

BENJAMIN FRANKLIN

That Benjamin Franklin accomplished so much is amazing, especially for a man with little formal education. He is often considered to be unequalled in scientific research for his time, and his work in electricity was the basis of information later used by Thomas Edison.

A. Franklin's Youth

Benjamin Franklin was born on January 17, 1706, in Boston, Massachusetts. He was the fifteenth of seventeen children. His father was a candle and soap maker. Ben attended school for only two years; at ten, he went to work in his father's shop. Two years later, he became an *apprentice* to a printer. He read whenever possible; he taught himself algebra, geometry, *navigation*, foreign languages, and grammar. He was determined to make himself one of the best educated young men in his time.

At seventeen, young Ben took off, alone, for Philadelphia to master the printing trade. He was sent to London to buy presses; there he became a skilled printer. He later returned to Philadelphia; he became a publisher and started the *Pennsylvania Gazette*. He worked hard to succeed. He became a very wealthy man while still in his twenties. He married in 1730.

B. Experiments with Electricity

Franklin turned toward a life of public service, politics, and education. In 1749, he founded a college that later became the University of Pennsylvania. He established the world's first subscription library; he re-

formed the police department; he organized a fire department and raised money to build a hospital. Thanks to Ben Franklin, Philadelphia was becoming the most developed city in the thirteen colonies.

In 1746, Ben's business was successful. He began experimenting with electricity. He came to the conclusion that electricity is a single fluid that flows in or out of objects to produce electric charges. Terms used in electricity (*positive*, *negative*, *battery*, and *condenser*) were first used by Franklin.

In 1752, he flew a homemade kite during a thunderstorm. He showed that lightning is a form of electricity when a bolt of lightning struck and traveled down the kite wire to a key, where it caused a spark.

Franklin's most famous scientific research had to do with lightning and the lightning rod. He showed that thunderclouds are seats of electric charge and that a pointed conductor could carry this charge to earth safely. He also demonstrated that some thunderclouds have positive charges, though most are negative.

C. Other Scientific Findings

Franklin can be considered a *diverse* genius because he was interested in so many areas of life. He studied the sea and examined the Gulf Stream in the Atlantic Ocean. He produced the first navigational charts of the Gulf Stream, which allowed sailors to travel faster by knowing the currents, depth, and temperature of the waters.

He is often called the Father of Meteorology because he was the first person to study patterns and to predict weather conditions.

Franklin also arranged the flues in his fireplace so that he could make his sitting room twice as warm with much less fuel. This arrangement was the basis of the Pennsylvania fireplace, now often called the Franklin stove. He later allowed a London manufacturer to make and sell these stoves at his profit. Ben Franklin never cared about personal gain; he simply preferred that people could use his inventions.

Later, Franklin invented bifocals. These eyeglasses allowed the wearer to have close and distant lenses in the same frame.

D. The Statesman

Franklin spent much of his life in public service and in government. In 1776, he helped to draft the Declaration of Independence; he was also one of the signers. Ben was seventy years old, but he still had accomplishments ahead of him. He helped to draft the Treaty of Paris in 1787. He also guided the Constitutional Convention to formulate and to ratify the Constitution of the United States. His last official act was to sign an appeal to Congress to abolish slavery.

The death of Benjamin Franklin on April 17, 1790, was met with such sorrow that



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Franklin, a printer, invented bifocals, helped to draft the Declaration of Independence, and experimented with electricity. over half of the population of Philadelphia attended his funeral. He had accomplished so much in his lifetime, yet he began his will with the simple words, "I, Benjamin Franklin, printer..."

SUMMARY

Benjamin Franklin can be admired for his many talents. He was concerned with the dignity and the well-being of men. His practical inventions led to a better world for people in the 1700's, and his study of electricity opened doors to later scientists.

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LESSON 3

Preview: Find the author's subject and main topics.

1. Read the title, introduction, and summary of the text about Benjamin Franklin. Then, put an X in front of the best ending to this sentence:

The article will probably tell that Franklin's discoveries

- a. were useful in medicine. _____
- b. led to other inventions. _____
- c. were useless in his time. _____
- d. made him wealthy. _____

2. Look through the text. Find the boldface headings marked A, B, C, and D. Write these headings beside the same letters in this outline.

Benjamin Franklin (1706 - 1790)

A. _____

1. Born (when) _____ (where) _____
2. Father was _____
3. Apprenticed to _____
4. At 17, _____
5. Started the _____

B. _____

1. 1749, _____
2. Established first _____
3. Organized _____
4. 1746, _____
5. 1752, showed that _____

C. _____

1. Called Father of _____ and _____
2. Invented _____

D. _____

1. 1776, _____
2. 1787, _____
3. Died (when) _____ (where) _____

Read and Record: Read the text under the first heading, A. Then, record the subtopics (1, etc.) in the outline. Clues are given. Complete sections B, C, and D in the same manner.

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A. Rethink: Put an X in front of the words that best complete each sentence.

1. Franklin's first job was as _____
 - a. an inventor. _____
 - b. a teacher. _____
 - c. a librarian. _____
 - d. a printer. _____
2. Franklin contributed to the development of the city of _____
 - a. New York. _____
 - b. London. _____
 - c. Boston. _____
 - d. Philadelphia. _____
3. Franklin found that lightning was safe if _____
 - a. a conductor carried it to earth. _____
 - b. it carried a negative charge. _____
 - c. a key was used. _____
 - d. no electricity was present. _____
4. Franklin's last public act was signing the _____
 - a. Declaration of Independence. _____
 - b. Treaty of Paris. _____
 - c. appeal to end slavery. _____
 - d. Constitutional Convention. _____

B. Review Vocabulary: Find each word in italics in the text. Think what the word means in that sentence. Then, match each word to its definition by writing the correct letter on the line provided.

1. apprentice _____ a. of many interests
2. navigation _____ b. to draw up, to write
3. reformed _____ c. changed for the better; improved
4. diverse _____ d. helper, assistant; one learning a trade
5. draft _____ e. map reading; the method of determining position, course, and distance traveled

C. React and Write: Answer in complete sentences.

1. How could a person become well educated without formal schooling?

2. Explain how one thing that Ben Franklin did or invented helped you or your family.
