1.Problem identification:

Marine Litter Awareness: The Plastic Threat

ESCOLA SECUNDÁRIA DE PAREDES-TEAM (PORTUGAL):

Subjects : Biology, ICT, Social sciences, foreign language , Language

Description: Using different ICT Tools , students will be doing an exercise to gather information about plastics as an important part of marine litter**.** This is suitable for students aged between 12-18 years.

Aims: : Develop ICT Skills, Team work, Gathering and organizing information

Outcomes: Public presentation of findings and awareness and dissemination of plastic threat in marine and water environments and possible solutions or alternatives

Learning designer link : https://v.gd/xNQCIZ

Title	Procedure	Time
Presentation	Get the apps/ Software , Install and learn how does it work	90 min
Workgroup	Field trip to gather information on trash found on the beach or river.	1 day
Discussion	Team work – Collaborative work- Peer to peer work – Teacher as a facilitator	135 min
Evaluation	Public presentation and dissemination (Parents/Townhall, etc)	90 min

Marine Trash and ICT

Background

This project is based on the need, given the scale of the problem, in the development of young people's awareness to the dangers of the accumulation of plastics in the oceans and beaches in various parts of the world. This awareness will only be rooted and strengthened, if young people are involved in active citizenship practices that can motivate them, in the near future and throughout their lives, to be themselves agents of change. By helping these young people, we are encouraging their autonomy in creating, developing or participating in awareness activities, about this problem, in their peers. In this way, we can reach out to a larger number of people and help them, too, to actively participate in protecting the environment.

Young people communicate, in an increasingly instinctive way, using computer platforms, apps, internet, a non-stop process that must be capitalized and empowered by all those who want to improve the quality of life on the planet.

Within this project, the students and teachers involved participate in several *beach cleanups* sessions[1]. This type of activity has an extremely high potential in developing a willingness to act personally in the face of a problem, but it has the limitation of involving a small group of people at a time. This unit aims to reconcile the potential of this type of activity with the ability to convey the experiences of this limited group of people to a very broad community of young people who communicate quickly and effectively using the internet.

This didactic unit consists of an approach, with resources of a multipurpose learning focus , in the various phases involved in the preparation and realization of a field trip for the collection and separation of plastics on a beach, as well as in the subsequent work in communication of results.

In a first phase, the students are prepared, from the scientific point of view, to the field trip through the exploration of a PowerPoint built for this purpose. Also in this phase, tutorials for two software applications "HP Reveal" and "Socrative", are provided and explored. The

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[1] We rather prefer to call them **"Trash finding evidences on the beach"**, since for this project was more important to know what are the most common materials found in coastal areas and to learn more about its origin rather to clean the beach. However, we end up collecting rubb

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first application allows the association of photographs or small films, with images in a context of augmented reality. The second application allows the execution of questionnaires that are answered through a mobile phone / tablet.

In a second phase, that is, the field trip, students are encouraged to record, through photography or video, different moments during the activity of cleaning the beach. During the return trip, and using their mobile devices, they carry out a small questionnaire prepared by the teachers who supervised the field trip.

In a third phase, the students divided into groups, make a poster representing the field output. The elaborate posters include resources, in fact increased, making communication with other young people more appealing. Along with the posters, a small tutorial on the HP Reveal application is posted to make it easy to access the photos and videos, this will contribute to the transmission of the experiences of the students who participated in the field trip.

In a fourth phase, there is a public presentation at the school, to communicate the procedures and results of the activities, which can be transmitted live through online platforms (example Instagram).

ACTIVITIES:

1. **TOPIC: Plastic Threat.**

2. **STRATEGY:** Study field trip

3. **SKILLS STUDENTS WILL DEVELOP AIMING AT XXI CENTURY:** Creativity; cooperation; critical thought; skills in communication; skills in ICT; skills in health; adaptation and flexibility; initiative and determination
1. **METHODOLOGY:** Approach, in the classroom, to the marine litter and plastic issue with the support of a Powerpoint (PPT).
2. Students divided into groups (4 to 5 elements).
3. Study and work with the tutorial of the App *HP Reveal*.

Part ONE - HP Reveal Download

Look for the App Reveal (playstore …).

Download the App.

Open the App, read the initial instructions and fol

Create an account, using an e-mail, a user name and a password.

Part TWO - Use App HP Reveal (Android*system).

Open the App in the mobile.

Main menu–Seen several images (Auras) and an icon a bit below.

Option A – Search auras

A1. Select "Find Auras"

A2. Search for intended channel (provided by the teacher. For example: E+ MALIA).

A3. Select *Next* (turns blue)

A4. Return to Main Menu.

A5. Select *blue icon*.

A6. Camera opens with moving spheres.

A7. Point the mobile to the image (Aura). It'll switch to augmented reality mode.

Option B – Create auras.

B1. Open the App.

B2. On the main Menu select the icon + (Upper right corner).

B3. A grid is shown to help frame the image.

B4. Select the blue icon when the white market is over the yellow or green side of the slider on top (best option).The selection becomes harder when the background is orange or red.

B5. Attach an Aura (there are two options)

Library – Auras already created and available onli

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B5.1 Select the Aura.

