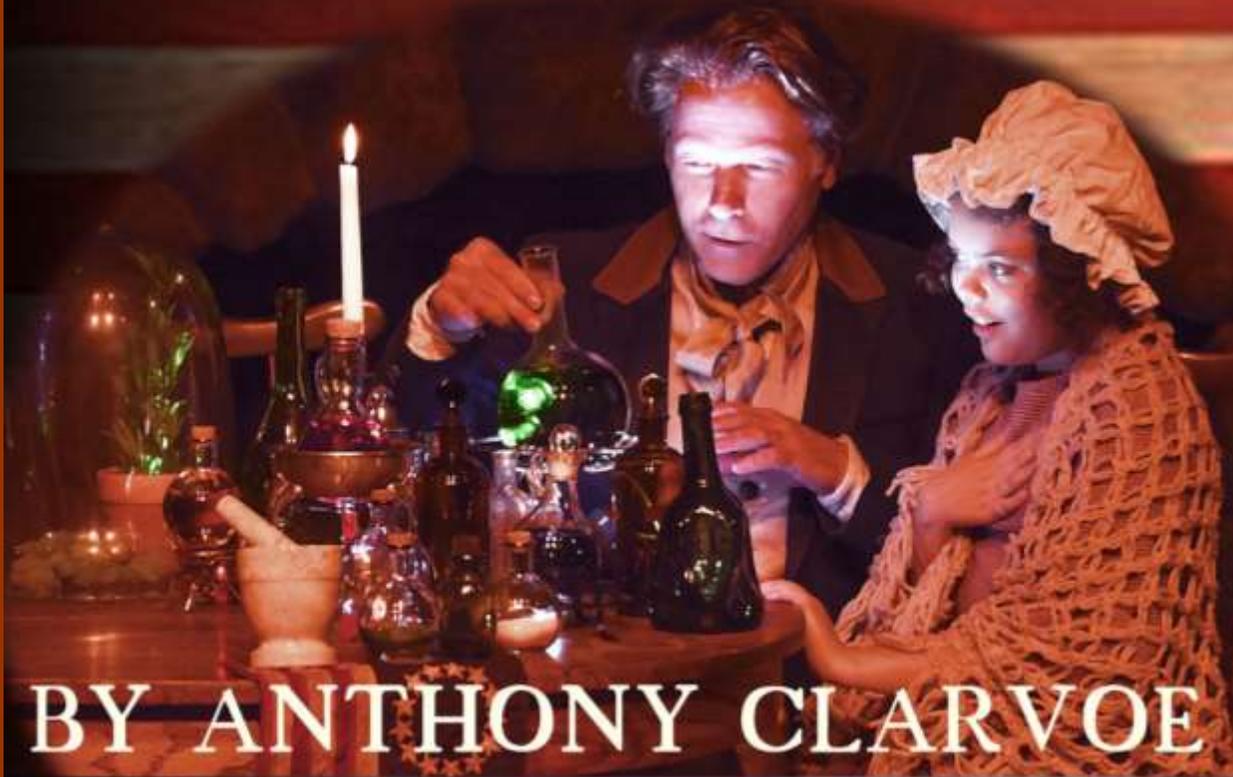


BLOOMSBURG THEATRE ENSEMBLE PRESENTS  
THE WORLD PREMIERE OF

# GUNPOWDER JOE

JOSEPH PRIESTLEY, PENNSYLVANIA,  
AND THE AMERICAN EXPERIMENT



BY ANTHONY CLARVOE

*A world-premiere play by award-winning playwright Anthony Clarvoe, commissioned by and created with the Bloomsburg Theatre Ensemble, about Joseph Priestley, celebrated scientist, radical religious leader, and fierce defender of the American Revolution, who, after making himself the most hated man in England, spent his last years in Northumberland, Pennsylvania.*

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# T A B L E O F C O N T E N T S

# SHOW SUMMARY

"HE WHO DOES NOT FOOLISHLY AFFECT TO BE ABOVE THE FAILINGS OF HUMANITY, WILL NOT BE MORTIFIED WHEN IT IS PROVED THAT HE IS BUT A MAN. "

—JOSEPH PRIESTLEY,  
*EXPERIMENTS AND OBSERVATIONS ON DIFFERENT KINDS OF AIR*

This is a play about America. It brings to life not only the thrilling scientific discoveries of the late 18<sup>th</sup> century, but also the world-changing experiment of forging a new nation. The story focuses on Joseph Priestley, a celebrated scientist and political radical.

