

LOCAL STUDENTS LEARN ABOUT JOSEPH PRIESTLEY

The 250th anniversary of Joseph Priestley's discovery of oxygen seemed to act as a catalyst for local schools to connect students with both science and local history.

The children in Kindergarten through Grade 2 at the Priestley and Oaklyn Elementary Schools learned about Dr. Joseph Priestley this year. Because 2024 marks the 250th anniversary of Priestley's discovery of oxygen, an event that is being celebrated locally at the Joseph Priestley House Museum in Northumberland this year, RIF Coordinator Lisa Mertz chose to make "Joseph Priestley, the Scientist" the theme for one of this year's events.

Five hundred seventy-six students across the two elementary schools watched videos focused on Joseph Priestley, which taught them about Priestley's life, his scientific experiments, and his house in Northumberland. At the conclusion of the program, each child received a Priestley



Student Visitors

coloring book and two books of their choice. "The 250th anniversary celebrates a great man and our community, and RIF celebrates books and the love of reading. I think Joseph Priestley would have approved," said Lisa, who also serves as a member of the Friends of Joseph Priestley House Board.

Then during the month of May one hundred ten 4th graders from Chief Shikellamy Elementary School and two hundred 8th graders from Shikellamy Middle School visited Joseph Priestley House to learn about Joseph Priestley and life in the late 1700s in Northumberland. Tours of the house and the grounds were part of their on-site experience, and because of a special grant, every student who visited received a free book. The books provided through the grant, all STEM related, cover topics in science and in history, a nod to Joseph Priestley's place in history and his interest in science.



JOSEPH PRIESTLEY HOUSE
P.O. Box 226
NORTHUMBERLAND, PA. 17857



Postings from Priestley House

NEWSLETTER OF THE FRIENDS OF JOSEPH PRIESTLEY HOUSE

Number 83, Summer 2024

www.joseph-priestley-house.org

570-473-9474

SPECIAL DATES

2024 Season
250th Anniversary of the
Discovery of Oxygen

JUNE 29 - JULY 5
PINEKNOTTER DAYS

JULY 17 - AUGUST 2
ENGLAND TOUR

AUGUST 2-4
250th ANNIVERSARY
GALA WEEKEND

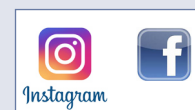
SEPTEMBER 21
SCOUT DAY
Topic: Science & Nature
for Scouts of all ages
1-4 pm

OCTOBER 19-20
CEMETERY TOUR
at the Riverview Cemetery
has been discontinued

OCTOBER
SPECIAL MUSEUM EVENT
at the Priestley House
Date & Time TBA

NOVEMBER
FRIENDS DINNER
recognizing members
and volunteers
Date, Place & Time TBA

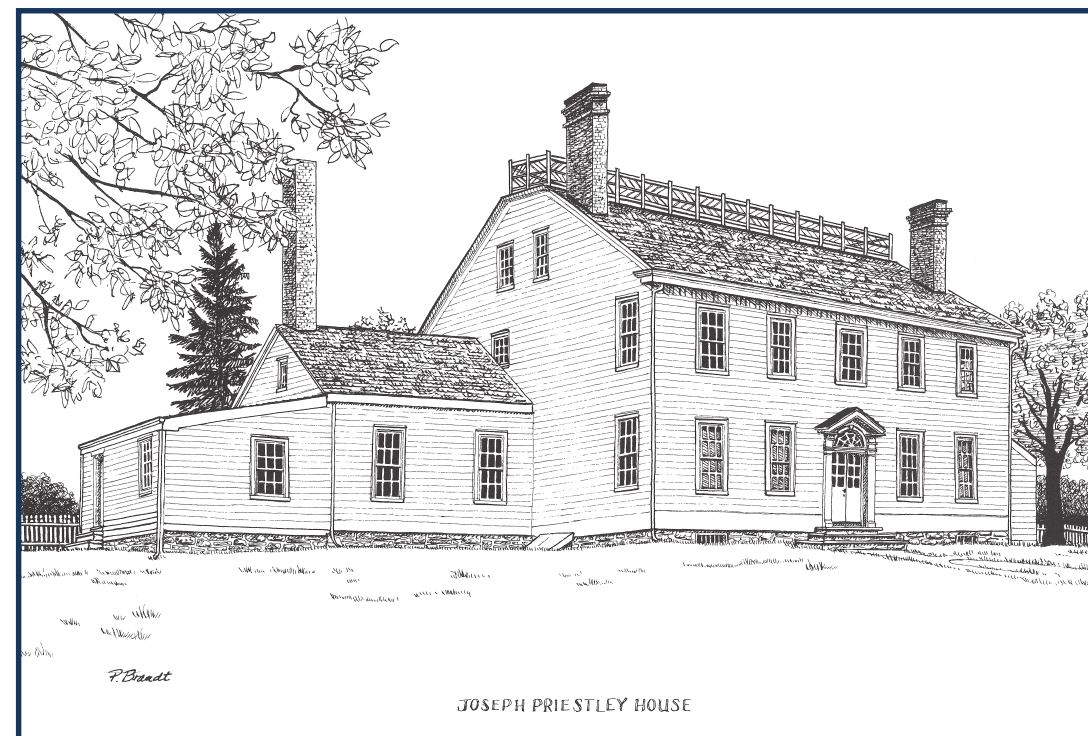
Check local papers, Facebook,
or joseph-priestley-house.org
for additional details as
event days draw closer.



