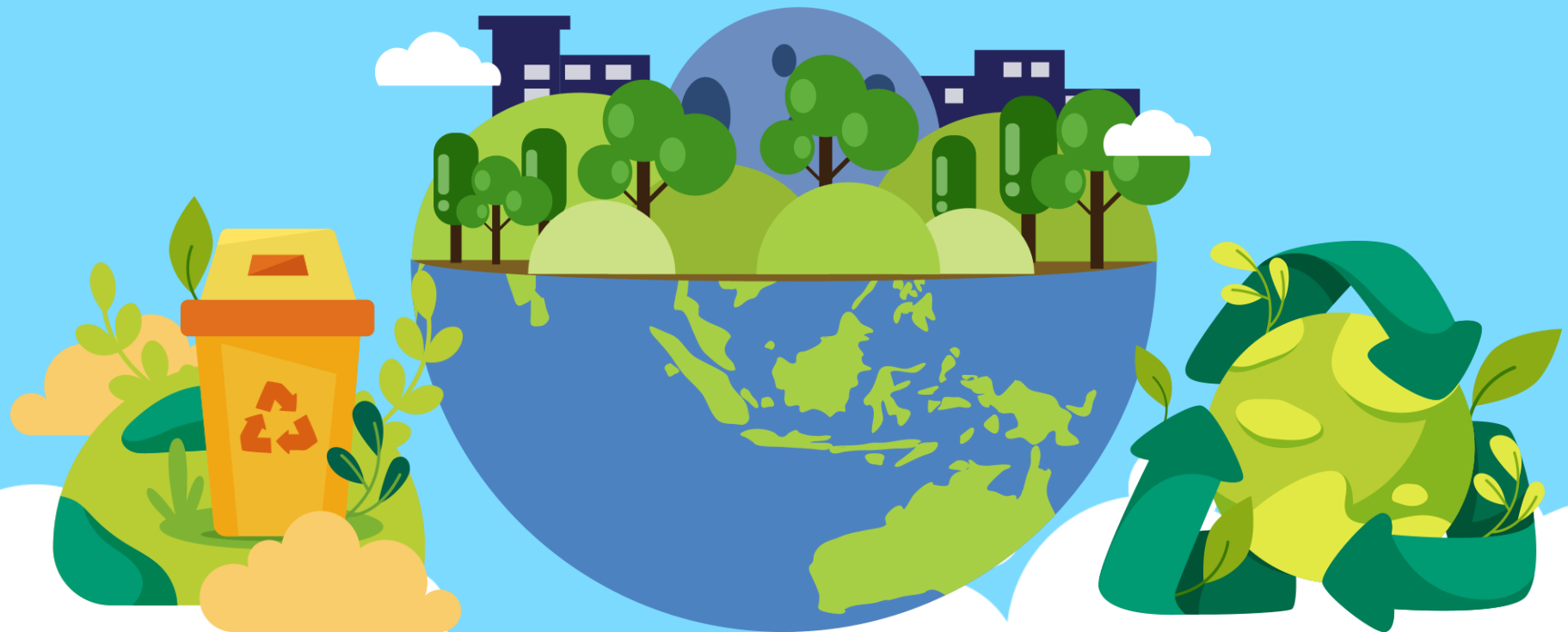
Lesson 7

Changes in Matter and Waste Reduction

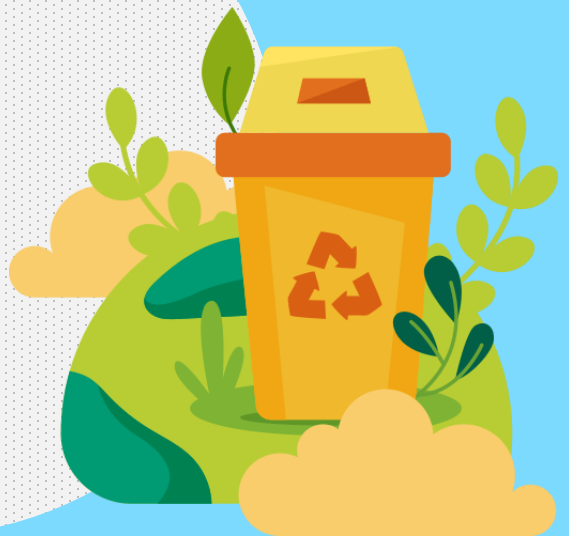


Changes in Matter can be beneficial or harmful to living things and the environment. Knowing the physical and chemical changes that materials undergo help us determine the best way to manage materials and minimize waste, thereby preventing environmental problems.

Consider the following in Managing your waste:

1. Used cans , either crushed or in either original form can be reused or recycled . However, some tin cans end up in landfills especially if they have undergone chemical change (rusting). When a metal starts to rust , it is hard to reuse because rust will continue to destroy it . To prevent metal from rusting , paint the surface to prevent it from reacting with oxygen.

2. The most common example of chemical change in spoiling of food. When food spoils, you cannot eat anymore, or else you will poisoned. You have to discard it. But discarding it does not necessarily mean you will generate waste. Rotten or spoiled food, as well as fruit and vegetable peelings and other food scraps, can be used for composting.



