



Ministry of Education,
Culture, Research, and Technology
Republic of Indonesia



APCEIU
Asia-Pacific Centre of
Education for
International Understanding
유네스코 아시아태평양 국제이해교육원

Co - Curricular Project Teaching Module 2024

THEME 4R (REFUSE, REDUCE, REUSE, AND RECYCLE)

ZERO WASTE HERO IN ACTION

BY AGNITA HANDAYANI

Elementary School Teacher



Global Citizenship Education (GCED)

Copyright © 2024 Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia and Asia-Pacific Centre of Education for International Understanding

All rights reserved.

Published by

Ministry of Education, Culture, Research, and Technology (MoECRT) Republic of Indonesia

and

Asia-Pacific Centre of Education for International Understanding (APCEIU) under the auspices of UNESCO

The ideas and opinions expressed in this report are those of the author(s) and do not necessarily represent the views of APCEIU or MoECRT. The author is responsible for the choice and presentation of facts contained in this publication. The maps, pictures, and symbols presented do not imply any opinion on the part of APCEIU or MoECRT.

Adviser : Prof. Nunuk Suryani

Person in charge : Dr. Rachmadi Widdiharto, M.A.

Author : Agnita Handayani

Editorial Board : 1. Sofie Dewayani
2. Arif Widiyatmoko
3. Sani Aryanto
4. Meliyanti
5. Nita Isaeni
6. Ratna Nurlaila

Proofreader : Ade Windiana Argina

Layout & Design : Romy Saputra

1st Edition, September 2024

ISBN: 979-11-93573-18-1



**ZERO WASTE HERO IN ACTION
CO-CURRICULAR PROJECT TEACHING MODULE**

MODULE THEME :

4R (REFUSE, REDUCE, REUSE, AND RECYCLE)

WRITTEN BY:

AGNITA HANDAYANI

MODULE TARGETED SUBJECT:

ELEMENTARY SCHOOL TEACHERS

COLLABORATIONS PROGRAM

**ASIA-PACIFIC CENTRE OF EDUCATION FOR INTERNATIONAL
UNDERSTANDING (APCEIU)**

AND

**DIRECTORATE GENERAL OF TEACHER AND EDUCATION PERSONNEL,
MINISTRY OF EDUCATION, CULTURE, RESEARCH AND TECHNOLOGY**

2024

Acknowledgment

Since 2016, the Asia-Pacific Centre of Education for International Understanding (APCEIU) has been working on the ***Global Citizenship Education (GCED) Curriculum Development and Integration (CDI) Project*** with several countries in the Asia-Pacific region. This initiative aims to incorporate Global Citizenship Education (GCED) into national curricula and share it worldwide.

APCEIU expresses great pleasure in welcoming Indonesia as a partner country for the 3rd Round of the GCED CDI Project. Indonesia's adherence to the philosophical principles of Pancasila, which resonate strongly with the values of GCED, underscores its commitment to global diversity, collaboration, and critical thinking. We anticipated with confidence the successful implementation of the GCED CDI Project in Indonesia, and we are delighted to witness Indonesia's proactive and enthusiastic execution of the project. This effort has significantly bolstered educators' skills and fostered the development of educational resources for GCED.

We are particularly pleased with the development of four modules focused on enhancing STEM (Science, Technology, Engineering, Mathematics) literacy and numeracy competencies. This development is significant, as proficiency in these areas is increasingly vital for the future, where knowledge and skills in these fields are highly sought after.

APCEIU extends sincere appreciation to the Directorate General of Teacher and Education Personnel, Ministry of Education, Culture, Research, and Technology (MoECRT), with special recognition for Prof. Dr. Nunuk Suryani, M.Pd., and Dr. Rachmadi Widdiharto. We also wish to express gratitude to the editors of this report: Sofie Dewayani, Arif Widiyatmoko, Sani Aryanto, Meliyanti, Nita Isaeni, and Ratna Nurlaila.

We commend all contributors involved in the publication of these modules, particularly Yuni Ifayati, Agnita Handayani, Kultum Afifah, and Novita Fatmasari, the teachers who authored the four modules. As well as our colleagues at APCEIU, who supported the development of this project and final report.

We hope that these materials, tailored to the Indonesian context, will serve as an effective tool and pedagogical guideline for teachers to implement the GCED Program, thereby helping students improve their problem-solving skills, practical and creative thinking, and communication abilities as inclusive and open-minded global citizens. We look forward to Indonesia's continued leadership and pivotal role in advancing GCED globally.

LIM Hyun Mook

Director, APCEIU



Acknowledgment

Praise be to God Almighty, because by His grace, we have completed the project/lesson plan module from the series of Global Citizenship Education (GCED) activities - Integrated Teaching Modules of Literacy And Numeracy For Primary Teachers In Indonesia And The Asia-Pacific Region. This project for Indonesia has been carried out in collaboration between APCEIU and the Directorate General of Teacher and Education Personnel, Ministry of Education, Culture, Research and Technology of the Republic of Indonesia (DGTEP) by Implementing an Arrangement (IA) between the Directorate General of Teachers and Education Personnel and the Asia-Pacific Centre of Education for International Understanding (APCEIU) under the auspices of UNESCO, dated 22 March 2023, No. APCEIU/C23/035 concerning GCED-Integrated Teaching Modules of Literacy and Numeracy for Primary Teachers in Indonesia and The Asia-Pacific Region.

In the Merdeka Curriculum developed in Indonesia, developing literacy and numeracy competencies is very important for improving the quality of students, so that they have a comprehensive understanding and meaningful learning. The curriculum in Indonesia also focuses on character development by strengthening the Pancasila Student Profile in the learning process. Pancasila is the philosophy of the Indonesian nation, where the characters that are developed include faith and devotion to God Almighty, Global Diversity, Cooperation, Independence, Critical Reasoning, and Creativity.

Collaboration between the Directorate General of Teachers and Education Personnel and the APCEIU is something that strengthens the competence of teachers and strengthens the competence of students in understanding GCED especially in terms of climate change. GCED values are already present in the school curriculum in Indonesia so that the development of teaching modules and project modules is very integrated.

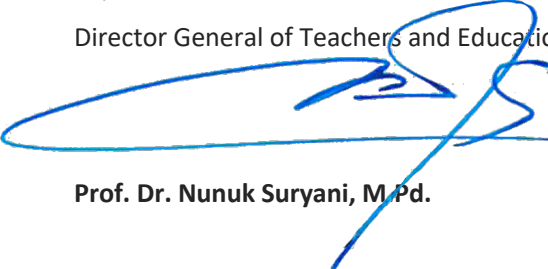
In this activity, there are four modules related to GCED that strengthen STEM (Science, Technology, Engineering, Mathematics) based literacy and numeracy competencies written by selected teachers, including Agnita Handayani, the module entitled "Zero Waste Hero In Action module: Dealing with Waste Through 4R (Refuse, Reduce, Reuse and Recycle) at SDN Cipinang Muara 14 Pagi, East Jakarta", Novita Fatmasari, the module entitled "Avoiding Food Waste, It's Time to Share" problematizes the issue of food waste in urban areas, Yuni Ifayati, implementing the project "Ecobrick: Beat the Plastic" at Fitrah Al Fikri Islamic Junior High School, and Kultum Afifah, the module entitled "Every Drop of Water Counts" which is aimed at raising students' awareness of the water crisis as a local and global problems.

In recognizing the achievement of the zero waste program at SDN Cipinang Muara 14 Pagi, we celebrate more than just a successful waste management initiative. We acknowledge a transformative movement towards sustainable living and environmental responsibility. In this way, the program's impact extends far beyond the school grounds, contributing to a broader movement towards a more sustainable and resilient future.

We would like to thank APCEIU for the collaboration that has been established. Furthermore, these modules can become a reference for teachers in Indonesia and Asia-Pacific, especially in the implementation of Global Citizenship Education which strengthens STEM-based literacy and numeracy competencies, and superior character as world citizens.

September 2024,

Director General of Teachers and Education Personnel,

A handwritten signature in blue ink, consisting of a large, sweeping horizontal stroke followed by a vertical stroke that loops back to the right, ending in a small flourish.

Prof. Dr. Nunuk Suryani, M.Pd.

Table of Content

| | Page. |
|--|-----------|
| Acknowledgment | i |
| Table of Content | iv |
| Introduction | 1 |
| Objectives, Procedures, and Targets | 3 |
| A. Objectives..... | 3 |
| B. Procedures | 3 |
| C. Targets | 3 |
| How To Use The Module | 4 |
| Project Stages Procedure | 6 |
| A. Introduction | 8 |
| B. Contextualization | 11 |
| C. Action | 13 |
| D. Assessment/Reflection..... | 17 |
| E. Presentation..... | 18 |
| Worksheet Zero Waste Hero | 20 |
| A. Meeting 1: Your Waste is The World’s Waste..... | 21 |
| B. Meeting 2: Climate Change is Real..... | 26 |
| C. Meeting 3: Become a Zero Waste Hero: 4R..... | 30 |
| D. Meeting 4: Sorting Waste | 38 |
| E. Meeting 5: Reduce and Reuse | 42 |
| F. Meeting 6: Time for Action: Recycling | 49 |
| G. Meeting 7: Zero Waste Heroes and Their Dreams : Creating Poster or Video..... | 53 |
| H. Meeting 8: Evaluation and Reflection | 55 |
| I. Meeting 9: Zero Waste Hero Campaign and Sharing Session..... | 58 |
| References | 60 |

Introduction

Waste and climate change are interconnected global concerns. Poorly managed waste contributes to the emission of CO₂ and methane gas, thereby exacerbating the issue of climate change. The National Waste Management Information System estimates that 61.86% of Indonesia's waste, or 7,968,149.94 metric tonnes per year, is managed and 38.14% is unmanaged, or 4,912,871.53 metric tonnes per year. Organic waste comprises 41.28% of the total refuse in Indonesia, followed by plastic waste at 18.23%. Effective waste management may represent a potential strategy for mitigating climate change. By serving as educational institutions for the younger generation, schools play a significant role in promoting environmental consciousness and waste management. One of the virtues inculcated in educational institutions is environmental stewardship, which aligns with the principles outlined in the Pancasila Student Profile (PPP) dimensions: faith, devotion to the Almighty God, and noble morals, with particular emphasis on personal integrity, humaneness, and ecological responsibility. The purpose of caring for the environment at the level of primary education is to increase environmental consciousness.

Educational institutions serve as a focal point for fostering environmental consciousness. Despite serving as educational institutions committed to environmental protection, schools generate waste. Waste in educational institutions can be attributed to the purchase and consumption of food and drink packaging materials, plastic bags, and drinking vessels by students during break periods. Schools generate paper waste and food waste in addition to plastic waste. In the educational setting, plastic and paper waste constitute the predominant categories of waste that are frequently produced. Schools must therefore take action in response to this matter. Paper that is no longer in use can be recycled, while schools can collaborate with parents and the cafeteria to reduce plastic usage. Educational institutions may establish regulations mandating that students bring in their own food supplies or food containers. An additional method of reducing plastic waste through collaboration between schools and canteens is the substitution of plastic containers with eco-friendly alternatives, such as banana leaves. An approach to reducing waste and fostering sustainable waste management is the utilization of banana leaves.

Zero waste can encourage environmentally responsible waste management. Zero Waste is an environmental movement that aims to minimize or eliminate waste entirely. This notion is adaptable to the educational environment. In this module, students are encouraged to adopt the 4Rs—refuse, reduce, reuse, and recycle—and adopt a zero-waste lifestyle in order to become Zero Waste Heroes. By adhering to these 4Rs, students reduce their plastic consumption, demonstrate prudent product

usage, and advocate for a sustainable way of life. Zero-waste initiatives can be incorporated into school extracurriculars. Schools actively engage with global issues and implement tangible measures to cultivate a generation that demonstrates accountability as global citizens.

