Session Title	**The Environment and You**
Objectives:	**Real-world Content/Context**
1. Formulate a definition of environment. 2. Outline the effects of human activities on the environment 3. Justify the importance of conserving the natural environment	Students will explore how their daily activities impacts waste production. They will specifically make links between their daily activities and conserving the natural environment. The will eventually formulate a definition of the environment.
Life Skills	
Collaboration	Think Pair share
Problem-solving	Engineering Design Process
Communication	Explain their ideas during phase 3 of the 5Es lesson
Creativity	Make predictions and communicate through creative writing and art work

Content Notes

The environment is all the physical surroundings on the Earth, including all living and non-living things, and which affects life on earth. Deserts, forests, wetlands, grasslands, marine, freshwater and tundra are examples of environments which differ in vegetation, animal life, soil and terrain and climate. Conserving the environment means trying to preserve natural resources so they will still be around in the future.

The activities of people may affect the environment in good and bad ways. Human activities have caused serious environmental problems which have changed the earth and its climate, and have impacted the health of many living things.

Attention Igniter (AI)

Guessing game:

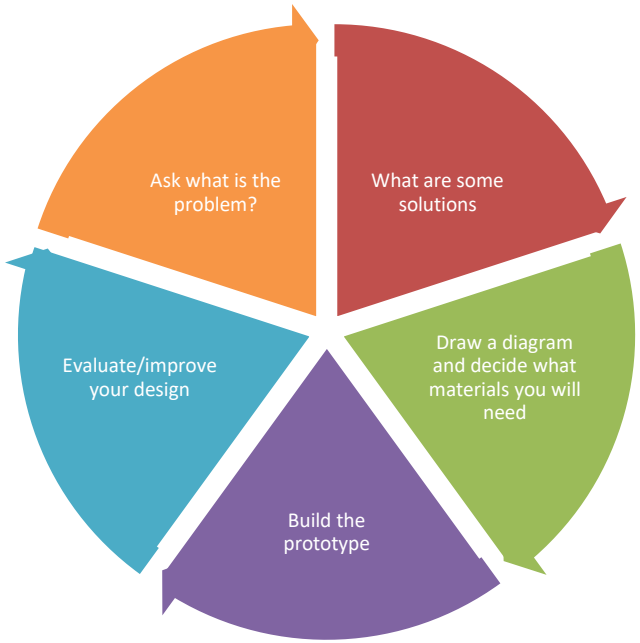
1. **Set up 2 teams**
2. **Let each team pick a student randomly**
3. **Show the student one of the images**
4. **The student must help the team guess the image in 30 seconds**
5. **If a team does not guess the second team can try**
6. **Go until all six images are used.**
7. **Formulate a definition of Environment using all the guessed words**

Vegetation	Animal life	Soil	Climate
			
			

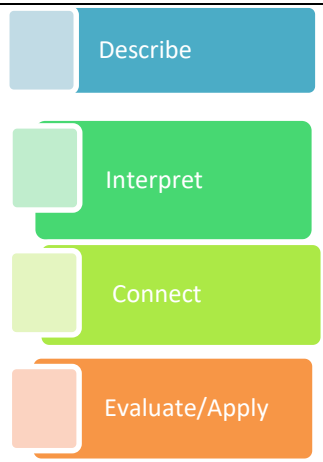
<table>
<tr><td colspan="4">ENGAGE
(a). Let students Think Pair Share and answer questions 1-4
(b). Show Students the trash generation sheet</td><td colspan="2">1.What kind of objects do you use most each day?
2. How much trash do you generate each day?
3. What happens to the trash you use?
4. Where does plastic come from?</td></tr>
<tr><td colspan="2">List all the things you used and threw away from yesterday till now.</td><td colspan="3">Count the type of things you used and write the number below.</td><td>Calculate the percentage of the things you use that are plastic?</td></tr>
<tr><td colspan="2" rowspan="2"></td><td>Plastic</td><td>Paper</td><td>Other</td><td rowspan="2">(Amount of plastic/total things) X 100</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="6"></td></tr>
<tr><td colspan="6">EXPLORE</td></tr>
<tr><td colspan="6">Watch the two videos below (If a video player is not available then the infographic shown at the end of the lesson can be used for discussion</td></tr>
<tr><td colspan="3"> 
</td><td colspan="2"> 
</td><td></td></tr>
<tr><td colspan="6"></td></tr>
<tr><td colspan="6">EXPLAIN</td></tr>
<tr><td colspan="6">Answer the following questions:
1. How are plastic made?
2. How is making plastic bad for the environment?
3. What are the negative effects of improper plastic disposal in the environment?
4. How can plastics be better disposed?</td></tr>
<tr><td colspan="6">ELABORATE</td></tr>
</table>

