ASEAN-JAPAN CENTRE 40th SINCE 1981

ASEAN-Hiroshima Eco-school

24 November 2021

Nakamura School - Indonesia

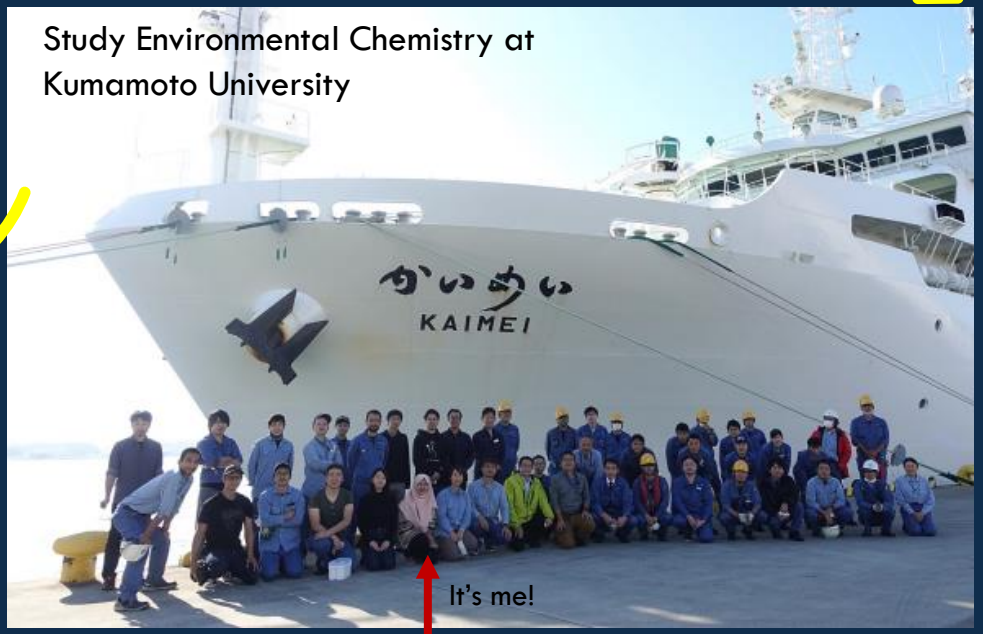
Photo of plastic debris towed by Neuston Net in Akazawa during cruise of KM 20-09 – 14 November 2020
Properties of Masashi Tsuchiya, JAMSTEC-Japan

Hi!
I am Nurlatifah

Studied to be a Chemical Analyst since high school

Actively involved in international activities as a volunteer during my bachelor degree

Study Environmental Chemistry at Kumamoto University



It's me!

Member of the ASEAN-Japan team on fighting ocean plastic waste

Source: https://www.ad-c.or.jp/campaign/self_all/self_all_01.html

PLASTIC

Let's discuss about...

What can we do about plastic pollution?

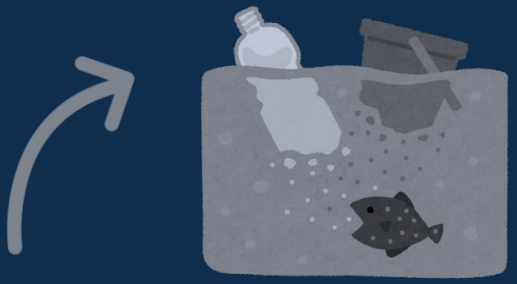
What is ocean plastic pollution?

What is **plastics** and why do we use them?

Introduction of ASEAN-Hiroshima Eco-School Project

Let's discuss about...

What can we do about plastic pollution?



What is ocean plastic pollution?

What is **plastics** and why do we use them?

Introduction of ASEAN-Hiroshima Eco-School Project

Association of Southeast Asian Nations

10 countries come together and collaborate for better future

Source: https://www.asean.or.jp/en/asean/country/

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ASEAN-Hiroshima Eco-School Project

2020

22 young leaders from ASEAN and Japan came together to create a written promise about ocean plastic waste

2021

ASEAN – Hiroshima Eco School project

Conducting lectures about plastic pollution for elementary and high school students in ASEAN and Japan

Photo by ASEAN-Japan Center

Let's discuss about...

What can we do about plastic pollution?

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What is **plastics** and why do we use them?

Introduction of ASEAN-Hiroshima Eco-School Project

What is PLASTIC?

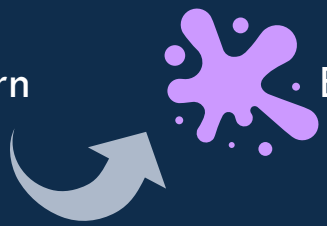
A thing made by human that is very strong

We can shape it to many shapes and colors!

Not getting wet

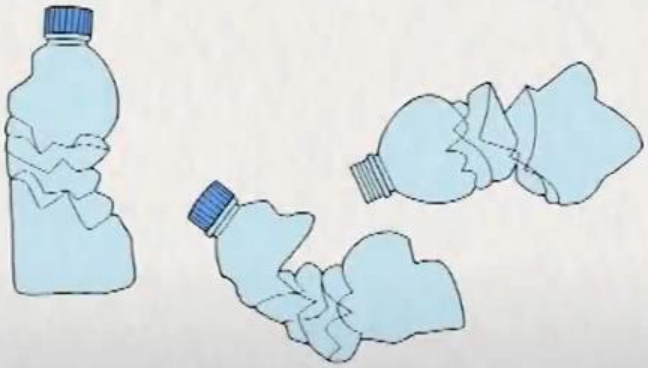
Not transferring electricity or attracting magnet

Not easy to burn



But can melt if heated

How to make plastics?



