

Space Exploration

Kids' Books: Reach for the Stars

- J-Reader**
Mae Jemison by Laurie Calkhoven
Buzz Aldrin by Kilsdonk Jazyńska
- J-Nonfiction**
Astronaut Aquanaut: How Space Science and Sea Science Interact by Jennifer Swanson 627.72 SWAN
The Space Adventurer's Guide by Peter McMahon 629.4 MCMA
Above and Beyond: NASA's Journey to Tomorrow by Olugbemisola Rhuday-Petkovitch 629.4 RHUD
Exploring Space: From Galileo to the Mars Rover and Beyond by Martin Jenkins 629.409 JENK
Mission Control, This is Apollo by Andrew Chalkin 629.454 C434MI
Moonshot: The Flight of Apollo 11 (picture book) by Brian Floca 629.454 F628M
Countdown: 2979 days to the Moon (told in free verse) by Suzanne Slade 629.454 SLAD
Team Moon: How 400,000 People Landed Apollo 11 on the Moon by Catherine Thimmesh 629.454 T443T
- J-Biography**
Counting on Katherine: How Katherine Johnson Saved Apollo 13 by Helaine Becker 510.92 JOHN (picture book)
Hidden Figures: The True Story of Four Black Women and the Space Race by Margot Lee Shetterly 510.92 SHET (picture book)
One Giant Leap: The Story of Neil Armstrong by Don Brown 629.450092 A737B (picture book)
My Journey to the Stars by Scott Kelly 629.450092 KELL (picture book)
Chasing Space by Leland Melvin 629.450092 MELV
Almost Astronauts: 13 Women Who Dared to Dream by Tanya Lee Stone 629.450092 S881A
To the Stars! The First American Woman to Walk in Space by Carmella Van Vleet 629.450092 SULL VANV (picture book)

Teen Booklist

Space

- Fiction**
Heart of Iron by Ashley Poston
Buzz Aldrin by Yoon Ha Lee
Empress of a Thousand Skies by Rhoda Belleza
Illuminae by Amie Kaufman and Jay Kristof
The Disasters by M. K. England
- Nonfiction**
Astrophysics for People in a Hurry by Neil deGrasse Tyson 523.01 TYSO
Space Junk: The Dangers of polluting the Earth's Orbit by Karen Romano Young 629.416 YOUN
We Could Not Fail: The First African Americans in the Space Program by Richard Paul and Steven Moss 629.4092 PAUL
Rise of the Rocket Girls: The Women Who Propelled Us, From Missiles to the Moon to Mars by Nathalia Holt 629.407207 HOLT
Elon Musk: Tesla, SpaceX, and the Quest for a Fantastic Future by Ashlee Vance Biography 338.762922 MUSK VANC

Web Pick

NASA has the go-to website (nasa.gov) for anyone looking to learn more about space! Browse for current information by topic. Check out the Image of the Day to see brand new photographs from NASA's Hubble Space Telescope and historic photos. Hop over to NASA Kids' Club (nasa.gov/kidsclub) to play games or visit the Space Place (spaceplace.nasa.gov) for an easy-to-navigate introduction to all things space. Scroll through student and educator resources and information. The NASA Knows section houses one-page articles, broken down by grade level, that explain science concepts, provide biographies, and answer fun questions, like: What is a space suit? What is supersonic flight? Who is Katherine Johnson? Any of these articles will take you down a rabbit hole of discovery! Finally, check out the affiliated website, Story Time from Space (storytimefromspace.com). What's cooler than watching real astronauts in real space reading really great books?

Here's an example of Image of the Day:

Finding an Elusive Star Behind a Supernova
 Located 65 million light-years away is a blue supergiant star that once existed inside a cluster of young stars in the spiral galaxy NGC 3938, as shown in this artist's concept.



Teen Activity: DIY Constellation Jars

Materials:

- Aluminum foil • Jar • LED stick-on (or other light)
- Pencil with sharp tip • Sharpie • Printed-out constellation

Instructions:

1. Cut a piece of aluminum foil that is long enough to wrap around the inside of your jar.
2. Trace or draw a constellation onto the aluminum foil with sharpie.
3. Go over the sharpie with pencil to make pronounced lines in the foil, and poke holes through the foil with your pencil to indicate stars.
4. Put your LED light inside the jar.
5. Line the inner edge of your jar with the aluminum foil.
6. Turn on the LED and enjoy!



