IO3 - ICE CAP WebQuests

WebQuest - Preservation

ice-cap

TIME ALLOCATED:	360 Minutes
LEVEL:	Expert
TITLE OF THE WEBQUEST:	Preservation

Introduction: (It involves giving background information on the topic and, often introduces key vocabulary and concepts which learners will need to understand in order to complete the tasks involved. It should present a scenario and context for playing out the tasks in the WebQuest and it should be a fun, engaging and creative so as to draw the learners in.)

Last summer, you and some friends spent three months travelling in South America. You went there to celebrate graduation, discover the world a little, and take part in a turtle conservancy campaign in Costa Rica. Having not traveled beyond Europe before, you realise that some of the paradises weren't as you expected. Although the trip was fun and full of culture, the states of bounteous topicalities were sometimes disappointing. Cities were highly polluted, lush rainforests were disappearing quickly, and on some beaches, shores were ankle deep in plastic waste.

Since coming back home, you feel a little confused. All of these discoveries (and more) are things that you saw on news and social media, but it is easy to dissociate between these discoveries and life at home. Besides, these choices that harmfully impact the environment are not something that you would actively advocate. Now that you've been there, you realise the effects are due to humanity as a whole, thus you feel more connected to these issues. Since many interesting conversations with other conservation volunteers in Costa Rica, you are inspired to expand, discuss and publicise your learnings openly.

Tasks: (Explains clearly and precisely what learners have to do, it should be motivating and interesting and where possible, it should include activities that contribute to the development of skills that they will use in their daily lives. Guidance should be given on how to present findings; for example, maps, graphs, essays, wall displays and diagrams.)

You can identify that whilst the information is available to all, media content and how it is presented is essential for getting your message across. As podcasting has become more popular in recent years, and the tools to create them more available - you decided to make a mini-podcast to express your concerns. This consists of three 15-20 minute episodes. In each one you discuss how people, like yourself, can identify with global environmental issues that are seemingly 'out of sight, out of mind'. You will be focussing on the circular economy, and how daily consumerist habits can result in such environment problems, locally and abroad. You will include short interviews with people who can share advice and experiences of working to preserve the environment. There are many issues that you can focus on, but the three episodes should feature the following subjects (all of which are especially prevalent on the South American continent);

1. **Deforestation**
2. **Plastic in the ocean**
3. **Overfishing and coastal economies**

For each of the steps outlined in the process below, there is a 'Resources' section further down to help you achieve the tasks and conduct your research.

Process: (Set of steps and research tasks using predefined sources that are predominantly web-based usually in a clickable form. This stage has usually one or more "products" that learners are expected to present at the end. These products form the basis of the Evaluation stage.)

Step 1: The circular economy: What is it, and how can it affect preservation?

Initially, it is best to introduce the concept of a circular economy - being able to define this will will help you to be conscious of ecological and profitable solutions to environmental issues as you learn more about them. The circular economy is a model that enables companies and organisations to be efficient in a way that can save resources, costs and above all have a positive affect on the environment. In recent history, there has often been a compromise for environmental concern, when companies aim to stretch profits where possible. Successful implementations of the circular economy help to demonstrate an evolution of this conventional model, and prove that considering the environment benefits resources, profits and customer relations.

In 300-350 words, research and state your own definition for the circular economy, and find two examples demonstrating how the model is applied to have positive environmental impacts.

Throughout this WebQuest, keep in mind how the circular economy can positively impact the subjects of your three podcast episodes.

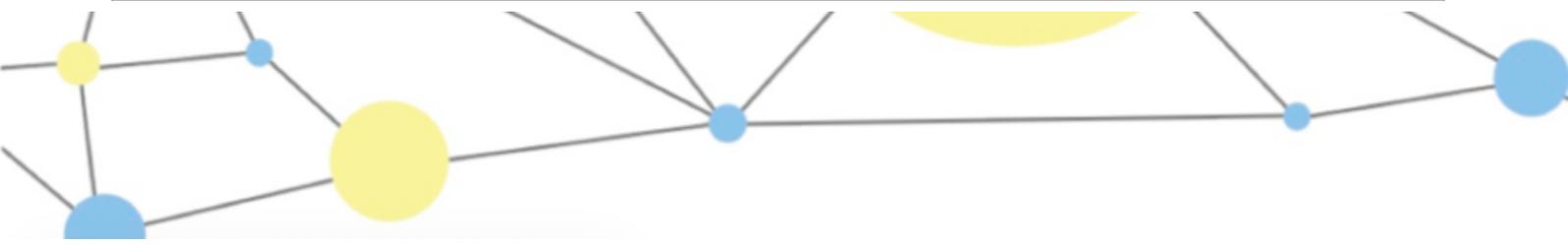**Step 2: Podcast episode 1 research - Deforestation**