UNESCO asserts that Global Citizenship Education (GCED) has the potential to foster the development of a generation that embodies accountability as global citizens. GCED is an educational methodology that seeks to cultivate global citizens who possess an understanding of and assume accountability for matters of global significance, including but not limited to sustainable lifestyles and climate change. GCED can thus instill in its students a concern for the environment and refuse management. GCED fosters the development of a waste-aware individual by imparting pertinent information regarding refuse reduction, recycling, and management. Three learning domains comprise the GCED: cognitive, socio-emotional, and behavioural.

This module facilitates the development of student's cognitive abilities by engaging them in numeracy literacy activities that require them to comprehend, analyse, and process information pertaining to pollution and climate change. Students develop their socio-emotional and behavioural dimensions through participation in a variety of activities that emphasise their status as global citizens. Students will consciously be more accountable as global citizens with regard to the issue of pollution and its influence on climate change by engaging in tangible actions. Because GCED and zero waste are interconnected in the context of education and positive social, cultural, and environmental change, the Zero Waste Hero persona was created. Zero Waste Heroes seeks to equip students with environmental responsibility-related knowledge, consciousness, and practical abilities. By attaining the status of Zero Waste Heroes, it is anticipated that students will cultivate a conscience regarding waste by acquiring adequate knowledge pertaining to waste reduction, recycling, and management. Students will ultimately determine which activities are most efficacious in mitigating waste volume and how to circumvent obstacles.

The theme of this module is Zero Waste Heroes in Action: Managing Waste Through the 4Rs. In this module, students are invited to complete a 30-day-interactive challenge. In addition, students will learn to understand the problem of waste and its impact on climate change. Students will take real action on waste problems through the 4R movement. Student creativity is honed through STEM (Science, Technology, Engineering, and Mathematics) based activities by recycling waste into drawstring pencil holders at school and recycling plastic waste with families at home and documenting it.

Objectives, Procedures, and Targets

A. Objectives

This module comprises a range of activities that are designed to:

1. Enhance students' global citizenship awareness by augmenting their understanding of waste predicaments and the consequential effects on climate change.
2. Fostering students' sense of responsibility in acting as global citizens who actively confront waste issues by means of the 4R movement.
3. Fostering students' ingenuity and analytical reasoning by engaging them in recycling initiatives as a means to mitigate the waste dilemma.
4. Encouraging students, in their capacity as global citizens, to embrace a sustainable way of life through the reduction of wasteful product usage.

B. Procedures

This endeavour concludes with a presentation, following phases of introduction, contextualization, action, and evaluation. The initial phase of the curriculum entails students investigating waste management, climate change, and the notion of assuming the role of a Zero Waste Hero. In the contextualization phase that follows, students identify recyclable waste categories and gain knowledge of various recycling procedures.

At this juncture, students additionally produce posters or videos in support of the Zero Waste Hero campaign. Students are prepared to confront climate change by adapting to and mitigating its effects through the recycling of materials into useful and beneficial products during this phase of action. In the assessment phase that follows, students conduct self-evaluation and reflection in their capacity as Zero Waste Heroes. The final phase of learning in this module is the presentation phase. During this phase, students present the outcomes of tangible endeavours, including completed products and exemplary procedures.

C. Targets

This module's intended audience consists of elementary school Teachers and students in the fifth grade. It is anticipated that Teachers will mentor students to become zero-waste heroes. Students are expected to establish a lifestyle that is environmentally conscious, with a particular focus on climate change, by assuming the role of zero waste champions.

How To Use The Module

1. Teachers may utilize this module as a point of reference. As this module was designed as a co-curricular endeavour, specific subject competencies are not its primary objective.
2. Lessons, projects, and activities may be modified by teachers in accordance with school requirements and environmental conditions.
3. The module comprises the following learning stages: introduction, contextualization, action, reflection, and presentation.
4. The learning activities within this module are organised to promote skills in STEM, literacy, and numeracy.
5. The tasks encompassed within this module are subdivided as follows:
 - a. Develop cognitive capacities
 - 1) Let's Read
 - 2) Let's Watch
 - 3) Let's Discuss
 - 4) Let's Write
 - 5) Let's Practice
 - b. Develop interpersonal and emotional competencies
 - 1) Let's play
 - 2) Let's share
 - 3) Develop behavioural skills
 - 4) Let's research
 - 5) Let's be creative
6. The module encompasses a variety of subjects during each meeting, including:
 - a. Meeting 1: Your Waste is the World's Waste
 - b. Meeting 2: Climate Change is Real
 - c. Meeting 3: Becoming a Zero Waste Hero: 4R
 - d. Meeting 4: Waste Sorting
 - e. Meeting 5 : Reduce and Recycle
 - f. Meeting 6: Time for Action: Recycling
 - g. Meeting 7 : Zero Waste Heroes and Their Dreams: Making Posters and Videos
 - h. Meeting 8: Evaluation and Reflection
 - i. Meeting 9: Zero Waste Hero Campaign and Sharing Session

7. This module contains the following topics: waste issues, climate change, zero waste, and 4R.
8. The assessment for this module consists of reflection and comprehension activities that are evaluated. The Let's Reflect activity is implemented at the conclusion of every meeting to facilitate reflection.
9. Teachers serve as facilitators. Teachers are welcome to utilise this module as a reference. Educators possess the ability to adapt the lessons, projects, and activities within them to accommodate circumstances at the school or in the environment.

Project Stages Procedure

This endeavour commences with an introduction, progresses through contextualization, action, and evaluation, and culminates in a presentation.

The progression of the project stages in this module is as follows:

| STAGES OF INTRODUCTION | |
|--|---|
| MEETING 1 | MEETING 2 |
| Your Waste is The World's Waste (70 Minutes) | <i>Climate Change is Real (105 Minutes)</i> |
| <ol style="list-style-type: none"> 1. Understand the waste issue in Indonesia and the world 2. Understand that the issue of waste in the surrounding environment and waste in the world are interconnected 3. Evaluation and reflection | <ol style="list-style-type: none"> 1. Understand the concept of climate change 2. Understand that waste generated from human activities has an impact on climate change 3. Evaluation and reflection |
| STAGES OF CONTEXTUALIZATION | |
| MEETING 3 | MEETING 4 |
| Becoming a Zero Waste Hero: 4R (105 Minutes) | Waste Sorting (70 Minutes) |
| <ol style="list-style-type: none"> 1. Identifying the Zero Waste Concept 2. Become a Zero Waste Hero through 4R: Refuse, Reduce, Reuse, Recycle 3. Evaluation and reflection | <ol style="list-style-type: none"> 1. Identify the concept of waste segregation as a responsibility as a global citizen 2. Evaluation and reflection |
| A STAGE OF ACTION | |
| MEETING 5 | |
| Reduce and Recycle (70 Minutes) | |
| Identify the concept of reducing and recycling in everyday life | |

| MEETING 6 | MEETING 7 |
|---|---|
| Time for Action: Recycling (140 Minutes) | Zero Waste Heroes and Their Dreams: Making Poster or Video (105 Minutes) |
| 7. Recycle plastic bottle waste into a drawstring pencil case 8. Evaluation and Reflection | 1. Create a Zero Waste Hero action campaign poster or video 2. Evaluation and Reflection |
| A STAGE OF ASSESSMENT | |
| Meeting 8 | |
| Evaluation and Reflection (70 Minutes) | |
| Gather and analyse data in order to ascertain the learning requirements, progress, and attainment of learning objectives of students. The resulting information is subsequently utilised as subject matter for reflective practice. | |
| PRESENTATION | |
| MEETING 9 | |
| Zero Waste Hero Campaign and Sharing Session (140 Minutes) | |
| As an example of a zero-waste champion, present the outcomes of actual learning initiatives and disseminate successful practices. | |

A. Introduction

During the initial phase, students receive additional support and guidance pertaining to waste-related concerns in both Indonesia and globally. Subsequently, the dissemination of information regarding this waste matter will contribute to the cultivation of awareness and comprehension regarding the significance of this substance in relation to the prevailing worldwide predicament of climate change.

1. Meeting 1

| TOPIC: "YOUR WASTE IS THE WORLD'S WASTE" | | MEETING: 1 |
|---|---|--|
| GOALS: 1. Students are able to comprehend the waste issue affecting both the world and Indonesia. 2. Students are able to understand how local waste issues are interconnected with global waste problems. | TIME: 2x35 minutes | PRELIMINARIES 1. The teacher prepares the resources and facilities for the initial activities of the module. 2. Teacher prepares the worksheet. |
| | MEDIA: 1. Video 2. Illustrated Stories 3. Students' Worksheet | |
| | TEACHER'S ROLE Facilitator | |
| LEARNING RESOURCES: 1. Text about Waste Awareness Day Source: https://megapolitan.kompas.com/read/2023/02/21/06350091/sejarah-ditetapkannya-hari-peduli-sampah-nasional-berawal-dari-peristiwa?page=all) 2. Data on the Largest Waste Producing Countries Source : https://databoks.katadata.co.id/infografik/2023/07/05/inilah-negara-penghasil-sampah-terbesar-dunia-ada-indonesia 3. Handbook of Climatology Source: https://karangploso.jatim.bmkg.go.id/index.php/informasi-iklim/artikel/555558973-buku-saku-klimatologi-iklim-dan-cuaca-kita-seri-iklim-untuk-anak-dan-remaja | | |
| IMPLEMENTATION 1. The teacher begins the lesson by outlining the goals and activities of the module. 2. The teacher explains The 30-day challenge that students will participate in while studying the Zero Waste Hero module. 3. The teacher asks engaging questions related to the waste. | | |

| | |
|---|--|
| <ol style="list-style-type: none"> a. <i>"Have you ever disposed of waste carelessly?"</i> b. <i>"Where does that waste end up?"</i> c. <i>"What impact does waste have on our planet?"</i> <ol style="list-style-type: none"> 4. Students engage in a comprehensive analysis of the text titled "Waste Awareness Day" and actively participate in interactive discourse pertaining to its content. 5. Students learn about the journey of waste to the landfill. 6. Students discuss waste issues in Indonesia and their effect on the world, including Indonesia's position as one of the largest waste producers. 7. Students read a pocket guide on climatology covering weather, climate, and seasons. 8. Teacher outlines the learning objectives for the next session. 9. Students reflect on what they have learned. | |
| <p>TIPS (OPTIONAL)</p> <ol style="list-style-type: none"> 1. After viewing the graph the teacher can provide a brief explanation as reinforcement so that students can understand the context of the video. 2. Discussions can be held as a class or in small groups. 3. Apart from the text "National Waste Day", students can prepare a video of the event "Leuwigajah Landfill Tragedy". | |
| <p>TASK</p> <p>Doing the 30 day Module challenge</p> | <p>ENRICHMENT</p> <p>Students complete the "Happy Earth Day" poster</p> |

2. Meeting 2

| TOPIC: CLIMATE CHANGE IS REAL | | MEETING: 2 |
|--|--|--|
| <p>GOALS:</p> <ol style="list-style-type: none"> 1. Students are able to understand the concept of climate change. 2. Students are able to understand that waste generated from human activities and climate change are interconnected. | <p>TIME:</p> <p>2x35 minutes</p> | <p>PRELIMINARIES</p> <ol style="list-style-type: none"> 1. The teacher prepares the resources and facilities for the initial activities of the module. 2. Teacher prepares the worksheet. |
| | <p>MEDIA:</p> <p>Visual, Audio Visual</p> | |
| | <p>TEACHER'S ROLE</p> <p>Facilitator</p> | |

LEARNING RESOURCES:

Video of Climate Change:

Source : <https://www.youtube.com/watch?v=29jyaPIWzFI>

IMPLEMENTATION

1. The teacher begins the lesson by reviewing the previous lesson on waste issues and climatology pocketbook.
2. Teachers and students discuss how waste issues are linked to climate change.
3. Students examine an infographic about climate change.
4. Students answer the questions based on the infographic provided.
 - a. "How will climate change impact our lives?"
 - b. "What are some examples of changes you have noticed?"
 - c. "Why do you think these changes occur?"
5. Students discuss climate change and the possible actions to address it.
6. Students take turns sharing the results of their discussion.
7. Students work on crossword puzzles related to climate change.
8. Students reflect on what they have learned.