In addition to our webpage you can Like us on Facebook (Joseph Priestley House Museum) to keep abreast of special Joseph Priestley House Museum events or follow us on Instagram (jphmuseum). Also, you can donate to the Priestley House via Amazon Smile! Go to www.smile.amazon.com and select "Friends of Joseph Priestley" as your charity. Everytime you shop at Amazon Smile, a portion of the purchase will be donated to the Priestley House!

CELEBRATING THE 250TH ANNIVERSARY OF DR. JOSEPH PRIESTLEY'S

Discovery of Oxygen: 1774-2024



P. Brant

JOSEPH PRIESTLEY HOUSE

The Friends of Joseph Priestley House would like to recognize with gratitude the

250TH ANNIVERSARY MEMBER DONORS

whose generosity helped to make this year's celebration possible:

Virginia H. Eaton
Todd Miller
Seth Rohrbach
Robert & Neta Sacks
Eric & Barbara Schmidt
Douglas G. Tarr

and a gift made in memory of
Becky Hollenbach

The Friends of Joseph Priestley House would like to recognize with gratitude the

250TH ANNIVERSARY BUSINESS SPONSORS

whose generosity helped to make this year's celebration possible:

Marotta/Main Architects
Pineknottter Brewery
Something Special Flower Shop
W & S Beer Distributors
Whispering Oaks Winery

PLANT FAIRE WEATHER LESS THAN FAIR

Rain, and lots of it, marked the Native Plant and Herb Faire at the Priestley House Museum on May 18th. Fortunately, diehard gardeners are not discouraged by rain. Sales at the native plant stand sponsored by the Friends of Joseph Priestley House sold more plants at this year's event than at the premier event in 2023, although attendance overall was down.

Master Gardeners spent part of the day offering gardening presentations in the Pond Building. Visitors were able to learn about "Planting for Wildlife" and "Noxious vs. Native Planting," with opportunities to ask questions and interact with the presenters.

The plethora of Spring rain brought the Priestley gardens to life, providing a pleasing backdrop for the day's events. The lavender in the Forecourt Garden garnered a bit of attention from visitors, spurring the possibility of offering Priestley garden cuttings and plants for sale at future events.



Forecourt Garden Sundial



Master Gardeners



Herb Garden

The new display of heirloom flower and vegetable seeds in the Visitors Center Gift Shop, provided through the Landis Valley Farm Museum's Heirloom Seed Project, also attracted attention, as did the herbal soaps, inspired by the herb garden on the Priestley property.

Vendors also dotted the grounds of the Joseph Priestley House Museum. In addition to the food truck **Pier 147** set up in the museum parking lot, nine vendors dotted the Priestley Museum lawn:

Backyard Forest (Bellefonte), **Patti's Fairy Gardens**, **Simply Sarah**, **Fuzzy Ninja Crafts**, **C & K Creations**, **Castle Creek Farms**, **Hackenberg Apiaries**, **Louise & Me**, and **Joyce Gift Baskets**.

The event also provided activities for families, including a make-and-take event for children as well as a special book give-away underwritten by a special grant to the Joseph Priestley Museum.

A NEW FACE AT JOSEPH PRIESTLEY HOUSE

At a recent Board Meeting, Friends of Joseph Priestley House hired Jennifer Long to work part time along with Operations Manager Murrie Zlotziver. Jennifer will be assisting Murrie with record keeping, on-going data collection, and special project support.