Since 1970, more than 800,000 km² of amazonian rainforest has been lost, mostly to provide cattle pasture. Other causes are crop cultivation (namely soy & palm), yielding timber, forest fires, exploitation of resources for biofuels, mining and extraction. For a sense of perspective, the area lost is the more land than Ireland, Portugal, Croatia, Finland and Great Britain combined. That's more than 300 football pitches worth of animal habitat, CO_2 absorbing biomass, and delicate ecosystems every day (in the Amazon alone). This doesn't just cost South America's fauna and flora huge amounts of destruction, but it has far reaching effects that impact our entire planet.

To be used as source material for discussion in your first podcast episode, create a one-page document to answer the following questions (using the resource material given).

1. What is carbon sequestration?
2. What is meant by 'soil depletion'?
3. Why are forests necessary for the future quality of human life?
4. What is damaging about palm oil plantations, and which products do you use that contain palm oil?
5. Soy cultivation is responsible for a large amount of deforestation, but what proportions are used for;
   - Soy produced for cattle feed
   - Soy produced for human consumption
   - Soy produced for biofuels.
6. How does cattle ranching affect the Amazon basin?

Step 3: Podcast episode 2 research - Plastic in our oceans

Plastic is an amazingly versatile material that has been purposeful for almost every person on the planet, at some point. Unfortunately, it usually remains useful for as long as few days, months or years before being thrown away. Furthermore, oil based plastics take many different chemical forms, and so whilst a few decompose within 50 years, others are estimated to take up to a 500 years (i.e. plastic bags). Due to overpopulation, mass plastic production, insufficient recycling schemes and waste management, over one thousand tons of plastic waste pour into our oceans every day.

To be used as source material for discussion in your second podcast episode, create a one-page document to answer the following questions (using the resource material given).

1. What is the Great Pacific Garbage Patch?
2. What are the main sources of ocean plastics?
3. How does plastic end up on our plates?
4. How does plastic get from land to sea?
5. What plastic alternatives are available?
6. What is the Circular Bioeconomy?

Step 4: Podcast episode 3 research - Overfishing and coastal economies

Beyond the threats of plastic in our oceans, oceanic biodiversity is faced with another crisis with alarming consequences: overfishing. This is when fishing vessels are removing more fish from the oceans than can be naturally sustained. Many billions of people rely on the oceans for a direct source of income and nourishment, but it is largely due to industrial fishing methods that reduces fish stocks. This is a problem because;

- Ocean life accounts for an estimated 60 million jobs worldwide.
- Approximately 3 billion people in the world rely on wild-caught and farmed seafood as sustenance and a primary source of protein.
- Overfishing certain species causes instabilities in oceanic food chains.
- Many larger species are put at risk, as they are caught and killed accidentally (i.e. dolphins, turtles, whales, vaquitas).
- Destructive fishing practises (i.e. trawl fishing) can cause damage that takes ecosystems decades to recover.

To be used as source material for discussion in your third podcast episode, create a one-page document to answer the following questions regarding overfishing, and human dependancy on the ocean (using the resource material given).

1. What is IUU Fishing?
2. What is meant by 'bycatch'?
3. What are the different industrial fishing methods, and how are they harmful to marine ecosystems?
4. How and why do industrial fishing methods affect coastal communities and their economies?

Step 5: Application of circular economies - What can we do?

Now that you are thoroughly researched on what these various issues are and some of the complexities surrounding them, the following question remains: What can we do?

It is evident that financial gain has long been the incentive to exploit the natural world, though many pioneers in the circular economy have shown that giving back to our environment can be profitable too. As consumers we can make influential and significant changes to endorse circular economies (i.e. investing in products that source materials with environmental consideration).

