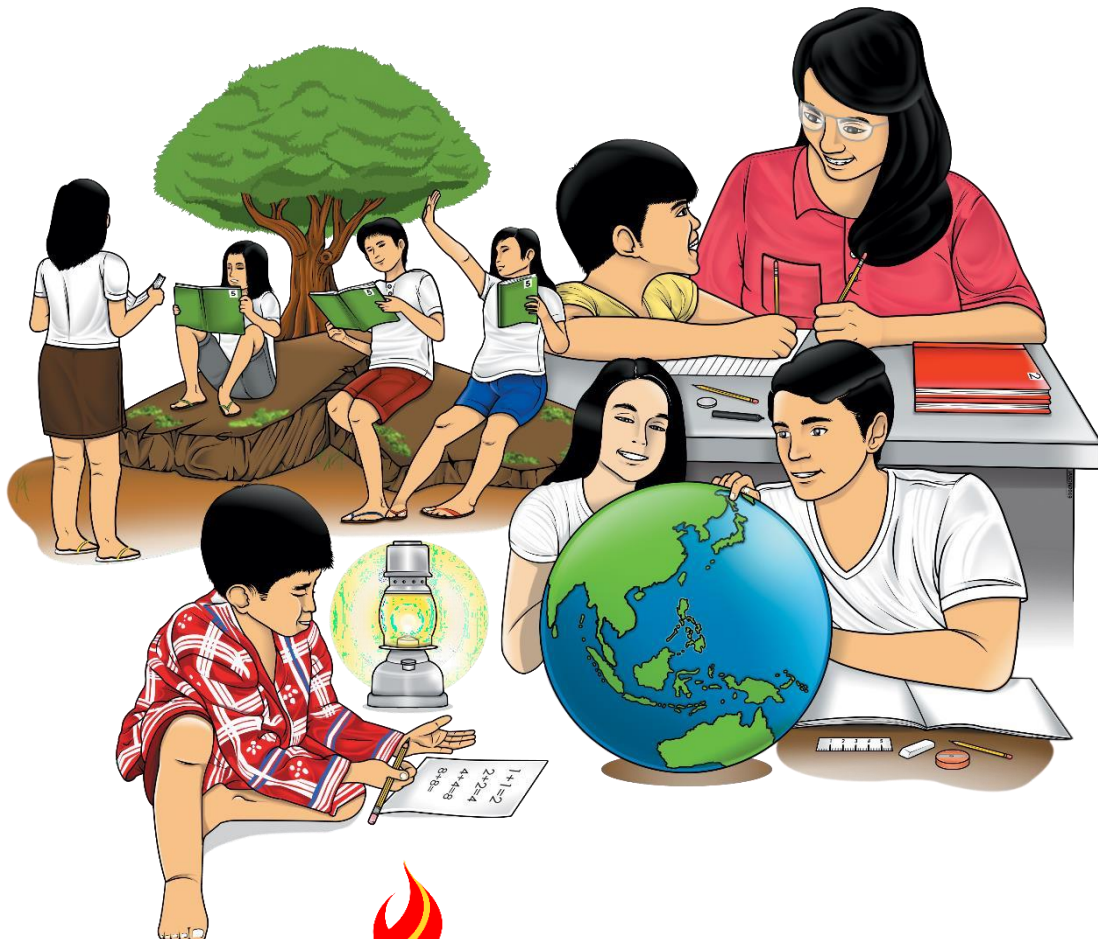


6

# Technology and Livelihood Education

## Industrial Arts – Module 12: Recyclable Products/ Waste Materials



**TLE – Grade 6**  
**Alternative Delivery Mode**  
**Industrial Arts – Module 12: Recyclable Products/ Waste Materials**  
**First Edition, 2020**

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Published by the Department of Education  
Secretary: Leonor Magtolis Briones  
Undersecretary: Diosdado M. San Antonio

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Printed in the Philippines by \_\_\_\_\_

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# **Technology and Livelihood Education**

## **Industrial Arts – Module 12: Recyclable Products/ Waste Materials**

## **Introductory Message**

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by- step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



## ***What I Need to Know***

This module was designed and written with you in mind. It is here to help you master the skills in recycling waste materials. The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of students. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the textbook you are now using

This module focuses on the following topics:

- a. Different types of waste materials that can be recycle; and
- b. Waste materials that are Recyclable.

