

## *Plastic: One Material, Many Uses*



*Plastic can be made into many different objects.*

### ***Why it Matters***

- A large percentage of our belongings are partially or fully made of plastic.



### ***Did you know?***

Two million plastic bags are used every minute worldwide.

Look around the room. Without moving from your place, count how many items you can see that are made of plastic. You probably see quite a few. Plastic chairs, bags, and toys are obvious items. How about glitter, scotch tape, and acrylic paint? Those are also plastic. Diapers, tea bags, and lycra t-shirts are also made of plastic. Did you know that nylon is also plastic? How about vinyl? There are many types of plastic around us.

Where does plastic come from? Is it found in the earth, like salt or gold? Does it grow, like wood or herbs? The answer to those questions is no. Plastic is actually a manmade material. Let's learn all about it!

## Benefits of Plastic

People make plastic for a number of reasons. A major one is to save money, since plastic can be used in the place of more expensive materials. Nylon can be used instead of silk to make stockings. Pipes can be made of plastic instead of metal. Siding for houses can be made of vinyl instead of wood.

Another great thing about plastic is that it does not get used up. If we kept cutting down trees to make houses, paper, toys, and other items, we would need to plant many trees to keep up. Plastic, however, can be made in a lab, allowing us to make as much as we want.

Plastic is also easy to work with. For instance, for factories to make plastic toys, they can simply melt the plastic and then mold it into the toys they want. Sculpting pieces of wood to make wooden toys requires more effort and **expertise**.<sup>1</sup>

Before plastic was invented, other materials, such as wood and metal, were used to make a variety of items. Animal parts, such as elephant tusks, turtle shells, and buffalo bones, were also used to make some everyday items. These animal parts were strong but required killing the animals to use them. That was not a long-term solution for a number of reasons.



*Plastic toys are cheaper and easier to produce than wooden ones.*

## Making Plastic

Plastic is made from **crude**<sup>2</sup> oil, which is taken from deep in the ground. First, big holes are drilled into the ground. Next, a pump is inserted into the hole. The pump extracts the oil from deep inside the ground and carries it through long pipes to an oil **refinery**.<sup>3</sup>

In an oil refinery, the crude oil is heated up and **refined**<sup>4</sup> into many types of oil, including petrol, kerosene, and diesel. Some parts of the oil are refined, heated, and mixed with other ingredients to make plastic **pellets**.<sup>5</sup> The pellets are packaged and sent to other factories. When the packages of pellets arrive, they are melted down and poured into molds for plastic products. The plastic can become pipes, car parts, or plastic spoons.

- 1 **expertise** – knowledge; skill
- 2 **crude** – raw; unrefined
- 3 **refinery** – factory to clean and purify natural products
- 4 **refined** – cleaned; purified
- 5 **pellets** – little balls

## Plastic and the Environment

In recent years, you've probably heard a lot about avoiding using plastic and the importance of recycling plastic bottles. The reason for this is that plastic does not **decompose**<sup>6</sup> easily.

Natural materials can decompose if they are left alone. That is because they are **biodegradable**.<sup>7</sup> For example, if you throw an apple core on the ground, it will get moldy and eventually decompose. It can take as little as six weeks for that to happen. Wood breaks down and disappears within ten years, and some other natural materials break down even faster than that.

Plastic, on the other hand, does not do any of that. It can take hundreds or even thousands of years for plastic to break down, which is bad for the environment. When you throw plastic in the garbage, it gets taken to a landfill and stays there. The landfills get fuller and fuller from all the plastic waste.

A significant amount of plastic is used for single-use products, like plastic cups, food wrappers, and plastic bottles. That creates a lot of waste. Up to 80% of the waste in America can be recycled but is usually not.

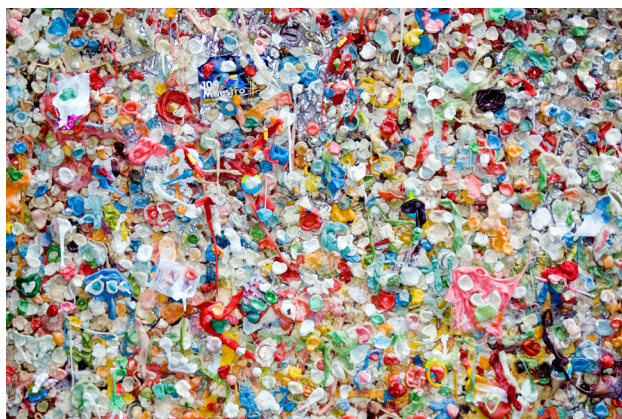
If you throw a plastic wrapper on the ground, besides for making your neighborhood look ugly, it can get swept away to the ocean. That can be harmful for the fish and other sea life under the water. They can mistake the plastic for food and eat it. Sometimes, plastic can end up wound around an animal and hurt it.

There are many steps we can take to save the environment from the **detriments**<sup>8</sup> of plastic. One great idea is recycling. When we recycle our plastic waste, it won't be dumped in a landfill. It can be melted down into other plastic items, including clothing, bottles, and playground equipment. When you recycle, it **reduces**<sup>9</sup> the amount of oil used to make plastic and keeps our world cleaner by reducing waste.

We can try to cut down on the amount of plastic used. Reusable bags, cups, bottles, and straws are all widely available and great for many uses. Such items can also be made from biodegradable materials.



*Plastic is made in a refinery.*



*Plastic waste overfills landfills.*



*Plastic waste in the ocean can be harmful to sea creatures.*

- 6 **decompose** – decay; break down
- 7 **biodegradable** – able to break down
- 8 **detriments** – disadvantages
- 9 **reduces** – lessens; cuts down on



## Questions

- Circle the choice that has the same meaning as the following sentences from the lesson:**  
*A significant amount of plastic is used for single-use products.*
  - Plastic is often in items that are used once and then discarded.
  - A large number of items that are used one at a time is made from plastic.
  - Many plastic items are used more than once before being recycled.
  - Items that are used multiple times are usually not made from plastic.
- Circle the vocabulary word that best fits the sentence.**  
*Each person must do whatever they can to protect themselves from the (**decompose**, **detriments**) of identity theft.*
- Mark each statement as F (fact) or O (opinion).**  
 Plastic utensils are more practical than silverware.  
 There should be an easier way to recycle plastic.  
 Biodegradable materials are more environmentally friendly.  
 Plastic is predominantly made out of oil.
- Which of the following sentences from the lesson does NOT support the idea that plastic can pose as an issue for the environment?**
  - It can take hundreds or even thousands of years for plastic to break down, which is bad for the environment.
  - The landfills get fuller and fuller from all the plastic waste.
  - Natural materials can decompose if they are left alone.
  - Sometimes, plastic can end up wound around an animal and hurt it.
- What is the author's purpose in including the concept of biodegradability?**
  - To discuss why plastic is the preferred material to use
  - To mention why other materials are more durable than plastic
  - To highlight the problems of plastic in contrast to natural materials
  - To explain the scientific ramifications of reusing natural materials

6. What is the main idea of the lesson?

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7. Name three differences between plastic and wood.

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8. What is an effect of littering with plastic?

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