For each of your podcast's three topics, answer the following two questions;

1. How can my friends, family and I alter daily consumerist habits to prevent this environmental threat?
2. How are companies and organisations tackling these issues in a way that aims to 'close the loop'?

Step 6: Spread the word

Using snippets of information collected In Steps 2 - 5, create a digital flyer* that can ideally be used for social media feeds. The flyer should promote your podcast concept and include the following information:

- A name and logo for your podcast.
- A simple breakdown of the three topics you'll discuss, and one of the questions that will be asked relating to each topic.
- Include simple and colourful graphics to capture people's attention - be creative!

Best is a square format for instagram, twitter and facebook feeds. If you don't use social media, this flyer can be printed as a poster, or emailed to friends and family. There is no obligation to post your flyer on social media if you don't feel comfortable to do so.

Step 7: Script your podcast: creating captivating content

There are many thousands of podcasts series available, many of which are discussing environment, economy, and the politics entwined . Have a listen to some included in the resources section and deduce which you like more and why. Some tell stories accompanied by sounds of the narrator's environment, others hold your attention through engrossing discussion and interviews. It's often popular to use a separate narration voice that transitions the listener from one section to another, or a short piece of music. Information regarding where to find this audio is discussed later - now is the time to come up with a minute-by-minute structure for you to share information.
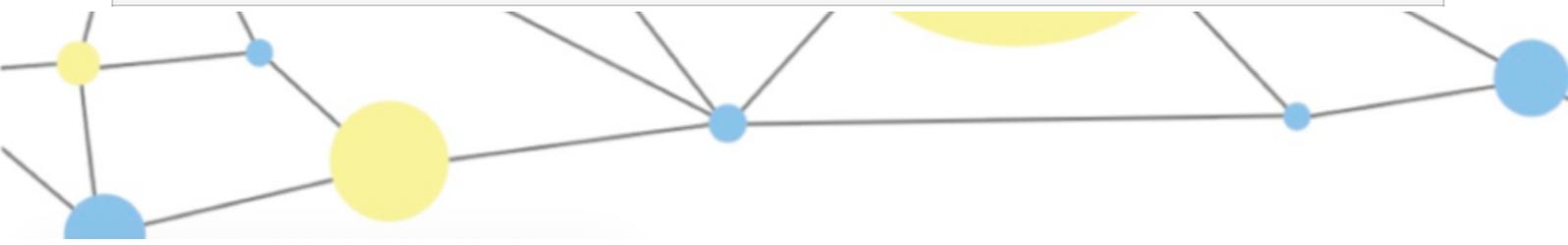
For example: Episode 2 - Around the World as Plastic Bottle

- **0:00-00:20** Theme music of the podcast.
- **0:20-01:00** Spoken introduction relating to the journey of plastics throughout the ocean.
- **1:00-03:00** Discussion of how plastic recycling works.
- **3:00-05:00** Visit to recycling plant, interview with plant manager regarding environmental impact.
- **05:00-10:00** Discussion and explanation of plastics breaking down in the sea, and how these plastics effect ecosystems and are transported by currents around the globe.
- **10:00-15:00** Interview with NGO spokesperson that tries to preserve waste entering the oceans.
- **15:00-18:00** Analysis of countries and organisations that have come up with economic solutions to recycle waste removed from the ocean's plastic gyres.
- **18:00-19:00** Summary and thanks/credits.
- **19:00-end** Theme music.

Once you have created your proposed itinerary for each episode make arrangements to meet your interviewees and align agendas with your classmates, friends or family. Arrange visits to any locations you wish to include (for example, the recycling plant).

Step 8: Recording and capturing material

Since researching other podcasts you'll notice that some are better quality than others. In order for you to voice your opinion and research (on any topic) in a public domain, it is essential that you can make it appealing and accessible. Due to the sheer amounts of high quality (technically) media content available, you need to make sure that your podcast surpasses the qualitative threshold of the listener's expectations, particularly in the first 30 seconds!

All mobile phones (even if they are not smartphones) have the ability to record audio, usually via a voice memo or dictaphone application. Decide which of your classmates has the best phone for recording conversation at a decent quality. If you have access to a dictaphone or location recorder, even better. Either way, it is essential for you to transfer your recordings to a computer for the next step, so now is a good to time to make sure this is possible!