After going through this module, you are expected to:

- a. Identify recyclable products/ waste materials made of wood, metal, paper, plastic and others. (TLE6IA-0i- 12)



## ***What I Know***

A. **Directions:** Choose the letter of the best answer and write your answer on a separate sheet of paper.

1. Cellphones, DVD, CD, computers, televisions, electronic toys and appliances are called\_.
  - A. Industrial waste
  - B. Construction and demolition waste
  - C. Electronic waste
  - D. Medical waste
  
2. Which of the following are commonly called garbage from homes and commercial establishments?
  - A. Electronic waste
  - B. Industrial waste
  - C. Medical waste
  - D. Municipal solid waste
  
3. Which of the following are examples of construction and demolition waste?
  - A. CD, DVD, cellphones
  - B. Processed foods, pesticides, cement
  - C. Needles, syringes, surgical waste
  - D. Concrete, wood, metals
  
4. Needles, syringes, radioactive waste are called\_\_\_\_\_.
  - A. Medical waste
  - B. Solid waste
  - C. Electronic waste
  - D. Industrial waste
  
5. This waste is best described as leftovers from extraction and production processing of paper, plastic, steel and others.
  - A. Electronic waste
  - B. Industrial waste
  - C. Medical waste
  - D. Solid waste

6. It is a process of converting or transforming waste materials into reusable products.
- A. Reducing
  - B. Reusing
  - C. Recycling
  - D. Refusing
7. What is the importance of identifying recyclable materials from other waste?
- A. Gives different kinds of recyclable materials.
  - B. Creates great file of waste in our barangay.
  - C. Increases waste disposal of our community.
  - D. Minimizes the volume of waste materials thrown every day.
8. What will happen if we do not practice recycling?
- A. All waste materials will rot away in due time.
  - B. Surroundings will be cleaner and greener.
  - C. Recyclable materials will scatter everywhere.
  - D. We can minimize garbage.
9. Who can practice recycling?
- A. Only the professionals.
  - B. Those who produce more waste.
  - C. Only those who to sell the product.
  - D. Everyone who is interested can develop a skill in recycling.
10. What will happen if there is improper waste management in your place or community?
- A. Spread of diseases will be minimized.
  - B. Flood control will be implemented.
  - C. Successful environmental protection.
  - D. Waste and recyclable materials will scatter everywhere.

# Lesson 1

## Recyclable Products/ Waste Materials

Proper waste management is encouraged to prevent the harmful effects of wastes to both human and environment. How can a pupil like you, contribute to waste management? Perhaps the answer to this is, if you are able to identify recyclable products and wastes materials.



### *What's In*

“Are wastes not really a problem?” Of course, every one of us is really having a hard time disposing our waste at home or in our workplace. It is just good that we have previously discussed the principles of 5S because it will help us make our home and workplace become more ideal.

By the way, can you still recall what this 5S stands for? Can you enumerate the five Japanese words and their English term? Very good if you can. One of the Principles in 5S is seiri (sort) which means to identify and eliminate unnecessary item in the workplace. In eliminating them, we may consider those things which are recyclable and can be made into useful object.

**Directions:** Choose the principles of 5 “S” inside the box that is best described by the sentences below. Write your answer on a separate sheet of paper

Seiri (Sort)  
Seiton (Systematize/Set in order)  
Seiso (Sweep)  
Seiketsu (Standardized)  
Shitsuke (Sustain)

1. Instill the habit of cleaning.
2. Identify and eliminate unnecessary items.
3. Put all needed materials in order.
4. Clean the workplace thoroughly after work.
5. Maintain high quality of cleanliness and orderliness.





### ***Notes to the Teacher***

To our beloved teachers,

The words below are defined according to how they are referred to this module.

Please facilitate and help the pupils understand the meaning of each word. It is important that pupils understand the words so that they can comprehend their lessons well.

The words below are defined according to their function in this module. Take time to familiarize them. It will help you on your journey in this module.

### **New Words To Learn**

- a. Recycling – to convert or transform a material into another material that can be used.
- b. Products – refer to different items produce and used.
- c. Conservation – planned management of natural resources  
- as not to waste the resources.
- d. Disposal – getting rid of things that are no longer needed.
- e. Variant – different kinds or classes.
- f. Reuse – to use again for some or another purpose.
- g. Junk – refers to old paper, metal, plastic, wood, glass and tires.
- h. Junkshop – a place that buys and sells junk products.
- i. Pharmaceutical – relating to medicine production.