A Shikellamy High School graduate with work experience at both Karpinski Trucking and Furmano Foods, Inc, Jennifer brings an extensive knowledge of office procedure and experience with computer software, instrumental in today's technology driven world, to assist with the behind the scenes operations of the museum.

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jphopsmanager@gmail.com

ASST. TO OPS MANAGER
Jennifer Long

VOLUNTEER COORDINATOR
Jo Ann Long

NEWSLETTER EDITOR
Deborah Bernhisel
jphpostings@gmail.com

JOSEPH PRIESTLEY HOUSE
473 PRIESTLEY AVENUE
NORTHUMBERLAND, PA 17857

Walk-in Visitors or visitors with reservations are welcome during museum hours. For tour reservations go to our web site <https://joseph-priestley-house.org>

The reservations link is available on both the home page and tour page. Reservations will be confirmed by e-mail.

Tours will begin at 1pm, 2pm, 3pm.
Admission prices are listed on the tour page.

Special Assistance
Individuals who need special assistance or accommodation to visit The Joseph Priestley House should contact us in advance to discuss their needs.

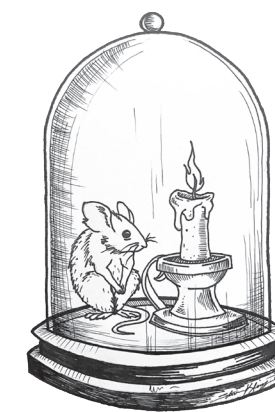
To join the Friends of Priestley House call 570-473-9497 or visit www.joseph-priestley-house.org

ART & SCIENCE: WHAT ABOUT THE MOUSE?

The name Anna Laetitia (Aikin) Barbauld¹ is not a name one normally hears associated with science or the discovery of oxygen. But the story of oxygen would not be complete without making mention of "The Mouse's Petition." During her time Barbauld was a prominent English poet, essayist, literary critic, editor, and author of children's literature, but prior to her marriage, she and her family lived in Warrington, where her father, John Aikin served as a tutor at Warrington Academy. It was there that the Aikins and Priestleys became friends, and it was there that Anna Aikin saw the fate of the mice Priestley captured, inspiring her to write "The Mouse's Petition." The poem, published in 1773, prior to Priestley's discovery of oxygen and written from the perspective of a captured mouse awaiting use in an upcoming experiment, began:

Oh! Hear a pensive captive's prayer.
For liberty that sighs:
And never let thine heart be shut
Against the prisoner's cries!

For here forlorn and sad I sit,
Within wiry grate:
And tremble at the' approaching morn,
Which brings impending fate,²



Barbauld's works contain other poems inspired both by Joseph Priestley and Mary Wilkinson, although none so directly connected to his research on gases. Among those pieces are "To Dr. Priestley, Dec. 29 1792" was originally written as a private piece in sympathy to Priestley, who had lost his house and church during the Birmingham riots and was, like many dissenters of his day, coming under increasing pressure from the crown with the passage of a Royal Proclamation issued against "Seditious Writings and Proclamation" and "An Inventory of the Furniture in Dr. Priestley's Study" that appeared in The Works of Anna Leatitia Barbauld, with a Memoir by Lucy Aikin, published in 1825.³ She also wrote "A Character of Priestley" in which she describes Joseph Priestley as, among other things, a "Champion of Truth!"

¹A Celebration of Women Writers: Anna Laetitia Aikin Barbauld (1743-1825). UPenn Digital Library. <https://digital.library.upenn.edu>

²Jackson, Joe. A World on Fire: A Heretic, An Aristocrat, and the Race to Discover Oxygen. New York: Penguin Books, 2007, pg. 169.

³A Celebration of Women Writers: Anna Laetitia Aikin Barbauld (1743-1825). Ibid.

⁴Steven Klinger created the illustration of the mouse and candle enclosed in a bell jar.

Of note ~ A letter from Joseph Priestley to Anna Aikin is housed in the Dickinson College Archives & Special Collections dated June 13, 1769.