If you have a laptop, you can also record directly into Audacity, by selecting the input to be the integrated microphone.

If you want to have music or ambience recordings in your podcast that help to contextually embellish your spoken content, there are sufficient sample libraries available online. See the Resources section for more information. These can be downloaded and stored on a USB stick or on a computer's hard drive.

Step 9 : Edit & Publish

One of the most easy-to-use (and free) audio editing software for this application is Audacity. You can drag and drop your audio files here, cut, paste and move them into the place that you want them. It's easy to change the volumes as well. Please follow the tutorials in the Resources section to learn how to do this. Once you are happy that the narrative and the flow of your podcast sounds good (get a friend or family member to listen through), you can export the most to and MP3 file (see here for more detailed help).

1. Go to File -> Export - Export as MP3
2. Type the name of your podcast at the top
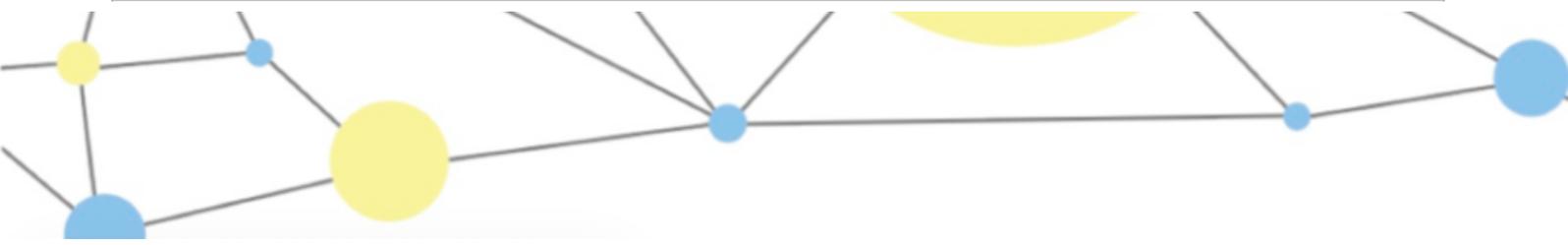3. Select your file destination and select OK.

There are many places you can publicise your mini-series, and I would recommend Soundcloud being a good place (it also has an app for android and iPhone). You can make a free account, and upload your podcast episodes there (as a playlist), along with a picture and description - here you can use the graphics created in Step 6. Once uploaded, copy and paste the URL from the browser, and paste it within any social media platform. It will then turn into a playable link once posted, so your audience can listen immediately.

The podcast is now live, congratulations! It's important to inform your audience what the content entails, what's next and when. Keeping listeners involved, inspired and as engaged as you are, is as dependent on your communication, as it is on the difference you make as an individual.

Resources: (For each step in the process, there should also be a series of links included (3-4 per step). These links should be fore videos, articles, blogs, webpages, etc. that the learners can visit to help them to complete the task. Links should be embedded in the WebQuest to sites, pages, databases, search engines and so on.)

Resources for Step 1: What is the circular economy?

- https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy
- https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/what-is-the-definition-a-circular-economy/
- https://www.sciencedirect.com/science/article/pii/S092134491930151X
- https://www.weforum.org/agenda/2019/02/companies-leading-way-to-circular-economy/

Resources for Step 2: Deforestation

- General Information:
  - https://globalforestatlas.yale.edu/conservation
  - https://www.bbc.com/news/science-environment-27963330
- Deforestation due to soy cultivation and pastures - https://iopscience.iop.org/article/10.1088/1748-9326/5/2/024002#erl342016s4
- Soil Depletion - https://www.e-education.psu.edu/geog3/node/1141
- Palm Oil - https://www.rainforest-rescue.org/topics/palm-oil#start
- Carbon Sequestration - http://www.kgs.ku.edu/Midcarb/sequestration.shtml
- Global Soy Growth - https://www.soymeal.org/soy-meal-articles/world-soybean-production/
- Soy Growth Statistics - https://sustainablefoodtrust.org/articles/dairy-cows-livestock-behind-growth-soya-south-america/
- Animal Agriculture Resource Consumption - https://www.sciencedirect.com/science/article/pii/S2212371713000024
- Cattle Ranching in the Amazon Basin - https://globalforestatlas.yale.edu/amazon/land-use/cattle-ranching