TIPS (OPTIONAL)

1. After watching the video, the teacher can provide a brief explanation to reinforce students' understanding of its context.
2. Discussion can take place in a whole-class setting or in small groups.
3. The teacher can also share information about climate change prior to the meeting using the BMKG climatology pocketbook."

Source:

https://iklim.bmkg.go.id/bmkgadmin/storage/brosur/Buku%20Saku_KLIMATOLOGI_bnew%20.pdf

TASK

Practice Questions on Climate Change.

ENRICHMENT -

B. Contextualization

During the contextualization phase, it is emphasized that climate change poses one of the greatest challenges. This is largely due to the rise in greenhouse gases from human activities, including ineffective waste management. In this context, the concepts of zero waste and waste sorting will help students understand alternatives for addressing waste issues and global climate change.

1. Meeting 3

| TOPIC: BECOMING A ZERO WASTE HERO (4R) | | MEETING: 3 |
|---|---------------------------------------|---|
| GOALS: 1. Students are able to identify the concept of Zero Waste as a way to overcome the problem of climate change. 2. Students are able to become Zero Waste Heroes through the 4Rs: Refuse, Reduce, Reuse, Recycle. | TIME: 3x35 minutes | PRELIMINARIES 1. The teacher prepares the resources and facilities for the initial activities of the module. 2. The teacher prepares printouts of snakes and ladders according to the number of groups. 3. The teacher prepares scissors and glue for the dice and snakes and ladders characters. |
| | MEDIA: Visual, Audio Visual | |
| | TEACHER'S ROLE Facilitator | |
| LEARNING RESOURCES: 1. Video GCED: Source: https://youtu.be/uLeREqPKR08 2. Video of 4R: Source : https://www.youtube.com/watch?v=MqAyl6caMv4 3. Video My Responsibility: Source : https://www.youtube.com/watch?v=CGd3lgxReFE 4. Video of Pandawara Group: Source : https://www.youtube.com/watch?v=TjM5YRTRuS0 | | |
| IMPLEMENTATION 1. The teacher begins the lesson by reviewing the previous topic on waste issues and climate change. 2. Students watch a video on GCED and the concept of zero waste through 4R and the responsibility toward waste. 3. Students are prompted with a question based on the video: 'How can we implement the concept of zero waste through 4R in our daily lives?' 4. Students read the infographic 'Let's Become Zero Waste Heroes.' | | |

| | |
|--|----------------------------|
| <ol style="list-style-type: none"> 5. Students watch the 'Pandawara Group Video' characters as inspiration for being environmental advocates. 6. Students discuss how to be Zero Waste Heroes through 4R by completing the following statements: 'I am...' 'I have...' 'What I can do is...' 7. Students play the 'Zero Waste' snakes and ladders game. 8. Students reflect on their learning. | |
| <p>TIPS (OPTIONAL)</p> <ol style="list-style-type: none"> 1. After watching the video the teacher can provide a short explanation as reinforcement so that students can understand the context of the video. 2. Discussions can be held as a class or in small groups. 3. Printable snakes and ladders printed on A3 paper. 4. The teacher has prepared the dice and characters for the snakes and ladders before the activity. | |
| <p>TASK</p> <p>Write down Zero Waste Hero through 4R tasks.</p> | <p>ENRICHMENT -</p> |

2. Meeting 4

| TOPIC: WASTE SORTING | | MEETING: 4 |
|---|--|---|
| <p>GOALS:</p> <p>Students are able to identify the concept of sorting waste as a responsibility as world citizens.</p> | <p>TIME:</p> <p>2x35 minutes</p> | <p>PRELIMINARIES</p> <ol style="list-style-type: none"> 1. The teacher prepares the infrastructure for video viewing activities. 2. The teacher prepares worksheets. |
| | <p>MEDIA:</p> <p>Visual, Audio Visual</p> | |
| | <p>TEACHER'S ROLE</p> <p>Facilitator</p> | |
| <p>LEARNING RESOURCES:</p> <ol style="list-style-type: none"> 1. Video : Source: https://www.youtube.com/watch?v=lx12mdZstDw 2. Text of Waste Sorting. 3. Ebook: Sedotani (A Queen of Garbage). https://www.letsreadasia.org/read/ba75bcfa-6476-4cc7-953b-b964fa5e94f5?bookLang=6260074016145408 | | |

| | |
|---|--|
| IMPLEMENTATION | |
| <ol style="list-style-type: none"> 1. The teacher starts the lesson by linking previous learning about what we can do as Zero Waste Heroes, which includes sorting waste. 2. Students watch videos on types of waste. 3. Students note important things from the video about types of waste. 4. Students discuss to identify types of waste according to the color of the bins. 5. Students read a text about types of waste. 6. Students do exercises about types of waste. 7. Students play type of waste bingo. 8. Students reflect on activities. | |
| TIPS (OPTIONAL) | |
| <ol style="list-style-type: none"> 1. Discussion can take place in a whole-class setting or in small groups. 2. While playing the BINGO game, students share their ideas about different types of waste in front of the class based on the theme. | |
| TASK | ENRICHMENT |
| <ol style="list-style-type: none"> 1. Practice questions on types of waste. 2. BINGO games. | Read the story Sedotani, the story of a straw abandoned by humans. |

C. Action

In the action phase, students take real actions by planning practical steps based on the concepts of reducing and recycling in their daily lives. During this stage, the learning activities use a STEM approach to enhance literacy and numeracy skills by recycling the types of waste most commonly produced at school.

1. Meeting 5

| TOPIC: REDUCE AND RECYCLE | | MEETING: 5 |
|--|---------------------------------------|--|
| GOALS: Students are able to identify the concepts of reducing and recycling in everyday life | TIME: 2x35 minutes | PRELIMINARIES <ol style="list-style-type: none"> 1. The teacher prepares the resources and facilities for the initial activities of the module. 2. The teacher prepares the worksheet. |
| | MEDIA: Visual, Audio Visual | |
| | TEACHER'S ROLE Facilitator | |

LEARNING RESOURCES:

1. Video of types of waste that can be recycled
Source: https://www.youtube.com/watch?v=6jQ7y_qQYUA
2. Video of Science of recycling
Source: <https://www.youtube.com/watch?v=YgxO1tE4l1k>
3. Recycling Text
Source: <https://waste4change.com/blog/daur-ulang-sampah>

IMPLEMENTATION

1. The teacher begins the lesson by connecting it to the previous topic on types of waste and recyclable materials.
2. The teacher outlines the learning objectives.
3. Students read a text about recycling and engage in a discussion to identify recyclable waste.
4. Students watch a video about the success of a figure in recycling and take notes on important points from the success story.
5. Students play the Recycling Truck game and work in groups to match images with statements about ways to reduce waste.
6. Students investigate the daily waste production activities of the school community, given three days to complete this task.
7. The teacher informs students to bring tools and materials for the recycling activity in the next session.
8. Students reflect on their learning.

TIPS (OPTIONAL)

1. After watching the video, the teacher can provide a brief explanation to reinforce students' understanding of its context.
2. In the 'Let's Research' activity, students are encouraged not to ask the same person questions.
3. The results of the 'Let's Research' activity can be discussed in the next session (separate from the sixth meeting).
4. When the teacher informs students about the recycling activity in the next session, they can provide examples of how to create a tutorial video.

TASK

Conduct an investigation of the waste producing activities within the school community using the Let's Research activity.

ENRICHMENT

Students watch video tutorials on making recycling as background knowledge.

2. Meeting 6

| TOPIC: TIME FOR ACTION : RECYCLING | | MEETING: 6 |
|--|--|--|
| GOALS: Students are able to recycle plastic bottle waste into new useful items. | TIME: 4x35 minutes | PRELIMINARIES 1. The teacher reminds students to bring tools and materials in advance. 2. The class is divided into groups 3. The teacher prepares worksheets. |
| | MEDIA: Tools and materials for making a drawstring pencil case | |
| | TEACHER'S ROLE Facilitator | |
| LEARNING RESOURCES: Recycling Tutorial https://www.livemaster.ru/topic/106447-iz-nenuzhnogo-nuzhnoe-sumochki-iz-butylak | | |
| IMPLEMENTATION 1. The instructor commences the lesson by establishing connections to prior knowledge, such as "Children, we covered the recycling process in the previous lesson." "Which waste types are recyclable?"; "What methods of recycling are feasible?". 2. Students read the steps to make a "Drawstring Pencil Holder from a Plastic Bottle". 3. The students conducted an experiment wherein they constructed a "Drawstring Pencil Holder from a Plastic Bottle" in accordance with the instructions provided in the worksheets. 4. The teachers provide feedback on students' work. 5. Students reflect on their learning. | | |
| TIPS (OPTIONAL) 1. The teacher reminds students to bring all the required equipment and materials. 2. The teacher offers supplementary tools and supplies as a contingency for students who fail to bring their own. 3. Students can share photos of their activities on their social media platforms. 4. The teachers can curate photos of activities and projects into Google sites. | | |
| TASK Make a "Drawstring Pencil Holder from a Plastic Bottle". | ENRICHMENT Students can make other recycled creations with their families at home. | |

3. Meeting 7

| TOPIC: ZERO WASTE HEROES AND THEIR DREAMS: MAKING POSTER OR VIDEOS | | MEETING: 7 |
|--|--|---|
| GOALS: Students are able to create images or videos that can be used to share practices related to waste management and the impact of climate change. | TIME: 3x35 minutes | PRELIMINARIES 1. The teacher prepares tools and materials. 2. The teacher prepares examples of posters and videos. |
| | MEDIA: Drawing and coloring tools | |
| | TEACHER'S ROLE Facilitator | |
| LEARNING RESOURCES: Infographics and worksheets | | |
| IMPLEMENTATION 1. The teacher opens the lesson and relates previous learning through trigger questions such as "What do you know about 4R?"; "What do you know about climate change?"; "How to invite other friends to be part of Zero Waste Heroes". 2. The teacher states the learning objectives. 3. The teacher divides groups based on their interests and abilities in making posters or videos. 4. Students make posters or videos, the teacher becomes a facilitator to accompany the students. 5. Students reflect on their learning. | | |
| TIPS (OPTIONAL) 1. Students are given the freedom to choose the media for making posters. 2. Posters can be two-dimensional or digital posters using the Canva application, photo grid, etc. 3. Teachers can curate photos of activities and projects into Google sites. | | |
| TASK Students share their posters on their social media. | ENRICHMENT Students can make posters/videos with the same theme with different images. | |

D. Assessment/Reflection

During the assessment and reflection stage, students engage in the evaluation of their comprehension, abilities, and experiences as they strive to become advocates for zero waste through 4R practices. The assessment of comprehension typically takes the form of a test consisting of interrogative prompts. Assess the competencies and backgrounds of students by employing self-evaluation instruments in a thoughtful manner.

1. Meeting 8

| TOPIC: EVALUATION AND REFLECTION | | MEETING: 8 |
|---|--|---|
| GOALS: Students can reflect on their understanding, skills, and experiences related to the learning activities. | TIME: 2x35 minutes | PRELIMINARIES The teacher prepares questions and self-evaluation instruments. |
| | MEDIA: Written question sheets or online questions | |
| | TEACHER'S ROLE Facilitator | |
| LEARNING RESOURCES: - | | |
| IMPLEMENTATION <ol style="list-style-type: none"> 1. The teacher begins the lesson by connecting it to the learning that has taken place so far. 2. Students complete evaluation exercises in the form of a quiz or practice questions based on the module material covered. 3. The teacher randomly selects a student to share their reflections on the 30-day challenge results. 4. Teacher provides feedback to the students. 5. Students reflect on their learning. | | |
| TIPS (OPTIONAL) - | | |
| TASK <ol style="list-style-type: none"> 1. Completing evaluation questions. 2. Sharing reflections on the material covered in the module. 3. Sharing reflections on the 30-day challenge results. | | ENRICHMENT - |

E. Presentation

In the presentation stage, students showcase the results of their real-life actions from the learning process and share good practices with their peers at school. During this opportunity, students communicate their understanding, skills, and experiences as Zero Waste Heroes Through 4R. This presentation activity is the culmination of the series of activities in the Zero Waste Heroes challenge and project. The school can set aside a specific time to host these real-life actions and good practices.