SCIENTIFIC ART ON DISPLAY DURING GALA WEEKEND

During the Gala Weekend Celebration on the grounds of Priestley House, the museum will be opening another room of displays to the general public. In addition to showcasing several special Priestley artifacts, the room will serve as a temporary art gallery for scientific art. The young artist responsible for the exhibit is Hope Buzelli, a recent graduate of the New York Academy of Art, who specializes in scientific illustration. When the exhibition closes in November, the room will become the site of a variety of rotating displays relevant to the life and times of Joseph Priestley.

Of special note to the museum and its members is that Hope is planning to make a gift of one of her pieces for permanent display at the Priestley House Museum.

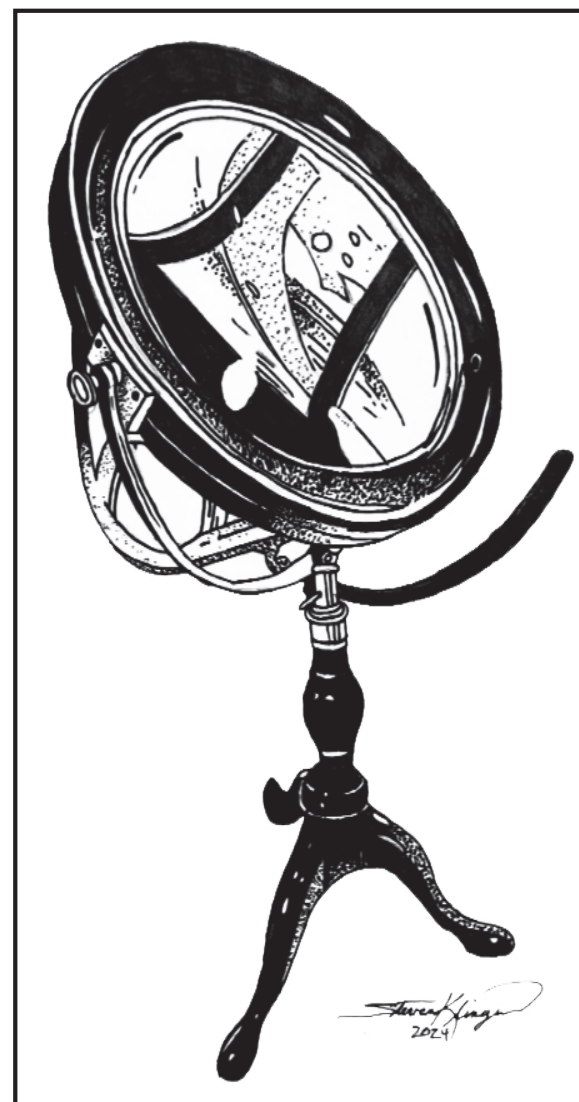
THE DISCOVERY OF OXYGEN: WHAT HAPPENS WHEN SOMETHING BURNS?

According to the American Chemical Society's publication "Joseph Priestley: Discoverer of Oxygen," the "most pressing issue in chemistry and physics" in the mid- 18th century, was "what exactly happens when something burns." Joseph Priestley believed that flammable material contained a substance called "phlogiston" that "was released during combustion," a theory shared by many of his contemporaries. Basically, he believed that "when a candle burned, for example, phlogiston was transferred from it to the surrounding air. When the air became saturated with phlogiston, and could contain no more, the flame went out."

Priestley's interest in gases seems to have been sparked during his time in Leeds, when he lived near a brewery with an abundant source of "fixed air" (carbon dioxide). It was not until 1773, however, when Priestley was employed by William FitzMaurice Petty, Earl of Shelburne, that he had both the time and the equipment to extend his experiments. Priestley "systematically analyzed the properties of different 'airs' using his favored apparatus: an inverted container on a platform that could capture the gases produced by various experiments next to it. The container could also be placed in a pool of water or mercury, effectively sealing it, and the gas tested to see if it could sustain a flame or support life."¹

It was through these experiments that Priestley discovered that putting green plants in the jars and exposing them to sunlight allowed a flame to burn and a mouse to breathe. Then on August 1st of 1774 Priestley conducted his most famous experiment. "Using a 12-inch-wide glass 'burning lens,' he focused sunlight on a lump of reddish mercuric oxide at the top of an inverted glass container filled with mercury and placed it in a pool of mercury." The gas emitted during the experiment was "five or six times as good as common air"² and caused candle flames to burn brighter. Puzzled by a gas, which behaved like nitrous air, but was released by mercuric oxide, which did not produce nitrous air, Dr. Priestley continued his experiments, eventually identifying the unidentified gas as a more rarified version of common air, which he named "dephlogisticated air."

