

## STUDY GUIDE Ben Franklin and His Kite

by Scott Wichmann

#### Audience: Students in grades K-5

#### **Curricular Connections:**

Biography, History, Government, Language Arts, Science

#### Additional Resources:

<u>Ben and Me: An Astonishing Life</u> of Benjamin Franklin by His Good <u>Mouse Amos</u>, by Robert Lawson

Ben Franklin Public Broadcast Service (PBS) An Extraordinary Life. An Electric Mind. http://www.pbs.org/benfranklin/

Energy Kids: U.S. Energy Information Administration Science of Electricity http://www.eia.gov/KIDS/energy. cfm?page=electricity science-basics

<u>Now & Ben: The Modern Inventions</u> of Benjamin Franklin, by Gene Barretta

The Franklin Institute History of Science and Technology: Benjamin Franklin https://www.fi.edu/historyresources/franklin

<u>Who Was Ben Franklin?</u> by Dennis Brindell Fradin



By Unknown - crop of File:Benjamin West, English (born America) - Benjamin Franklin Drawing Electricity from the Sky - Google Art Project.jpg, Public Domain, https://commons.wikimedia.org/w/index.php?curid=41818787

Is electricity the same as lightning? What causes static electricity? How can I create static electricity? How can we protect people from lightning? Benjamin Franklin, a man of undying curiosity, asked all of these questions. Franklin was an inventor, poet, philosopher, statesman, scientist, author, printer, and more.

In June 1752, Ben Franklin "shocked" the world with his discovery that lightning held electricity! Take this "enlightening" journey with Virginia Repertory Theatre into the experiment that changed the course of history 250 years ago. This entertaining and educational play brings the history of Franklin's experiments with electricity to life.

# Benjamin Franklin: Struck by Curiosity

The play advises, "Folks, all you have to do is let your curiosity be your guide." That was the spirit of Benjamin Franklin. His curiosity lead him to constantly hypothesize, experiment, and draw new conclusions about the natural world. Use what you've learned about electricity to draw lightning bolts to match each description with a term, below:

current	Something that electricity does not flow through freely.	
battery	The path along which a current flows.	LIGHTNING
insulator	The flow of electrical charge.	
conductor	A device that stores and produces electricity by changing chemical energy into electric energy.	Wire
circuit	Something that electricity flows through freely.	Ground Rod

One of the things that Franklin invented was the **lightning rod**. Use a highlighter to draw a bolt of lightning, and show where the electrical charge will travel if it were to strike the lightning rod pictured to the right.

## Understanding the Scientific Process

#### Scientists go through the following steps:

- 1. Identify a question or problem that they are curious about.
- 2. Make a prediction or hypothesis about what they think the answer to that question might be.
- 3. List the materials needed for the experiment, and figure out the procedures involved.

4. Carefully follow the procedures, making observations in the form of notes, diagrams, and pictures.

5. Reflect back on the original problem and hypothesis. Was it solved? What new information was learned? What new questions emerged? Write these conclusions down.

### What are you curious about?

### Get started by brainstorming with a partner on the back of this sheet.

# The Wise Ben Franklin

Benjamin Franklin was more than a scientist. He was also an inventor, poet, philosopher, statesman, author, and printer, to name a few things. He wrote <u>Poor Richard's Almanac</u>, and is famous for his wise words. Below are a few words of wisdom from Benjamin Franklin. Choose one of these quotes, and explain what you think it means in the space below.



"You may delay, but time will not."

"Early to bed and early to rise makes a man healthy, wealthy, and wise."

"Well done is better than well said."

"Lost time is never found again."

"It is the working man who is the happy man. It is the idle man who is the miserable man."

## Cross out the incorrect statements below about Benjamin Franklin.

He served as a Senator from New Jersey.	He was part of the Boston Tea Party.	
He wrote <u>Poor Richard's Almanac</u> .	He fought in the Civil War.	
He helped write the Declaration of Independence.	He invented the lightning rod.	
He had wooden teeth.	He invented the hearing aid.	
He created Philadelphia's first fire department.	He served as Governor of Pennsylvania	
He invented bifocals.	He was a U.S. President.	

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## Behind the Curtains

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Virginia Repertory Theatre Presents...

### Ben Franklin and His Kite

by Scott Wichmann

Virginia Repertory Theatre Nathaniel Shaw, Artistic Director Phil Whiteway, Managing Director

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## Theater Etiquette



You should clap after a play, act, or song, or right before intermission. If you loved the show, you can give a "standing ovation" at the end. That's when you stand up while applauding.

#### It's quiet time (sort of).

If the play makes you laugh or cry, that is fine, but you can chat with your friends afterwards. Show the actors respect and quiet they need to focus on their roles. Being quiet allows the rest of the audience to concentrate on the play. Many people with different skills and talents work together to make a production such as *Ben Franklin and His Kite* come to life. Can you match these theater jobs with their descriptions?

a person who plays a role or character in stage plays, motion set designer pictures, television broadcasts, etc. a person who creates the look of each character by designing playwright clothes and accessories the actors will wear in performance. this person's job is to pull together all the pieces and parts of a play stage manager - the script, actors, set, costumes, lighting and sound, and music to create a production. this job focuses on using light to create effects that match the actor mood of various scenes in a performance. this person is a writer of scripts for plays. The script tells a story through costume designer the actions and words of the characters. this person creates the physical surroundings of a play, including lighting designer any scenery, furniture, or props used throughout the play. this person helps the director and helps organize the actors, director designers, stage crew, and technicians throughout the production of a play.