B5.2 Edit Aura placement.

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B5.3 Select *Next* or *Back* (to choose a different option).

B5.4 Give the aura a name.

B5.5 Create a Channel – name it and set it to *Private* or *Public* (in this case Channel must be set to Public so it can be found with Search); it's also possible to attach it to an existing Channel of the same author.

B5.6 Select Done.

OR

Device - images or videos in the memory/store of the mobile.

B5.1 Select Upload.

B5.2 Select Photo Gallery (when we already have the video or image in the mobile)

B5.3 Choose Photo or Video

B5.4 Name the video or photo

B5.5 Edit aura placement.

B5.6 Select *Next* or *Back* to choose another option.

B5.7 Name your aura (ex: Plastic 2)

B5.8 Create a Channel – give it a name and set it to *Public* or *Private* (in this case Channel must be set to Public so it can be found with Search);

OR

It's also possible to attach it to an already existing Channel of the same author (ex, E+ Malia)

B5.9 Select Send (upper right corner).

B6.0 Select Done.

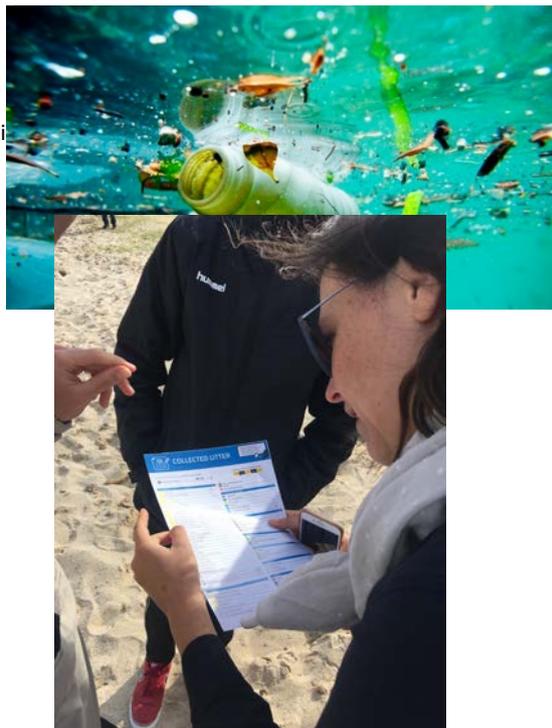**B6.1** Link anyone interested to your Channel name so they can access the created auras.

*for other systems, there are differences regarding the ....ded guidelines allow, with some adaptations, to understand the way the App works.

This Photo by Unknown A

This Photo by Unknown Author i

App use through the didactic material provided by the teacher (related to marine litter and trash composition materials found on the sea, underwater, floating or along the coast and flowing streams)

1. Exploration of the tutorial of the App *Socrative*

Part ONE - Installing the Socrative Application

1. Browse the Socrative application (playstore ...).

2. Install the application.

3. Open the application, read the initial prompts and move on.

4. Create an account, using an email, a username and a password

Part TWO - Use the Socrative application (Android * system).

Teacher- create questionnaire

1. Enter the Socrative application in Teacher Login

2. Click on the upper right corner next to the username

3. Click on Quizzes

4. Click + Add wanted

5. Create Proof

6. Name the questionnaire

7. Select question type (3 options)

8. Create the questions and select the right answers
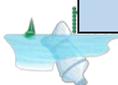
9. At the end, click Save and Exit

Part THREE- Putting a questionnaire to students

1. Click on the questionnaire

2. Click on the created test

3. It looks like three Instant Feedback options; Open Navigation and Teacher Rhythm.

4. Choose the one that best fits the teacher's taste.

5. At the end, click Finish.

6. Select an option to end the activity and report the student's results.

Students

1. Browse the Socrative application (playstore …) and install the application.

2. Open the application in Socrative student

3. Write the name of the room that is the name of the teacher's user and wait for the teacher to also enter the application and make the questionnaire available.

2. Study field trip
    a) Collection of marine litter on a beach (Guidelines for running a School Coastal Marine Litter collection Event)
    b) Audio-visual registration (photos and videos)
    c) Separation of marine litter into their different categories (Data card Marine Litter on beaches);
    d) Audio-visual registration (photos and videos)
3. Individual inquiry through the App *Socrative* during the return trip in the bus.
4. Research of news related to marine litter, plastics and/or microplastics issues (one per group).

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5. Making of a poster with a map of the place of the beach, added with the photos and videos made during the marine collection activity and using the App *HP Reveal.*

Marine litter being classified on site

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Schedule

Activity	Time/duration	Resources
Technical Approach (in the classroom) Tutorials explorations of the App HP Reveal and Socrative	45 minutes 45 minutes	Computer; video projector, Powerpoint;
Study trip Individual Report (*Socrative* App)	1day 15 minutes	Bus, teachers, mobile devices/ cameras; access to the internet. Check School guidelines organizing a field trip for gathering information on trash at coastal environments
Research of news related to marine litter, plastics and/or microplastics issues	45 minutes	Mobile devices and computers with internet access
Making of the poster with the map of the beach	90 minutes	Mobile devices
Presentation of team work by groups. Final results and conclusions	90 minutes	Computer; projector