The story of the discovery of oxygen would not be complete, however, without mentioning that Priestley was not alone in researching gases.



This burning glass was made by Samuel Parker in London for Dr. Joseph Priestley in 1792. It is currently in the possession of Dickinson College in Carlisle, Pennsylvania.¹⁰

Sometime between 1771 and November 16, 1772, Carl Wilhelm Scheele³, a Swedish German pharmaceutical chemist and accomplished researcher, "discovered that manganese oxide, when heated white-hot, discharged a gas he called 'fire air' . . . but [Scheele] explained everything in terms of phlogiton and did not demonstrate the importance of 'fire air' in respiration or combustion."⁴ Scheele's book *Air and Fire* that detailed his findings was not released until 1777, by which time Priestley's discovery was accepted and being widely shared. Another researcher, Pierre Bayan, a master apothecary of the French army and a contemporary of Antoine Lavoisier⁵, also came close to discovering oxygen. In February 1774 Bayan released a report describing his experiments with mercury oxide in which he noted that "red mercury oxide could be converted directly into metallic mercury without being heated by charcoal."⁶ The heating process released a gas, oxygen, but he "mistakenly identified it as Joseph Black's carbon dioxide, or "fixed air."⁷

During this same period of time, Lavoisier was also changing the face of science. While Priestley was researching what it was in air that sustained life, Lavoisier was investigating what in air aided burning. It was Lavoisier who "expressed on paper his dissatisfaction with the phlogiston theory and asked himself whether air might combine with other substances."⁸ His research methodology differed significantly from that of Priestley, but until he met Priestley in Paris in the Fall of 1774, he had reached an impasse. What he did learn through his experiments prior to meeting Priestley was that substances gained, rather than lost weight, during combustion. It was Priestley himself who gave Lavoisier the missing piece to his puzzle; unlike Priestley, Lavoisier did not heat the mercuric oxide directly with the burning glass, thus bypassing the contaminating fumes produced with charcoal. Furthermore, he learned that the heated mercuric oxide released a gas that sustained combustion better than atmospheric air.⁹ Building on Priestley's discoveries, Lavoisier developed the theory that a substance capable of burning must combine with oxygen for combustion to take place. He believed Priestley was incorrect in naming his discovery "dephlogisticated air." Lavoisier argued that burning objects did not give off phlogiston, but rather took on Priestley's gas. It was Lavoisier who named the newly identified gas "oxygen."

¹ Suplee, Curt. "Joseph Priestley Discoverer of Oxygen." American Chemical Society, 2004.

² Ibid.

³ West, John B. "Carl Wilhelm Scheele, the discoverer of oxygen, and a very productive chemist." American Physiological Society Journal. <https://journals.physiology.org>.

⁴ Jackson, Joe. *A World on Fire: A Heretic, An Aristocrat, and the Race to Discover Oxygen*. New York, USA: Penguin Books, 2005, pg. 116.

⁵ "Antoine-Laurent Lavoisier" Science History Institute. <http://www.sciencehistory.org>.

⁶ Jackson, pg. 116.

⁷ Ibid., pg. 117.

⁸ Ibid., pg. 136.

⁹ Ibid, pgs. 158-162.

¹⁰ Steven Klinger illustrated the burning glass which appears with this article. All copyrights to the work were relinquished to the Friends of the Joseph Priestley Museum.

GALA WEEKEND CELEBRATION

SCHEDULE FOR AUGUST 2-4TH

August 1, 2024 marks the 250th Anniversary of Dr. Joseph Priestley's discovery of oxygen, and in honor of that auspicious event, Joseph Priestley House Museum is hosting a celebration. Here's what to expect:

Friday Evening, August 2 from 6-9 pm Priestley House Museum is hosting a party on the museum grounds. Under a tent set up just for the occasion, guests will be able to enjoy food catered by Townside Catering and purchase Priestley Pilsner brewed by Pineknotter Brewery or wine from Whispering Oak Winery, and, if one so desires, dance to music performed by Elegance Quartet (<https://www.elegancequartet.com>). The house will be open for guests to visit the newly renovated second floor room designated for Special Museum Displays. From August through November that room will feature an art exhibit by guest artist Hope Buzzelli, whose scientific illustration art will debut art specifically created for the 250th Anniversary Celebration. Registration, including a cover charge of \$5 per person, will be required of all event attendees. Registration will be available on-line at the newly upgraded Priestley House Museum website (joseph-priestley-house.org) beginning in July.

