LESSON 1.3
TYPES OF PLASTICS

GRADE LEVEL	TIME
6-8, 9-12	30–60 MINUTES

Objective:

Students will learn about the different types of plastics. They will explore how plastics are characterized and how this influences the recycling process. After reviewing a recycling chart, the students will answer questions posed on the Student Response Sheet and complete the Personal Plastic Use Sheet.

Instructions:

1. Review the Recycling Chart as a class to discuss the differences between the 7 types of plastic.
2. Display and pass around different plastic items so students can see and feel the differences, and identify which number each item corresponds to.
3. After examining each item, have students group items into different piles based on their number codes. Ask students what they notice about the items in each number code. What is similar about the items? What is different about the items? If an item does not have a number code, encourage students to use the characteristics of each type of plastic in the recycling chart to determine what type of plastic it is.
4. Have students fill out the Student Response Sheet.
5. Distribute the Personal Plastic Use Sheet and have students take the sheet home. While at home, students should look around their home and try to find a plastic item from each category (Numbers 1-7). Encourage them to use the Recycling Chart as a guide. Once they identify an item, have them write down what it is and how often they use it. After their chart is filled out, have students answer the reflection questions.

Materials:

- Recycling Chart
- Container of common plastic items, such as those listed in the Recycling Chart
  NOTE: can be the same plastic items used in Plastic Pollution Lesson 1.1
- Student Response Sheet
- Personal Plastic Use Sheet

Notes:

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Learning Standards:

SCI:
5-ESS3-1, MS-ESS3-4, HS-ESS3-4

GLLP:
6

Plastic Pollution and You

RECYCLING CHART

Name: _____   Class: _____   Date: _____/_____/_____

NUMBER 1 • *PETE or PET (polyethylene terephalate)*

IS USED....................   microwavable food trays, salad dressing, soft drink and water bottles

IS RECYCLED TO MAKE...   carpet, furniture, new containers, polar fleece

PETE

NUMBER 2 • *HDPE (high-density polyethylene)*

IS USED....................   household cleaner and shampoo bottles, milk jugs, yogurt tubs

IS RECYCLED TO MAKE...   detergent bottles, fencing, floor tiles, pens

HDPE

NUMBER 3 • *V or PVC (vinyl)*

IS USED....................   cooking oil bottles, clear food packaging, mouthwash bottles

IS RECYCLED TO MAKE...   cables, mudflaps, paneling, roadway gutters

V

NUMBER 4 • *LDPE (low-density polyethylene)*

IS USED....................   bread and shopping bags, carpet, clothing, furniture

IS RECYCLED TO MAKE...   plastic envelopes, floor tiles, artificial lumber, trash-can liners

LDPE

Number 5 • *PP (polypropylene)*

IS USED....................   ketchup bottles, medicine and syrup bottles, drinking straws

IS RECYCLED TO MAKE...   battery cables, brooms, ice scrapers, rakes

PP

Number 6 • *PS (polystyrene)*

IS USED....................   disposable cups and plates, egg cartons, take-out containers

IS RECYCLED TO MAKE...   foam packaging, insulation, light switchplates, rulers

PS

Number 7 • *Other (miscellaneous)*

IS USED....................   5-gallon water jugs, nylon, some food containers, and other items

IS RECYCLED TO MAKE...   custom-made products

OTHER

The above is not an exhaustive list; there are many other items that are comprised of multiple types of plastic

Plastic Pollution and You

TYPES OF PLASTICS
STUDENT RESPONSE SHEET

Name: _____   *Class:* _____   *Date:* _____/_____/_____

Instructions: You will use the recycling chart for this activity. As you look over the chart, make annotations to point out important information and also record questions you might have. These annotations can be helpful for quick reference when you respond to the questions on this worksheet. You can use the space below for your notes

_____

_____

_____

1. What type of plastic is used in plastic bags?

   _____

   _____

2. What type of plastic is used in plastic bottles?

   _____

   _____

3. What type of plastic is used in plastic straws?

   _____

   _____

4. For questions 1–3, do you have the same answers? Are you surprised by what you found?

   _____

   _____

5. Identify some items on the list you use.

What items on the recycling chart do I use?	What type of plastic are these items made of?	What can these items become if they are recycled?

6. What number plastic do you think you use the most and why do you think that?

   _____

   _____

Plastic Pollution and You

PERSONAL PLASTIC USE SHEET

Name: _____   Class: _____   Date: _____/_____/_____

Instructions: Look around your home and try to find a plastic item from each category (Numbers 1-7), you can use the Recycling Chart to guide you. Once you identify the item, write down what it is and how often you use it. After your chart is filled out, answer the reflection questions.

Plastic Number	Common Item	Single Use, Multi-Use, or Long Term Use?*	What Do You Do With This Item When You Are Done With It?
♳ 1			
♴ 2			
♵ 3			
♶ 4			
♷ 5			
♸ 6			
♹ 7			

*How Many Times Do You Use This Item Before You Throw It Away:

SINGLE USE	MULTI-USE	LONG TERM
These are items that are designed to be used once and then disposed of. Examples include plastic silverware, to go containers, fast food packaging, and water bottles. These items can be used again but are not constructed to withstand multi or long– term use.	These are items that are designed to be used repeatedly, often in the place of single use items. Examples include reusable water bottles, reusable shopping bags, pens, and other common items. These items are constructed to withstand repeated use over time.	These items are durable goods that are designed to be used frequently over extended periods of time. Examples of these items can be composed predominantly of plastic (ie: kayak) or plastic can be a key component of a larger item (ie: laptop computer, car)

Plastic Pollution and You

Name: _____   Class: _____   Date: _____/_____/_____

1. What do you notice about the items on your list?

   _____
   _____
   _____

2. Are you surprised about how often you use plastic?

   _____
   _____

3. Were there items you didn't realize were plastic?

   _____
   _____
   _____

4. Look up your local recycling chart, which items you use are recyclable in your area?

   _____
   _____
   _____

5. Could any of these plastic items be replaced by non-plastic alternatives? Would the non-plastic alternative require additional resources, time, support or money?

   _____
   _____
   _____
   _____

6. There are almost 20 million people in the state of New York. Some people believe it would be helpful if people used less plastic. Do you agree or disagree? Explain your response.

   _____
   _____
   _____
   _____
   _____