TECHNOLOGY - LESSON PLAN

Grade:	3rd - 5th (Age 8-11)
Subject:	United in Biodiversity - **Pollution**
Lesson n°:	**#**
Topic:	**Plastic pollution's impact on biodiversity: what can we do to reduce our plastic use? Creation of a digital infographic with actionable tips.**
Lessons focus and goals:	**Goals:** ● Understanding the impact of pollution on biodiversity loss, specifically plastic pollution's impact on wildlife; ● Modifying the students' behaviour regarding waste reduction, specifically plastic waste; ● Understanding the importance of technology in raising awareness on the topic and on disseminating; ● Engaging the entire school and local community. **Focus:** promoting a sense of deep awareness of our impact on our natural world, while understanding the power of choices we have to change. Using a digital app, students will improve their ICT skills, while also improving their communication, problem solving, critical thinking, creativity and collaboration skills.
Learning objectives:	● **Understanding** how pollution, and specifically plastic pollution, affects biodiversity and the actions we can take to change our impact on biodiversity. ● **Promoting critical thinking and problem solving skills, analysing solutions and actions**: students will explore solutions and strategies contributing to minimising our plastic pollution footprint, analysing practical actions and deciding on the most important actionable tips. ● **Developing digital skills:** students will use a digital app to create an infographic representing a list of actionable tips to reduce plastic use, refining their digital skills in utilising online tools to creatively and engagingly represent their findings. ● **Promoting creativity and communication skills:** the activity will encourage students to express their creativity in visually representing in the most effective way the actionable behaviour changes we can all adopt to reduce plastic pollution. ● **Promoting group work and collaboration**: the activity will be structured to promote collaboration among students, requiring them to work in groups and to make decisions as a class.

	● **Disseminating and raising awareness:** students will share their infographics with other classes, the school website and their parents, so as to raise awareness of the topic and promote a behaviour change, thus understanding the importance of technology in disseminating.

Materials	- Internet connection - PC or tablet - Projector or big screen/TV monitor - Access to Word/Google documents - Brainstorming Apps (e.g. Jamboard) - Access to an online platform to create digital content (e.g. Canva, Google presentation,..) - Plastic gloves - Container filled with water

Structure and activities	**This activity can be implemented in 2 to 3 lessons** **Prerequisites** Children are already familiar with the topic of general pollution, and of the importance of the 3Rs: reduce, reuse, recycle (also by means of the 3Rs song The 3 R's). At the beginning of the lesson, the teacher can ask the students to sing along to the 3Rs song and discuss what they remember about pollution and the 3Rs. **Introduction and Activation (15/20 min max)** The teacher tells their students that they will learn more about plastic pollution and about its impact on biodiversity. Then: 1. Asks students to name all the plastic items they have on their desks, in the school, at home, leading to the insight that we are surrounded by plastic; 2. Checks how much plastic waste the class has produced that day (given that the class sorts their waste in the classroom); 3. (for 8 year old pupils) Puts a transparent plastic glove in a container filled with water, stirs the container and asks children what it looks like when it floats/moves. It may look like an octopus or a jellyfish. Elicits what other sea animals may do with the plastic glove, if they thought it were a jellyfish: they might eat it. 4. (for 9-11 year old pupils) Quickly calculates the class plastic footprint, starting from step 2 and using an online calculator like How to calculate plastic footprint **Focus on plastic pollution and its impact on biodiversity (30 min)** The teacher presents plastic pollution and its impact on biodiversity through the following short videos/visuals, e.g., followed by a class discussion on the topic: 1. Pictures of the impact of plastic waste on wildlife, e.g.: How animals are affected by plastic 2. Plastic Pollution 3. How Does Plastic Impact Animals and Humans? - Earth.Org Kids 4. WWF facts and numbers about plastic waste and its impact Plastic is NOT fantastic For teachers' reference: KS2 Activity handbook for teachers *"Plastic is designed to last for a very long time. But it hasn't been around for very long – only since the early 1900s – although it wasn't until the 1960s that plastics became more widely used. Since then, plastic has changed the way we live. It's cheap and can be used for many different purposes, from life-saving medical equipment to takeaway coffee cups. Today we are surrounded by more plastic than ever before. Plastic production has surged over the past 50 years, from 15 million tonnes in 1964 to 311 million tonnes in 2014, and is expected to double again over the next 20 years. A huge*

Inclusion	● The aim of the lesson and its structure are explained to the students at the beginning of the activity ● Instructions are kept simple and repeated where necessary ● Students are put into mixed ability groups ● Equitable participation is encouraged:Ensure that all students have an opportunity to participate actively in the lesson. ● Monitor participation and intervene if certain students are being marginalised or excluded.