Source: Emma Bryce (April, 2015). What really happens to the plastic you throw away – TED-Ed, Full video at: https://youtu.be/_6xlNyWPpB8

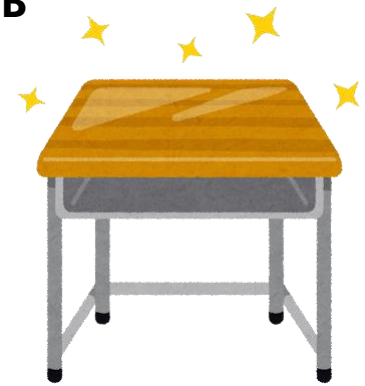
Which one is plastic?

Please answer “A”, “B”, or “C” in the chat box!

A

Snack package

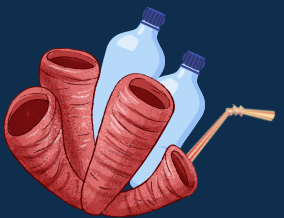
B



Table

C

Book



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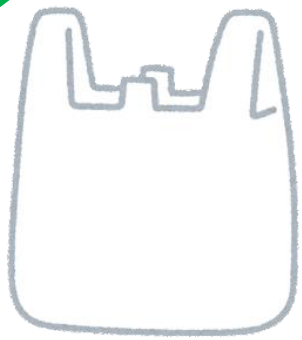
Which one is plastic?

Please answer “A”, “B”, or “C” in the chat box!

A

Bath chair

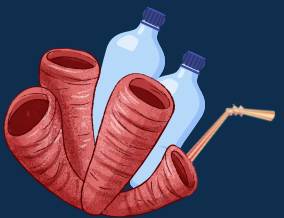
B



Single-use bag

C

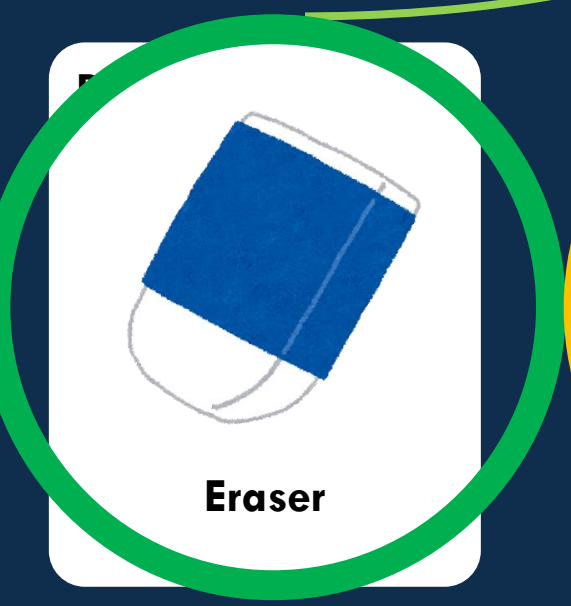
Shoes



Which one is plastic?

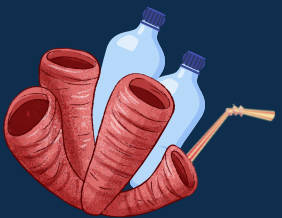
Please answer “A”, “B”, or “C” in the chat box!

Soft-elastic plastic made of Polyvinyl chloride (PVC)

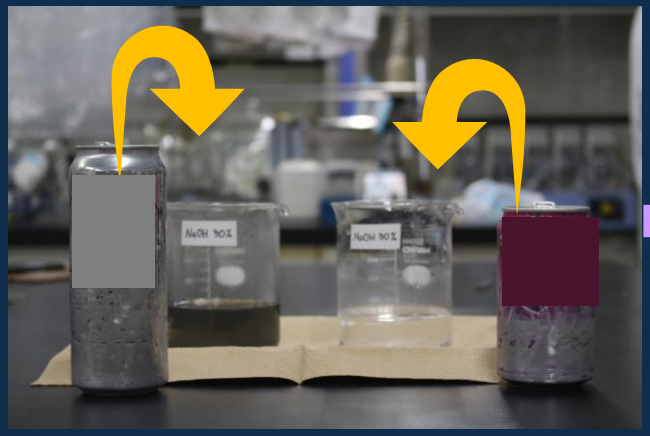


Consists of: metal & plastic

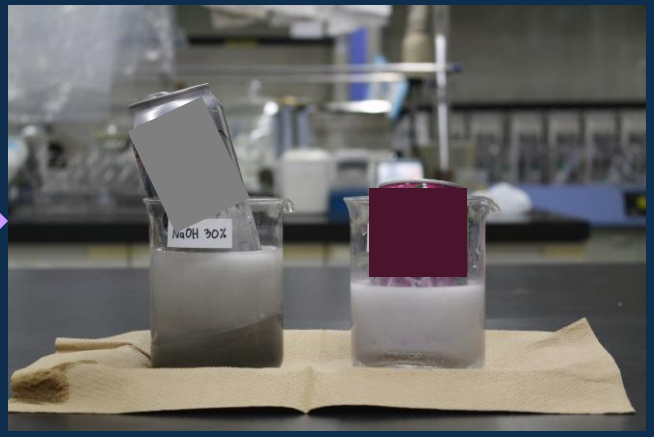
Let’s melt the metal!