1. Meeting 9

| TOPIC: ZERO WASTE HERO CAMPAIGN AND SHARING SESSION | | MEETING: 9 |
|---|--|--|
| GOALS: Students are able to present the outcomes of their real-life learning actions and share the best practices they have implemented as Zero Waste Heroes Through 4R. | TIME: 4x35 minutes | PRELIMINARIES <ol style="list-style-type: none"> 1. The teacher coordinates with the principal and other teachers regarding the planning of the real-life action event. 2. The teacher and students prepare the necessary resources and facilities. 3. Students curate the works that will be displayed. |
| | MEDIA: Recycled products, good practice photos and audio | |
| | TEACHER'S ROLE Facilitator | |
| LEARNING RESOURCES: Recycled products, good practice posters, photos, and videos. | | |
| IMPLEMENTATION <ol style="list-style-type: none"> 1. The teacher begins the activity by introducing themselves and the fifth-grade students. 2. The teacher outlines the objectives of the activity. 3. A student representative presents the issue of waste related to climate change. 4. Another student representative explains the concept of Zero Waste Heroes and the good practices that have been implemented. 5. Students then reflect by writing: <i>Before studying this module, I...</i> <i>After studying this module, I...</i> | | |

TIPS (OPTIONAL)

1. Real actions and good practices can be carried out at a special time such as after a ceremony or group gymnastics.
2. Good practice activity documentation is printed for display.
3. Activity documentation can also be curated on Google Sites.

TASK -**ENRICHMENT -**

Worksheet Zero Waste Hero

Welcome to the Zero Waste Heroes worksheet. In this worksheet, you will discover many important topics. You will learn about waste issues and their effects on climate change. Additionally, you will take practical actions to address waste through the 4R (Refuse, Reduce, Reuse, Recycle) . By the end of the activities, you will engage in recycling and document your experiences.

Finally, you will evaluate which activities are most effective in reducing waste volume and how to tackle these challenges. Before we start, let's take a look at the following 30-day challenge. At the end of the module, share the outcomes of this challenge.



The 30-day challenge
"I'm Indonesian. I'm Global Citizen"

| | | | | |
|---|--|------------------------------------|--|--|
| Taking the 30-day zero waste hero module challenge earnestly. | Finding out information about national waste day | Bring handkerchief | using handkerchief instead of tissues | Bring a reuseable water bottle |
| Bring a reuseable food container | Say no to plastic straw | Pack a low-waste lunch | Learning about the causes and impacts of climate change. | Learning about global climate change |
| Repurpose old books as notepads | Bring a reusable shopping bag | Avoid food waste | Food sharing | Use or buy less packed food |
| Place waste in the trash | Learning zero waste and 4R | Journal writing as zero waste hero | Picking up waste on the street | Walk or bike to school |
| Planing a recycle tutorial video | Making a recycle tutorial video | Posting a recycle tutorial video | Doing plastic recycle | Doing paper recycle |
| Making zero waste or 4R poster | Making zero waste or 4R poster | Promoting Zero Waste Hero Campaign | Influencing others to become a zero waste hero | Being a global citizen through zero waste here |

A. Meeting 1: Your Waste is The World's Waste

GOALS

By engaging in this particular endeavour, you have the opportunity to:

1. Understand the waste issue in Indonesia and in the world.
2. Recognizing the fact that the waste generated locally is interconnected with global waste problems.

1. Let's Read

NATIONAL WASTE AWARENESS DAY

The National Waste Day is an annual observance that takes place on February 21st each year. The initiation of National Waste Day was prompted by a distressing incident, specifically the occurrence of a landslide involving a heap of waste at the Leuwigajah Landfill in Cimahi, West Java, on February 21, 2005. During the aforementioned period, approximately at 02.00 WIB, an audible detonation was seen, subsequently accompanied by a substantial landslide of waste materials, transpiring at the Leuwigajah landfill.



A sixty-meter-tall by two-hundred-meter mountain of waste was believed to have been shaken in this incident by intense overnight precipitation. In addition, it is believed that the explosion sound was generated by the methane gas explosion emanating from within the garbage mound. Hundreds of dwellings were destroyed and 157 people perished when millions of cubic metres of garbage collapsed due to this incident.

The occurrence of the landslide at the Leuwigajah Landfill can be attributed to inadequate waste management practices. The reason behind the utilisation of an open dumping system by the Leuwigayah Landfill is that garbage is disposed of by means of direct disposal and accumulation. The occurrence of the landslide at the Leuwigajah Landfill, including piles of waste, eventually emerged as a

significant event in the establishment of National Waste Day, thus attaining historical significance. This occurrence serves as a cautionary message to the general population, urging them to avoid encountering similar pitfalls.

Source: <https://megapolitan.kompas.com/read/2023/02/21/06350091/sejarah-ditetapkannya-hari-peduli-sampah-nasional-berawal-dari-peristiwa?page=all>

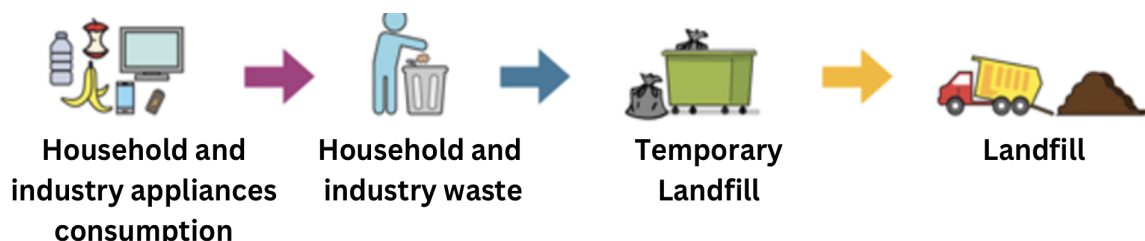
2. Let's Discuss

Answer the following questions in collaboration with your group members!

1. Why does February 21st of each year mark National Waste Awareness Day (HPSN)?
.....
2. What caused the garbage mound at the Leuwigajah landfill to collapse?
.....
3. Do you believe that there exists a viable solution that can be implemented to surmount this phenomenon?
.....

There is a prevailing perception that waste management in Indonesia is suboptimal. Once utilised in residential or industrial settings and subsequently discarded, waste materials are typically gathered solely within temporary shelters, also referred to as TPS. Subsequently, the waste trajectory culminates at the Final Processing Site (TPA) or landfill.

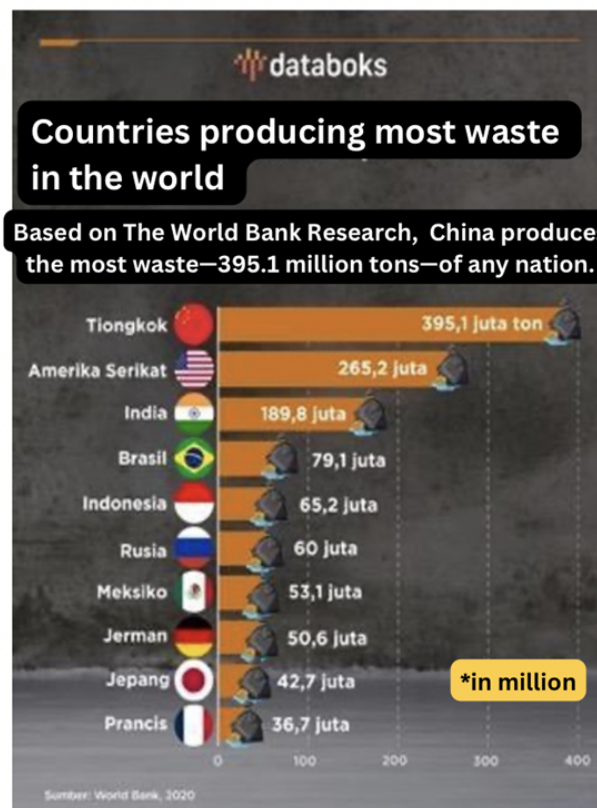
Typically, such processes result in the accumulation of waste and further depletion of usable land resources. Moreover, it is worth noting that there exist multiple categories of garbage that can be effectively recycled and repurposed to fulfil diverse requirements, hence possessing significant economic worth. The subsequent delineation presents the sequential progression of the waste trajectory culminating in its ultimate destination at the landfill site.



Source: : <https://katadata.co.id/timrisetdanpublikasi/analisisdata/5e9a57af981c1/kelola-sampah-mulai-dari-rumah>

3. Let's Read

Are you aware of where the waste you dispose of each day ultimately ends up? While we may not frequently consider this, the waste we produce on a daily basis has considerable implications for our local environment and the global context. Examine the following chart illustrating the ten countries that generate the highest amounts of waste.



Sumber: <https://databoks.katadata.co.id/infografik/2023/07/05/inilah-negara-penghasil-sampah-terbesar-dunia-ada-indonesia>

According to the data, Indonesia was the fifth-largest waste producer in the world in 2020, as recorded in the World Bank report titled The Atlas of Sustainable Development Goals 2023. The report indicates that Indonesia generated approximately 65.2 million tons of waste in that year.

As the fourth most populous country, Indonesia continues to experience significant population growth annually. This large population has numerous implications, one of which is the substantial amount of waste produced, leading to Indonesia becoming one of the largest contributors to plastic waste.

Write your response after analyzing the countries producing most waste in the world chart.

.....

.....



Source: <https://karangploso.jatim.bmkg.go.id/index.php/informasi-iklim/artikel/555558973-buku-saku-klimatologi-iklim-dan-cuaca-kita-seri-iklim-untuk-anak-dan-remaja>

Climate change refers to the enduring alteration in Earth's temperature and weather patterns over an extended period of time. Consider the Earth as analogous to the human body. Similar to how human bodies require optimal temperatures for proper functioning, the Earth too necessitates a suitable and harmonious temperature. Nevertheless, anthropogenic actions, such as inadequate waste disposal practices, unregulated deforestation, and the combustion of fossil fuels such as coal, oil, and gas, have the potential to generate greenhouse gases. The emission of greenhouse gases is responsible for the phenomenon of global warming and subsequent climate change. For a comprehensive understanding of weather and climate, it is recommended to peruse the following climatology handbook. One has the ability to record significant information within the confines of a pocket-sized notebook.

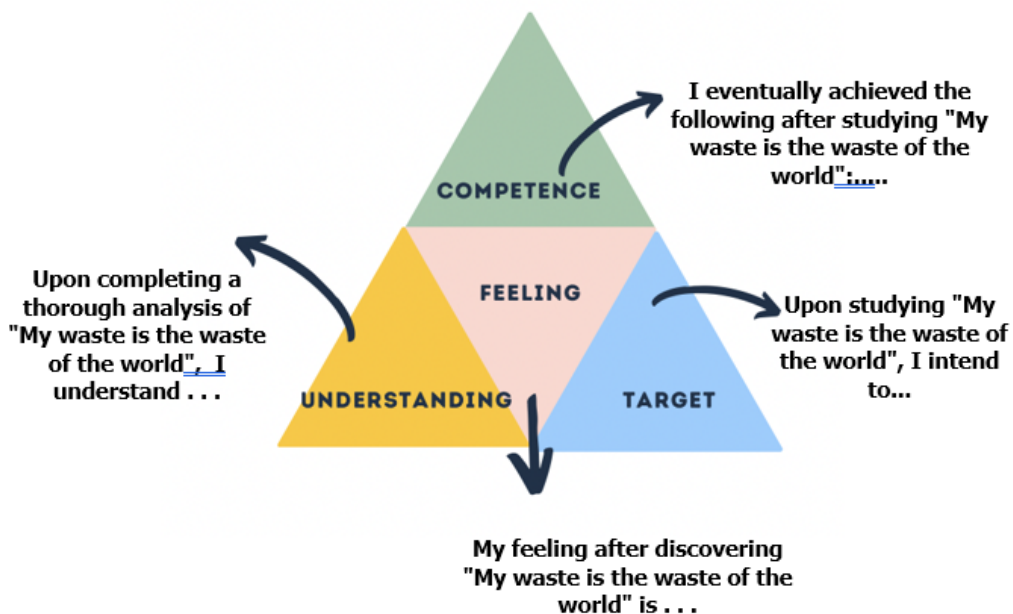
4. Enrichment

Look at the following picture. Write a suitable sentence for concluding the poster!