## ***What's New***



Jofel D. Nolasco, waste/garbage, 2019

What do you see in the picture?

Do you regard them as problem? It is necessary to throw them all away?

Problem on waste disposal is an environmental issue. We tend to throw away things we perceived as waste and wish to never see them again. Some of these materials are found in streets, dumpsites, landfills, rivers and even on the seashore.

These materials are not waste and can be recycled. Recycling is the process of turning materials into new, simple and useful products.

Recycling is the best way to conserve energy and solve problem on waste management.

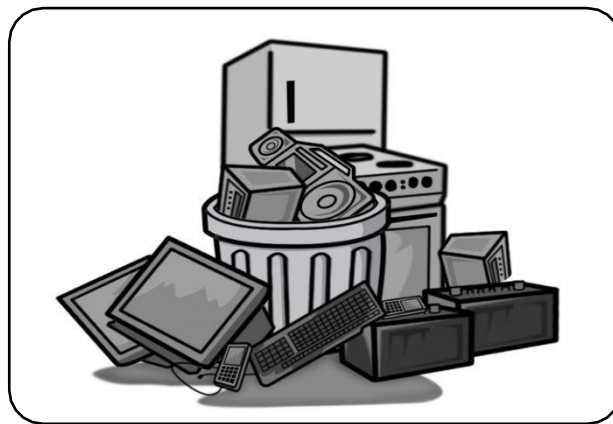


## ***What is It***

What are the different waste materials that can be recycled?

**Waste materials** include containers and packages made of plastic, polystyrene, paper, glass, metal, rubbers and others. Some of the wastes do not decompose but can be recycled.

### **Different types of waste materials that can be recycled**



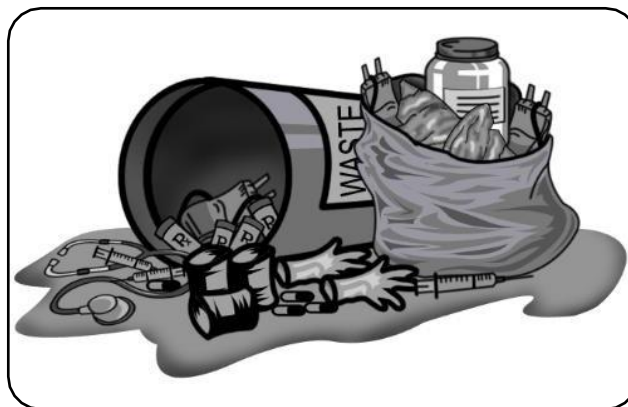
1. **Electronic waste** – cartridge, CD, DVD, cellphones, computers, television, appliances, electronic gadgets and toys.



2. **Industrial waste** – leftovers from extractions and production processing in making paper, steel, cement, processed food, pesticides, pharmaceutical and others.



3. **Construction and demolition waste** – concrete, G.I. sheets, woods, metal, plastic, glass, doors and window.



4. **Medical waste** – pharmaceutical waste, needles, syringes, radioactive waste and food waste.



5. **Municipal solid waste** – waste commonly called garbage from home and commercial establishment.



Jofel D. Nolasco, waste/garbage, 2019

6. **Other type of waste** – wastes found at home which can be converted into something useful and/or decorative.

### **Waste materials that are Recyclable**

In saving energy and conservation of environment, recycling is the best way. Here are some of the recyclables that can be found in our surroundings.

#### **Wood**

Wood waste coming from houses, construction sites, and old furniture can be processed and introduced as new products. They can be turned into wood tiles, garden accessories, wooden utensils, chairs, and wooden decorations at home.

#### **Metal**

Tins and cans as packaging or container of food and drinks are made of metal and aluminum. They are good materials for recycling. They are even sold to junkshops where companies of food and drinks buy them to be reused to conserve energy and other resources.

#### **Paper**

Old newspaper, old notebooks, old letters, cardboards, junk office papers and paper packaging are example of paper waste.

These materials can be processed and recycled into something useful and unique like paper basket, paper-Mache, paper flowers, paper bags and other decorative paper figures.

## Plastic

Empty plastic bottles and containers of soft drinks, water, oil, and other products are great recyclable materials. The plastics are soft and bendable. They can be cut with scissors and cutters to form them into figures like flowers, animals, butterflies, and other decorative products. Huge plastic bottles are even made as pots for flowers and vegetables.

