PIKES PEAK LIBRARY DISTRICT ppld

HOMESCHOOL CONNECTIONS

AN EDUCATIONAL RESOURCE TOOL | **WINTER 2025/2026**

LOCATIONS

Calhan Library
600 Bank St., Calhan
(719) 531-6333, x7013

Cheyenne Mountain Library
1785 S. 8th St.
(719) 531-6333, x7001

East Library
5550 N. Union Blvd.
(719) 531-6333, x7014

eLibrary
ppld.org
Open 24 hours a day, 7 days a week

Fountain Library
230 S. Main St., Fountain
(719) 531-6333, x7002

High Prairie Library
7035 Old Meridian Rd., Peyton
(719) 531-6333, x7003

Library 21c
1175 Chapel Hills Dr.
(719) 531-6333, x7012

Manitou Springs Library
701 Manitou Ave., Manitou Springs
(719) 531-6333, x7004

Mobile Library Services
ppld.org/mobile-library-services
(719) 531-6333, x7702

Monument Library
1706 Lake Woodmoor Dr.,
Monument (719) 531-6333, x7005

Old Colorado City Library
2418 W. Pikes Peak Ave.
(719) 531-6333, x7006

Palmer Lake Library
66 Lower Glenway St.,
Palmer Lake (719) 531-6333, x7007

Penrose Library
20 N. Cascade Ave.
(719) 531-6333, x7015

Ruth Holley Library
685 N. Murray Blvd.
(719) 531-6333, x7009

Sand Creek Library
1821 S. Academy Blvd.
(719) 531-6333, x7018

Ute Pass Library
8010 Severy Rd., Cascade
(719) 531-6333, x7011

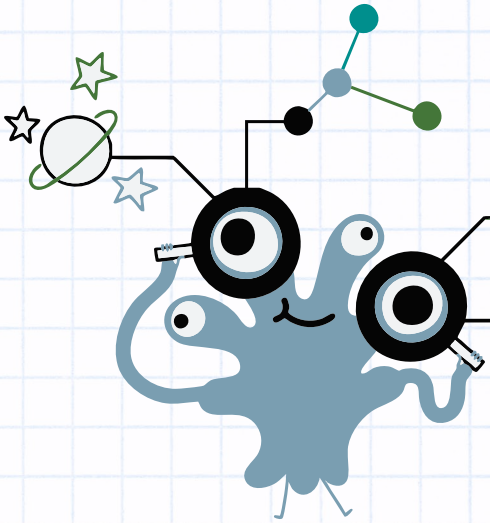
HOMESCHOOL HUB | *ppld.org/homeschool-hub*

Whether you are a veteran homeschooling family or just getting started, visit the PPLD Homeschool Hub to find Library events and sign up for eNewsletters. Click on the "Resources" tab for information about getting started, Colorado homeschool law, local enrichment programs, tutoring, extracurricular activities, and more.

CITIZEN SCIENTISTS

Are you looking for a way to teach science that encourages a deeper understanding of concepts but also creates a sense of wonder and curiosity? Consider joining citizen science projects. Citizen science invites ordinary people of all ages to be actively involved in scientific research in their community, collaborating with scientists to advance discovery. It is a perfect way for homeschoolers to develop awareness of the world around them while also nurturing critical observation and stewardship skills . Whether your family is interested in astronomy, ecology, biology, environmental science, or something different, they can join in a variety of ways.

WHY SHOULD YOU CONSIDER CITIZEN SCIENCE?



Hands-on: Become involved in actual projects in your area.

Self-directed: Pursue opportunities that match your curriculum and interests.

Community involvement: Connect with other community members, scientists, and researchers.

Educational: Develop skills in critical thinking and environmental stewardship.

HOW DO YOU INCORPORATE CITIZEN SCIENCE INTO YOUR HOMESCHOOL LESSONS?

Science: Align citizen science projects with what you are learning. Encourage the use of data collection and analysis to connect to scientific principles.

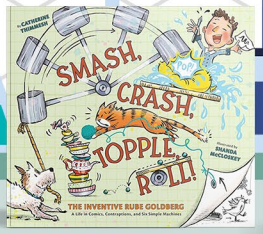
Math: Collect data that includes measurement and record keeping. Explore your data with mathematical analysis using graphs and charts.

