

Table of Contents

Introduction	3	Create Your Own School and Community Almanac	53
Teacher Lesson Plans for Reading Comprehension		Persuasive Essay—The Greatest Invention	54
Colonial Inventions and Inventors	4	Persuasive Essay Planner	55
19th-Century Inventions	4	Proverbs and Sayings	56
Agricultural and Medical Inventions	5	Vocabulary in Context	57
Cars, Planes, and Rockets	5	Einstein Anderson: Child Scientist	58
The Computer Revolution	6		
Common Inventions	6	Teacher Lesson Plans for Social Studies and Science	
Student Reading Pages		Time Lines and Researching Inventions	59
Colonial Inventions and Inventors	7	Using Maps	59
19th-Century Inventions: Power and Transportation	11	Electricity Experiments	60
19th-Century Inventions: The Communications Revolution	13	Planes and Phones	60
Agricultural Inventions	18	Kites and Plants	61
Medical Inventions	20	Making Car Models	61
A Revolution in Speed: Cars, Planes, and Rockets	25	Student Activity Pages for Social Studies and Science	
The Computer Revolution	30	Time Line of American Inventions	62
Common Inventions	32	Time Line of American History	63
Reading Comprehension Quizzes		Researching Inventions	64
Colonial Inventions and Inventors Quiz	36	Mapping Inventions and Inventors	65
19th-Century Inventions: Power and Transportation Quiz	37	Focus on Ben Franklin: Making an Electroscope	67
19th-Century Inventions: The Communications Revolution Quiz	38	Modifying an Electroscope	68
Agricultural Inventions Quiz	39	Making a Telegraph Model	69
Medical Inventions Quiz	40	Sending Morse Code	71
A Revolution in Speed: Cars, Planes, and Rockets Quiz	41	Using Morse Code	72
The Computer Revolution Quiz	42	Electromagnets	73
Common Inventions Quiz	43	Become Your Own Airplane Designer	74
Teacher Lesson Plans for Language Arts		Fishing Line Phones	77
Biography	44	Tetrahedral Kites	79
Almanacs and Persuasive Essay	44	Becoming an Agricultural Scientist	82
Vocabulary and Literature	45	Agricultural Science: Phototropism and Geotropism	83
Student Activity Pages for Language Arts		Agricultural Science: Plant Nutrients	84
Focus on a Colonial Inventor: Ben Franklin	46	Agricultural Science: Growing Plants from Plants	85
Biographies	47	Make Your Own Car Model	86
Selected Biographies of American Inventors	48	Culminating Activities: Create Your Own Invention	89
Write an Inventor’s Biography	49	Annotated Bibliography	93
Inventor Organizer	50	Glossary	94
Write Your Own Biography as an Inventor	51	Answer Key	96
Using an Almanac	52		

1700

1750

1800

1850

1900

1950

2000

Focus on a Colonial Inventor: Ben Franklin

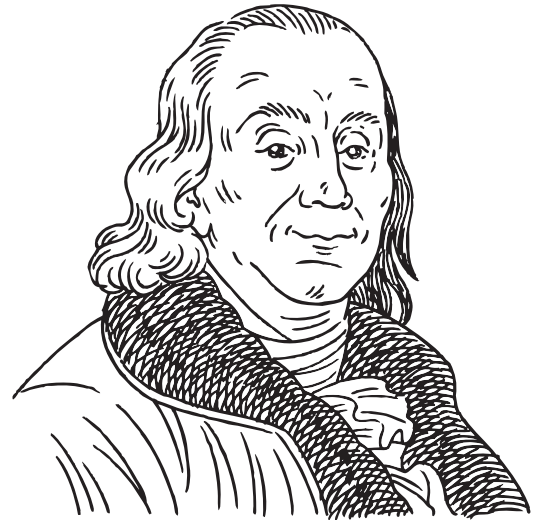
Benjamin Franklin is a model for the typical American inventor. From his youth, he saw needs and tried to create practical solutions. He was interested in swimming as a boy and wanted to go faster through the water. He observed the birds and other animals that swept rapidly through the water and designed his own paddles for hands and feet. He went faster, but they were uncomfortably heavy, so he sometimes used a kite in a good breeze to pull him across a river.

