PLASTIC Changemakers

INNOVATION & CREATIVITY
MODULE 3

THE BRETEAU FOUNDATION

ZAG HEROEZ Miraculous Action

MODULE FACILITATOR:
Max and Markov

MODULE OBJECTIVES

Learners will be able to:

- Using STEAM methodologies, formulate a solution to an aspect of the plastic problem that could minimize or solve it
- Evaluate other learners' innovations that have attempted to solve the problem of plastics

Remember

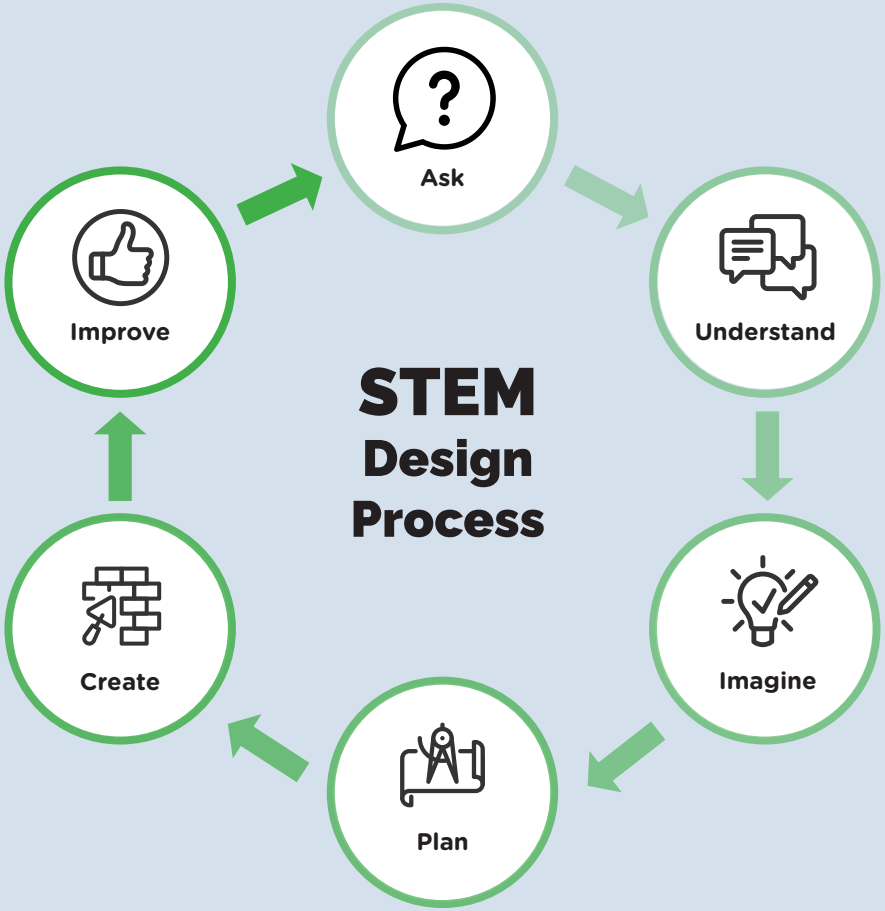
What did we cover in our last session?

landfill | decompose | reduce| reuse | recycle | residual | break down | biodegradable | compostable | microplastic

For any new creation or innovation, a design process is followed.

We will follow this process today.

What is STEM? When we combine skills and knowledge from science, technology, engineering and math to solve a problem.

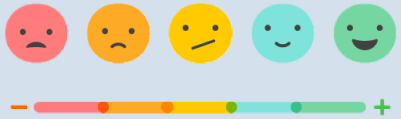


Ask

Do we have a plastic problem?

Plastic consumption:
images for discussion

How does this make you feel?



LESSON 1

We can make a difference

Haaziq Kazi

Haaziq Kazi was born on the 8th April 2006 in India.