In your teams use the Engineering Design Process shown below to accomplish Project B. Select and conduct one other Project out of A or C	

PROJECT A	PROJECT B	PROJECT C
Conduct an audit of the plastic waste in your school. Develop a plan to better dispose of your plastic waste.	**Conduct an audit of plastic waste in your school. Develop a prototype for an innovative use of disposed plastics that has commercial value.**	**Conduct an audit of organic waste in your school. Develop a plan to compost the organic waste and sell the product.**



EVALUATE

	Describe the learning experience, including all components as well as instructions for the task. Say what you thought about the task and what you expected going in. How were those expectations met or impacted?	2
	Interpret the experience discussing what you found challenging. Discuss in depth any insight(s) obtained. Support your insight(s) with examples.	3
	Relate specifically what you have learnt from the experience. Make any possible connections to content previously learnt.	2
	Provide a detailed account of how what you have learnt will influence your work/professional/personal practices for the future.	3

PLASTIC DOES NOT GO AWAY

BOOMERANG ALLIANCE

THIS YEAR OVER
9 MILLION TONNES
OF PLASTIC[1]
WILL ENTER THE WORLD'S OCEANS

9 MILLION TONNES
x2
18 MILLION TONNES
BY 2026 ??

THE RATE WE ARE POLLUTING THE OUR OCEAN **DOUBLES EVERY 11 YEARS**[2]

AUSTRALIANS CONSUME
2.93 MILLION TONNES
of plastic each year
of which
<9%
is recycled

"Plastic is so permanent and so indestructible that when you've tossed it, in the ocean or even into a dustbin... it does not go away"
Sir David Attenborough

192 BILLION PIECES OF PLASTIC
in Australia's marine environment[3]
including (every year)

180 MILLION PLASTIC BAGS
420 MILLION PLASTIC BOTTLES
200 MILLION OTHER PIECES OF PLASTIC PACKAGING
TRILLIONS OF MICROPLASTIC BEADS & FIBRES

PLASTIC DOESN'T DECOMPOSE

IT JUST **GETS SMALLER**

Over time a single plastic bottle can break up into over **10,000 PIECES OF MICROPLASTIC**

Microplastics act as a toxic sponge. Studies show that it can be **1 MILLION TIMES MORE TOXIC** than the water around it[4]

This creates serious concerns regarding the potential contamination of our seafood.

96% OF ALL BIODIVERSITY
potentially ingests plastics[5]
including

52% of all **SEA TURTLES**[6]
100% of all **CORAL REEFS**[6]
90% of all **SEA BIRDS**[7]

The animals most vulnerable to the toxic effects of plastic contamination are those at the very top of the food chain – **US!**[8]

WE MUST ACT NOW

THE FIRST 4 STEPS
WILL ELIMINATE OVER
70%
of marine plastic pollution **BEFORE** it enters our oceans:

1. Introduce a container deposit system to eliminate beverage rubbish
2. Ban all single-use plastic bags
3. Remove microbeads from personal care & laundry products
4. Ensure plastic producers & recyclers capture microplastics on their premises

INFORMATION SOURCES

1 University of Georgia
2 CSIRO
3 Algalita Marine Research Foundation
4 University of Queensland
5 ARC Centre of Excellence for Coral Reef Studies
6 Sydney Institute of Marine Science
7 Australian Marine Conservation Society
8 Catalyst, ABC TV

For more information see our slideshow about marine plastic pollution and/or our submission to the Senate Inquiry into the Threat of marine plastic pollution in Australia: http://www.boomerangalliance.org.au/plastic_pollution_resources

Join the campaign to
STOP MARINE PLASTIC POLLUTION
www.boomerangalliance.org.au/plastic_pollution