Removing metal from can

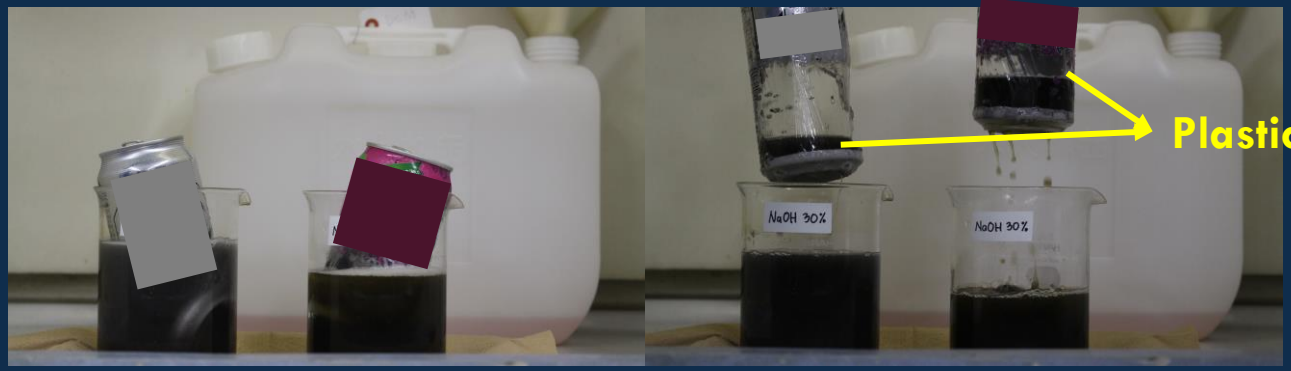


2 cans and NaOH 30% solution



Metal is dissolved to NaOH solution (1.5 hours)

**NaOH or Sodium Hydroxide is a chemical used to dissolve/melt aluminum*

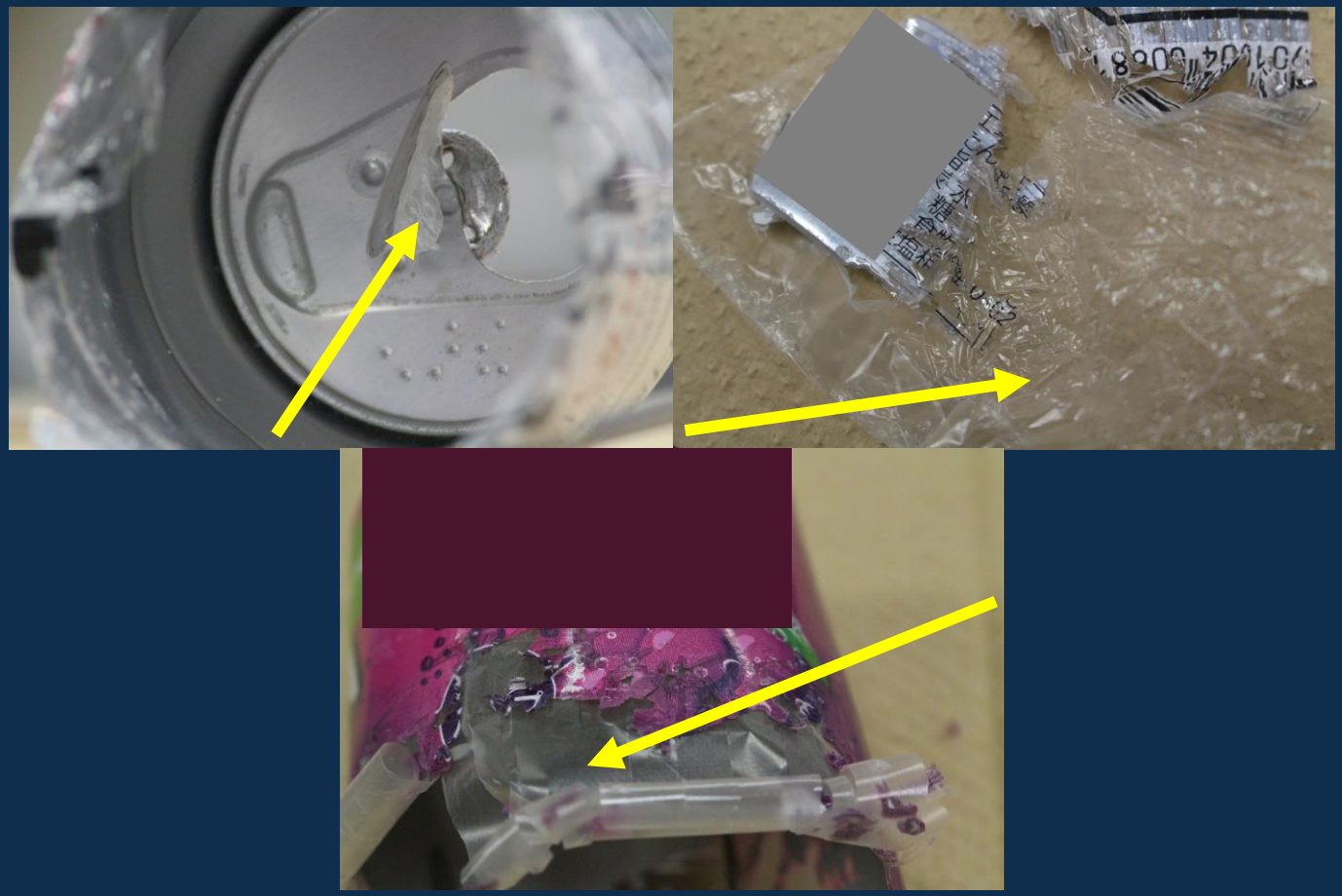


Plastic layer in cans!