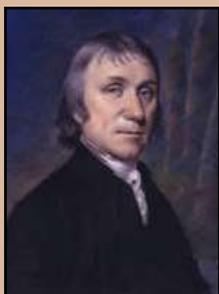
Because of his beliefs, Joseph Priestley was hounded out of his native England. He hoped to secure a sanctuary along the banks of the Susquehanna. Would he find America—that great experiment—to be the true democracy he had championed from across the sea? Would he finally be free to pursue his religion, science, and political beliefs in this new “land of liberty”?

*Gunpowder Joe* takes place in the tumultuous years after our nation is founded. The American Revolution is over, but how are we going to govern ourselves? Revolutionary comrades turn into bitter political opponents when it comes time to actually govern the country they founded. The immigrant Priestley is drawn into the vortex of America’s first major crisis.

“Freedom of Speech” has yet to be tested and Priestley’s admirers, John Adams and Thomas Jefferson, are engaged in a deeply polarizing debate over the fate of our fledgling nation. Will Priestley once again find himself labeled a *most dangerous* man because of his beliefs and outspoken nature?

# T H E C H A R A C T E R S

## JOSEPH PRIESTLEY (1733-1804)



A noted British theologian, political progressive, and prolific author, Priestley is best known as the “discoverer of oxygen.” His scientific contributions include: development of the carbonation process, an early understanding of the relationship between plants and animals, identification of carbon monoxide, experiments in electricity, and exploration of photosynthesis.

A supporter of the American Revolution, Priestley was dubbed “Gunpowder Joe” by his political enemies because of his incendiary writings.

## MARY PRIESTLEY (1742-1796)



Born into a successful industrialist family (Wilkinson Ironworks), Mary married Joseph Priestley in 1762.

She was the mother of their four children, and an intellectual companion and supporter of her husband’s work. She joined her husband in exile, and looked forward to their new life in America.

Mary designed the architecture of the Priestley’s home, but died of tuberculosis before the construction was finished.

## JOHN ADAMS (1735-1826)



Adams was the First Vice President and Second President of the United States. He helped draft the Declaration of Independence. After the Revolutionary War, he became the first American Minister to London, which is where he met Priestley.

In 1796, Adams beat his old friend and political enemy Thomas Jefferson to become president. Respected but not popular, Adams served one term before losing to Jefferson in the election of 1800.

## ABIGAIL ADAMS (1744-1818)



Abigail was the wife of the Second President, John Adams, and the mother of the Sixth President, John Quincy Adams. Her fond, newsy and philosophical letters to her husband have become famous both as evidence of a deep love affair and as a source of information about the Revolutionary era.

Abigail became a friend to First Lady Martha Washington when John Adams became the country’s first Vice President under George Washington.

# T H E C H A R A C T E R S

## THOMAS JEFFERSON (1743-1826)



Jefferson was the Third President and a key drafter of the Declaration of Independence. He credited Joseph Priestley's writings as inspiring that document.

He served as: Minister to France, Governor of Virginia, and Secretary of State. He was Vice President to John Adams. Their famously contentious relationship spawned our nation's two-party system. Their friendship was rekindled, however, through an exchange of letters. Jefferson and Adams died within hours of each other on the fiftieth anniversary of the signing of the Declaration of Independence.

## SALLY HEMINGS (1773-1835)



An enslaved woman of mixed race, Hemings was owned by President Thomas Jefferson. Most historians agree that she was the mother of six fathered by him, of whom four survived to adulthood, and were given freedom by Jefferson.

At fourteen, Hemings accompanied Jefferson's daughter, Mary, to London and then to Paris where she spent two years. It is believed that Jefferson began his relationship with Hemings while she was accompanying his daughter in France. Hemings remained a slave in Jefferson's house until his death.

## THOMAS COOPER (1759-1839)

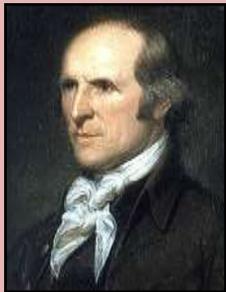


An Anglo-American economist, college president, political philosopher, and a fellow radical in England with Joseph Priestley. Like his friend Priestley, Cooper sympathized with the Jeffersonian Democrat-Republicans. He was very vocal in his disapproval of the Alien and Sedition Acts.

He later served as the chair of chemistry at Dickinson College and at the University of Pennsylvania. He went on to become the President of the University of South Carolina.

# T H E C H A R A C T E R S

**TIMOTHY  
PICKERING**  
(1795-1800)



A politician from Massachusetts, Pickering served as the third Secretary of State. He fought in the Revolutionary War and participated in the Pennsylvania convention to ratify the Constitution.