## Glass

Glass among others is the easiest material to reuse or recycle. Empty bottles of various products come with different variant, color and sizes. They are best turned into wall decors, flower vases, and holder of artificial or fresh flowers. Empty wine glasses add elegance on the wall and cabinets of the house when displayed artistically.

## Rubbers and tires

Recycling rubbers and tires are discovered recently. Tires of motorcycle and trucks are made into beautiful animal figures which make our school garden more attractive.



## *What's More*

### Activity 1: Understanding the words better

#### Learning the Skill: Defining a word through scrambled letters

**Directions:** There are scrambled letters before each item below. Arrange the scrambled letters to form the correct word. Use the clue words or sentences provided. Write your answer on a separate sheet of paper.

ueser

1. Using a material again for some other purpose. \_\_\_\_\_

ductpros

2. Refers to different items produced and used. \_\_\_\_\_

antivar

3. Different kind or class \_\_\_\_\_

lasopsid

4. Getting rid of things that no longer needed \_\_\_\_\_

clingericy

5. To convert or transform a material into new, simple and useful products. \_\_\_\_\_

vationerscon

punkjosh

elbadargedoib

elbadargedoibnon

kunj

6. Planned management of resources as not to waste the resources \_\_\_\_\_

7. A place that buys and sells junk products. \_\_\_\_\_

8. Materials or wastes that decompose \_\_\_\_\_

9. Materials or waste that do not decompose \_\_\_\_\_

10. Materials that are old and no longer in use. \_\_\_\_\_

## Activity 2: Waste I Know

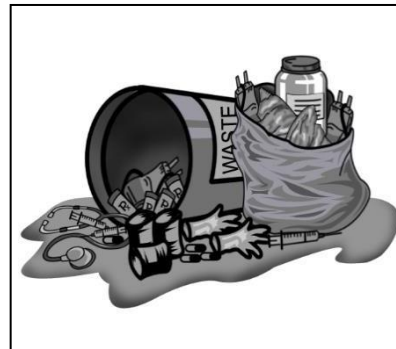
### Learning the Skill: Brainstorming

**Directions:** Below are the different types of waste. List down at least five (5) examples that belongs/ or under each category. Write your answer on a separate sheet of paper.



#### A. Electronic waste

- 1.
- 2.
- 3.
- 4.
- 5.



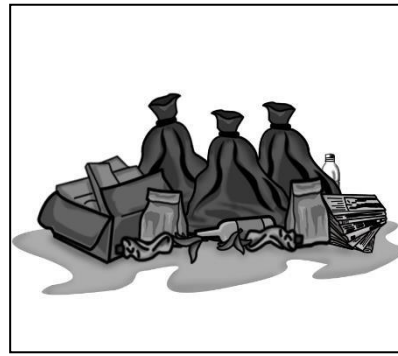
#### B. Medical waste

- 1.
- 2.
- 3.
- 4.



C. Industrial waste

- 1.
- 2.
- 3.
- 4.
- 5.



D. Municipal solid waste

- 1.
- 2.
- 3.
- 4.
- 5.

### Activity 3: Creative Thinking

#### Learning the Skill: Creating something

**Directions:** Below are examples of recyclable materials. Give possible items that can be made from them. Write your answer on a separate sheet of paper.

1. Plastic bottles: \_\_\_\_\_
2. Colored wine bottles: \_\_\_\_\_
3. Rubbers and tires: \_\_\_\_\_
4. Old papers: \_\_\_\_\_
5. Tins and cans: \_\_\_\_\_





## ***What I Have Learned***

**Directions:** Recall the facts and write your answer on a separate sheet of paper.

How do we classify waste materials?

Waste materials can be classified as \_\_\_\_\_ and \_\_\_\_\_

What are the common waste materials found in our community?

There are many kinds of waste materials in our community such as containers and packages made of \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and others.

What are the other sources of waste materials in our community?

Some sources of waste materials in the community are:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_



## ***What I Can Do***

**Directions:** Based on the situation presented below, analyze and write a paragraph on what you're going to do on a separate sheet of paper.

Everyday, you go to school and you notice that there are lots of empty plastic bottles scattering around. You know the possible hazard that they can bring to human and to the environment.

As a student of your age, what is the best thing that you can do to solve that problem?