Did you know that we commemorate Earth Day or World Earth Day on April 22 every year? The celebration of Earth Day serves as a means of expressing support for the preservation of the environment, specifically with regard to the planet Earth.

5. Let's Reflect



B. Meeting 2: Climate Change is Real

GOALS

By engaging in this particular endeavour, you have the opportunity to:

1. Understand the concept of climate change.
2. Understand that waste generated from human activities and climate change are interconnected.

1. Let's Watch

CLIMATE CHANGE



Source : <https://www.youtube.com/watch?v=29jyaPIWzFI>

According to the United Nations, climate change refers to long-term alterations in temperature and weather patterns. Climate change occurs when the Earth's weather and climate systems experience significant shifts and imbalances.

These changes are primarily driven by environmentally harmful human activities. Let us scan the following barcode to view a video that explores the current climate change impacts in Indonesia and globally

Do you think the waste we generate and dispose of daily can affect climate change on Earth?

NO

YES

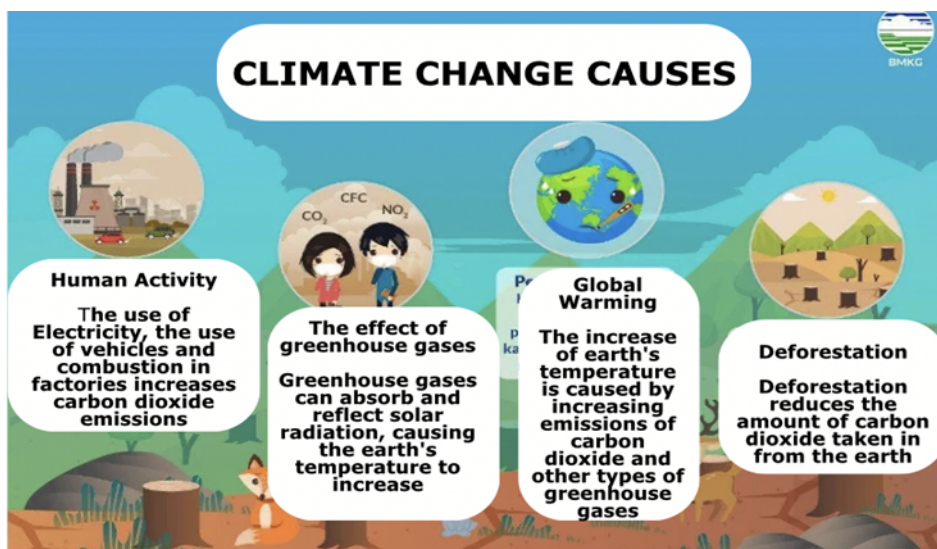
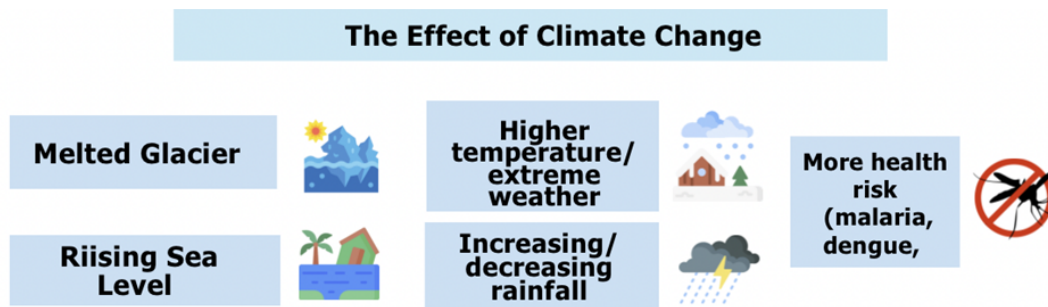
Write your view on how the waste we dispose of daily can impact climate change globally?

.....

.....

.....

Improperly managed waste is a contributor to greenhouse gases, which have the potential to cause environmental harm. The resulting greenhouse gas emissions will subsequently contribute to climate change. The process of climate change typically extends over a decade, in contrast to meteorological fluctuations that can occur within weeks or days. As a result of climate change, however, extreme events are occurring more frequently at present. Along with the rise in water temperatures, environmental temperatures will also increase as a result of climate change. Below is a graphical representation of the causes and effects of climate change. Make a note of the vital information that you obtain!



2. Let's Discuss

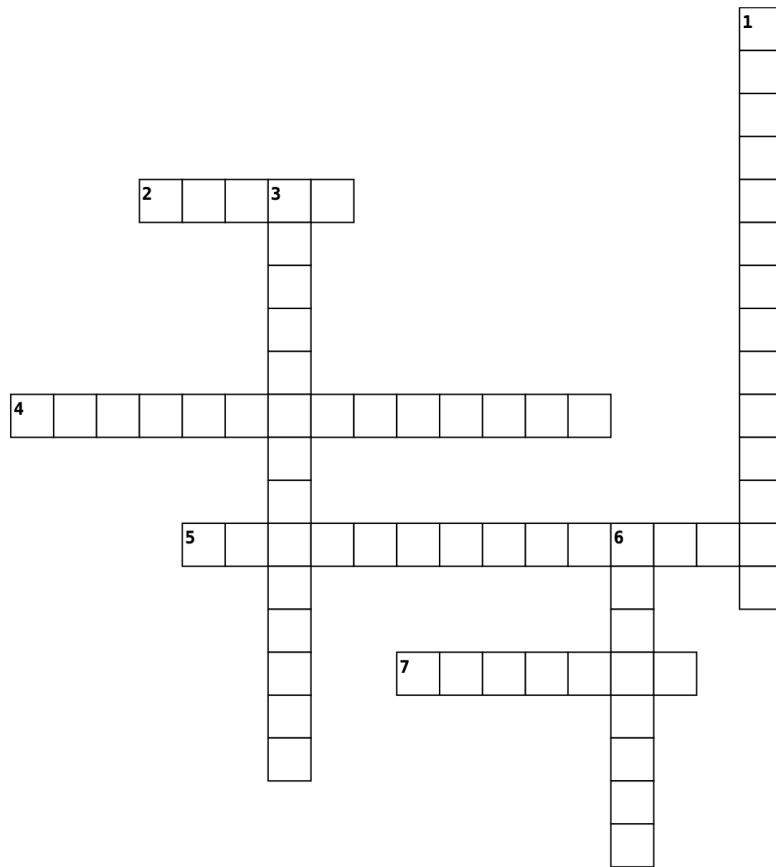
Complete the following table with your group members once you have a greater understanding of climate change. Share the results of the discussion in turn.

| Write down your ideas of climate change! | What can we do to mitigate the effects of climate change? |
|--|---|
| 1. Ice at the North Pole that is melting waste | 1. Effectively manage waste |
| 2. | 2. |
| 3. | 3. |
| 4. | 4. |
| 5. | 5. |
| 6. | 6. |
| 7. | 7. |

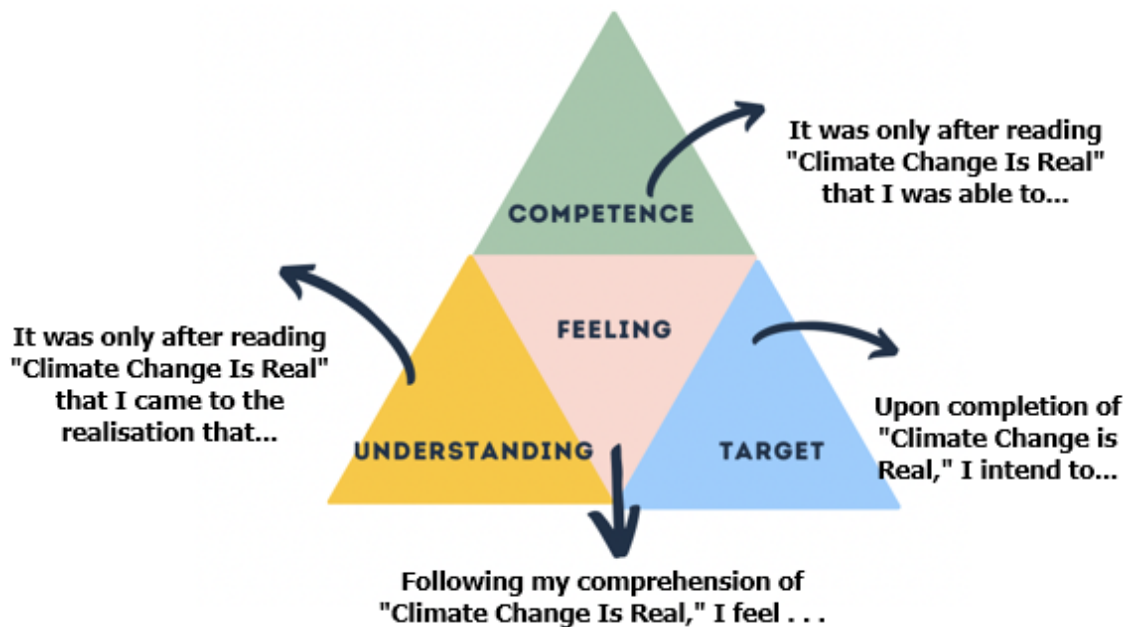
3. Let's Practice

Changes in climate have had an impact on numerous aspects of the planet. In some regions, for instance, the increasing temperature is precipitating extreme weather phenomena such as cyclones and more severe droughts. There have been notable alterations in precipitation patterns, leading to extreme drought in certain regions and severe inundation in others. Complete the accompanying crossword puzzle regarding climate change.

| CLUE |
|---|
| <p>ACROSS</p> <p>2. Goods or objects that are thrown away because they are no longer used.</p> <p>4. Another name for CO₂.</p> <p>5. A phenomenon where there is an increase in the average temperature of the earth's surface due to the amount of greenhouse gas emissions.</p> <p>7. The situation in which rainfall has been absent for quite some time.</p> <p>DOWN</p> <p>1. Extremely lengthy weather and temperature fluctuations</p> <p>3. Floods caused by overflowing tides.</p> <p>6. Gas produced by waste.</p> |



4. Let's Reflect



C. Meeting 3: Become a Zero Waste Hero: 4R

GOALS

Through this activity you can:

1. Recognise the Zero Waste Concept as a potential solution to the challenge of climate change
2. Become an advocate for zero waste by adhering to the 4R principles of refuse, reduce, reuse, and recycle

1. Let's Watch

ZERO WASTE

Improperly managed waste is a contributor to greenhouse gases, which have the potential to cause environmental harm. The resulting greenhouse gas emissions will subsequently contribute to climate change. One tangible measure that can be implemented to address the issue of waste is the adoption of a zero waste way of life.

The zero-waste principle encourages the prudent utilisation of single-use products in order to diminish the quantity and adverse consequences of waste. The objective is to prevent waste from ending up in landfills in order to conserve natural resources.

For more information on Global Citizenship and Zero waste concept through 4R (Refuse, Reduce, Reuse, and Recycle) please scan the QR code or visit the following website:



Global Citizenship

Source: <https://youtu.be/uLeReQPKR08>



Zero waste concept through 4R

(Refuse, Reduce, Reuse, and Recycle)

Source : <https://www.youtube.com/watch?v=MqAyI6caMv4>

After viewing the videos, jot down any pertinent information that you obtain.

.....