As Secretary of State he is most remembered for his strong Federalist Party attachments to British causes. In 1802, Pickering attempted to gain support for the secession of New England. The irony of a Federalist moving against the national government was not lost among his dissenters.

**BENJAMIN FRANKLIN  
BACHE**  
(1769-1798)



An American journalist, printer and publisher, Bache founded the Philadelphia Aurora newspaper. His paper's heated attacks of Federalist political leaders are thought to have contributed to Congress's passage of the Alien and Sedition Acts, under which Bache was arrested in 1798. The law may have been written to suppress opponents such as Bache. After posting bail, he publicly condemned the Sedition Act in print as a violation of the First Amendment. Before his trial, he died at age 29 of yellow fever.

**WILLIAM COBBET**  
(1763-1835)



Also known as Peter Porcupine, he was a controversial pamphleteer in his native England. In 1793 he sailed for Philadelphia and arrived into a political storm. Convinced that Joseph Priestley was a traitor, Cobbett wrote the pamphlet "Observations on the Emigration of Joseph Priestley." It launched his career as a journalist. Through his newspaper, Porcupine's Gazette, he engaged in a media war against Benjamin Franklin Bache's Aurora. After paying a heavy fine in a libel judgment, Cobbett returned to England in 1800.

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Joseph Priestley lived in England during an exciting time often called the "Age of Enlightenment." During this period in the 1700s, scientists and philosophers began examining the world through reason and human intellect. Their ideas touched many aspects of life including: politics, economics, science, and religion.

Enlightenment thinkers promoted the political concept known as Natural Rights. This theory argues that people are born with certain rights the government cannot take away such as life, liberty, and the pursuit of happiness. These values informed the secession of the American colonies from their mother country, Great Britain, where the church and state were united. This created a dangerous environment for the dissenters who refused to swear an oath to the Anglican church. No laws existed to protect the people from expressing dissatisfaction with the law.

Joseph Priestley made no effort to hide his beliefs. He did not subscribe to the 19 Articles of the Anglican Church. As an academic, he taught about principles of good governments— many ideas of which included anti-establishment thinking and were considered explosive and dangerous. Many upper class English believed that common people controlling the government would result in chaos. Priestley, however, vied for increased literacy and education which he believed would lead the people to a natural interest in matters of their governance.

Joseph Priestley communed with a circle of experimenters, industrialists, philosophers, and intellects in Birmingham, England who called themselves the "Lunar Society." The name originated from coordinating their monthly meeting time with the full moon. They playfully called themselves the "lunartics."



An Experiment on a Bird in the Air Pump, 1768

THE LUNAR SOCIETY

With Priestley's increased involvement in the Lunar Society, the meeting times

moved from the Sunday to the Monday nearest the full moon to accommodate Priestley's prior commitments as a clergyman.

The British artist Joseph Wright of Derby knew Joseph Priestley and was closely attached to the Lunar Society. Wright's paintings of laboratory scenes depict the intense, wondrous moments of scientific discovery. Our poster image for *Gunpowder Joe* was inspired by these artworks.



A Philosopher Lecturing on the Orrery, 1766

Eventually, Priestley's radical views and his risky public position became dangerous to him and his family. In 1791, a week-long public riot destroyed his home, library of research, laboratory, and chapels. The harassment continued and in 1794, Priestley sailed for America and settled in Northumberland, Pennsylvania. He believed that the new nation's government was progressive enough to allow for free-thinking. In America he did not align himself with any political party and continued to write and operate as a free-thinker.

# COMMON CORE CONNECTIONS

For text requirements, utilize the script provided

## GRADES 9—10

*CCSS.ELA-LITERACY.RH.9-10.3*

*Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them.*

*CCSS.ELA-LITERACY.RH.9-10.4*

*Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social science.*

### GET ACTIVE

Create a Critical Response:

Describe the events which preceded Joseph Priestley's relocation to America. What, if any, events led to his relocation? Support your response with specific examples and vocabulary from the text.

## GRADES 11—12

*CCSS.ELA-Literacy.RI.11-12.4*

*Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).*

*CCSS.ELA-Literacy.RH.11-12.6*

*Evaluate authors' differing points of view on the same historical event or issue by assessing the authors' claims, reasoning, and evidence.*

*CCSS.ELA.Literacy.RH.11-12.7*

*Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.*

### GET ACTIVE

Create a Play Response:

Utilize diverse formats and media to present your personal response to the play. Use the performance itself as a model for media-enhanced delivery of information. Carrying on in Priestley's experimental spirit, find a unique way to present your feelings, reactions, and thought about the play. Do not simply summarize the play; delve into why the play did/did not "work" for you as an audience member. All facets of the production are fair game: acting, costumes, set, music, lights, etc.