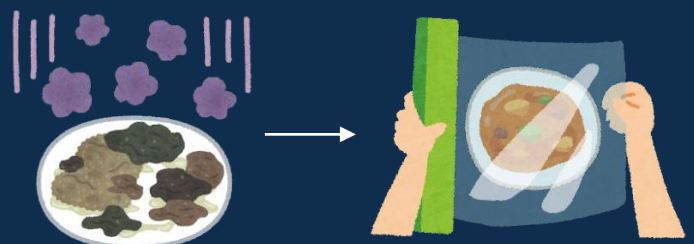
After 1.5 hours

Source: Personal credit (2020)

Plastic layer(part) in can



Source: Personal credit (2020)



Storing food

Lunch box/instant noodle

Light/Ringan/軽い（かるい）

Convenient/Mudah digunakan/便利（べんり）

Shopping

Medical equipment

Sweater/clothes

What are the type of plastic?

1 PET	2 HDPE	3 PVC	4 LDPE	5 PP	6 PS	7 OTHER
POLYETHYLENE TEREPHTHALATE	HIGH-DENSITY POLYETHYLENE	POLYVINYL CHLORIDE	LOW-DENSITY POLYETHYLENE	POLYPROPYLENE	POLYSTYRENE	OTHER
WATER BOTTLES; JARS; CAPS	SHAMPOO BOTTLES; GROCEY BAGS	CLEANING PRODUCTS; SHEETINGS	BREAD BAGS; PLASTIC FILMS	YOGURT CUPS; STRAWS; HANGERS	TAKE-AWAY AND HARD PACKAGING; TOYS	BABY BOTTLES; NYLON; CDS
						

Source : https://www.plasticsforchange.org/blog/different-types-of-plastic

Let's discuss about...

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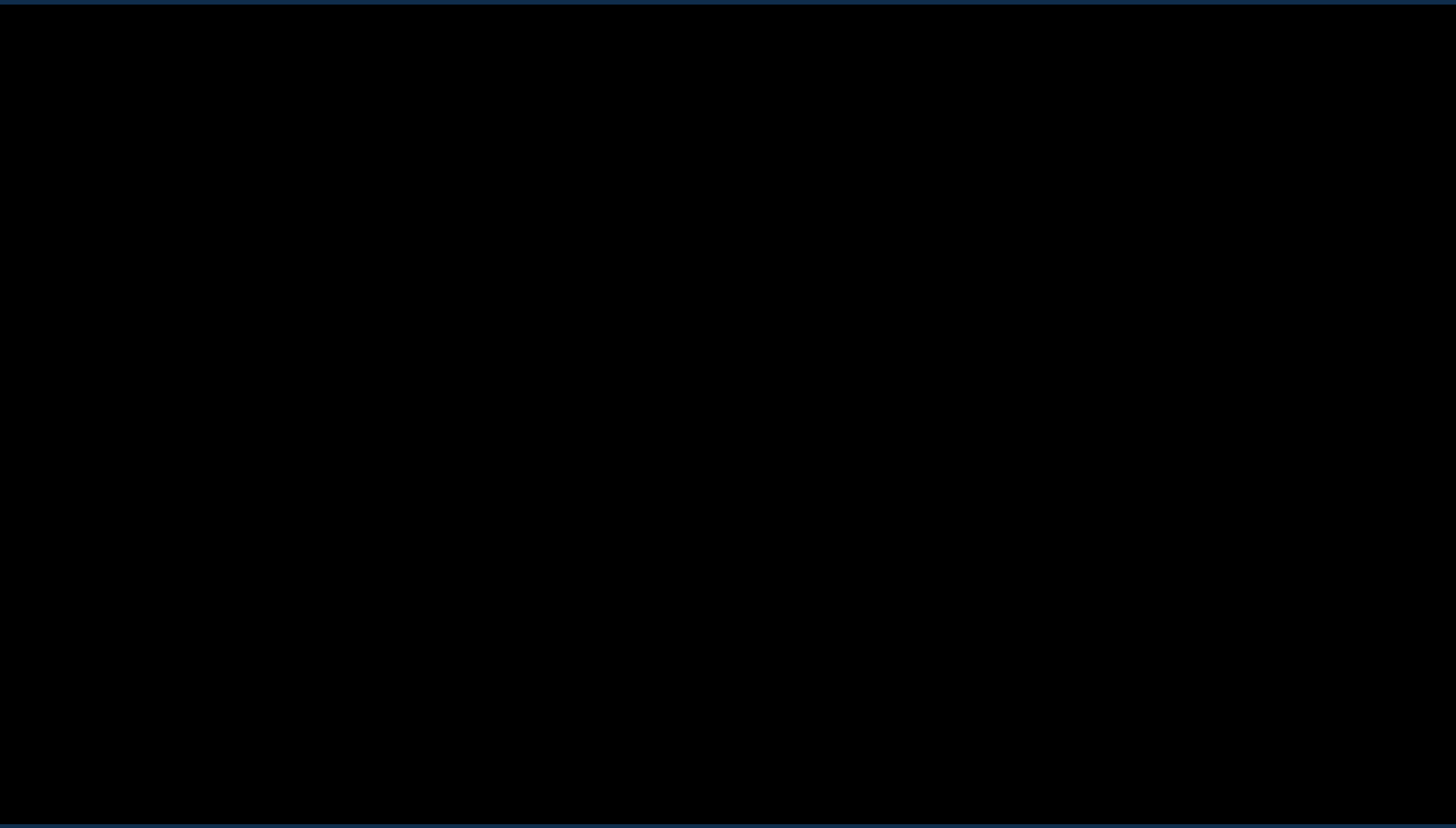
What is **plastics** and why do we use them?