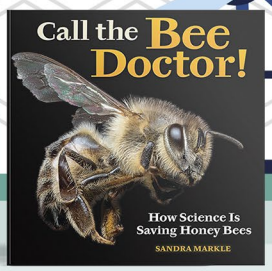
Language Arts: Integrate reading, writing, and other communication into your learning. Consider having your students summarize their findings and share them with the community.

Social Studies: Investigate the historical aspects of your project and the impact on the community.

Geography: Use your citizen science project to map results and land use. Discuss how land formations may affect the results.

Now is a great time to get involved! Learn how to find citizen science projects on page 3!





THE BOOKSHELF

Safe Crossing

by Kari Percival

One wet spring evening, a child and her family head to a country road where they help frogs and salamanders cross during their migration to vernal pools to lay their eggs. Some don't make it, and the girl wonders if there is a way to create a permanent safe crossing (a bridge or a tunnel), initiating a community effort that includes consulting scientists, presenting plans to the town council, fundraising, and more! This exquisitely illustrated book ends with amphibian facts and tips on how to become a community scientist.

Ages 4 - 10; Citizen Scientists; Wildlife Rescue; Amphibians; Volunteers; Community

Firefly Song: Lynn Frierson Faust and the Great Smoky Mountain Discovery

by Colleen Paeff; illustrated by Ji-Hyuk Kim

As a child, Lynn spent summers exploring the Great Smoky Mountains where local fireflies put on a "dazzling" display. Later on, she noticed that the insects were flashing in a regular pattern. Told by experts that synchronized fireflies do not exist in the Western Hemisphere, this self-taught naturalist went on a quest to find out more—carefully observing, conducting research, and finally convincing scientists they were wrong! Lush illustrations and lyrical text introduce the wonder of discovery.

Ages 5 – 10; Citizen Scientists; Fireflies; Nature Cube; Inventors; Puzzles

Alberto Salas Plays Paka Paka Con La Papa

by Sara Andrea Fajardo; illustrated by Juana Martinez-Neal

Alberto grew up in the Peruvian Andes playing paka paka con la papa (potato hide-and-seek), a game that made him familiar with his surroundings. After becoming a plant expert, he found himself playing the game again—traveling the mountains to hunt for wild potatoes with "superpowers" (providing nutrition, blocking diseases, etc.). Scientists can use these native plants to create durable new species, but Alberto must find them before climate change causes them to go extinct. Told with playful text, earthy artwork, background, and photos.

Ages 5 - 10; Conservation; Agriculture; Scientists; South America

The Quest for a Smash, Crash, Topple, Roll!: The Inventive Rube Goldberg

by Catherine Thimmesh; illustrated by Shanda McCloskey

Born in 1883, Rube Goldberg grew up during a time of tremendous technological advances. Gadgets were everywhere, but not all of them worked well. These complexities encouraged Rube's creative humor and led to his name becoming an adjective—taking a simple task and making it as complicated as possible. Combining history, biography, and physics concepts, this exceptional book also encourages readers to create their own Rube Goldberg contraption (tips included).

Ages 6 - 12; American History; Science; Inventions; Experimentation

Call the Bee Doctor!: How Science Is Saving Honey Bees

by Sandra Markle

How do scientists solve big problems? Though the future looked grim after massive honey bee losses in the mid-2000s, apiologists (the "bee doctors") have been hard at work trying to understand what causes colony collapse disorder (there are many reasons) and to create solutions. This top-notch science work reviews the current findings in the search for honey bee health, clearly presenting information along with photos of scientists at work—and amazing closeup shots of the insects. Includes additional resources.

Ages 8 - 14; Science; Bee Diseases; Scientists in the Field

DID YOU KNOW? CELEBRATED CITIZEN SCIENTISTS

Benjamin Franklin (1706-1790)
A self-taught scientist, this founding father constantly explored the world around him. In addition to his kite experiment proving that lightning is electricity, he also charted (and named) the Gulf Stream to help ships navigate more efficiently, investigated topics like electromagnetism, and observed and published the transit of Venus (and don't forget all of those inventions).