Adapted from: craft.ideas2live4.com/2015/04/24/diy-constellation-jar-lamp/

Kids' Activities: Explore Space!



Visit NASA's website (spaceplace.nasa.gov/menu/dot) to access directions for the activities featured below and more fun ideas!

Sun Paper - Use shaving cream and food coloring to make marbled paper that looks like our sun. You can glue it onto black paper.

Ultraviolet Light Handprint - See how sunscreen protects your skin from the harmful effects of ultraviolet light and create handprint art at the same time!

Design a Moon Habitat - NASA is working on plans to send a group of astronauts to live on the moon. You can practice by engineering your own astronaut habitat using simple materials.

Build a Physics Machine - Use materials you already have to build a device that demonstrates a basic law of nature.

Create a Balloon-Powered Nanorover - Beginning with Styrofoam meat trays, create a nanorover to explore an outer space surface.



HOMESCHOOL CONNECTIONS

An Educational Resource Tool

Summer 2019

LOCATION KEY

- EA East Library** (719) 531-6333, x7014
5550 N. Union Blvd.
- PE Penrose Library** (719) 531-6333, x7015
20 N. Cascade Ave.
- LI Library 21c** (719) 531-6333, x7012
1175 Chapel Hills Dr.
- CH Cheyenne Mountain Library** (719) 531-6333, x7001
1785 S. 8th St.
- CyberShelf**
cybershelf.ppld.org
Open 24 hours a day, 7 days a week
- FO Fountain Library** (719) 531-6333, x7002
230 S. Main St.
Fountain
- HI High Prairie Library** (719) 531-6333, x7003
7035 Old Meridian Rd.
Falcon
- MA Manitou Springs Library** (719) 531-6333, x7004
701 Manitou Ave.
Manitou Springs
- MO Monument Library** (719) 531-6333, x7005
1706 Lake Woodmoor Dr.
Monument
- OL Old Colorado City Library** (719) 531-6333, x7006
2418 W. Pikes Peak Ave.
- PA Palmer Lake Library** (719) 531-6333, x7007
66 Lower Glenway St.
Palmer Lake
- RO Rockrimmon Library** (719) 531-6333, x7008
832 Village Center Dr.
- RU Ruth Holley Library** (719) 531-6333, x7009
685 N. Murray Blvd.
- SA Sand Creek Library** (719) 531-6333, x7018
1821 S. Academy Blvd.
- UT Ute Pass Library** (719) 531-6333, x7011
8010 Severy Rd., Cascade

Space Exploration

The 50th anniversary of the successful Apollo 11 mission is this year! On July 20, 1969, Apollo Lunar Module Eagle landed on the Moon. Six hours later, on July 21, astronauts Neil Armstrong and Buzz Aldrin became the first people to step foot on its surface. Now, in 2019, we are celebrating our past accomplishments in space as we strive to learn even more about the expanse beyond our planet. Currently, NASA is gearing up to head back to the Moon for another landing (albeit with robots, not humans) by partnering with private companies such as SpaceX and Blue Origin, run by famous billionaires Elon Musk and Jeff Bezos, respectively. Meanwhile, SpaceX and Blue Origin are preparing to head to Mars. SpaceX currently hopes to put humans on Mars by 2024. Are you more interested in finding alien life? NASA has you covered! According to the chief of NASA, Jim Bridenstine, "we're well on our way" to discovering alien life forms on Mars, Jupiter's moon Europa, or Saturn's Titan moon.



It's not only an exciting time for space exploration, it's also an exciting time to learn about space at your local library! This year's summer reading theme, "A Universe of Stories," is a fantastic opportunity to find out more about the past and future of space exploration and to work with fabulous local organizations that provide space education. Take advantage of the Colorado Springs' rich history of working in and studying space and visit one of these educational organizations, which also provide opportunities for homeschooled students:

Challenger Center of Colorado

10215 Lexington Dr., Suite 110, Colorado Springs, CO, 80920 • (719) 598-9755 • challenger.org
 (Moving to 8701 Wolf Valley Dr. in September 2019)

