

**Stage.02**  
**Zero Waste School Program (ZWSP)**

| <b>Eco-Activities #1: Waste Separation</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |
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| <b>Outcome Learning/ Purpose</b>           | <ul style="list-style-type: none"> <li>Knowing the 3 categories of waste types: organic, recyclable and residue according to the #GerakanNasionalPilahSampahDariRumah.</li> <li>Understanding that all kinds of waste are bad, always makes life difficult because we have to take care of it.</li> <li>Understand that waste also pollutes the environment.</li> <li>Motivate students to try not to produce waste.</li> <li>Before the lesson educator will find out about the recyclables from the nearest Waste bank</li> </ul> <p><a href="https://drive.google.com/open?id=1eo6_R96wuMeSMdoErZgEJvn_XycyYU4zPe1ccQHoch8">https://drive.google.com/open?id=1eo6_R96wuMeSMdoErZgEJvn_XycyYU4zPe1ccQHoch8</a></p> |            |
| <b>Lesson 1</b>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |
| <b>Opening Activities</b>                  | Watch an animated film about waste separation: “Tami Wereng” and then answering questions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10 minutes |
| <b>Main Learning Activities</b>            | <ul style="list-style-type: none"> <li>The educator gives explanations about 3 types of waste and shows them the example of each waste. Recyclable waste is described in accordance with the local Waste bank demand.</li> <li>The educator asks the students what kind of waste that they usually find in their environment.</li> <li>Students will categorize waste into 3 types of waste : organic, recyclable and residue.</li> </ul>                                                                                                                                                                                                                                                                            | 25 minutes |
| <b>Reflections</b>                         | Answering questions related to learning activities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5 minutes  |
| <b>Lesson 2</b>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |
| <b>Opening Activities</b>                  | Sing a song “3 Cara kelola sampah” (3 ways to take care of waste).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5 minutes  |
| <b>Main Learning Activities</b>            | Playing games “Memilah Sampah” (Separating waste). <ul style="list-style-type: none"> <li>2-3 groups of students run relay to separate waste (prepared by the educator) into assigned boxes (organic, recyclable and residue).</li> <li>Educator checks and discusses with the students about the result.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                 | 20 minutes |
| <b>Reflection</b>                          | <ul style="list-style-type: none"> <li>Answering questions related to learning activities.</li> <li>Label waste bins around the school for 3 types of waste</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 15 minutes |

| Eco-Activities #2 : Bio Decomposition Experiment |                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |
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| <b>Outcome Learning/ Purpose</b>                 | <ul style="list-style-type: none"> <li>students learn the process of bio decomposition through experimentation.</li> <li>students realize that the easiest to handle is the organic waste because we can take care of it ourselves, it bio decomposes.</li> </ul> <a href="https://drive.google.com/open?id=1VMvYpVxob_gwS_zmBZe0mSNPSbDHSF38r6XjQOgnDZ4">https://drive.google.com/open?id=1VMvYpVxob_gwS_zmBZe0mSNPSbDHSF38r6XjQOgnDZ4</a> |            |
| <b>Opening Activities</b>                        | Explanation of the steps regarding the experimental activity and its purpose.                                                                                                                                                                                                                                                                                                                                                               | 5 minutes  |
| <b>Main Learning Activities</b>                  | In this experiment, students mix soil, organic waste, and pieces of plastic and insert it into a container made from up-cycled water bottle.                                                                                                                                                                                                                                                                                                | 30 minutes |
| <b>Reflection</b>                                | <ul style="list-style-type: none"> <li>Tell the students to make their own hypothesis about the result of this experiment.</li> <li>Students observe the experiment for 2-3 weeks and record which elements bio decompose and which don't.</li> </ul>                                                                                                                                                                                       | 5 minutes  |

| Eco-Activities #3: Bio Decomposition Through Story of Bacteria |                                                                                                                                                                                                                                                                                                                                                                                   |            |
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| <b>Outcome Learning/ Purpose</b>                               | <ul style="list-style-type: none"> <li>Students learn through a story that bio decomposition is done by bacteria.</li> <li>Students realize that bacteria can only break down organic waste.</li> </ul> <a href="https://drive.google.com/open?id=1quM0TjEJglkvldVeUZI6_UIPz8sOJt3n0KJn-2gKuTA">https://drive.google.com/open?id=1quM0TjEJglkvldVeUZI6_UIPz8sOJt3n0KJn-2gKuTA</a> |            |
| <b>Lesson 1</b>                                                |                                                                                                                                                                                                                                                                                                                                                                                   |            |
| <b>Opening Activities</b>                                      | Discussion about organic waste management in students' homes and in the local community.                                                                                                                                                                                                                                                                                          | 10 minutes |
| <b>Main Learning Activities</b>                                | <ul style="list-style-type: none"> <li>Educator reads the story of "Bakta and Eri" and students answer the related questions.</li> <li>Students draw illustrations based on the story of "Bakta and Eri".</li> </ul>                                                                                                                                                              | 25 minutes |
| <b>Reflections</b>                                             | <ul style="list-style-type: none"> <li>Question and answer using the questions contained in the story "Bakta and Eri".</li> <li>Observing the results of the experiment (Eco-activities #2 on ZWSP volume 2)</li> </ul>                                                                                                                                                           | 5 minutes  |

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|                                 | <ul style="list-style-type: none"> <li>Homework: Finishing "Bakta and Eri" illustration</li> </ul>           |            |
| <b>Lesson 2</b>                 |                                                                                                              |            |
| <b>Opening Activities</b>       | Create groups and arrange stories "Bakta and Eri" which have finished drawing illustrations by the students. | 5 minutes  |
| <b>Main Learning Activities</b> | Retelling the story of "Bakta and Eri" using puppets prepared by the educator.                               | 30 minutes |
| <b>Reflection</b>               | Sing the song "3 Cara Kelola Sampah" (3 ways to take care of waste).                                         | 5 minutes  |

| <b>Eco-Activities #4 : Bio decomposition Through Bacteria Game</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |
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| <b>Outcome Learning</b>                                            | Students learn how bacteria can easily decompose organic waste through a game.<br><br><a href="https://drive.google.com/open?id=1IANB50n0A_fjokm1K7gdAJS_k_AC1QvLBf2hltK5thM">https://drive.google.com/open?id=1IANB50n0A_fjokm1K7gdAJS_k_AC1QvLBf2hltK5thM</a>                                                                                                                                                                  |            |
| <b>Opening Activities</b>                                          | Discussion based on the story of "Bakta and Eri" and questions related to lesson 3 (non-organic waste).                                                                                                                                                                                                                                                                                                                          | 5 minutes  |
| <b>Main Learning Activities</b>                                    | <ul style="list-style-type: none"> <li>"Bacteria Game (Permainan Bakteri)".</li> <li>Some students form firm and loose bonds representing non-organic and organic matter and the rest of the students try to tear them apart.</li> <li>Students learn that the firm non-organic bond is difficult to separate by the bacteria.</li> </ul>                                                                                        | 25 minutes |
| <b>Reflection</b>                                                  | <ul style="list-style-type: none"> <li>Discussion and question and answer about "Bacteria Game".</li> <li>Evaluate student's hypothesis and result of the experiment (Eco-activities #2 on ZWSP volume 2)</li> <li>Remove plastic from the up-cycled bottle, and use the rest of the mix to plant seed.</li> <li>Motivate students to reduce the use of single-use plastic because plastic can not be bio decomposed.</li> </ul> | 10 minutes |