Resources for Step 3: Plastic In The Ocean

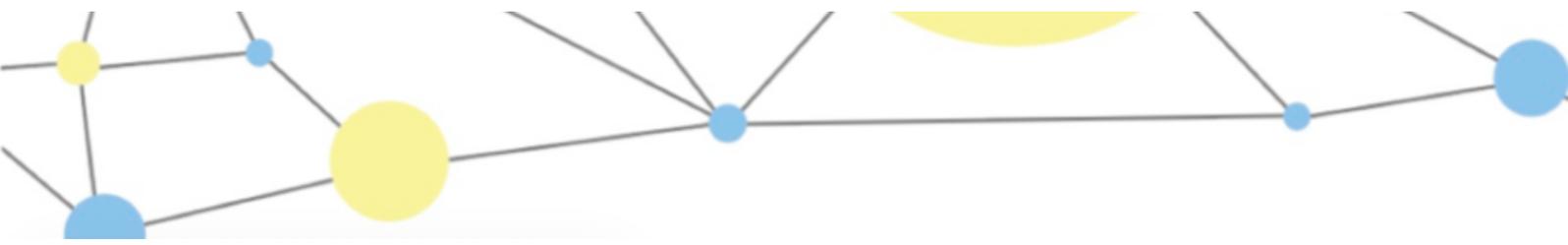- Great Pacific Garbage Patch - https://www.nationalgeographic.org/encyclopedia/great-pacific-garbage-patch/
- Sources of Ocean Plastics:
  - https://www.seashepherdglobal.org/latest-news/marine-debris-plastic-fishing-gear/
  - https://www.iucn.org/resources/issues-briefs/marine-plastics
- Micro-plastics in the Food Chain:
  - https://www.youtube.com/watch?time_continue=279&v=CWjkH7EV9lg
  - https://www.ngi.no/eng/News/NGI-News/When-plastic-is-part-of-the-food-chain
- Journey to the Ocean? - https://www.wwf.org.uk/updates/how-does-plastic-end-ocean
- Plastic Alternatives - https://disruptorleague.com/2018/07/02/13-plastic-packaging-alternatives/
- Bioeconomy within Circular Economy - http://bio-based.eu/download/?did=120804&file=0

Resources for Step 4: Overfishing & Coastal Economies

- Organisations working to prevent overfishing:
  - https://blueventures.org/
  - https://www.seashepherdglobal.org/our-campaigns/
- IUU Fishing - https://ec.europa.eu/fisheries/sites/fisheries/files/docs/publications/2019-tackling-iuu-fishing_en.pdf
- Bycatch - https://www.bycatch.org/about-bycatch
- Overfishing explained:
  - https://ed.ted.com/lessons/will-the-ocean-ever-run-out-of-fish-ayana-elizabeth-johnson-and-jennifer-jacquet#watch
  - https://www.youtube.com/watch?v=Z4AXnZOsrK8

Resources for Step 5: Application of the Circular Economy

- Deforestation:
  - https://www.theworldcounts.com/stories/How-Can-We-Stop-Deforestation

- - https://ec.europa.eu/regional_policy/en/projects/netherlands/dutch-company-helps-accelerate-the-shift-to-tasty-vegetable-based-proteins
  - https://www.naturalproductsglobal.com/food-and-drink/circular-economy-plant-based-and-deforestation-among-top-topics-at-sao-paulo-summit/
- Plastic in the ocean:
  - https://www.nrdc.org/stories/10-ways-reduce-plastic-pollution
  - https://theoceancleanup.com/
- Overfishing and Coastal Economies:
  - https://www.msc.org/what-you-can-do/eat-sustainable-seafood
  - https://blueventures.org/
  - https://www.youtube.com/watch?v=Smv0-_6o_ZU

Resources for Step 6:

- Podcast about general environmentalism - https://open.spotify.com/episode/0TMkTIumRhJEK8RdNCS6CU
- Podcast examples for the Circular economy -https://open.spotify.com/show/13XS38ZiXa0mDZrDLBtXaq?si=tfvuZ6s1SrqmqEKg4GF7WQ
- Podcast example for overfishing - https://www.fisheries.noaa.gov/podcast/end-overfishing

