

# Everyday Polymers Worksheet



*Drinking straws are made of #5 PP plastic.*

## Introduction

Plastics are identified by numbers 1 through 7. Usually located on the bottom of the package, this number is code for the specific type of plastic you're holding. Here are a couple of examples of the identification numbers and their corresponding products:

## Identification Key: Recycling Codes and Application Examples for Polymeric Materials in the USA

**#1 PET** (Polyethylene terephthalate) – Fizzy drink bottles, oven-ready meal trays and water bottles

**#2 HDPE** (High-density polyethylene) – Milk bottles, detergent bottles, yogurt and margarine tubs, cereal box liners and grocery, trash and retail bags

**#3 PVC** (Polyvinyl chloride) – Cling film (plastic food wrap), vegetable oil bottles, loose-leaf binders and construction products such as plastic pipes

**#4 LDPE** (Low-density polyethylene) – Dry cleaning bags, produce bags, trash can liners, bread bags, frozen food bags and squeezable bottles, such as mustard and honey

**#5 PP** (Polypropylene) – Ketchup bottles, medicine bottles, aerosol caps and drinking straws

**#6 PS** (Polystyrene) – Compact disc jackets, grocery store meat trays, egg cartons, aspirin bottles, foam packaging peanuts and plastic tableware

**#7 Other** - Three- and five-gallon reusable water bottles, certain kinds of food containers and Tupperware

**Everyday Encounters with Polymeric Materials**

As a class, we will collect all types of polymeric materials found at home and school. Once the class has collected over 200 varieties of plastic consumer products frequently found at home and school, we will have a sorting party! Using seven or more paper grocery bags or waste baskets, you will make colored recycling symbols using a letter or A4 size paper. Be sure to accurately associate the number with material type and write examples of their use following the numbered guide listed above. Be sure to use creativity in constructing your recycling sign! Once the sign identification activity is completed, we will tape the signs to the paper bags or waste baskets and let the sorting begin.

**Safety Consideration**

While sorting and handling collected materials, wear disposable plastic gloves and wash hands thoroughly after touching collected products.

**Data Analysis Table**

<b>Polymeric Material Code</b>	<b>Frequency (count)</b>	<b>Percentage</b>	<b>Describe Uses or Application Collected</b>
<b>1</b>			
<b>2</b>			
<b>3</b>			
<b>4</b>			
<b>5</b>			
<b>6</b>			
<b>7</b>			
<b>Totals</b>			

**Assessment Questions**

Using your polymeric materials data collection and sorting table you or your class/team produced, please answer the following questions on a separate sheet of paper.

From the polymeric material samples collected by your class:

1. Which polymeric material was most commonly collected by your class?
2. What percentage of the total collection did the most common material represent?
3. Which polymeric material was the least common collected by your class?
4. What percentage of polystyrene materials were collected?
5. What was the most common application collected for polyethylene terephthalate materials collected?
6. Ranking the polymeric materials collected from the most common to least common, where did high-density polyethylene rank in your sample?