.....

BEING A ZERO WASTE HERO USING 4R



Children have the potential to become environmentally conscious individuals who actively contribute to waste reduction through the adoption of the 4R principles: Refuse, Reduce, Reuse, and Recycle. As individuals committed to zero waste practises, we possess the agency to select appropriate courses of action, engage in incremental yet impactful behaviours, and encourage our peers to actively participate in environmental conservation efforts. Are you familiar with the concept of Super 4R, everyone?



Refuse – It signifies abstaining from utilising products that are either not sustainable in nature or are utilised to an excessive degree.

One way to contribute to the reduction of waste in the environment is to decline products that are single-use or have excessive packaging, which ultimately end up in landfills.



Reduce - It entails diminishing the consumption of disposable items or those that generate an excessive amount of refuse. By selecting organic

or reusable products that are more environmentally favourable, we can reduce our consumption of plastic and products with excessive packaging, thereby becoming zero-waste heroes.



Reuse – It entails the practise of repurposing viable products or materials in order to prevent their disposal as refuse. One can contribute to the reduction of waste by encouraging companions to utilise reusable food containers and beverages, as well as by repurposing used paper into notepads.



Recycling - It involves transforming refuse materials into those that are suitable for reuse. Child advocates for zero waste may opt to organise and recycle plastic bottles, paper waste, and organic waste into alternative products that are functional.




Source : <https://www.youtube.com/watch?v=TjM5YRTRuSQ>

One notable action for waste awareness has been undertaken by a group of young people known as the Pandawara Group. To date, the Pandawara Group remains active in cleaning various major rivers, tributaries, and drainage systems, as well as several beaches across Indonesia. Here are some of the concrete actions they have taken.

Our children can also engage in meaningful waste awareness activities, similar to those carried out by the Pandawara Group. Let's complete the following prompts. Remember, every action you take will have an impact on the world.

ZERO WASTE HERO




I'm

I have

I think

Then What I can do



The illustration shows a boy superhero with a red mask and cape made of newspaper. He has a recycling symbol on his orange shirt. To his right are three yellow speech bubbles with text prompts. Below the speech bubbles is a yellow box for writing. At the bottom right is an illustration of a polluted Earth with factories, construction, and trash in the water.

2. Let's Play

We will play zero-waste snakes and ladders this time around. Kindly select the desired character by cutting it. One snake and ladder can accommodate up to four players.

THE RULES



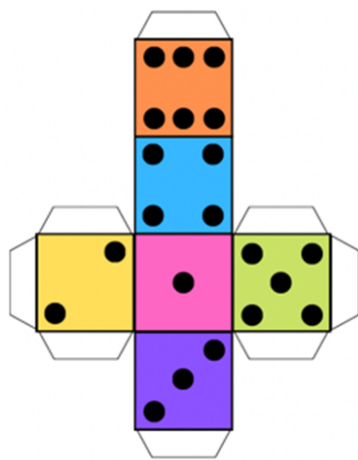
If a player steps on a ladder tile, the player can step up to the next tile.



If a player steps on a snake square, the player may retrace a few steps from the prior square



If a player steps on a recycle tile, it is required to select a card and adhere to the instructions printed on that card.



DICE

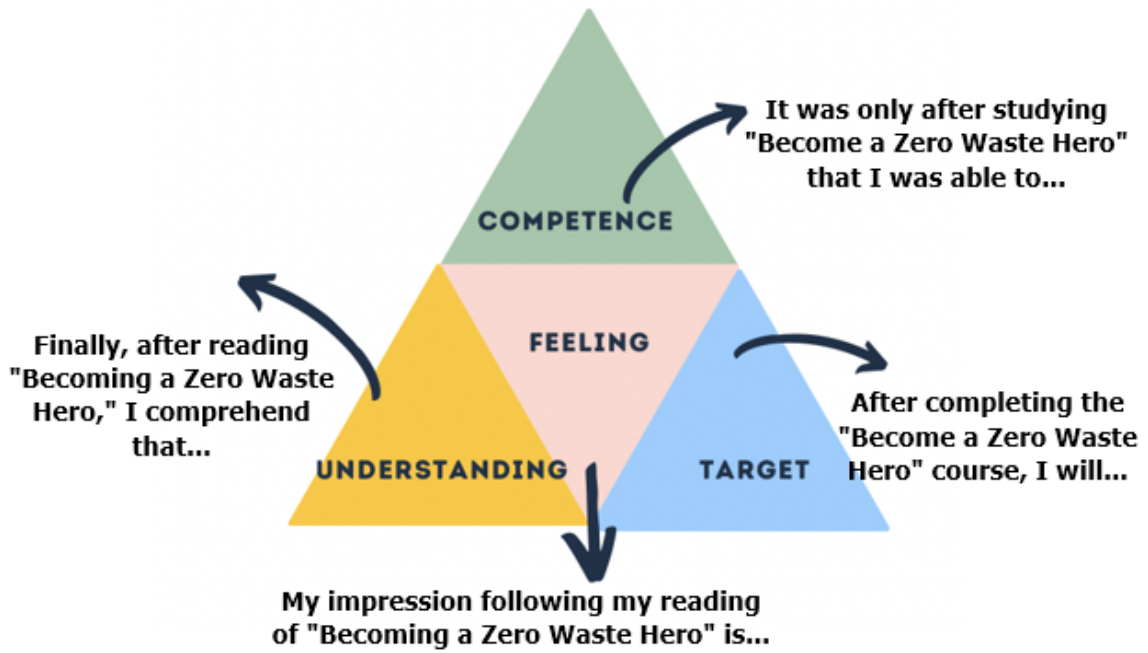


CHARACTER



| | | |
|---|---|--|
| <p>GOOD!</p> <p>You bring your own reusable Bottle.</p> <p>Please take 2 steps forward</p>  | <p>AWESOME!</p> <p>You collect plastic bottles for recycling.</p> <p>Please take 2 steps forward</p>  | <p>PHEW!</p> <p>You forget to turn off the TV</p> <p>Please take 3 steps back</p>  |
| <p>GOOD JOB!</p> <p>You borrow a book from the library.</p> <p>Please take 2 steps forward</p>  | <p>AWESOME!</p> <p>Walk or bike to school</p> <p>Please take a step forward</p>  | <p>DUHI!</p> <p>You buy food in Styrofoam containers.</p> <p>Please take 2 steps back</p>  |
| <p>AWESOME!</p> <p>You bring a reusable shopping bag</p> <p>Please go 3 steps forward</p>  | <p>GREAT!</p> <p>You use water as needed.</p> <p>Please take a step forward</p>  | <p>OUCH!</p> <p>You sip your beverage through a plastic straw.</p> <p>Please take a step back</p>  |
| <p>SUPER!</p> <p>You buy less packed food.</p> <p>Please go 3 steps forward</p>  | <p>GOOD!</p> <p>You reuse plastic drinking glasses as pencil holders.</p> <p>Please go 3 steps forward</p>  | <p>PHEW!</p> <p>You keep turning the tap on while brushing your teeth.</p> <p>Please take a step back</p>  |
| <p>CONGRATULATION!</p> <p>You finished your lunch.</p> <p>Please take a step forward</p>  | <p>DUHI!</p> <p>You buy drinks in plastic glass containers.</p> <p>Please take 2 steps back</p>  | <p>OUCH!</p> <p>You keep misplace your reusable water bottle and buy a new one.</p> <p>Please take 3 steps back</p>  |
| <p>CONGRATULATION!</p> <p>You use recycled materials for your art projects.</p> <p>Please go 3 steps forward</p>  | <p>OUCH!</p> <p>You forget to bring a reusable shopping bag</p> <p>Please take a step back</p>  | <p>OH NO!</p> <p>You're doing food waste.</p> <p>Please take 2 steps back</p>  |

3. Let's Reflect



D. Meeting 4: Sorting Waste

GOALS

By engaging in this exercise, you will be able to:

Identify the concept of waste segregation as a responsibility of global citizenship.

1. Let's Watch

Hello, Zero Waste Heroes. Are you aware that waste continues to be a significant issue in Indonesia? Today, we will embark on an exploration of the intriguing world of waste segregation. As Zero Waste Heroes, we can reduce greenhouse gas emissions by actively participating in effective waste management practices. Proper waste management can be achieved through the segregation of waste according to its type. Let us learn how to categorize waste based on its classification..

Scan the barcode or visit the following website to learn how to sort waste:



Source <https://www.youtube.com/watch?v=lx12mdZstDw>

After watching the video on the side, note down the important things you learned

.....

.....

2. Let's Read

For more information on waste sorting, please refer to the following text.

SORTING WASTE

Various public spaces may feature waste receptacles adorned with vibrant hues. The colours utilised on the garbage can are not coincidental; rather, they serve a distinct function. The fact that each colour in the waste box corresponds to a distinct type of waste facilitates the accurate sorting of waste by type. Organic waste, inorganic waste, hazardous and toxic waste (B3) are the three distinct categories of waste.



Organic Waste, Inorganic Waste, Hazardous and Toxic Waste (B3)

1. Organic Waste

Organic waste refers to waste that is readily biodegradable in the environment, such as food scraps, plant materials, and tree branches. Organic waste is typically collected in green-colored waste bins.

2. Inorganic Waste

Inorganic waste refers to waste that is more challenging to decompose, including materials such as plastic, metal cans, and Styrofoam. Inorganic waste is typically collected in yellow-colored waste bins.

3. Hazardous and Toxic Waste (B3)

hazardous waste is typically collected in red-colored waste bins. This type of waste poses risks to human health, animals, and the surrounding environment. Examples of hazardous waste include glass, packaging from detergents or other cleaning agents, as well as insecticides and similar substances.

3. Let's Discuss

Participate in a group discussion regarding the appropriate types of waste that can be placed in the designated bins.



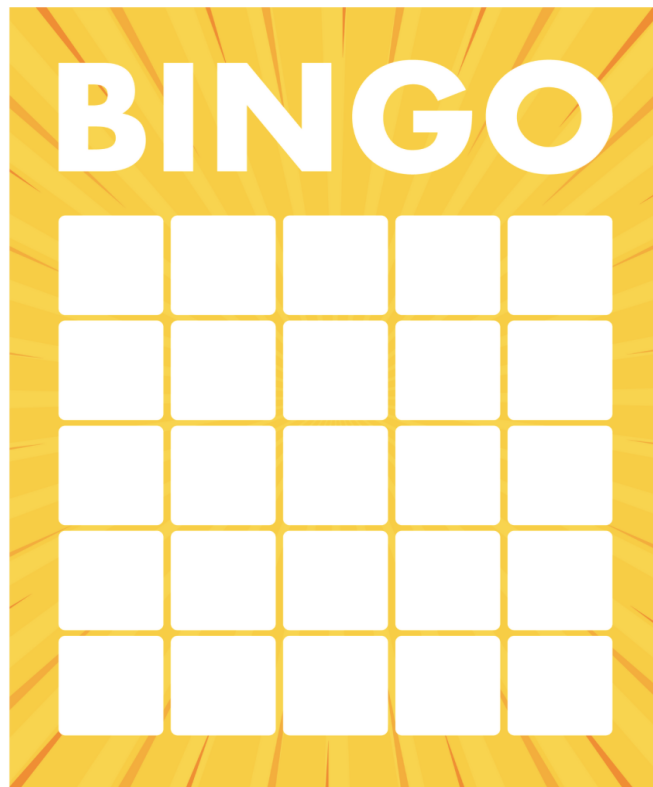
4. Let's Practice

Please indicate if the following assertions are TRUE (✓) atau FALSE (✗) and provide reasons for your answer.

| NO | STATEMENT | TRUE | FALSE | REASON |
|----|--|------|-------|--------|
| 1 | Laras placed the orange peels in the green bin and closed it. | ✓ | ✗ | |
| 2 | Uncle drank from a plastic cup, then tossed it in the yellow bin. | ✓ | ✗ | |
| 3 | The blue bin is used for B3 waste | ✓ | ✗ | |
| 4 | Materials that are difficult to break down, such as plastic, cans, and styrofoam, are classified as inorganic waste. | ✓ | ✗ | |
| 5 | Sorting waste can help us reduce greenhouse gas emissions. | ✓ | ✗ | |

5. Let's Play

Participants will engage in a bingo game that corresponds to the specific category of waste they select. Reach a consensus with your cohort of acquaintances regarding the thematic framework for your bingo game. If the theme selected is "Organic Waste," please provide a list of organic waste materials.