He is a young innovator and creator of ERVIS, a large ship that cleans plastic off the surface of the ocean. He is also an environmentalist, raising awareness of the plastic problem and its effects on marine life.

Here, he talks about his inspiration and his invention.

We can make a difference

Anna Du

Anna is a young inventor, advocate and author. She began her journey by collecting plastic bags and bottles that had been left on her local beaches. She then began to notice tiny pieces of plastic or microplastics that were impossible to pick up. At just 12 years old, she created her own robot invention that detects microplastics on the ocean floor. Now, she helps to advocate and educate others to prevent and clean up the plastic pollution in marine environments.

We can make a difference

Francisco Vera

Francisco was born in Colombia and is a climate change activist. His actions have especially been focused against plastic pollution, as well as mining in nature reserves and animal abuse. At 12 years old he founded ‘Guardians of Life,’ an environmental group that started with 6 members and has now over 200 members.

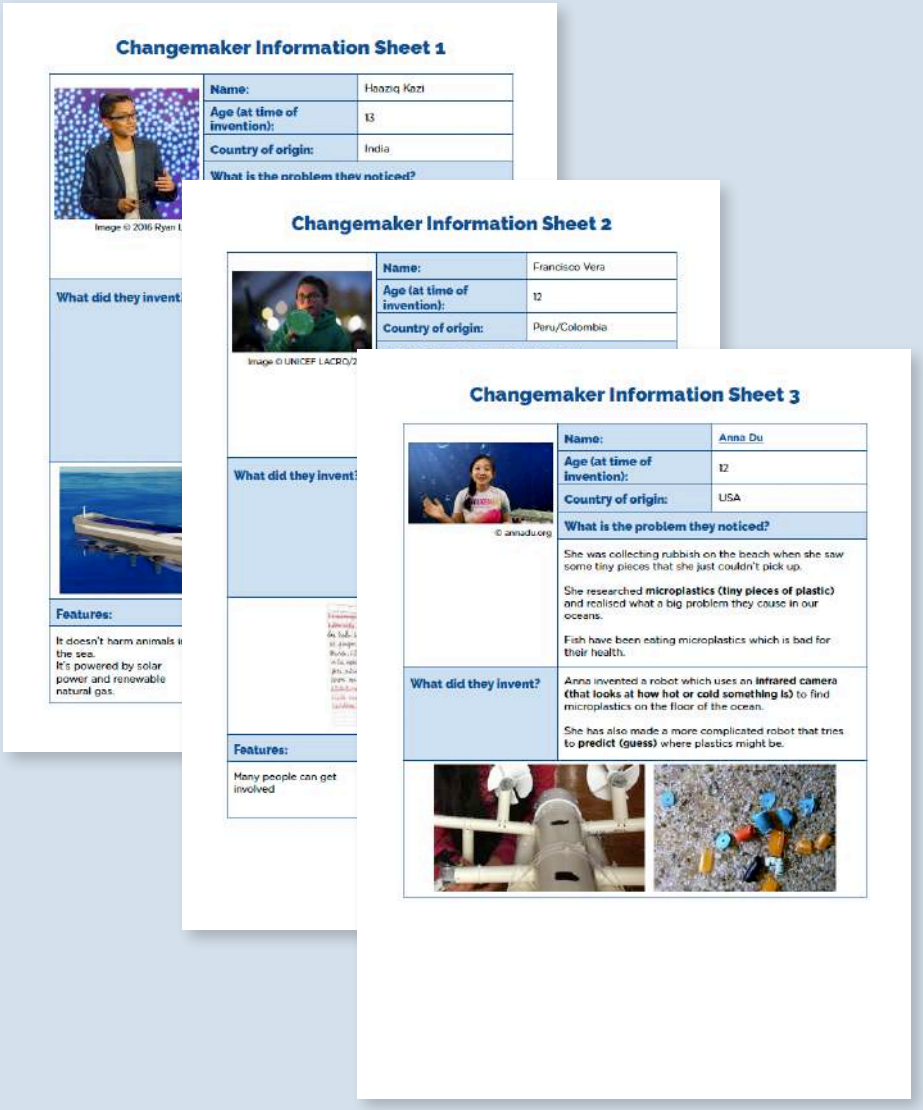
We can make a difference

Lesein Mutunkei

Lesein is a Kenyan climate activist and amateur footballer. He founded Trees4Goals at aged 12, an initiative to mobilize young athletes to score goals in order to plant trees and tackle deforestation.