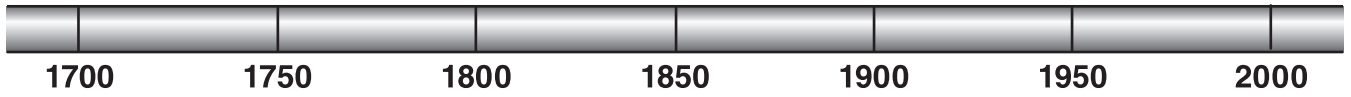
Ben would use a kite, of course, in his most famous experiment. He attached a long, pointed wire to a kite and a key to the kite string near his hand. During a lightning storm, he felt the electric shock from the key. Ben had proved that lightning was a form of electricity.

He was fortunate the electric shock didn't kill him, but his accounts of the experiment made him famous throughout Europe, where he was honored by universities and scientific organizations. Franklin used the information from the experiment to invent the lightning rod, which protected homes and barns from lightning strikes, a major cause of fire in colonial America. He also entertained friends and important community leaders with a series of electrical experiments, including efforts to electrocute a turkey and send electric shocks through his friends.

Franklin was a very successful printer and publisher of *Poor Richard's Almanack*, an annual publication filled with advice, weather predictions, and witty sayings that amused readers. Many of his other inventions centered on business, personal, and community needs. The Franklin stove was more efficient for heating homes and cooking. He invented a stepladder stool, a rocking chair with a fan, and a device for getting books from high shelves. Later, he invented bifocal glasses to help his aging eyes read better.

Some of Franklin's inventions were community-based. He helped organize the first circulating library in America, a fire department for Philadelphia, and suggested ways to protect the community from attack, deepen rivers, dispose of garbage, and keep the streets clean. He helped start a university and studied science subjects as diverse as comets, hurricanes, the behavior of insects, and medicine. Franklin was truly a creative genius and a model for every future American inventor.





Biographies

The biographies listed on page 48 recount the lives of famous American inventors. Some of the biographies focus on the personal lives of inventors. Others are concerned with the way the inventions were made and how they became important in American life.

Assignment

1. Read one of the suggested inventor biographies from the list on page 48 or another suggested by your teacher.
2. Complete the Discussion Notes below about your subject.
3. Use these Discussion Notes as ideas for sharing with your reading circle or class.

Discussion Notes

1. Why was this inventor important? _____

2. What interesting facts did you learn about your inventor? _____

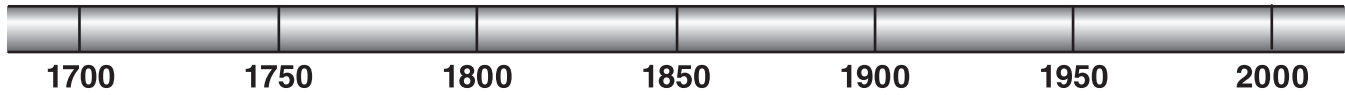
3. How did the life and experiences of the inventor's youth affect his or her career as an inventor?

4. Name and describe three inventions or improvements on inventions that your person created.
 - a. _____
 - b. _____
 - c. _____
5. Which of your person's ideas, designs, or inventions was the most important? Explain your choice.

6. What was the greatest challenge your inventor faced? _____

7. Are one or more of the inventions your subject created still in use today in some form or as the basis for other inventions? Where are they used? _____

8. Would you have liked to have known this inventor? Explain your answer.



Selected Biographies of American Inventors

Ben Franklin

- Fritz, Jean. What's the Big Idea, Ben Franklin? Coward, McCann, & Geoghegan, 1976. (An amusing, easy-to-read biography of Franklin as an inventor.)
- Giblin, James Cross. The Amazing Life of Benjamin Franklin. Scholastic, 2000. (A brief but comprehensive account of the life of Franklin as a creative thinker and patriotic leader.)
- Harness, Cheryl. The Remarkable Benjamin Franklin. National Geographic, 2005. (A well-written and colorfully illustrated review of Franklin's career.)

