



Glass

GLASS

PRE-READING QUESTIONS

1. Do you know how glass is made?
2. Who do you think invented glass?
3. What does an archeologist do?
4. Do you know what city is world famous for its beautiful glass-making?
5. What is an “environmentally friendly” product?





Glass

Glass is a substance made from sand, limestone, and soda, which are combined and heated to 1500 degrees Celsius. As the mixture cools, it becomes very thick and eventually becomes solid.

Historians believe that the ancient Egyptians invented glass. Archeologists have found 5,000-year-old glass beads there. About 100 B.C., Syrian craftsmen learned how to make hollow pots or vases by blowing air into molten glass through a long, narrow iron tube. The Romans used this glass-blowing technique to create beautiful artwork. They also found a way to make glass for windows.

After the fall of the Roman Empire, glass-making declined for several centuries. It was revived in the 8th century in the Middle East and soon spread to other parts of the world.

In the 15th century, glassmakers in Venice, Italy, discovered how to make clear glass (crystal). Until then, glass had impurities in it. Venice became famous for its exquisite glass bottles and still is today. Several Venetian craftsmen took their trade to other parts of Europe, such as Germany, where beautiful Bohemian glassware is made.

In the 17th century, lead crystal glass was invented. This much-improved material was used in optical lenses, telescopes, and microscopes.

Machines that could make glass bottles began to appear in the late 1880s. In 1907, Michael Owens, an American, invented a machine that produced 2,500 bottles every hour. Since then, many scientific discoveries have improved the quality of glass and how it is produced and have found new uses for it.

Today, glass is used for things such as windows and light bulbs, kitchenware, insulation, and sophisticated scientific equipment. Thousands of products, from wine to cosmetics, are packaged in glass containers. Fortunately, because it takes less energy to melt recycled glass than to make new glass, glass is considered to be an environmentally friendly material.

**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. Glass was invented by the Romans. _____
2. Heat is used in the process of glass-making. _____
3. Glass windows were first made by the Egyptians. _____
4. Venice has been famous for its glass-making for hundreds of years. _____
5. Michael Owens discovered how to make crystal. _____

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

1. Who do historians think invented glass and why do they think this? _____

2. How did the Syrians and Romans contribute to the development of glass-making? _____

3. When did glass-making decline and when was it revived? _____

4. Why is Venice famous for glass making? _____

5. What material was invented in the 17th century and how was this new material used? _____

6. What effect have scientific discoveries of the last century had on glass-making? _____

7. Why is glass considered to be an environmentally friendly product? _____

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

- Historians believe that the ancient Egyptians invented glass.
a) intelligent b) from long ago c) rich
- Syrian craftsmen learned how to make hollow pots or vases.
a) whole b) big c) not solid; with an empty space inside
- Glass-making declined for several centuries before it was revived.
a) improved b) lessened c) spread
- Glass making declined for several centuries and then revived in the 8th century.
a) died b) moved c) became strong or important again
- The Syrian craftsmen made vases by blowing air into molten glass.
a) made liquid by heat b) solid c) crystal
- Venice became famous for its exquisite glass bottles.
a) expensive b) very beautiful c) cheap
- Several Venetian craftsmen took their trade to other parts of Europe.
a) vases b) products c) occupation or skill
- Lead crystal glass was used in optical lenses, telescopes, and microscopes.
a) window b) related to sight c) telephones

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

- | | |
|-------------------------|---|
| _____ 1. eventually | a) small ball of wood or glass |
| _____ 2. invent | b) opposite of wide |
| _____ 3. bead | c) become liquid |
| _____ 4. vase | d) create something new |
| _____ 5. narrow | e) period of 100 years |
| _____ 6. century | f) container to hold flowers |
| _____ 7. spread | g) finally |
| _____ 8. melt | h) having the latest improvements |
| _____ 9. insulation | i) move or extend to a greater area |
| _____ 10. sophisticated | j) material used to stop the loss of heat |



DISCUSSION QUESTIONS

1. Glass is used in thousands of commonly used products. With your classmates, make a list of many of the glass products you encounter everyday.
2. Have you ever been to a glass-making studio? If so, discuss the process you saw and the products that were made there?
3. What kind of glass recycling programs are there in your community?
4. Glass is used to make many beautiful pieces of artwork such as stained glass windows, glass sculptures, glass beaded jewelry, etc. Tell your classmates about some of the beautiful glass artwork you have seen.

Notes:

**ANSWER KEY****PRE-READING QUESTIONS**

1-5. Individual Answer or...

1. Glass is made from sand, limestone, and soda, which are combined and heated to 1500 degrees Celsius. As the mixture cools, it becomes very thick and eventually becomes solid.
2. Historians believe the ancient Egyptians invented glass.
3. An archeologist is one who studies the remains of past human life and activities.
4. Venice is famous for its glass-making.
5. An environmentally-friendly product is one which inflicts little or no harm on the environment in its production or use.

COMPREHENSION QUESTIONS**A. True or False**

1. F 2. T 3. F 4. T 5. F

B. Written Answers

1. Historians believe that the ancient Egyptians invented glass because archeologists have found 5,000-year-old glass beads there.
2. The Syrians contributed to the development of glass-making by learning how to make hollow pots or vases by blowing air into molten glass through a long, narrow iron tube. The Romans contributed to glass-making by using this same technique to create beautiful artwork and finding a way to make glass for windows.
3. Glass-making declined for several centuries after the fall of the Roman Empire and was revived in the 8th century in the Middle East.
4. Venice is famous for glass-making because glassmakers there in the 15th century discovered how to make clear glass, more commonly known as crystal.
5. Lead crystal glass was invented in the 17th century and was used in optical lenses, telescopes and microscopes.
6. Scientific discoveries have improved the quality of glass and how it is produced and have found new uses for it.
7. Glass is considered to be an environmentally friendly product because it takes less energy to melt recycled glass than to make new glass.

**ANSWER KEY****VOCABULARY REVIEW****A. Choose the word**

1. b 2. c 3. b 4. c 5. a 6. b 7. c
8. b

B. Match the words

1. g 2. d 3. a 4. f 5. b 6. e 7. i 8. c
9. j 10. h