Kenya has a daily loss of an estimated 50 football pitches of forest cover.

Lesein wants to use football to connect, engage and educate his peers to help solve the climate crisis.



Changemaker Information Sheet 1

Name:	Haaziq Kazi
Age (at time of invention):	13
Country of origin:	India
What is the problem they noticed?	
What did they invent?	
Features:	It doesn't harm animals in the sea. It's powered by solar power and renewable natural gas.

Changemaker Information Sheet 2

Name:	Francisco Vera
Age (at time of invention):	12
Country of origin:	Peru/Colombia
What did they invent?	
Features:	Many people can get involved

Changemaker Information Sheet 3

Name:	Anna Du
Age (at time of invention):	12
Country of origin:	USA
What is the problem they noticed?	She was collecting rubbish on the beach when she saw some tiny pieces that she just couldn't pick up. She researched **microplastics (tiny pieces of plastic)** and realised what a big problem they cause in our oceans. Fish have been eating microplastics which is bad for their health.
What did they invent?	Anna invented a robot which uses an **infrared camera (that looks at how hot or cold something is)** to find microplastics on the floor of the ocean. She has also made a more complicated robot that tries to **predict (guess)** where plastics might be.

Choose one of the Changemaker Information Sheets to read.

Complete the Changemaker Research form.

Module 3: *LO: I can show understanding of what has been read by summarising*

Name: _____

Date: _____

CHANGEMAKER RESEARCH

Name of inventor:
What is the problem they noticed?
What did they invent?
Draw a picture of their invention:
Any other notes: (what impact has it had? Did they face any challenges? What features does it have?) • • •

Choose a question as a starting point for your idea.

How

How can you clean up plastic that is already in the ocean or on land?

How can you help us to stop producing so much plastic?

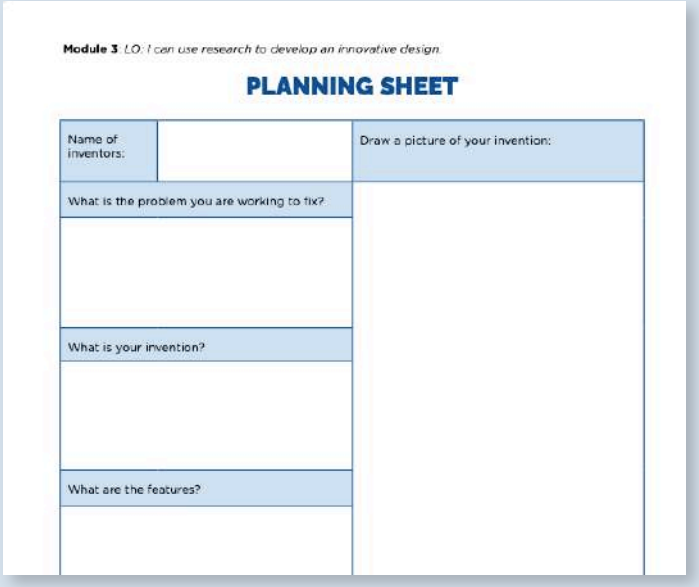
HOW

How can you repurpose plastic (use something that's been made, but for a different use)

How can you recreate something that's usually made of plastic, but from a different material?

Group Challenge

1. Discuss your ideas together as a team and decide which one to develop.
2. Complete the Planning Sheet together with a labelled diagram of your idea
3. Prepare a short presentation to share your idea with the class.