Wright Brothers

- Busby, Peter. First to Fly: How Wilbur and Orville Wright Invented the Airplane. Crown, 2003. (A good basic work on the life and work of the Wright brothers.)
- Collins, Mary. Airborne: A Photobiography of Wilbur and Orville Wright. National Geographic, 2003. (This work issued to celebrate the 100th anniversary of the historic flight has particularly clear explanations of the Wrights' technological achievements.)
- MacLeod, Elizabeth. The Wright Brothers: A Flying Start. Kids Can Press, 2002. (A well-illustrated, clever story of the great flight.)

Benjamin Banneker

- Maupin, Melissa. Benjamin Banneker. The Child's World, 2000. (An easy, well-illustrated account of Banneker's life and work.)

Thomas Alva Edison

- Mason, Paul. Thomas A. Edison. Raintree, 2002. (An excellent overview of the inventor's interests and career.)
- Price-Groff, Claire. Thomas Alva Edison: Inventor and Entrepreneur. Watts, 2003. (A detailed account of Edison's inventions and business life.)
- Williams, Brian. Thomas Alva Edison. Heinemann, 2001. (A complete overview of Edison's inventive career.)

George Washington Carver

- Carey, Charles W. George Washington Carver. The Child's World, 1909. (A good introduction to Carver's life and contributions.)
- MacLeod, Elizabeth. George Washington Carver: An Innovative Life. Kids Can Press, 2007. (An interesting and visual account of this inventor's life and career.)

Alexander Graham Bell

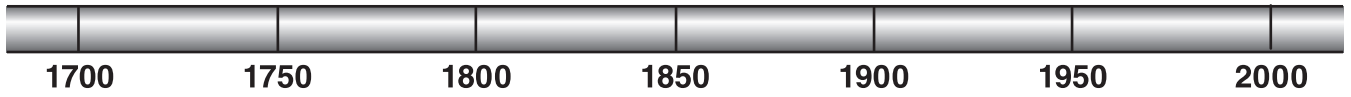
- Reid, Struan. Alexander Graham Bell. Heinemann, 2001. (A complete and graphic account of Bell and his many inventions.)
- Ross, Stewart. Alexander Graham Bell. Raintree, 2001. (A well-illustrated account of Bell's inventions.)
- Williams, Brian. Bell and the Science of the Telephone. Barron's, 2006. (A very graphic, clear, and light account of Bell's discovery.)

Robert Fulton

- Pierce, Morris A. Robert Fulton and the Development of the Steamboat. PowerPlus Books, 2003. (A very detailed and visual account of the Fulton's many interests.)

