy efficiency by 30%.
4. TEACHING SCIENCE WITHIN THE CONTEXT OF SUSTAINABILITY	During the activity, each of the smaller groups should learn about relevant topics related to earth science, such as: Atmospheric Sciences, Meteorology, Geology, Physical Geography, Geophysical and Geodesy, Ecology, Hydrology, Glaciology, Climatology, Astronomy, Cosmology, Oceanology, Paleomagnetism. The knowledge gained should be analyzed from the point of view of sustainable development.
5. Using Video to communicate about an issue	One of the most powerful mediums of communication, videos are used often by a variety of professions. Phones and cameras can capture small video clips of an issue, and these can easily be turned into a film.
6. Ørsted builds a greener world	The article describes how important the artificial intelligence they use to transform data from more than 1,300 offshore wind turbines is to them, preventing frequent maintenance and saving time and resources to analyse it all. Modern tools help all employees to work more efficiently and collaborate better. An example of this activity is the time it used to take to calculate the



foundations themselves, now, thanks to special tools, it takes a few hours.



4. Digital Storytelling in Schools

Resources	Description
1 "It's beautiful, living without fear that the world will end soon" a letter from the future self to the present self.	The participatory action research method of digital storytelling was adapted to explore climate futures, with thematic, visual and narrative analysis of the resulting videos. Young people articulated positive, negative and more complicated visions of the future, including counterfactuals, discontinuities, and living with loss and change.
2 Change the Story : Creating new climate stories across Europe	To make climate change education relevant and meaningful; provide young people with meaningful ways to deal with complex problem solving within a social context, offering them the process to tackle complex, socio-scientific, real-world problems.
3 My Favorite Part Is When We Tell the Truth": Identity and Agency in Middle School Youth's Climate Science Digital Storytelling	The Green Ninja Film Academy (GENIE) curriculum combines the traditional processes of storytelling with a technology rich experience
4 Eco-digital storytelling	EDS is designed to increase teens' content knowledge within multiple E-STEAM fields and to provide numerous technology-rich experiences in both application of geospatial technologies (i.e., GPS, interactive maps) and digital media creation (i.e., video, animation, ArcGIS StoryMaps) to shape teens' cultural learning pathways
5. Land Talk	Land Talk is a simple digital storytelling platform for students to learn about and document landscape changes in locations around the world. A younger person interviews an older "observer" who has known a location for at least 20 years, asking them to report on changes they have observed in that place.
6. Lego Education Story	An interesting tool for introducing storytelling in the classroom is the Lego Education Story Starter kit, which helps children build stories by introducing and describing the characters, setting and plot of the story, while improving manipulative and construction skills. The kit includes software that allows you to import and digitize images of the stories you create, and document and share your work.



5. Sustainability and Digital Storytelling

Resources	Description
1. Sharing stories on our composting bin	As a class create one composting bin. Students will take pictures throughout the whole process which will then turn them into a DST.
2. Digital Story Reflection on "The Lorax"	This activity is designed to help students learn about sustainability through digital storytelling using a book. The book we have chosen is "The Lorax" by Dr. Seuss. Students will read and then reflect on the main themes and objectives of the book that are all linked to sustainability. After that, students will also create a DST about the book with their opinion and why it is important for humans to take care of the environment.
3. Eco-Friendly Superheroes	This activity is a way for students to learn about sustainability through digital storytelling. The objective of this activity is to encourage students to think about sustainable living actions by making them create a superhero that is eco-friendly. This activity will also aim to encourage student's creativity.
4. Sharing Sustainable Living Practices	This activity is designed to help kids learn about sustainability and sustainable development goals through digital storytelling. Using digital storytelling, students will create a story that promotes sustainable living practices and addresses key sustainability issues.
5. Carbon Footprint Stories	This activity is designed to help students learn about sustainability through digital storytelling using the footprintcalculator.org website. Students will use the website to calculate their ecological footprint and create a digital story that promotes sustainable living practices.
6. Eco-Friendly Adventures	This activity aims to teach students about sustainability while providing a fun and interactive learning experience. Students will embark on an imaginary eco-friendly adventure and use digital storytelling tools to create a story that promotes eco-friendly behaviors and practices.