Mary Anning (1799-1847)
Born into poverty in Lyme Regis in southern England, Mary unearthed a 17-foot ichthyosaur skeleton at age 12, the first of many finds for which she would never receive credit. Though she had no formal education, she taught herself anatomy, geology, and fossil preparation, and was consulted by visiting scientists not only for specimens but also for guidance.

Ferdinand Mueller (1825-1896)
This German botanist traveled to Australia in 1847, where he enlisted the help of an estimated 1,300 volunteer citizen scientists to collect plant specimens. He created the first complete catalogue of Australian plants, uniting people across colonies in a massive citizen science effort.

Thomas Bopp (1949-2018)
When a comet streaked across the night skies in 1996, two star gazers in different locations discovered it at the same moment. One was professional astronomer Alan Hale, while the other, Thomas Bopp, was an amateur astronomer using a borrowed telescope out in the Arizona desert (the comet would be named Hale-Bopp).

PPLD RESOURCES: SCIENCE AND MORE!

Online resources can be accessed at ppld.org/databases and require a valid library card and PIN number. Search for each by title.

Gale in Context: Elementary

This database gradually lets elementary school children gain comfort with research by delivering age-appropriate, reliable, curriculum-related content covering a broad range of subjects. Browse a subject (e.g., Animals, Science, Technology) or research your own topic.

Science Reference Source

Designed to meet every student researcher's needs, Science Reference Center contains full text for over 732 science encyclopedias and reference books, 195 periodicals, 519 science videos, and other sources.

World Almanac for Kids

Geared toward elementary and middle school students, this database provides content from trusted sources. Search a particular topic or browse the "Life Science" and "Physical Science" sections. Check out the "Teacher Resources" section for lesson plans, diagrams, trivia, and more!

Junior Ranger Nature Packs

Designed for ages 7-13, these packs provide self-guided activities to encourage children and their families to get out, explore, observe, describe, and engage the senses any time during the year. Included are scientific activities, guides to wildlife and flora, trail maps, and more. *More info at ppld.org/Jr-Ranger-Packs.*

Family Stargazing Backpacks

Provided by the Colorado Springs Space Foundation Discovery Center, these backpacks are designed to encourage families to enjoy and explore the night sky. Includes binoculars, maps, and books as well an admission pass for four guests and any children under two years old. Search the catalog for available locations.

ONLINE RESOURCES: CITIZEN SCIENTIST OPPORTUNITIES

CoCoRaHS (cocorahs.org)
The Community Collaborative Rain, Hail & Snow Network site invites participants to help measure and report precipitation and track weather patterns to improve accuracy in forecasting.

Colorado Bat Watch (coloradobatwatch.org)
Colorado Bat Watch is a collaborative effort to study and conserve bats. You can get involved as a community scientist!

Colorado Pika Project (pikapartners.org/involved)
This community science program engages volunteers in collecting data to understand the impacts of climate change on American pikas (Ochotona princeps) across Colorado (including Front Range sites). Collect data at long-term monitoring sites or use an app to record data wherever pikas are found.

eBird (ebird.org)
Join people around the world in recording bird data. Share your observations with other birders, scientists, and educators to track data and contribute to global bird research.

GLOBE (globe.gov)
The Global Learning and Observations to Benefit the Environment program focuses on advancing Earth systems science through data collection and analysis by citizen scientists. After receiving a brief in-app training for each protocol, participants can submit data on various projects and participate in various challenges.

The Great Sunflower Project (greatsunflower.org)
Participate in reporting pollinator activity, identifying where pollinators need support, and finding out how you can help.

iNaturalist (inaturalist.org)
Record and share your interactions with nature. The site also helps with species identification and contributes to scientific research.

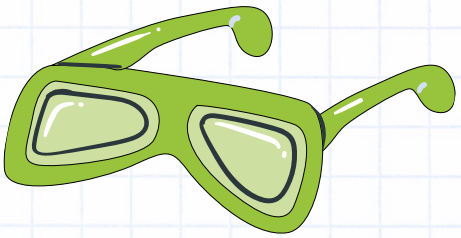
Journey North (journeynorth.org)
Engage in migration studies of monarch butterflies, hummingbirds, and more.

