



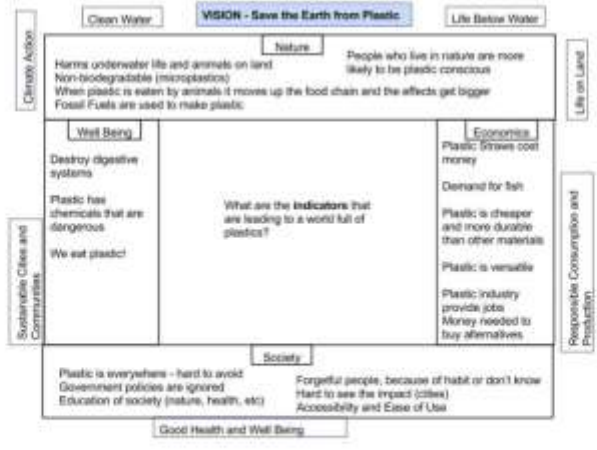
Grade 5 Service Learning: Plastic Pollution

(Submitted by Lucy Thompson (Classroom Teacher) and Sujata DeHart (ES Service and Sustainability Coordinator), 2018, while serving at International School of Kuala Lumpur, Malaysia)

Tool(s) used:	<ul style="list-style-type: none"> • Sustainability Compass • Pyramid Lite (VISIS) Introduction • Behavior Over Time Graphs • Causal Loop Diagrams • Triangles Game • Ladder of Inference
Purpose of using tool:	<ul style="list-style-type: none"> • Research • Generating Questions • Synthesizing Thinking • Guiding Discussion • Decide on Action <p>Overview: Students were interested in the issue of plastic pollution, so we decided to investigate it further using VISIS. From our investigation, we made decisions on actions we could take to help solve the problem.</p>
Context of lesson/case study:	G5 service learning project
Participants (# and description):	21 students in a Grade 5 classroom
Topic, Theme, or Key Understanding of unit/project:	Plastic Pollution
Length of unit/project:	1-2 times a week throughout the year
Resources/materials & setting required:	News online, news articles, chart paper, string/cardboard, markers, sticky notes, technology/resources dependent on their action ideas

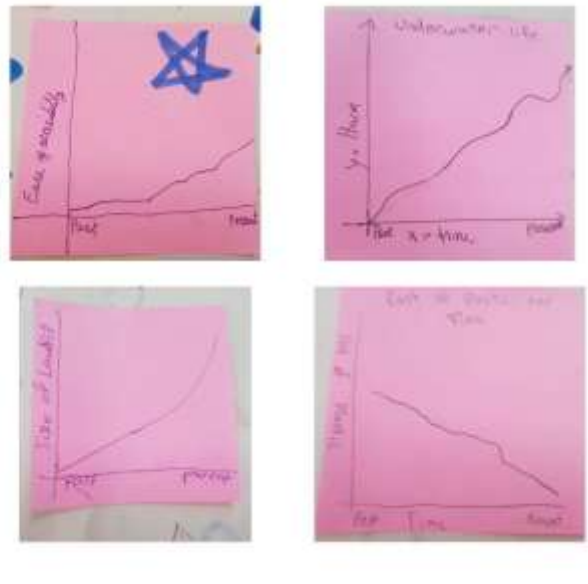
Lesson Plan/Description of the Project and Evidence :





Students linked the SDGs to their vision. Then, we used the compass points to help us look at the issues around plastic in a broad sense.

Students used the indicators to make a series of Behavior over Time Graphs (BOTGs) to demonstrate the patterns the indicators have shown.



Systems Analysis

Students began making connections between the BOTGs by creating causal diagrams. After making an initial diagram, they began to look for feedback loops. These loops they outlined in marker to see them more clearly. There were some small loops and some big loops.





Systems Analysis

Students participated in the causal circle game to understand feedback loops that and what is needed to ensure they are sustainable.



Systems Analysis

After playing the circle game, the students returned to their causal diagrams and reexamined their observations. They started to look for leverage points (the indicators that were most significant to the loops), where we could make the most change.

Guiding Questions

1. What is an indicator that has many arrows coming in and out of it? What does this say about the indicator?
2. Choose an indicator - what would happen if you could change that one? How would it effect other ones?
3. Are there indicators where there are many causes, but no effects? Why is that? What do you think that means?
4. Are the feedback loops sustainable? Why or why not?
5. What other noticings/wonderings can you make from your causal diagrams?



Systems Analysis

Students presented their ideas to each other on the leverage points they found and we created a list of observations.