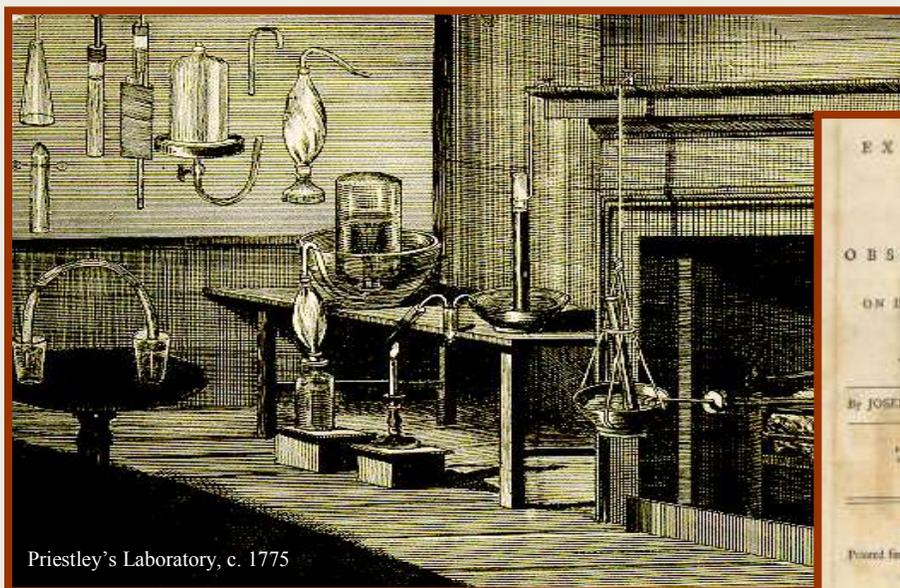
In Joseph Priestley's time, there was no such word as "scientist." Clearly defined areas of study such as chemistry, biology, and physics did not exist. Curious minds interested in the study of nature and its workings were called Natural Philosophers. Joseph Priestley was one such Natural Philosopher from a young age. One of his earliest experiments included trapping spiders in closed jars to see how long they could live.

Priestley had no formal science training, but he was an avid experimenter. He did not seek to become famous, instead, he desired to think for himself and encourage his students to do the same. Science demonstrations served as parlor-room and fairground entertainments in the 18th century. These Priestley experiments are presented in *Gunpowder Joe*:

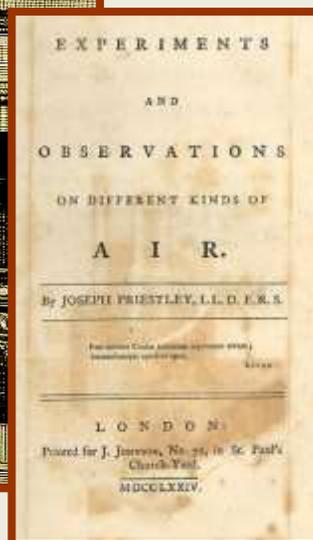
## THE DISCOVERY OF OXYGEN

In a series of experiments culminating in 1774, Priestley found that "air is not an elementary substance, but a composition," or mixture of gases. Among them was the colorless and highly reactive gas he called "dephlogisticated air," to which the great French chemist Antoine Lavoisier would soon give the name oxygen.

Priestley conducted his most famous experiment using a glass burning lens through which he focused sunlight on a lump of reddish mercuric oxide sat on top of an inverted glass container filled with mercury and placed in a pool of mercury. The gas emitted, he found, was "five or six times as good as common air." In succeeding tests, it caused a flame to burn intensely and kept a mouse alive about four times as long as a similar quantity of air. Both the mouse and Priestley found this gas to have remarkable effects: "The feeling of it in my lungs was not sensibly different from that of common air, but I fancied that my breast felt peculiarly light and easy for some time afterwards...Hitherto only two mice and myself have had the privilege of breathing it," he wrote.