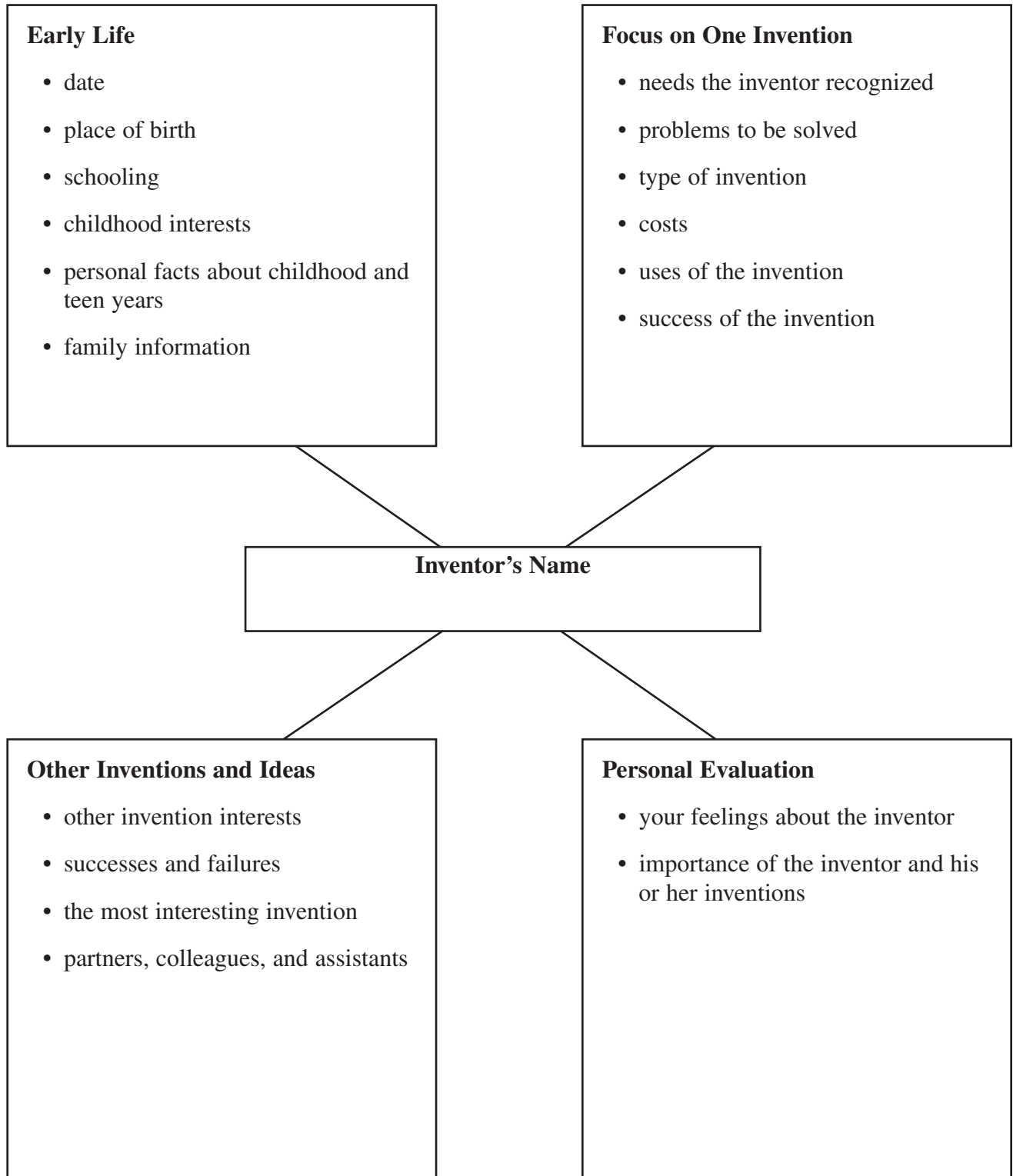
Other Biographies

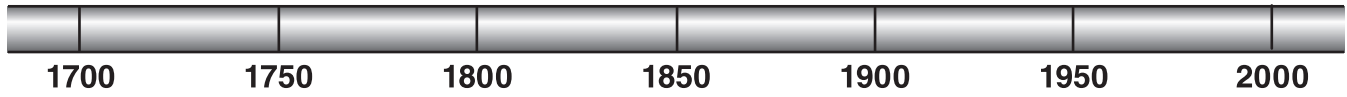
- Marx, Christy. Grace Hopper: The First Woman to Program the First Computer in the United States. Rosen, 2004. (An interesting account of Grace Hopper's career.)
- Riddle, John and Whiting, Jim. Stephen Wozniak and the Story of Apple Computer. Mitchell Lane, 2002. (A brief, easy-to-read account of the inventor's life.)



Write an Inventor's Biography

Directions: Choose one of the inventor biographies listed on page 48 or another recommended by your teacher. Use the following graphic organizer as a cluster for writing a 4-paragraph biography of your inventor. To start, complete each section in the blank organizer on page 50.





Inventor Organizer

Directions: Complete the graphic organizer below using the organizer outline from page 49 to guide your ideas. Use your findings to help you write your 4-paragraph biography on your own paper.

