



Plastic

Plastics play a big role in our lives. Products, packaging, and technology all depend on them.

The first man-made plastic, *Parkesine*, was created in 1862 but was too expensive to produce. A few years later, the game of Billiards led to the discovery of *celluloid*. Until 1866, billiard balls were made of ivory from elephant tusks. An American made a brittle material to replace ivory, but the balls broke easily. He altered it, and created celluloid, the first substance that could be shaped under heat and pressure, and keep its shape. Celluloid was used in the first flexible film for still and motion pictures.

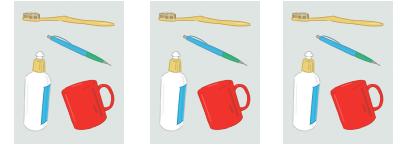
In 1907, a New York chemist developed *Bakelite*, a liquid that formed the exact shape of any container that held it. Adding it to other materials made materials stronger. Bakelite was used to make weapons for World War II, and household products that are still used today.

Cellophane was discovered in 1900. A Swiss textile engineer watched wine stain a tablecloth, and saw a need for a clear, protective layer. He added viscose to cloth but the material became too stiff to be useful. He then developed a machine to make viscose sheets, which he called Cellophane. Cellophane became the first clear, fully flexible, waterproof wrap.

The 1920s brought a "plastics craze", as the use of cellophane spread throughout the world. *Vinyl*, a durable, fire-resistant, and easily molded material, became popular for furniture. *Saran* was accidentally discovered in 1933. It was used first to protect military equipment, and later for food packaging. In 1938, *Teflon* was discovered when a chemist accidentally pumped freon gas into a cold cylinder. Teflon today is widely used in kitchenware.

In 1933, two chemists discovered *polyethylene*. Polyethylene played a key role during World War II, first as coating for underwater cable and then as a thin, insulating material. It weighed so little that radar systems for the first time could be carried on aircraft to help detect enemy bombers.

After the war, consumers bought many new polyethylene products. Today, polyethylene is used to make everyday items like soda bottles, milk jugs, grocery bags and food containers. It is the first plastic in the United States to sell more than a billion pounds a year, and the world's largest selling plastic.

**COMPREHENSION QUESTIONS**

A. True or False. Read the statements below. If the statement is true, write T beside the sentence. If it is false, write F. If it is false, correct the information.

1. The first man-made plastic was created in the 19th century. _____
2. Billiard balls were first made of plastic. _____
3. *Bakelite* was the first man-made plastic. _____
4. *Bakelite* became the first clear, flexible, waterproof wrap. _____
5. Plastics became very popular throughout the world in the 1920's. _____

B. Practice asking and answering the following questions with your partner. Then write the answers in complete sentences.

1. When was the first man-made plastic created and what was it called? _____

2. List at least seven different kinds of plastics that are mentioned in the article. _____

3. Briefly explain how the game of billiards led to the discovery of *celluloid*. _____

4. What was *Bakelite* and what was it used for? _____

5. What is *cellophane* and when was it created? _____

6. What is *vinyl*? _____

7. How was *Teflon* discovered? _____

8. What is the world's largest selling plastic? _____


VOCABULARY REVIEW
A. Choose the word(s) with the closest meaning to the underlined words in the following sentences.

1. Plastics play a big role in our lives.
 - a) are used in a lot of sports
 - b) are very important
 - c) are very expensive
2. Bakelite was used to make weapons during World War II.
 - a) weather stations
 - b) airplanes
 - c) something used in fighting: ex. gun, knife, etc.
3. When a Swiss textile engineer watched wine stain a tablecloth, he saw a need for a clear, protective layer.
 - a) someone who designs cloth, materials
 - b) a waiter
 - c) a person who works on a train
4. Vinyl is a durable, fire-resistant, and easily molded material.
 - a) burns easily
 - b) very cheap
 - c) undamaged by fire
5. The 1920's brought a "plastics craze."
 - a) a kind of illness
 - b) a plastic container
 - c) a very big demand for plastic

B. Match the words on the left with the correct meaning on the right.

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|----------------------|---|
| _____ 1. ivory | a) make colored or dirty marks on something |
| _____ 2. brittle | b) discover, find |
| _____ 3. alter | c) important |
| _____ 4. flexible | d) user |
| _____ 5. liquid | e) hard, but easily broken |
| _____ 6. stiff | f) white, bone-like material from elephant tusks |
| _____ 7. wrap | g) shaped |
| _____ 8. durable | h) cover |
| _____ 9. molded | i) easily bent without breaking |
| _____ 10. stain | j) likely to last for a long time |
| _____ 11. insulating | k) substance like water, not a gas or solid |
| _____ 12. key | l) covering to stop the loss of heat or electricity |
| _____ 13. detect | m) not easily bent or changed in shape |
| _____ 14. consumer | n) change |