Observations from Groups

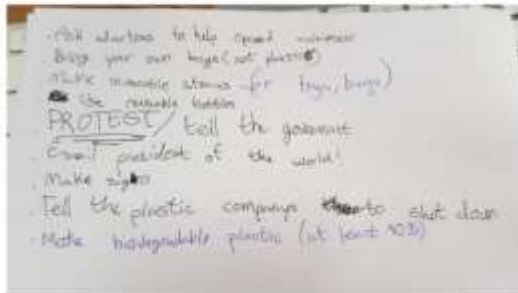
- Amount of Fossil Fuels to make plastic - can we make something like plastic without FF? (alternatives to plastic)
- Beaches have a lot of plastic, impacting underwater life
- People complaining about using plastic - increase the voice
- Ease of Accessibility and Habitat of Using practice have many connections and make loops
- Change causes leading a habitat of using practice, it will change the loops
- More education the harm of using plastic, so they are more aware
- Dead Ends: sickness, loss of water life, etc.





Innovations

Students worked in partnerships to brainstorm ways to break down the unsustainable systems and support our vision.



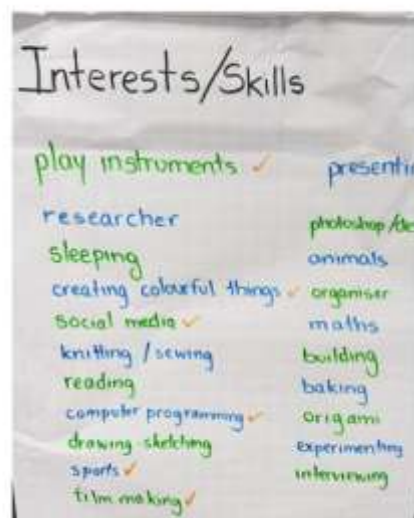
Innovations

Class List of Ideas to Make a Change

- Awareness
 - Make a book or website about plastic (challenges?)
 - Events to build awareness (music, make a song, etc.) - Get it to a radio station?
 - Talk to places (make presentation) that use plastic and educate them (restaurants, schools, etc.) - make a sign to put in the stores, etc.
 - Contact UN to make an announcement
 - Make advertisements (computer programming a game or app or film)
 - Build a giant sign out of plastic water bottles to say stop using plastic (collect plastic waste)
 - Encourage our parents to spread the word
 - Make a documentary/trailer
 - Social Media - post our video, our songs, etc.
 - Link with TakNakStraws
- Action
 - Make a biodegradable substitute for plastic
 - Trip to the beach for plastic waste collection/data information
 - Make things out of old plastic (umbrella, bags, toys, maths tools, balloons, trash cans, plant pots, etc.)

Strategy

Students brainstormed their different interests/skills. We connected these to our different innovative ideas. Based on their personal interests/skills, they chose the areas they would most like to take action and where they would be most useful.





Strategy - Group Leaders

We then had interviews to choose section leaders. These leaders meet with the group to come up with a plan of action and delegate jobs.

Sections

[Song Writing](#)

[Social Media \(link with TakNak Straws\) -](#)

[Website or Blog -](#)

[Presentation for Restaurants -](#)

[Upcycling plastic -](#)

[Build an App -](#)



Strategy - Planning

Each section met up to come up with an [action plan](#). These plans are revisited and revised as the actions evolve.

Action So Far

[Website](#)

Instagram Account: [5ay_no_plastic](#)

Logo competition and winner

Infographics ([Student Example](#))

Students taking action: [Say No to Straws](#)

Song in Progress

Upcycling Projects in Progress

App in Progress



Reflection

Plusses:

- Consistent use of the Compass Education's tools in earlier grades would have saved time and deepened understanding, as students would already be familiar with the tool and could focus on the learning.
- The students were engaged in the lessons and made deep connections during the causal diagramming. Their action choices reflect this deeper knowledge. They are also very passionate about the need to tackle this problem and are eager to work outside of class time to ensure their actions take place. Some students are going to restaurants to present their learning.





Challenges:

- Consistent use of the Compass Education's tools in earlier grades would have saved time and deepened understanding, as students would already be familiar with the tool and could focus on the learning.
- A less spread-out time frame would have also helped, so students could have more continuity in their efforts. Perhaps doing the investigations during a week or two consistently and then doing the action once a week.

Suggestions for other practitioners and educators:

- Block out time every week to work on the service learning project your class is interested in pursuing. Ensure that you take the time to investigate the issue before jumping into action ideas.
- Use the tools often and in different settings, so that the students are familiar with them when you want to use them.