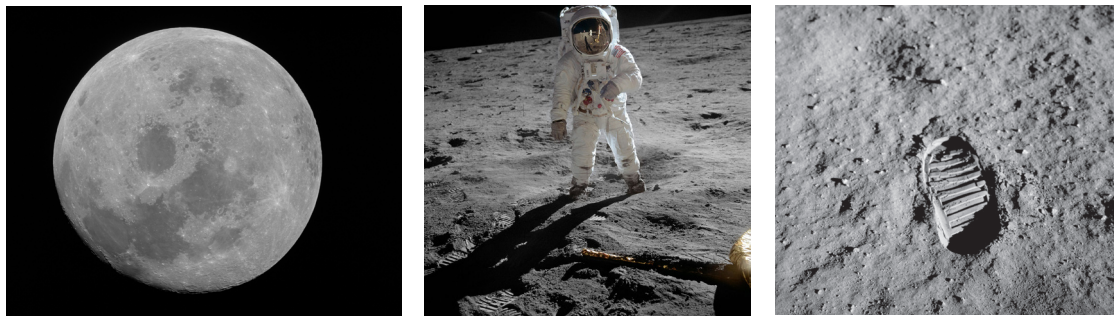
The Challenger Center of Colorado has lots of resources available to you and your family. Plan a space mission with other homeschool families, learn more about STEM resources at a STEM boot camp for educators, or visit their inflatable planetarium.

Space Foundation Discovery Center

4425 Arrowswest Dr., Colorado Springs, CO, 80907 • (719) 576-8000 • discoverspace.org
 The Space Foundation Discovery Center features museum-quality space exhibits for you and your children to explore. They cater to homeschool families with events like Family Star Parties and Homeschool Days, along with online resources you and your family can use to round out your curriculum.

National Space Science & Technology Institute

7150 Campus Dr., Suite 365 • Colorado Springs, CO, 80920 • nssti.org
 The National Space Science and Technology Institute is building an observatory on top of Pikes Peak, which they hope to have ready for the public by next year! In the meantime, visit their monthly observatory program (weather permitting). Email them at info@nssti.org for more information.



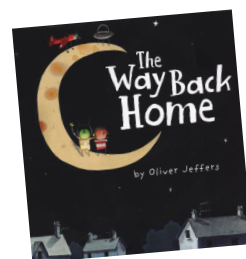
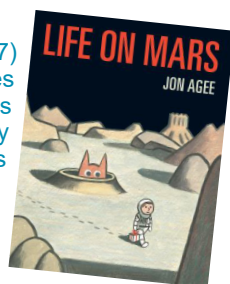
To contact PPLD's Homeschool Committee, please email jfleishhacker@ppld.org.



The Totally Spaced-Out Bookshelf

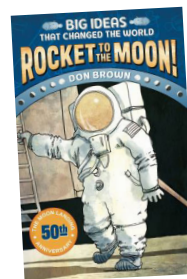
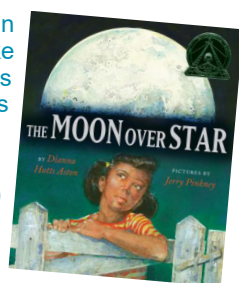
Picture Books (Ages 5 and Up)

Life on Mars by Jon Agee (2017)
A daring young astronaut travels to Mars with cupcakes to share, but cannot find anyone there. However, readers see the Martian creature. The illustrations provide many opportunities to talk about what is happening, and kids will be laughing as they turn the pages. (J-Easy)



The Way Back Home by Oliver Jeffers (2007)
After becoming stranded on the moon, a boy and a Martian cooperate so they can both make it back home. This story exudes examples of kindness towards those not like us. (J-Easy)

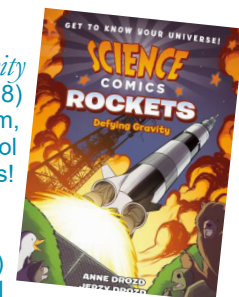
Moon over Star by Dianna Hutts Aston (2008)
July 20, 1969. Man's first day on the moon, as seen from the perspective of a little girl and her family. Historical fiction (J-Easy)



Graphic Novels and More

Rocket to the Moon! by Don Brown (2019)
A vivid history of the moon landing, and the newest book on this list. Don Brown is one of the best non-fiction writers in kid's books. Look for his other titles as well!
Ages 8 - 12. (J-629.454 BROW)