Introduction of ASEAN-Hiroshima Eco-School Project



Source: personal credit (2021), made for 「小さなプラスチックの大きな問題」Exhibition at Tsutaya Bookstore, Kumamoto - Japan

My plastic bag
Book copyright 2020 by Iuliia Kocherova
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Author: Iuliia Kocherova
Illustrations: Tatyana Fominykh
Editor: Leila Maria Hall

Manufactured in China

My plastic bag

created by Iuliia Kocherova
pictured by Tatyana Fominykh

Today, I bought a plastic bag,
Inside there was a yummy snack.
I finished all of it and then,
Looked at the bag
"It's empty! Hmm!"

Source: Kocherova, Iuliia. (2020). My plastic bag. China

Source: Kocherova, Iuliia. (2020). My plastic bag. China

Source: Kocherova, Iuliia. (2020). My plastic bag. China

Source: Kocherova, Iuliia. (2020). My plastic bag. China

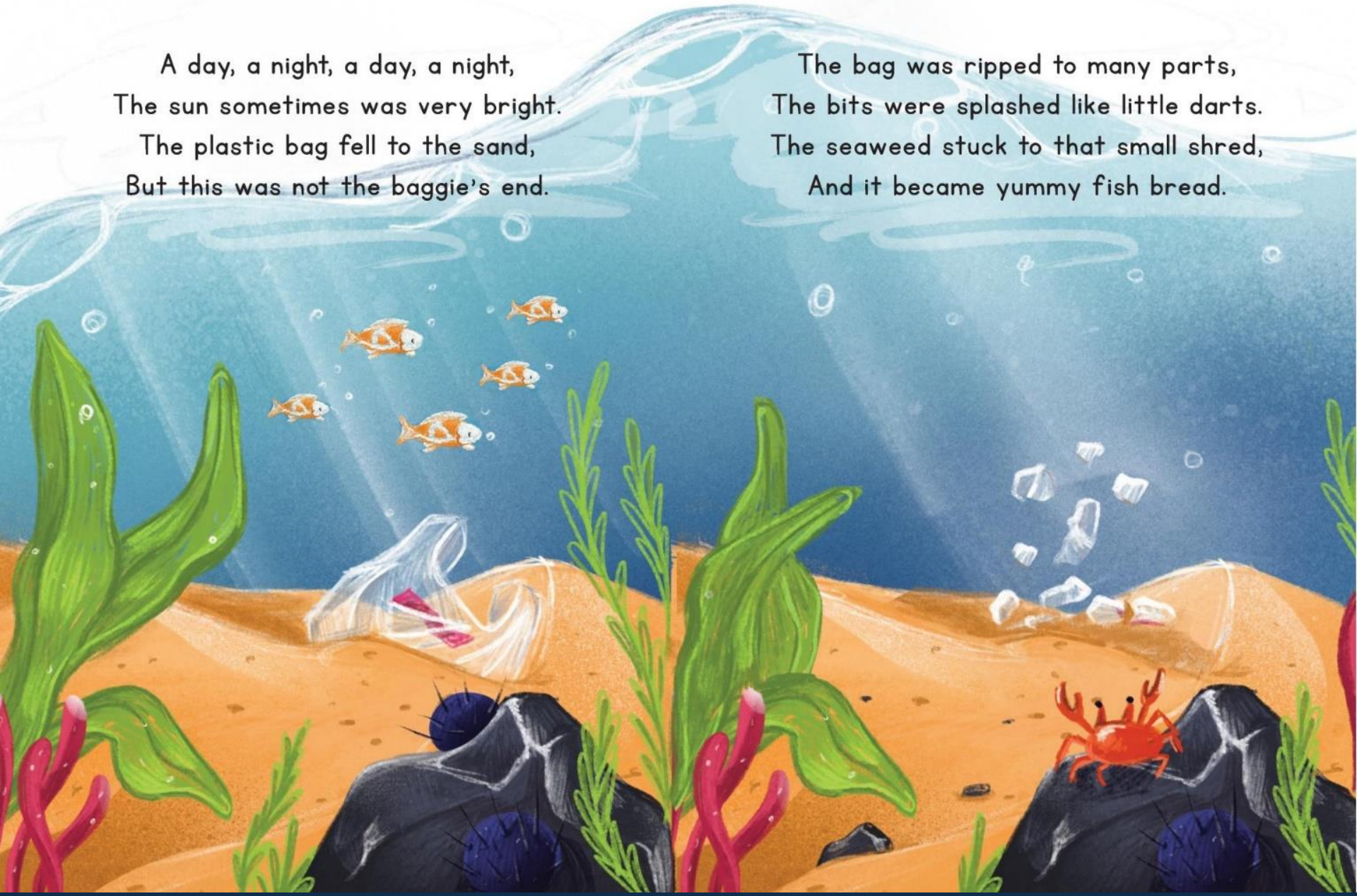
Oh, no!

It dived down to the sea,
For no one but the fish to see.
The fish were swimming all around,

"What's this? What's this? What's this
we've found?"

It didn't move, it didn't breathe,
It didn't have a mouth or teeth.
The seaweed kept the bag inside,
The waves they helped to hold it tight.