Assessments:

 # 1 - Use of technology for the infographic

1.	Initiating	Developing	Excelling
Description of performance	Uses basic digital tools to create their part of the infographic. May need help following the written instructions. May lack organisation. The images chosen may not be effective. May require a long time to type the text.	Uses digital tools more independently, referring to the written instructions when in doubt, and presenting a well-organised and visually appealing picture-text combination. Understands the importance of visuals in effective communication.	Uses digital tools independently, presenting a polished, clear and engaging picture-text combination. Understands the power of ICT and visuals in effective communication and dissemination.
Sample student response	"Here is my part of the list of ways to reduce our plastic use. I chose this picture because I liked it".	"In my part of the infographic, I chose this picture because by looking at it, without even reading the text, you can understand in which way you can reduce your plastic use.".	"In my part of the infographic, I chose the most effective picture so that it could be more easily remembered by the people who see it. Technology is really important because it makes it possible to share important topics with other classes, our families and other people.

			They can start reducing their plastic use too thanks to us".

#2 - Written reflection after the dissemination phase

2.	Initiating	Developing	Excelling
Description of performance	Provides a basic reflection on the activity, sticking to a superficial view without thoroughly analysing the connections between plastic pollution, biodiversity loss and citizens' behaviour changes.	Provides a more detailed reflection on the activity, establishing clearer connections between pollution, biodiversity loss and citizens' behaviour changes. Appreciates the impact of plastic on biodiversity, and how we are all responsible for change as a community.	Provides an in-depth reflection, demonstrating a clear and detailed understanding of the interconnections between plastic pollution, biodiversity loss and behaviour changes. Explains the role every citizen has on plastic use reduction. Appreciates the impact that the infographic might have on the local and school community.
Sample student response	"With our activity I understood that we use too much plastic. That can be a problem for the animals like turtles"	"Our activity was important because I understood that plastic pollution is very dangerous for the environment and for biodiversity. We can all do something simple to reduce our plastic use, so that it's better in the future for all of us."	"Our activity was very important. I learnt that plastic pollution has a big impact on biodiversity loss. One of the most important things we can do is to change our behaviour, reducing our plastic use. Simple habit changes are easy to act upon and have a big impact on plastic reduction. Our infographic has been shared with many people already, and I am sure many

			people will change some of their daily habits thanks to us!"

Quantitative Assessment Rubric:

Criteria	Initiating	Developing	Excelling
Description of Performance			
Use of technology for the infographic			
	1-3 points	4-6 points	7-10 points
	1-3 points	4-6 points	7-10 points
	1-3 points	4-6 points	7-10 points
Understanding of the interconnections between plastic pollution, biodiversity loss and behaviour changes			
	1-3 points	4-6 points	7-10 points
	1-3 points	4-6 points	7-10 points
	1-3 points	4-6 points	7-10 points

Total Points Calculation:
- Total points for each criterion can be calculated by summing up the points awarded in each category.

Sample Student Response:

Assessment Table: Inclusion and Diversity - Pollution

Criteria	Check
Information offered in multiple formats	
- Variety of learning materials provided	
- Text, visual, auditory resources	
Inclusive methodologies like peer-to-peer learning	
- Opportunities for collaborative activities	
- Group discussions, peer teaching	
Use of ICT tools	
- Integration of technology in learning activities	
- Use of online platforms, interactive tools	
Overall Inclusion and Diversity	
- Integration of diverse perspectives	
- Opportunities for student engagement	
- Promotion of equitable participation	

Explanation of Criteria:

- **Information offered in multiple formats:**
  - Assess whether the lesson plan provides learning materials in various formats such as text, visuals, and auditory resources to cater to diverse learning styles.

- **Inclusive methodologies like peer-to-peer learning:**
  - Evaluate if the lesson plan incorporates inclusive methodologies like peer-to-peer learning, group discussions, and collaborative activities to encourage interaction and engagement among students.

- **Use of ICT tools:**
  - Determine if the lesson plan utilises ICT tools such as online platforms and interactive resources to enhance learning experiences and accessibility.

- **Overall Inclusion and Diversity:**
  - Summarise the overall assessment of inclusion and diversity in the lesson plan, considering the integration of diverse perspectives, opportunities for student engagement, and promotion of equitable participation.