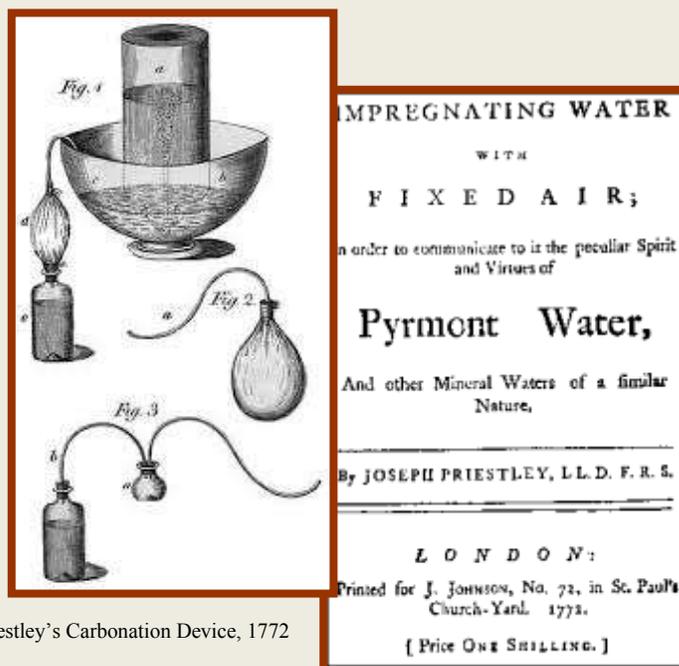


Priestley's Laboratory, c. 1775



## CARBONATION

Joseph Priestley invented soda pop! In 1767, Priestley was offered a ministry in Leeds located near a brewery. The abundant and convenient source of “fixed air”— carbon dioxide from fermentation— sparked his lifelong investigation into the chemistry of gases. The brewery allowed him to experiment on their premises. He discovered that pouring plain water back and forth between two cups while holding it over the vats infused it with the fixed air after a short amount of time, adding an agreeable fizz. He found a way to artificially produce this sparkling water and the method earned him the Royal Society’s coveted Copely Prize and was the precursor of the modern soft-drink industry.



Priestley's Carbonation Device, 1772

## ELECTRICITY

When Joseph Priestley first took up Natural Philosophy, he was drawn to the relatively new study of electricity. He traveled to London in 1765 and met Benjamin Franklin (who was serving as Pennsylvania’s colonial agent) in a coffee house and offered to write a book about the exciting discoveries in this field.

Franklin encouraged Priestley to conduct his own experiments while writing his book. *The History and Present State of Electricity, with Original Experiments* was published in 1767, and it was a big hit. Copies circulated around the globe. Franklin sent multiple copies back to the colonies, which was no wonder, as it was in this book that the story of Franklin’s famous experiment with the key and the kite was first told.



The book would remain the principal text on electricity for nearly a hundred years. Priestley outlined his own discoveries in the book, and he included some tips for aspiring scientific showmen: “A description of the most ENTERTAINING EXPERIMENTS performed by electricity.”

Eli Raeker-Jordon, an engineering student at Bucknell University, has built a replica of Joseph Priestley’s static electricity machine from a diagram in Priestley’s book. After the machine is used in the play, it will be donated to the Joseph Priestley House in Northumberland.



Replica of Priestley’s 1769 static electricity machine, built by John Jenkins, Spark Museum (Vintage Radio and Scientific Apparatus)

# COMMON CORE CONNECTIONS

## GRADES 9–10

*CCSS.ELA-LITERACY.WHST.9-10.2*

*Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.*

*CCSS.ELA-LITERACY.WHST.9-10.9*

*Draw evidence from informational texts to support analysis, reflection, and research.*

### GET ACTIVE

Create A Critical Response:

Utilize the play's presentation of science and technical subjects in the script and production to create a critical response. Utilize a wide variety of resources.

## GRADES 11–12

*CCSS.ELA-LITERACY.RST.11-12.3*

*Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.*

*CCSS.ELA-LITERACY.RST.11-12.2*

*Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.*

### GET ACTIVE

Recreate Priestley's Experiments:

Use Priestley's own instructions to replicate his experiments and equipment.

Create a Play Review:

Write a play review in response to its presentation of Priestley's achievements in science. Analyze how the playwright, actors, director, and designers have transformed scientific information into performance.

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Joseph Priestley House Webpage:

<http://www.josephpriestleyhouse.org/learn/about-joseph-priestley/>

Joseph Priestley House Teacher Packet:

<http://www.josephpriestleyhouse.org/wp-content/uploads/TeacherPacket.pdf>

American Chemical Society, Joseph Priestley and the Discovery of Oxygen:

<https://www.acs.org/content/acs/en/education/whatischemistry/landmarks/josephpriestleyoxygen.html>

American Chemical Society, Landmark Lesson Plan: Discovery of Oxygen:

<https://www.acs.org/content/acs/en/education/whatischemistry/landmarks/lesson-plans/joseph-priestley-discoverer-of-oxygen.html>

PBS: The Mystery of Matter, Episode 1: Out of Thin Air:

<http://www.pbs.org/video/2365543486/>

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