On **Saturday, August 3** the Priestley House Museum will be hosting a visit from Priestley descendants wishing to spend a day on-site. Registration for descendants will begin at 10:30 am in the Visitors Center. Between 11 am – 1 pm volunteers will be offering special house tours to registered descendants, including access to normally restricted areas of the property and followed by a special "family lunch" catered by On-a-Roll, beginning at 1 pm. The day will conclude with a brief presentation on the Priestleys in Northumberland, followed by a tour of Priestley properties in Northumberland, including a visit to the Priestley Chapel, and a visit to Riverview Cemetery and the grave of Joseph and Mary Priestley, with time to visit the other Priestley family members also buried at Riverview.

For non-descendent visitors, museum volunteers will be on-hand Saturday to conduct regular museum tours from 1-3 pm and the gift shop will be open for the purchase of 250th anniversary memorabilia.

Then, on **Sunday, August 4** the Friends of the Joseph Priestley House Museum will host its annual Oxygen Day Garden Party. The event will include light refreshments as well as a tribute to the American Chemical Society and special recognition of Dr. Roy Arne Olofson, Retired Professor of Chemistry from Penn State University at 12:30 pm. Kid-centered outdoor activities will begin at 11:30 am. The museum will open for tours beginning at 1 pm, with music in the parlor by Fred Hooper, piano, and Broderick Leshner, violin, from 1:30-3:30 pm. On the grounds visitors can interact with a Brewmeister demonstrating beer brewing from the 18th century and listen to the music of fiddler Beverley Conrad. At 1:30 pm and again at 3:30 pm in the Pond Building, Dr. Priestley, portrayed by Ron Blatchley, will demonstrate Priestley related science experiments. There is no charge for Sunday's events, although anyone wishing to attend the science demonstrations must get tickets in the Visitors Center, because seating is limited.

STUDENT ART CONTEST WINNERS FOR THE MONTH OF MAY

1st Place ~ Cora Hoover
2nd Place ~ Jamier Andrew
3rd Place ~ Ryleigh Ziants

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STUDENT POETRY CONTEST WINNERS FOR THE MONTH OF JUNE

1st Place ~ Jude D. Martin
2nd Place ~ Jay C. E. Martin

HISTORY CAMP AT PRIESTLEY HOUSE: JOSEPH PRIESTLEY, SCIENTIST



2024 History Camp with Ben Franklin

Seventeen young historians ages 5 -11 gathered at the Priestley House Museum from 9 am - Noon on June 10th, 11th, and 12th to learn about Dr. Joseph Priestley and the world in which he lived thanks to the efforts of History Camp Director Jo Ann Long. During their three days of camp the children met Dr. Priestley and Ben Franklin, learned about herbs and carbonation, and went home with punch tin ornaments, homemade kites, and wooden picture frames for their personal camp photo.

It takes the dedication of a number of adults to make the camp experience possible. Ron Blatchley was the resident Dr. Priestley during the first day of camp. His science experiments made science fun, and each child received a "gold penny" to commemorate the day, although one young camper made sure everyone was reminded the "gold pennies" weren't real! Then on day two Benjamin Franklin, portrayed by Steve Klinger, visited the children to talk about Franklin's friendship with Dr. Priestley and about the kite experiment that Priestley made famous in his Two Volume book *The History and State of Electricity with Original Experiments*. On the third day Cindy Inkrote introduced the campers to herbs and their uses in cooking and medicinal applications. She brought mint tea for the children to sample, although the root beer floats associated with Priestley's discovery of carbonation seemed to be a bigger hit. The camp experience also included a tour of the Priestley House, with plenty of time to explore the wonders of the Children's Room located in the pantry off the kitchen.

Thanks to the planning and dedication of Lisa Mertz and Mary Diehl, camp participants were able to do a variety of activities and crafts. The kites, commemorating Franklin's famous experiment were a particular hit. And parents appreciated the hand-decorated framed photos that commemorated their child's camp experience along with their punch tin ornament. The children also learned to play games common to the children of the late 1800s: cup and ball, Jacob's Ladder, hoops with stick, and the wooden bat and ball. It took some practice for the children to master the skills necessary to enjoy these games, so different from the on-line games with which they are familiar.

"It is always fun to work with the children and bring history to life," said Jo Ann.

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