KITCHEN WASTE FERTILIZER

Let's explore

Science skills: Observing, communicating

Time Frame: 15-30 minutes(preparation time)

3-6 months (observation time)

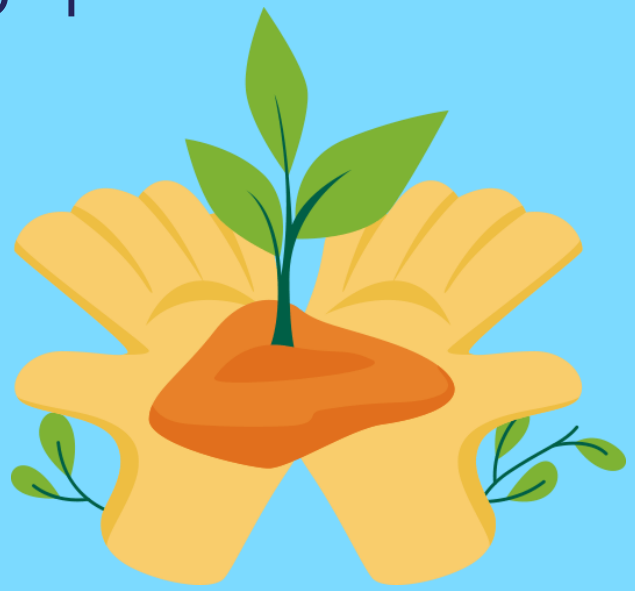
You will need:

- **Big can of cooking oil**
- **Soil**
- **Kitchen waste**

You will;

1. **Form a group with three members . You will make a compost bin either in the backyard of your house or in school.**
2. **Secure your large container. Put a small amount of soil until it fits 1/8 of the can.**
3. **Add kitchen waste in the can and cover it with more soil , Make sure the kitchen waste you put in the can are biodegradable.**
4. **Repeat the procedure until the can is almost full.**
5. **Set aside the compost bin and let it decay completely, you may stir the mixture every now and then**
6. **Record your findings on which waste decays the fastest and which decays the slowest.**

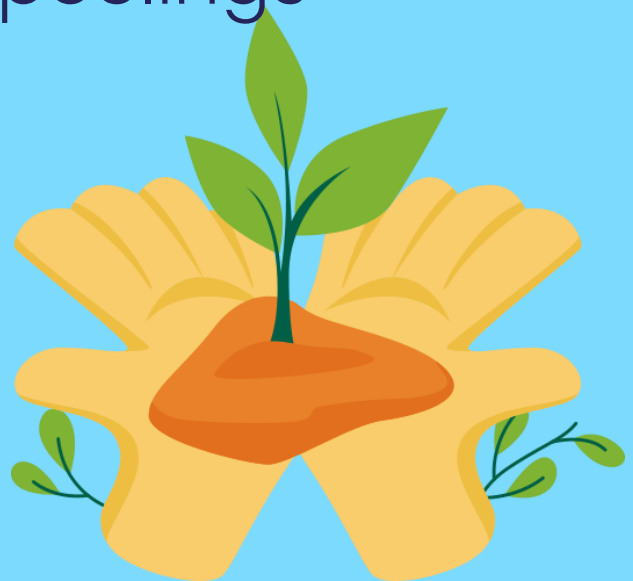
“One way computing is what we called **Vermicomposting.** It makes use of worms to speed up the composting process .



Let’s recall

Describe how chemical change can significantly reduce the following waste materials.

1. Soft drink cans
2. Spoiled or rotten foods
3. Fruit and vegetable peelings



Let's check

Answer the following questions briefly.

1. How does Physical and Chemical changes in matter can help us in waste management?
2. How can the changes in material affect the environment?

Let's apply it!

Below are example of waste materials that can be found at home. Think of ways on how these material can be manage .

Waste Material	Ways to Manage
1. Trimmed grass	
2. Broken pots	
3. Rotten fruits	
4. Expired can goods	
5. Metal bottle cap	
6. Torn cloth/ retaso	
7. Plastic bottle	
8. . Broken glass	
9. Vegetable peelings	
10. Old newspaper	

Let's Summarize

- Physical change is a change in the form and appearance of a matter, which it composition remaining the same.
- Chemical change result in the formation of a new chemical substances.
- The presence and absence of oxygen can bring changes to a material.
- The application of heat to materials can alter their physical properties as well as chemical properties.
- Some changes brought about by heat a irreversible.
- The physical and chemical changes that matter undego help determine the best way to manage these materials and minimize waste.

UNIT II: LIVING THINGS AND THEIR ENVIRONMENT

You came from your parents. The chicks came from their parent chicken . The Papaya plant came from its parent plant. People , Plants and animals have the ability to reproduce their own offspring. When two or more living things produce their offspring, they are involved in a process called **reproduction** .

Reproduction is important part of the life of all living things because it ensures the continuity of life. Humans , animals, and plants have one thing in common . They all reproduce.

In this unit, you will learn and understand how body parts work to help living things reproduce. You will also explore the interactions of living things in estuaries and intertidal zones.

THANKS