Resources for Step 7:

- Sound Effects - http://freesound.org/
- Free stock music (educative purpose only) - https://www.bensound.com/

Resources for Step 8:

- Download Audacity - https://www.audacityteam.org/
- Soundcloud - https://soundcloud.com/
- Audacity Tutorials:
  - https://www.youtube.com/watch?v=GHe_Og-yEow
  - https://www.youtube.com/watch?v=WWFvG1-AmNk
  - https://www.youtube.com/watch?v=aCisC3sHneM

Evaluation: (Self-evaluation, comparing and contrasting of what the learners have learned, giving feedback to the trainer on how they feel, what they have learned.)

On completion of this WebQuest, young adults will have achieved the following learning outcomes:

	Knowledge	Skills	Attitude	
	• Factual knowledge about environmental exploitation caused by production of products, food and commodities	• Recognise the validity of resources you discover beyond those given in the WebQuest. Often articles online are unreferenced, meaning that it is imperative to recognise the writer's stance on the issue, their political slant and who published their writing in which journal.	• Awareness of the relationship between, overpopulation, consumerist habits and the impact these have on on the environment • Appreciation of exemplary individuals and organisations making a difference to preservation issues.	

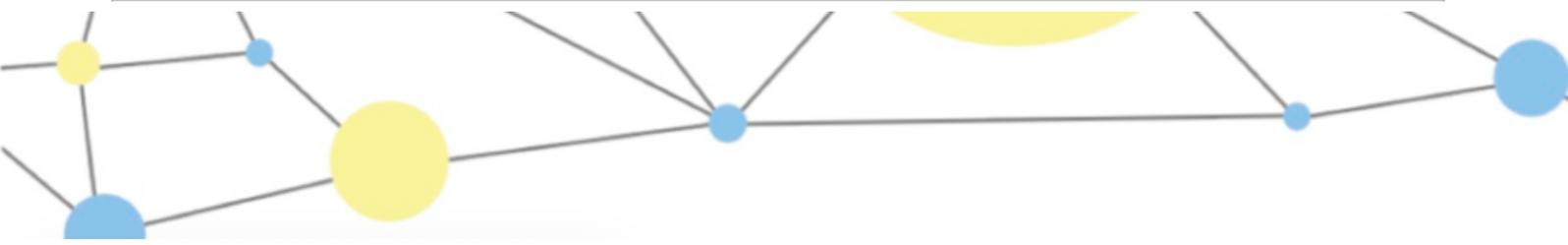|		
• Theoretical knowledge of climate science and statistics relating to land and water use, carbon offset, recycling processes. Furthermore, it is necessary to understand how the various companies and organisation use circular economy models to tackle these subjects. • Understanding of how to use basic media recording and production technologies to create intelligible and qualitative communication.	• Combine these understandings of opposing motivations, to create solutions that help both parties achieve their goals. • Synthesise content for publication (audio, graphics & written) regarding preservation • Apply learned knowledge to such media in order to effectively attract, explain and involve your audience. • Evaluate responses to the content you produced. Learn to adapt your creative styles to better reach your aim - to inform and involve.	• Increased regard for the political involvement and responsibilities that link local governments, individuals and NGO's to relevant environmental issues. • Openness to change of opinion and to take action to keep our environment (close and far) healthy and sustainable for the future. • Recognise not only the motivations for those protecting environmental preservation issues, but those who are apparently exploiting it. Understanding the reasoning that companies make damaging choices can be negotiated only once their motives are fully understood.

As part of the assessment of this WebQuest, all participants are expected to present the following material to their mentor or parent:

- Definition of the circular economy
- Research from Steps 2-5
- Promotional flyer from step 6
- Podcast mini-series published in step 9

The aim of producing this material and podcast is so that the participant can condense a wealth of information obtained, and portray it in an academic yet social manner. This includes concise arguments and well resourced statistics – demonstrating that the student has grasped the role and definition of the circular economy, and how it can be effective in the three topics of preservation undertaken.