6. Enrichment



Source: <https://www.letsreadasia.org/book/sedotani-si-ratu-sampah?bookLang=6260074016145408>

Sedotani is of the opinion that people continue to disregard the environment. Accompany Sedotani on an expedition to demonstrate this. Does Sedotani's conviction hold validity? Please provide your analysis of the narrative while following it.

7. Let's Reflect



E. Meeting 5: Reduce and Reuse

| GOALS |
|---|
| <p><i>Through this activity, you will be able to:</i></p> <p>Identify the concepts of reduction and recycling in everyday life.</p> |

Zero Waste Hero, we learned in the previous course about waste types and how to utilise 4R superpowers to process waste. This time around, we will examine the two Rs of waste management: Reduce and Recycle.

1. Let's Watch

Our waste does not all ultimately wind up in landfills. Certain refuse materials are recyclable. Recycling consists of dismantling the initial product and subsequently reshaping it into a new product featuring an altered form. The success story of a refuse paper craftsman who attained success is detailed below.



To view the paper waste processing success story, please scan the QR code or visit the following website: https://www.youtube.com/watch?v=tAbJ5WUFa_Y

After viewing the video on the side, jot down any pertinent information that you obtain.

.....

.....

.....

2. Let's Read



Text source: <https://waste4change.com/blog/daur-ulang-sampah>

The Image: <https://kaltimtoday.co/wp-content/uploads/2019/09/IMG-20190930-WA0018.jpg>

Reprocessing waste or consumable products into new, functional products constitutes waste recycling. Additionally, recycling prevents waste from accumulating further or ending up in landfills, where it degrades the environment.

Nevertheless, it is important to note that not all forms of garbage possess the capability to undergo recycling procedures. There exist numerous elements that exert influence, such as insufficient recycling technology, the state of residual goods rendered unusable or impractical, and the presence of non-recyclable garbage. The waste materials commonly encountered in daily life are plastic, glass, metal cans, paper, and used cooking oil or used oil.



Did You Know?

Waste management in Indonesia has not been conducted optimally throughout the country.

The Ministry of Environment and Forestry indicates that there has been at least 64 million tons of waste produced in Indonesia (Sumartiningtyas, 2019). The waste composition is as follows.

Waste Management

1. 60 % carried and brought to the final landfill
2. 30 % of waste is not managed so polluting the environment
3. 10 % is recycled

Source: www.kompas.com

Not all waste can be processed for recycling. Observe the following waste data: only 10% of waste is recyclable, while 60% is transported and deposited in landfills, and the remaining 30% is unmanaged and contributes to environmental pollution.

In addition to recycling, accumulated waste can be addressed through reduction. Reduction is the initial step in decreasing the amount of waste produced. As the saying goes, 'It is better to prevent than to cure.'

3. Let's Play



Look at the pictures above and draw the lines from the things that can be recycled to the recycling truck!



4. Let's Discuss

Please direct your attention to the visual representation provided below. Engage in a collaborative discourse with your peers to match the given image with a corresponding statement elucidating effective strategies for waste mitigating generation in a responsible manner.

| | | |
|---|-------|---|
| 1 | (...) | Bring your own drinking container from home. |
| 2 | (...) | Drink directly from a glass or use a stainless steel straw. |
| 3 | (...) | Bring your own shopping bag when shopping. |
| 4 | (...) | Bring your own food container. |
| 5 | (...) | Wipe away perspiration using a handkerchief. |



5. Let's Research

Let us investigate the refuse production initiatives undertaken by the school community, children. Compile the information into the following table using ten members of the school. Conclude this activity by writing your name on the final line.

| No | Name / Class | Ever done recycling | Never recycling | Currently generated paper waste (including food wrappers, bottles, and glassware) | The amount of paper waste produced today (in sheet) | Bring food containers from home | Bring a drinking container from home |
|----|--------------|---------------------|-----------------|---|---|---------------------------------|--------------------------------------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Formulate a conclusion based on the outcomes derived from the conducted activity.

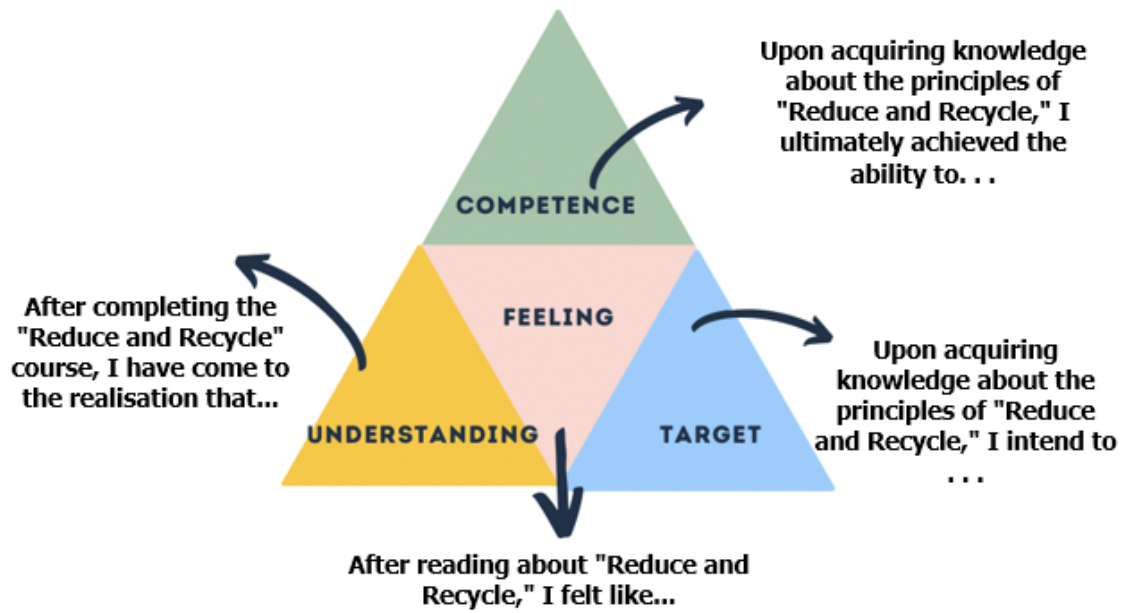
.....

.....

.....

.....

6. Let's Reflect



F. Meeting 6: Time for Action: Recycling

GOALS

Through this activity you can:

Make drawstring pencil cases out of recycled plastic bottles

Zero Waste Heroes, we learned about the recycling procedure in the previous lesson. This time around, we will discover how to repurpose used bottles that were previously discarded into new, functional objects.

Utilise the camera on your cell phone to record the process of creating recycled drawstring pencil cases as you demonstrate your ingenuity in recycling. You can utilise this video to create a video tutorial that you subsequently distribute to others. Best of success!

1. Let's Create



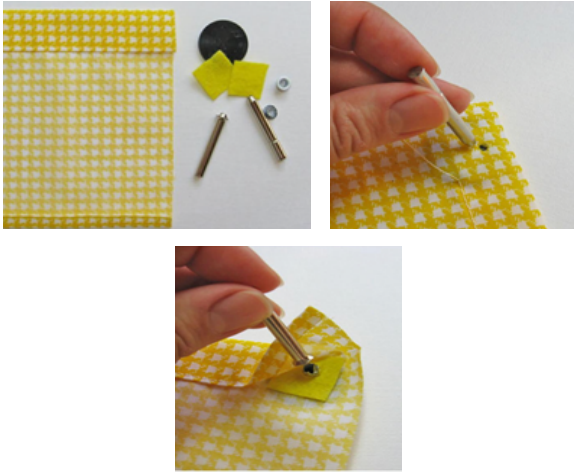

DRAWING PENCIL HOLDER



Tools & Materials

1. Plastic bottles
2. Patchwork
3. Eyelets
4. Ribbon or string
5. Beads
6. Needle and thread
7. Wax and needle

Procedures

| | |
|---|--|
| <p>1. Cut the top of the bottle to the desired height. You can use a rubber band to mark a line for creating holes. Make holes approximately 2 mm in size using a needle or a heated poking tool. Determine the size of the fabric top. If the bottle's diameter is 26 cm, add 2 cm. Therefore, the length of the fabric you will need is 28 cm, and the height is 15 cm.</p> |  |
| <p>2. Fold the fabric in 0,5 cm from the bottom and 3 cm from the top in order to conceal the unfinished edges. Integrate the perforations. Complete the upper edge with stitching.</p> |  |
| <p>3. The sides should be sewn. Aim precisely one centimetre away from the periphery. Although it appears enclosed in the image, the underside should be sewn into a flared shape. You may request your instructor's assistance in ironing the seams for greater neatness.</p> |  |
| <p>4. Attach the cap with thread to the bottle. Position it on top of the bottle with the folded edge plainly visible beneath the aperture after inverting it. After that, raise the fold until it is 1 mm below the opening. Reattach the needle using a seam.</p> |  |

5. The fabric top's dimensions must be set 2 cm may be added to a container with a diameter of 26 cm. The necessary fabric dimensions are therefore 28 centimetres in length and 15 cm in height.



Tutorial Source: <https://www.livemaster.ru/topic/106447-iz-nenuzhnogo-nuzhnoe-sumochki-iz-butylak>

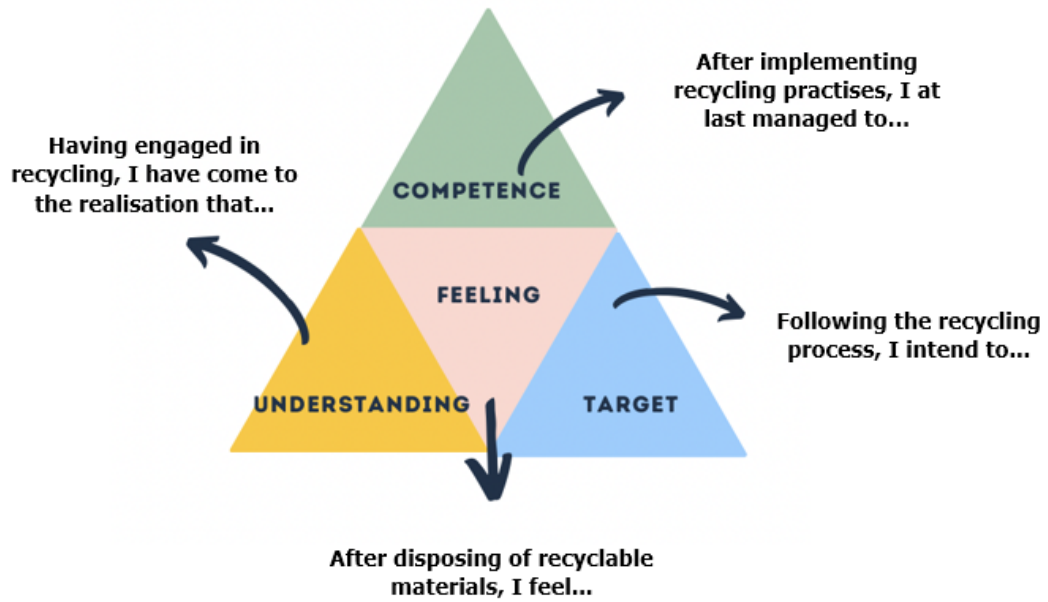
CONCLUSION

.....
.....
.....

CHALLENGES MADE

.....
.....
.....
.....