Source: Kocherova, Iuliia. (2020). My plastic bag. China



Source: Kocherova, Iuliia. (2020). My plastic bag. China

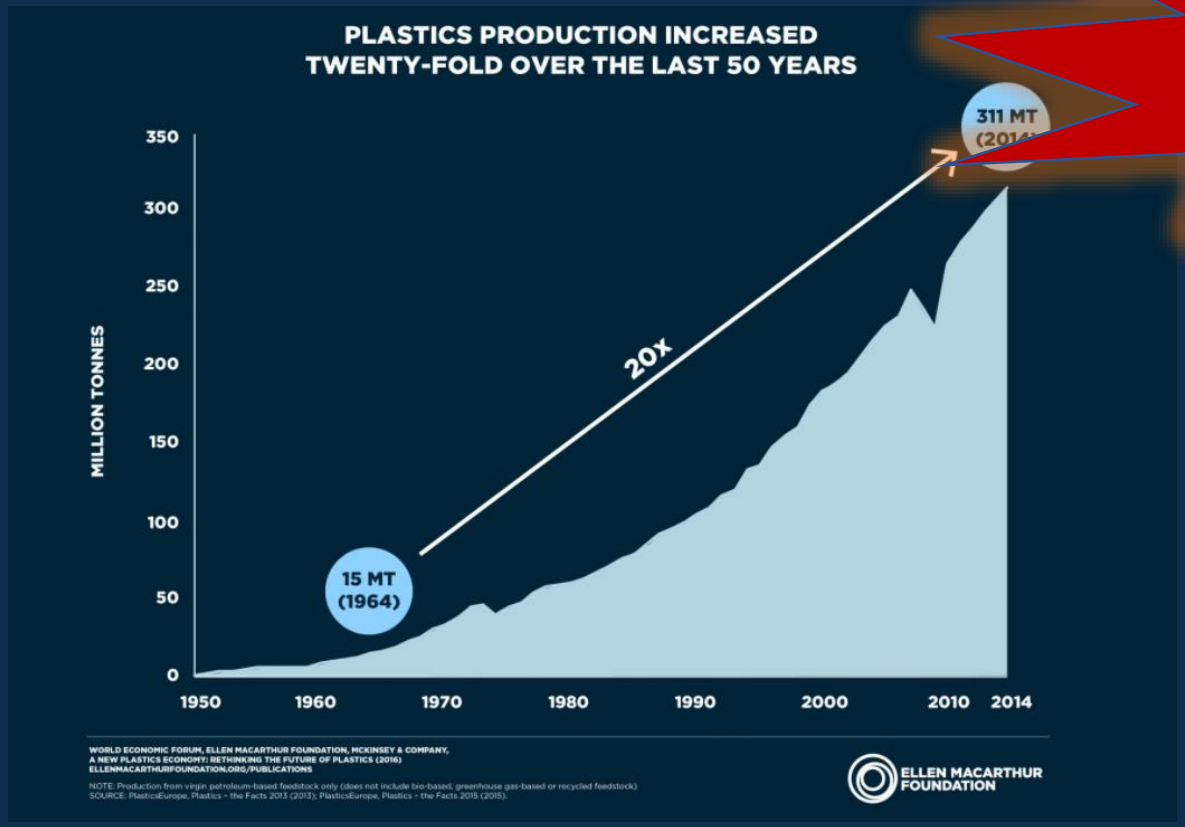
Source: Kocherova, Iuliia. (2020). My plastic bag. China

Source: https://youtu.be/hKWrKD2jiUY

World plastic production

300,000,000 tons

300 million tons of plastic every year



Source: Ellen MacArthur Foundation (2016). The new plastics economy: Rethinking the future of plastics, available at: https://ellenmacarthurfoundation.org/the-new-plastics-economy-rethinking-the-future-of-plastics

Photo: Animative, available at: https://giphy.com/gifs/animative-animation-cartoon-dJezVlwfVulTykjRQj

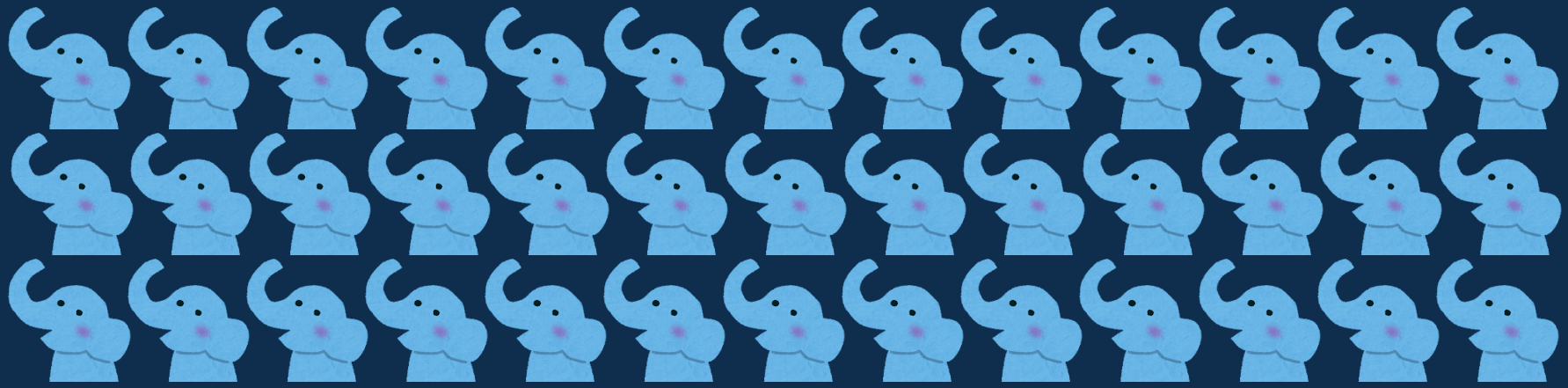
UN Environment Programme report (2018), Banning single-use plastic: lessons and experiences from countries, available at: https://www.unep.org/interactive/beat-plastic-pollution/