As a self-assessment exercise for this WebQuest, pupils can complete a short self-reflection exercise and write approximately 400 words on how they rated their performance in the task, what elements they enjoyed (or not) and what they would do differently. The following questions will guide participants in this self-assessment:

- What did you learn about the circular economy?
- Where there any discoveries within the three main topics that really stood out to you, or motivated you to influence change?
- Were there, if any, other environmental topics that you would have preferred to investigate? Why?
- Did you enjoy this activity, and if so, what elements of this activity did you enjoy best?
- What aspect was the most difficult and why?
- What skills did you acquire through this activity? Is there something you were good at that you didn't expect to be?
- If you were to do this activity again, would you do things differently next time? What and why?

Questions that a parent or teacher might use to start a discussion with participants about the environment and to debrief this WebQuest:

- What do you think you have learned through this challenge?
- Are there things you learned in this WebQuest that would make you want to change your habits? If so, what are they?
- Are there lessons from this WebQuest that can be applied to your home? If so, what are they?
- How would you rate the over-all experience? Did you enjoy learning through completing a WebQuest challenge?
- Did you find the scenario in any way relatable? Are there other scenarios that you would have preferred to work through or you would have felt were more appropriate, and if so, why?
- Do you have a sense of accomplishment on completing this challenge?
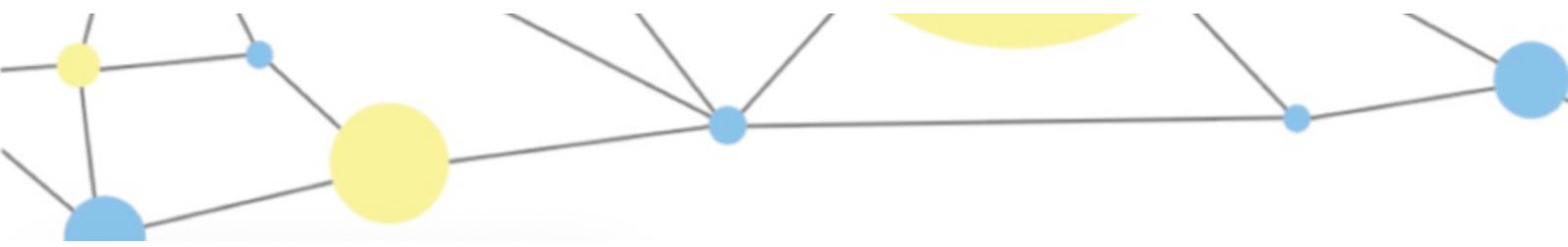
Conclusion: (Provides an opportunity to summarise the experience, to encourage reflection about the process, to extend and generalise what was learned, or some combination of these. Suggest questions that a trainer might use in a whole class discussion to debrief a WebQuest.)

The circular economy requires that we reduce the resources needed for a process, repurpose rather than dispose of resources and recycle what's left. The concept of closing this cycle of demand and supply can work on small scales (i.e. how we manage household waste) and in turn, poses monumental improvements on the wider world's biological balances, that humanity depends wholly upon.

Continue to discuss topics addressed in your podcast; see how your audience reacts, what they can teach you, and be open to demand for further topics to be discussed. Follow up with those featured in the podcast and see if the series affected how they go about their daily lives or if they applied the circular economy at work (if they weren't already).

Making conscious decisions about our consumerist actions has enormously positive implications on both lifestyle and environment. Supporting local businesses that provide local produce, organic materials and products that avoid industrial processes are great places to start, as these businesses will most likely provide clear and honest information regarding the sources from which they have come. Avoiding unsustainable palm oils and occasionally trying plant-based food alternatives, using biodegradable packaging where possible, and buying only sustainable seafood are all great ways to have a significant impact on your carbon and environmental footprint.

Discussing and researching such a topic can raise awareness and quite serious concern about the future of planet earth and the human systems' impact on that future. Who is responsible and in what way; the consumer, or the supplier? Implementing necessary change involves both - and it is most immediately effective to implement change in daily considerations that reflect understanding of global issues. A state of alarm is an instinctive and comprehensible response to these topics. It is however, important to acknowledge that a huge amount of progress relating to preservation has been achieved through intervention and remodelling economic infrastructures to benefit both our environment and consumer produce.
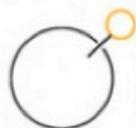
CREATIVE EXCHANGE

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OBRAZOVANJE | EDUCATION
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