2. Let's Reflect



G. Meeting 7: Zero Waste Heroes and Their Dreams : Creating Poster or Video

| GOALS |
|--|
| <p><i>By participating in this task, you can:</i></p> <p>Create an informative poster or video regarding the Zero Waste Hero campaign</p> |

Zero Waste Heroes, as we saw in the previous lesson, waste has the potential to contribute to global warming. With the assistance of 4R, we can contribute to the planet’s health. This time around, we will invite other peers to help protect the planet by creating a poster or video.

1. Let’s Observe

Observe the two posters that appear below. Comment on the following poster with your thoughts.



| MY VIEW CONCERNING THE POSTER |
|--|
| <p>.....</p> <p>.....</p> <p>.....</p> |

2. Let's Create

Creating a Poster on Waste Awareness and Climate Change

Goal : Creating a poster that encourages others to be mindful of waste and climate change.

Tools and Materials:

1. A3 paper
2. Pencil and eraser
3. Ruler
4. Coloring tools (colored pencils/crayons)

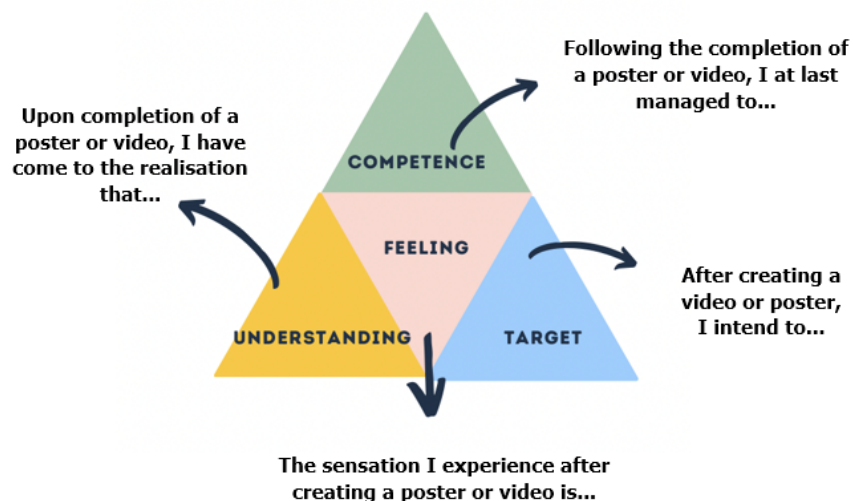
Procedures:

1. Choose the concept and topic for your poster.
2. Craft short, informative statements.
3. Include images that align with your message.
4. Use bright colors and write your message clearly to attract the attention of others.

3. Let's Share

Zero Waste Heroes, share the images you have created on social media platforms such as WhatsApp status, Instagram, and TikTok. In addition to posters, you can also create videos. If you have difficulty uploading your poster, ask for assistance from your teacher or parents.

4. Let's Reflect



3. Read the following text.

It has been observed by scientists that there has been a nearly 60 percent increase in the rate of contraction of the perennial ice sheet since the 1990s. Quantified, this would imply that between 1994 and 2017, 28 trillion tonnes of eternal ice melted. Rapidly melting glaciers or the eternal ice sheet, which collectively occupy 10 percent of the Earth's land surface, would instigate a series of events, including the following:...

- a. the sinking of coastal cities due to rising sea levels
 - b. there was a lot of rain that fell on places in the southern part of the earth
 - c. the creation of hot clouds which can be dangerous for living creatures
 - d. identification of various new marine animals at the South Pole and North Pole
4. To slow down global warming, we have to start adjusting to less plastic waste because...
- a. it can only be decomposed for hundreds of years
 - b. the price is expensive compared to other waste
 - c. cause the factories to declare bankruptcy
 - d. make anyone enjoy utilising it
5. Nowadays, it is expected of young people to spearhead initiatives that lessen global warming, such as becoming zero-waste heroes. One way to go about doing this is...
- a. always bring your own shopping bag
 - b. want to eat fruit and veggies only
 - c. avoid going to crowded events
 - d. take a walk everywhere, anytime
6. Note the statement that follows:
- 1) Utilise outdated newspapers to adorn tissue cases.
 - 2) Repurposed tyres as brand-new tyres.
 - 3) Recycled paper is attached to fresh books.
 - 4) Crafts involving beverage vessels and pencil holders.

Among these statements, the use of waste without recycling is

7. What factors contribute to the climate change that our waste generates?

8. What steps can you, as a student, undertake to safeguard the planet against climate change?

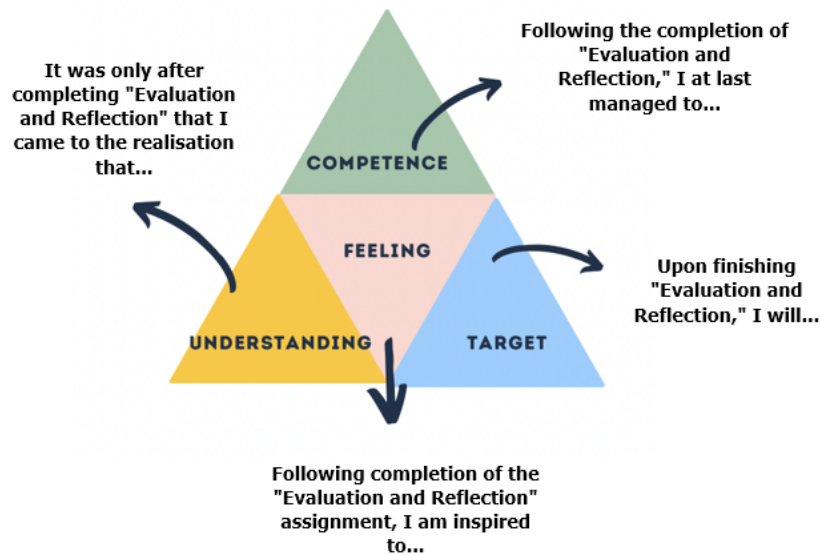
9. Fill in the gaps in the following paragraph.

Climate change is real. (1) Rainfall causes (2) The Of the Aedes aegypti mosquito increases. This of course causes disease (3).... Increase.

| | | |
|--------------|----------|---------|
| Increased | breeding | growth |
| dengue fever | plastic | weather |

10. Zero Waste Heroes, the 4Rs have been completed. Which of the 4R behaviours, in your opinion, is most effective at decreasing waste volume?

Let's Reflect



I. Meeting 9: Zero Waste Hero Campaign and Sharing Session

| GOALS |
|---|
| <p><i>Through this activity you will be able to :</i></p> <p>Present the outcomes of their real-life learning actions and share the best practices you have implemented as Zero Waste Heroes Through 4R.</p> |

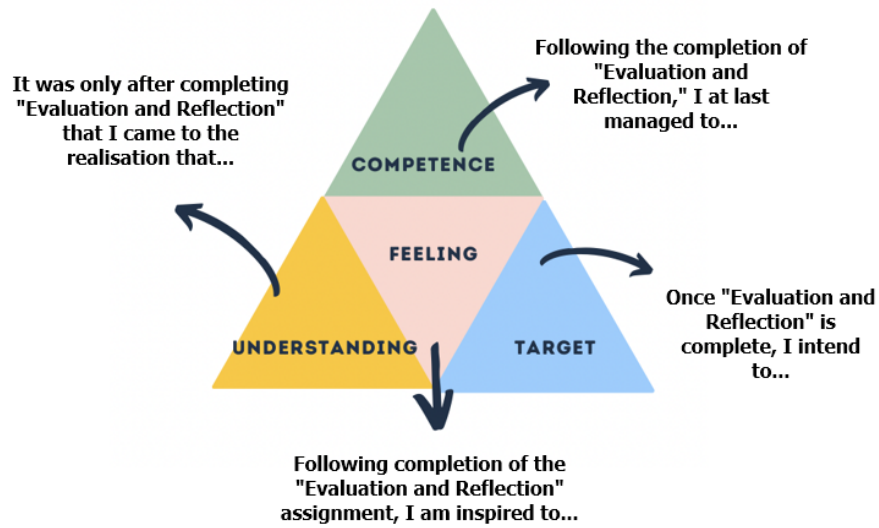
Zero Waste Heroes, we now have a deeper understanding of the importance of being mindful of waste to preserve the integrity of our planet. Let us share the results of our initiatives with the entire school community. Design an action plan that you will undertake in collaboration with your teachers and fellow Zero Waste Heroes.

ZERO WASTE HERO CAMPAIGN AND SHARING SESSION PLANING

| | |
|--------------------------------------|--------------|
| DAY : | DATE: |
| PURPOSE OF THE ACTIVITY | |
| | |
| DESCRIPTION OF THE ACTIVITIES | |
| | |

| WHAT IS REQUIRED TO BE PREPARED FOR | CHALLENGES TO BE CONQUERED AND HOW TO OVERCOME THEM |
|--|--|
| | |

Let's Reflect

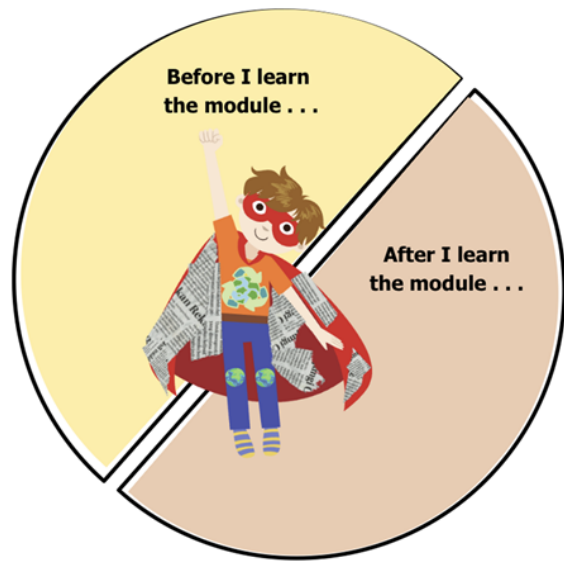


Zero Waste Hero, you have completed this module and the thirty-day challenge in order to attain the status of Zero Waste Hero. Tell us the conclusion to the activities that you have completed.

The 30-day challenge

"I'm Indonesian, I'm Global Citizen"

| | | | | |
|---|--|------------------------------------|--|--|
| Taking the 30-day zero waste hero module challenge earnestly. | Finding out information about national waste day | Bring handkerchief | using handkerchief instead of tissues | Bring a reusable water bottle |
| Bring a reuseable food container | Say no to plastic straw | Pack a low-waste lunch | Learning about the causes and impacts of climate change. | Learning about global climate change |
| Repurpose old books as notepads | Bring a reusable shopping bag | Avoid food waste | Food sharing | Use or buy less packed food |
| Place waste in the trash | Learning zero waste and 4R | Journal writing as zero waste hero | Picking up waste on the street | Walk or bike to school |
| Planing a recycle tutorial video | Making a recycle tutorial video | Posting a recycle tutorial video | Doing plastic recycle | Doing paper recycle |
| Making zero waste or 4R poster | Making zero waste or 4R poster | Promoting Zero Waste Hero Campaign | Influencing others to become a zero waste hero | Being a global citizen through zero waste here |



References

Kompas. (2023). Karya Seni Anyaman: Pengertian dan Jenisnya (2023). [Online]. Diakses dari <https://www.kompas.com/skola/read/2021/02/18/171640269/karya-seni-anyaman-pengertian-dan-jenisnya?page=all>

Neumann, Janette. (2022). *Global Citizenship Education and Teacher Learning and Change: Lessons Learned from within a Nascent Movement*. CGU Theses & Dissertations, 459. https://scholarship.claremont.edu/cgu_etd/459

Waste for Change. (2022). Daur Ulang Sampah dan Upaya Atasi Penumpukan Sampah (2023). [Online]. Diakses dari <https://waste4change.com/blog/daur-ulang-sampah/>

Co - Curricular Project Teaching Module 2024

Global Citizenship Education (GCED)



Ministry of Education,
Culture, Research, and Technology
Republic of Indonesia



APCEIU

Asia-Pacific Centre of
Education for
International Understanding
유네스코 아시아태평양 국제이해교육원