

Part 1: Identifying Properties and Function of Plastics

1. List some physical properties that could help you sort your plastic samples:
2. Using the internet links, [Safety Data Sheet Search](#), [Types of Plastic - A Complete Plastic Number Guide](#), [Omnexus](#) identify additional physical properties, chemical properties, toxicity, uses, and how to recycle the seven types of plastics listed in Table 1:

Table 1: Plastic Properties, Uses, and How To Recycle

Plastic Type	Physical Properties	Chemical Properties	Toxic Info	Uses	How to recycle
PETE (Polyethylene Terephthalate)					
LDPE (Low-density Polyethylene)					
HDPE (High-density Polyethylene)					
PP (Polypropylene)					
PS (Polycarbonate)					
Other (Polycarbonate/Lexan)					
V (Polyvinyl Chloride)					

2. Which types of plastics listed above can be reused?
3. What types of plastics listed above can be recycled?
4. Why would you choose the type of plastic to use for different objects?

5. When recycled these plastics can become:

Table 2: New Products from Recycled Plastics

Plastic Type	This Recycled Commodity can become....
PETE (Polyethylene Terephthalate)	
LDPE (Low-density Polyethylene)	
HDPE (High-density Polyethylene)	
PP (Polypropylene)	
PS (Polycarbonate)	
Other (Polycarbonate/Lexan)	
V (Polyvinyl Chloride)	

Part 2: Design a Better Way to Identify and Separate Plastics

Now that you have some background knowledge of the plastic commodities industry your task is to design an easier way to separate and identify the plastics that can be reused or repurposed into other products and not dumped into a landfill.

Reflect and Apply:

1. Ask students to describe what they know about recycling, and if they can identify products which are made from recycled plastics in their school.
2. If you had additional resources and time what might your group want to explore for your design in Part 2?
3. After learning about the different types of plastics, would you still purchase the ones that can not be reused or recycled? Is there another resource that you could have chosen instead?