NASA Citizen Science (science.nasa.gov/citizen-science)
Get involved in citizen science opportunities through NASA to help discover the secrets of the universe and improve life on Earth.

Project NOAH (projectnoah.org)
Participate in documenting and sharing wildlife and plant observations by uploading photos, joining missions, and contributing to species identification.

SciStarter (scistarter.org)
Search the SciStarter database for Citizen Science Projects nearby that are of interest. Searchable by age, project type, and more.

Zooniverse (zooniverse.org/projects)
The world's largest and most popular platform for people-powered research, made possible by volunteers—millions of people around the world. You can watch video footage to help identify fish, look for merging galaxies in date from the Webb Telescope, and more—all without leaving home!



BOOKS FOR KIDS: J-EASY

Bird Count by Susan Edwards Richmond

Bioblitz!: Counting Critters by Susan Edwards Richmond

BOOKS FOR KIDS: J-NONFICTION

Backyard Bears: Conservation, Habitat Changes, and the Rise of Urban Wildlife by Amy Cherrix

Chasing Bats and Tracking Rats: Urban Ecology, Community Science, and How We Share Our Cities by Cylita Guy

Winged Wonders: Solving the Monarch Migration Mystery by Meeg Pincus

Give Bees a Chance by Bethany Barton

Look Up!: Bird-watching in Your Own Backyard by Annette LeBlanc Cate

The Children's Book of Wildlife Watching by Dan Rouse

The Kid's Guide to Exploring Nature by the Children's Education Staff at Brooklyn Botanic Garden

Earth Squad: 50 People Who Are Saving the Planet by Alexandra Zissu

What Can a Citizen Do? by Dave Eggers

BOOKS FOR KIDS: J-BIOGRAPHY

Spring after Spring: How Rachel Carson Inspired the Environmental Movement by Stephanie Roth Sisson

BOOKS FOR TEENS: FICTION

Sky on Fire by E.K. Johnston

Dragonfly Girl by Marti Leimbach

Strange Birds: A Field Guide to Ruffling Feathers by Celia C. Pérez

The Curie Society: Eris Eternal by Heather Einhorn and Adam Staffaroni (graphic novel)

Pangu's Shadow by Karen Bao

Prom Theory by Ann LaBar

BOOKS FOR TEENS: NONFICTION

The Field Guide to Citizen Science: How You Can Contribute to Scientific Research and Make a Difference by Darlene Cavalier (adult book)

The Urban Naturalist: How to Make the City Your Scientific Playground by Menno Schilthuizen (adult book)

How to Change Everything: The Young Human's Guide to Protecting the Planet and Each Other by Naomi Klein

The 21: The True Story of the Youth Who Sued the U.S. Government Over Climate Change by Elizabeth Rusch

The Hidden Life of Trees: A Graphic Adaptation based on the book by Peter Wohlleben; adapted by Fred Bernard (adult book)

ACTIVITY: PAPER MOUNTAINS

A watershed is a geographic basin into which all the water on the land surface in an area flows. Our local watershed has an enormous impact on water supply and quality and is an important part of the health of our city. Much of the water comes from stormwater, like rain and snow/ice melt. As a family you can research the benefits of native plants, natural pesticides, and even the removal of litter from your neighborhood to reduce the pollution of stormwater. Try this activity, watch how "stormwater" washes through and into waterways, and then talk about how you keep our local watershed healthy.

Supplies: paper; marker; water dropper

1. Crumple up a piece of paper and gently open it most of the way. It should still show ridges (high points) and valleys (low points).

2. Choose one of the ridges and color the whole ridgeline with a washable marker. Use lots of ink! Make a prediction. If water fell on the ridge you just colored, where would it go? What would happen to the colored ink?

3. Now, test your prediction. Use the dropper to place water onto the peak, simulating a rainstorm. Was your prediction correct? Repeat this experiment with more ridges on your crumpled paper. Do your predictions change as you make and observe more simulated rainstorms?

Do you have feedback or ideas for a Homeschool Connections issue? Please email Joy at *Jfleishhacker@ppld.org*.