Plastic waste flows to the ocean

8 million tons of plastic waste are flowed to the ocean every year

Weight of elephant: 5-6 tons

8 million tons = ±1,400,000 elephants



Source: Hannah Ritchie & Max Roser. (2018). Plastic Pollution, available at: https://ourworldindata.org/plastic-pollution
Ismaa121a, available at: https://tenor.com/view/h222111-gif-20249520

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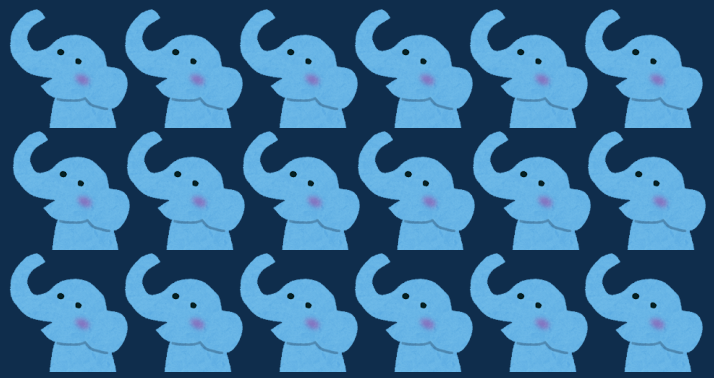
Where does our plastic waste go?

Sungai Bederah (24 March 2021)

3.2 million tons of plastic waste in Indonesia enters the ocean



3.2 million tons = 540,000 of elephants enter the ocean

Sources:
https://medan.tribunnews.com/2021/04/14/sungai-bedera-dilebarkan-hingga-8-meter-solusi-entaskan-banjir-di-medan-sunggal-dan-helvetia
https://bijakberplastik.aqua.co.id/publikasi/uncategorized/pentingnya-pengolahan-sampah-plastik-di-indonesia/

Where does our plastic waste go?

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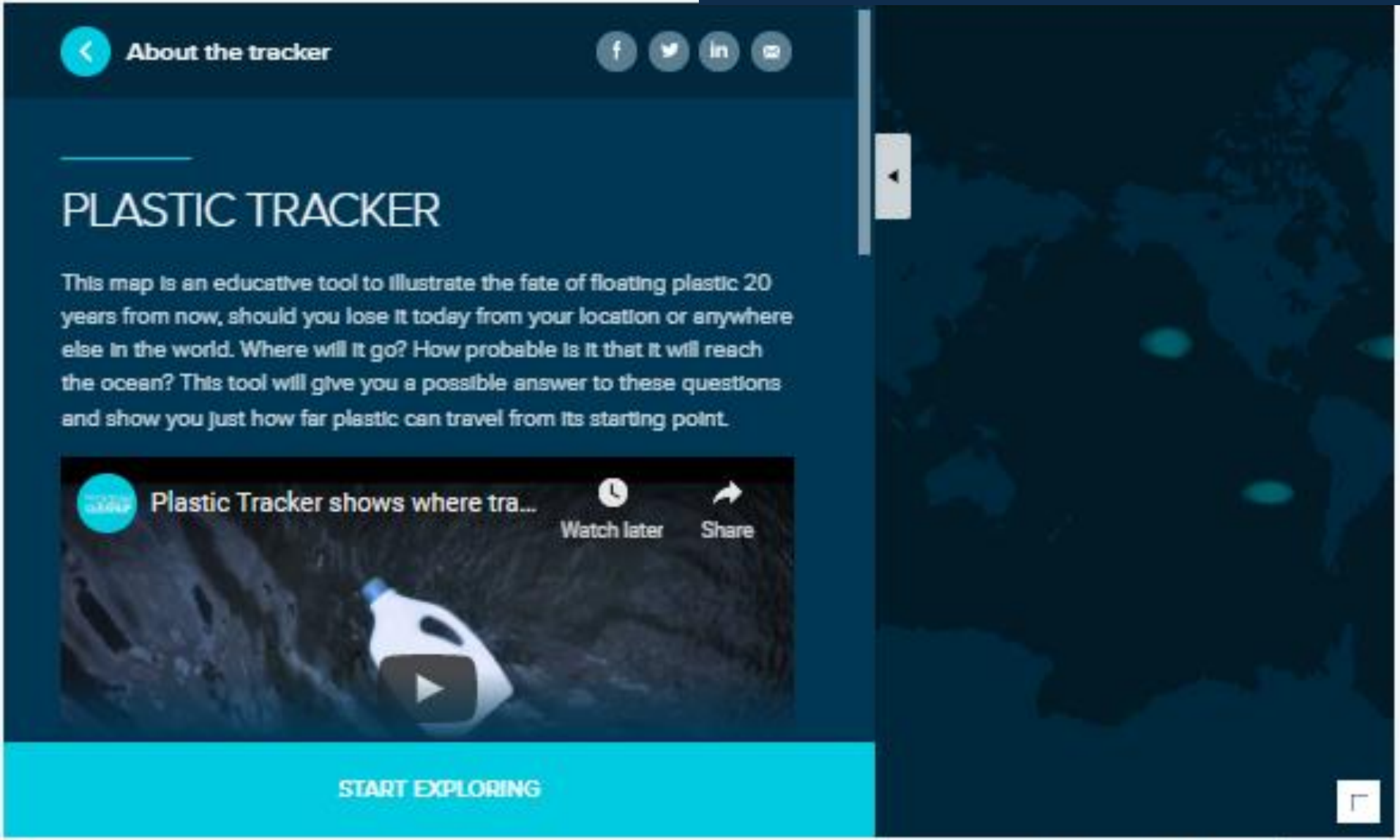

Source: The Ocean Cleanup (n.d.), available at: https://theoceancleanup.com/plastic-tracker/

Let's discuss about...