Module 3: *LO: I can use research to develop an innovative design.*

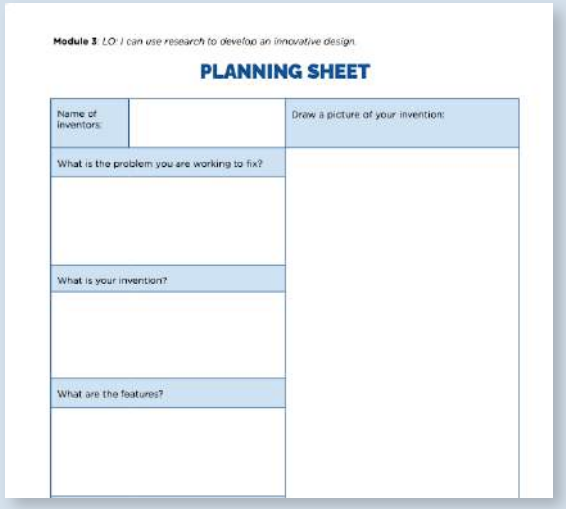
PLANNING SHEET

Name of inventors:		Draw a picture of your invention:
What is the problem you are working to fix?		
What is your invention?		
What are the features?		

Questions to promote deeper thinking...

Tell me about your idea...

How do you think it will have an impact?



Module 3: *LO: I can use research to develop an innovative design.*

PLANNING SHEET

Name of inventors:		Draw a picture of your invention:
What is the problem you are working to fix?		
What is your invention?		
What are the features?		

What other inventions have you used to inspire your design?

How have you come to an agreement as a group?

What materials will you make it from? Why?

LESSON 2

Time to share...

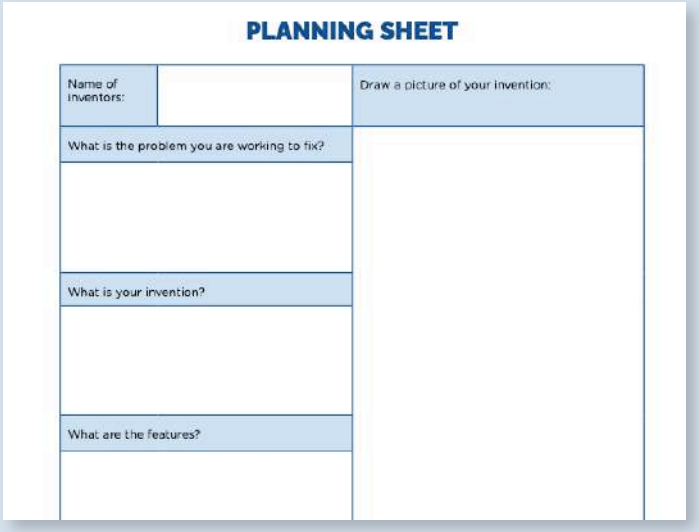
As a group, explain your design, it's purpose and features.

For those of you listening, offer feedback using the following sentence starters:

I like how you have...

Can you explain how...?

Have you thought about...?



PLANNING SHEET

Name of inventors:		Draw a picture of your invention:
What is the problem you are working to fix?		
What is your invention?		
What are the features?		

Make a prototype of your design.

Remember how Haaziq had to change the shape of his design?

You may also need to make changes as you design your invention!

How to make a paper prototype of your design

Sharing our designs

Points to consider when giving feedback...

- What is the problem the group are tackling?
- What is their idea for the solution?
- What are key features of the design?
- What do you think its impact might be?
- Who was it made for and how would it benefit them?
- What materials did they use?

Part of

PLASTIC Changemakers

A partnership between:

THE BRETEAU FOUNDATION

ZAG HEROEZ Miraculous Action

ZAG

ZAG HEROEZ

Mediawan KIDS & FAMILY

METHOD ANIMATION Mediawan