## **Assessment**

**Directions:** Choose the letter of the best answer and write your answer on a separate sheet of paper.

1. In what group of waste materials do computers, television, electronic toys and appliances belong to?
  - A. Industrial
  - B. Medical
  - C. Electronic
  - D. Construction and demolition
  
2. What do we call the materials or substance which are discarded after primary used?
  - A. waste
  - B. product
  - C. recyclable
  - D. construction
  
3. What is the process of turning waste materials into useful products?
  - A. Reducing
  - B. Refusing
  - C. Extraction
  - D. Recycling
  
4. Which of the materials can be recycled into something useful like basket, flowers, toys and other decorative figures?
  - A. Paper
  - B. Plastic
  - C. Rubber tires
  - D. Bottles
  
5. Which of the following are examples of construction and demolition waste?
  - A. Wood and metals
  - B. Cellphones and television
  - C. Surgical waste and needles
  - D. Cement and processed foods
  
6. Which of the following are commonly called garbage from homes and from commercial establishments?
  - A. Industrial Waste
  - B. Electronic Waste
  - C. Municipal Solid Waste
  - D. Medical Waste

7. These are considered as old or discarded material that can be found at home on in commercial establishments.
  - A. junks
  - B. products
  - C. substance
  - D. decorative figures
  
8. What will happen if we practice recycling recyclable waste or products?
  - A. We can minimize garbage or waste.
  - B. All waste materials will rot away in due time.
  - C. Dumpsite will be filled with lots of waste.
  - D. Recyclable materials will scatter everywhere.
  
9. What is the importance of identifying recyclable materials from other waste?
  - A. Helps our local government.
  - B. Gives households time to collect waste.
  - C. Knows the volume of waste materials collected.
  - D. Gives us the opportunity to reduce, reuse and recycle.
  
10. What will happen if there is improper waste management in your place or community?
  - A. Spread of diseases will be minimized.
  - B. Flood control will be implemented.
  - C. Successful environmental protection.
  - D. Waste and recyclable materials will scatter everywhere.



## ***Additional Activities***

- A. Below are examples of recyclable waste materials found in your community. List down at least three (3) examples of a new product that can be made from them. Write your answer on a separate sheet of paper.

1. Glass: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
2. Wood: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
3. Paper: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
4. Plastic: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
5. Metal: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_



# Answer Key

|  |   |   |
|--|---|---|
| <p><b>What's More</b><br/>Activity 3<br/>Note:<br/>The teacher will facilitate checking.<br/>Answers may vary.</p> <p><b>What I have Learned</b></p> <ol style="list-style-type: none"> <li>1. Biodegradable</li> <li>2. Non-biodegradable</li> <li>3. Electronic Waste<br/>Industrial Waste<br/>Construction Waste<br/>Medical Waste<br/>Municipal Solid Waste</li> </ol> | <p><b>What's More</b><br/>Activity 1.1.<br/>1. Reuse<br/>2. Products<br/>3. Variant<br/>4. Disposal<br/>5. Recycling<br/>6. Conservation<br/>7. Junkshop<br/>8. Biodegradable<br/>9. Non-biodegradable<br/>10. Junk</p> <p><b>Activity 2</b><br/>Electronic Waste<br/>Medical Waste<br/>Industrial Waste<br/>Municipal Solid Waste</p> <p>Note:<br/>The teacher will facilitate checking.<br/>Answers may vary.</p> | <p><b>What I Know</b></p> <ol style="list-style-type: none"> <li>1. C</li> <li>2. D</li> <li>3. D</li> <li>4. A</li> <li>5. B</li> <li>6. C</li> <li>7. D</li> <li>8. C</li> <li>9. D</li> <li>10. D</li> </ol> <p><b>What's In</b><br/>1. Shitsuke<br/>2. Seire<br/>3. Seiton<br/>4. Seiso<br/>5. Seiketsu</p> |
|--|---|---|

|  |  |
|--|--|
| <p><b>Assessment</b></p> <ol style="list-style-type: none"> <li>1. C</li> <li>2. A</li> <li>3. D</li> <li>4. A</li> <li>5. A</li> <li>6. C</li> <li>7. A</li> <li>8. A</li> <li>9. D</li> <li>10. D</li> </ol> | <p><b>Additional Activities</b></p> <p>Note:<br/>The teacher will facilitate checking.<br/>Answers may vary.</p> |
|--|--|

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<https://en.wikipedia.org/wiki/Waste>

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