What can we do about plastic pollution?

What is ocean plastic pollution?

What is **plastics** and why do we use them?

Introduction of ASEAN-Hiroshima Eco-School Project

My Plastic Footprint

ASEAN-JAPAN CENTRE

ECO SCHOOL Project

Based on plastic categories below, write the number of plastic garbage you throw within one day!

Plastic Category	Day 1	Day 2	Day 3	Day 4	Day 5	Total
Plastic Bag				2		2
Plastic Package	2	4	3	4	4	17
Plastic Bottle						
Food Tray	1			1	1	3
Plastic Cutlery						
Plastic Straw						

Plastic Category	Day 1	Day 2	Day 3	Day 4	Day 5	Total
Plastic Wrap	2			1		3
Can*					1	1
Boxed Beverage *						
Mask						
Others						

I produced 26 plastic waste in 5 days

*Note: Can and Boxed Beverage are usually coated with plastic polymer (i.e. PET or Epoxy resin)

How many did you **use plastic**?

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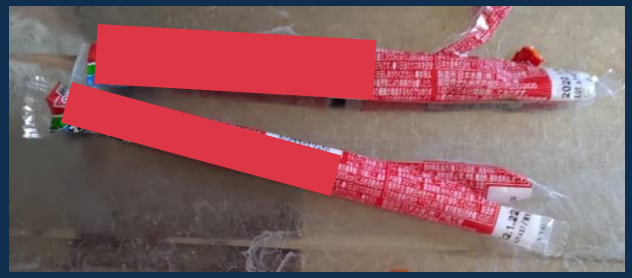
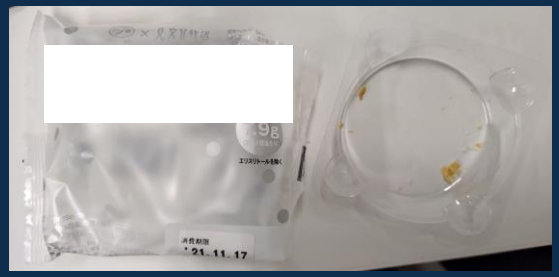
I produced 26 plastic waste in 5 days





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3R

Reuse, Reduce, Recycle

Reuse Use again plastic
finds new ways to use things that should be thrown away

Reduce Use less plastic in our daily life
Decrease the amount of trash we generate

Recycle Turn something old or trash into something new and useful

Reuse

Use again plastic

finds new ways to use things that should be thrown away

Ecobrick

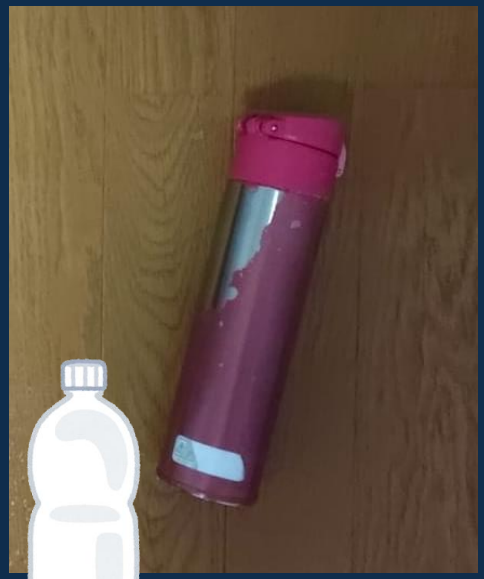
A brick that made of plastic bottle filled with ±500 gram plastic waste

Sources:
https://www.liputan6.com/regional/read/3739874/gaya-warga-medan-mengurangi-tumpukan-sampah-plastik-dengan-ecobrick
http://andalas.news/2019/01/atasi-masalah-sampah-plastik-dengan-kreativitas-ecobrick/

Reduce

Use less plastic in our daily life

Decrease the amount of trash we generate



Can is recycled better than PET bottles

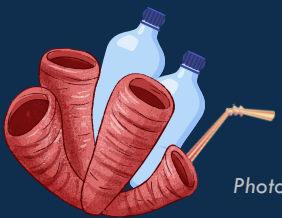


Photo: personal credits

3R

Reduce

Use less plastic in our daily life

Decrease the amount of trash we generate

Avoidable

Important

Not needed/important

Can not be avoided

Recycle

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Source: https://youtu.be/BqkekY5t7KY

Recycle

Turn something old or trash into something new and useful

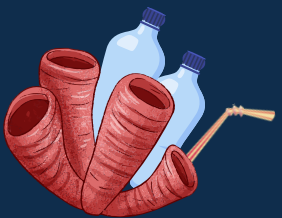
Used

Recycled

New bottles

New clothes (polyester)

New problems



Produce microplastics (very small plastics) when washed

Now you know that...

High amount plastic and plastic waste are produced and used everyday

8 million tons = as heavy as 1,400,000 of elephants
plastic waste entered the ocean every year

This makes our fishes are in danger

Everyone can make a change!
Be aware of plastic waste you generate!
Remember 3R! Reuse, Reduce, Recycle

Let's take action!

Sources: https://www.youtube.com/watch?v=IIXA821IlQc&t=2s

Photo: personal credit