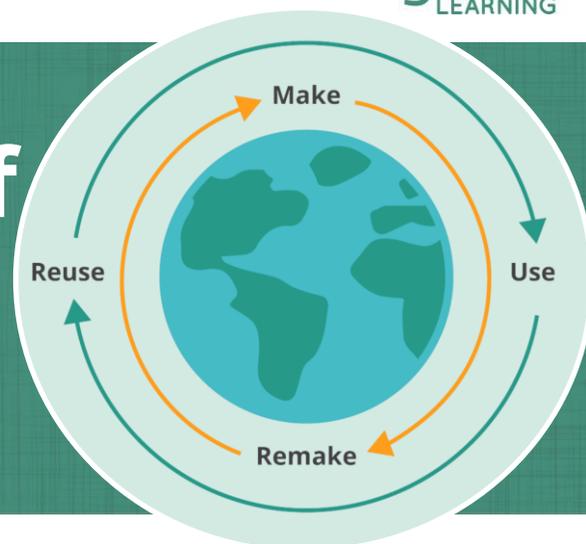


# Different Types of Plastics

#Eco360  
Activity  
Grade Level: 9-12



## Main Objectives

Learners will explore the different kinds of plastics found in our economy. Learners will learn how to distinguish what kind of plastic they are dealing with by looking at the labels on plastic products.

## Learning Outcomes

After completing this activity, learners will:

- Describe the different kinds of plastics found in our economy
- Be able to differentiate the different kinds of plastics by reading the labels on the plastic products
- Identify which kind of plastic is easily recyclable and those that are harder to recycle.

## Curriculum Connections

### Alberta

Science 20 Unit A: Chemical Changes

- 20-A3.1k identify materials used in daily life that are based upon Alberta's petrochemical industry and that involve changes in energy

Grade 9 Unit C: Environmental Chemistry

- 3 - Analyze and evaluate mechanisms affecting the distribution of potentially harmful substances within an environment

### Ontario

Grade 9 Geography

- E1. The Sustainability of Human Systems: analyse issues relating to the sustainability of human systems in Canada (FOCUS ON:
  - Interrelationships; Geographic Perspective)

## Length of Activity

45 - 60 minutes

## Materials List

Internet-enabled device

Eco 360 notebook (we recommend asking learners to maintain a notebook for this program to write down reflections as they go through the program)

Plastic by Number Worksheet

Information of Plastics Handout

## Step 1

Introduce learners to the different kinds of plastics found in our economy by watching the videos below. It is important to know the difference between different kinds of plastics as it indicates whether the plastic can be successfully recycled or not.

- Brief history of plastic:

<https://www.youtube.com/watch?v=9GMBRG9CZJw> (6 minutes)

- Know Your Plastics:

<https://www.youtube.com/watch?v=qTelxi3MjU> (2 minutes)

## Step 2

Distribute the "Plastic by Numbers Worksheet". Using the resource below, go through the different kinds of plastics found in our economy with your learners:

- Plastic by the Numbers, article:

<https://plasticactioncentre.ca/directory/plastic-by-the-numbers/#:-:text=Plastics%20that%20have%20%231%20>

### Step 3: Identifying common plastic items

- a. Have each learner bring 2-3 plastic items to class. Ask them to look for plastic items around the house, such as:
  - i. Bathroom: They can find empty plastic items in their bathroom such as shampoo bottles, toothpaste tubes, etc.
  - ii. Kitchen: Empty plastic containers, grocery bags, bottles, jars, milk jars, etc.
  - iii. Apparel Closet: They can bring a pair of socks, shoes or sandals, shirts, jackets etc.
  - iv. Or any other places they could find plastic!
- b. Have each learner read the label of the plastic items they brought with them and see if the plastic item has a recycling symbol ♻️ with a number on it. Explain to learners that the *Resin Identification Code (RIC)* is a universal code that indicates what the plastic is made from (i.e. its chemical composition) and indicates how it should be recycled. In the case of apparel, the items may indicate the composition, like this 100% Acrylic winter scarf.



Learners may notice that some plastics do not have a symbol on them or a label indicating their composition (as is usually the case in apparel) – for instance the chairs they are sitting on or the pen they are holding may

- c. not have labels or RIC symbols. Explain to learners that we find many plastic items in our economy that are not labelled. This poses a challenge for recycling as it is not easy to find out what they are made from and therefore, cannot be easily recycled. This may also be a good place to highlight how Canada currently recycles only 9% of its plastic waste, as mentioned in the backgrounder.
- c. Allow learners to reference the 'Information of Plastics Handout' as they are finding various plastic products in their house. It gives learners examples of each type of plastic as well as their associated formulas and structures.
- d. Have each learner record their findings in the Worksheet in columns A and B. They can find the chemical formula and composition of the plastic by looking at the PRS and finding the information about that plastic in the resource linked [here](#) (also provided in step 2).
- e. After each learner has gone through the items, have each learner share the common plastic number they found on their list with the rest of the class.
- f. As a class, regroup to discuss which is the most common type of plastic that was recorded most often by the learners in their individual exercise.
- g. Ask learners if all the plastic items that they brought to the class are recyclable in their municipality? They can find that by the instructions usually provided on the recycling bin or by visiting the local municipality's waste management website. If this information is not easily available to learners, ask them what should the local municipal authorities do about it to make this information more accessible and understandable for the masses? Emphasize on the importance of the role of municipalities in making recycling bylaws easily accessible to masses.
- h. This activity can be done in a distanced learning environment by asking learners to bring the plastic items to their virtual class.
- i. Educators may also go through the recycling bin in the classroom to find the common

items found there. This can be done over a number of weeks (sorting through the recycling bin and recording findings in the worksheet) to find the common plastic items consistently ending up in the classroom recycling bin.

#### **Step 4: Conclusion**

After having gone through the activity, ask learners to reflect on the questions below by having a discussion in groups or answering them individually in their ECO 360 notebooks:

- a. What was the most common type of plastic found in the classroom activity?
- b. Did they find a particular plastic item that is consumed frequently but not recycled in the municipality?
- c. Was the information on what can be recycled in their municipality easily accessible to them (i.e., the recycling bin had information printed on it showing what can be put in there?) If not, what can the learners do about it as informed citizens now to make this information easily accessible to their peers and families?
- d. Can they use alternative eco-friendly materials for the plastic items that were most commonly found in the class exercise?
- e. Can they eliminate the use of plastic items that were found in the exercise but not recyclable in their municipality?