Rockets: Defying Gravity by Anne and Jerzy Drozd (2018)
This is thick and heavy science, but in a comic book form, so it goes down easier. Record this in your child's school journal. Look for more titles in the Science Comics series!
(J-621.4356 DROZ)

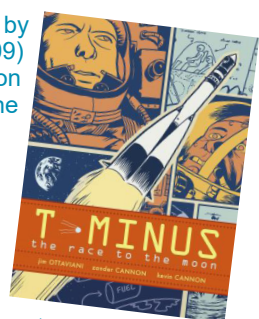


Zita the Spacegirl by Ben Hatke (2010)
This kid's graphic novel series is full of imagination. Three volumes have been published.
Ages 8 - 12. (J-741.5973 ZITASPAC HATK)

T-Minus: The Race to the Moon by Jim Ottaviani (2009)
This vintage-feel work of historical fiction is illustrated in black and white, making it feel true to the time period, beginning in 1957.
Ages 8 - 12. (J-741.5973 TMINUSRA OTTA)



Armstrong: The Adventurous Journey of a Mouse to the Moon by Torben Kuhlmann (2016)
Beautifully illustrated and imaginatively told, this art-book-meets-graphic-novel tells the story of a small mouse and a gigantic adventure. At 128 pages, it might take some time to read. Look for Kuhlmann's other similarly imaginative books.
Ages 7 - adult. (J-Fiction)



Little-Known Secrets

Family Star Gazing Backpacks

Does your family love to linger outdoors in the warm weather? Why not extend the fun - and the learning - into the evening hours by launching an exploration of the night sky? Everything you need to begin your journey is available in PPLD's new Family Star Gazing Backpacks. Created by the Space Foundation Discovery Center, each backpack contains an information booklet highlighting local spots for star gazing, star and moon charts, a pair of binoculars, and a copy of National Geographic's *Night Sky*, a fun-to-browse book packed with photos and fascinating facts. A red light attached to the zipper helps you to view the print materials without interfering with your night vision. Also included is a family pass for free admission to the Space Foundation Discovery Center (4425 Arrowswest Dr., Colorado Springs), the perfect place to extend your astronomy investigations. Visit the Discovery Center website (discoverspace.org) for a current listing of exhibits, events, and programming geared toward homeschoolers.



Ask for the backpacks at the check-out area of any PPLD location, or go to the catalog at ppld.org to place a hold (search under "Family Star Gazing Backpacks"). The backpacks can be used to complete some of the activities for our Summer Adventure program, which is themed "A Universe of Stories." Check one out, get outside, and see what you can discover!

Teen Fiction

One of the Teen Summer Adventure challenges is to "read" a book in a different format. Try the Overdrive/Libby app and listen to one of the titles listed below. All have excellent audio versions.

(Not all Robert Heinlein books are appropriate for teens. Google "Heinlein Juveniles" for more options.)

Citizen of the Galaxy
CD book; Overdrive/Libby (1957)

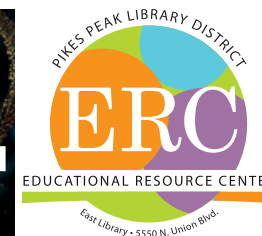
Rocketship Galileo
Overdrive /Libby audio (1947)

Rolling Stones
CD book; Overdrive/Libby audio (1952)

Have Space Suit, Will Travel
CD book; Overdrive/Libby audio (1958)



Libby app icon



Visit the Educational Resource Center and discover various models that will help your children visualize parts of outer space. Featuring the sun and eight planets, our Solar System Simulator model will give your children an understanding of sizes, distances, colors, and orbital speeds. They'll also discover which planets are visible at any given time and why some planets can only be seen at certain times of year. An informative guide with accessible astronomical information is included.

The Solar System and the Stars model can be used to explore the phenomenon of seasons, lunar eclipses, and phases of the Moon. A star chart maps out and names the constellations. The colorful, illustrated guide gives a clear understanding of the concepts presented.

The Orbiter model demonstrates basic Earth and Moon motions and explains the causes of day and night, seasons, and phases of the Moon. The guide offers 10 basic investigations with the orbiter, including "Why does the sun rise in the east and set in the west?" and "Why are there tides?" It also provides further inspiration for other challenging projects.

If you're interested in some hands-on learning when it comes to space, stop by the ERC on the second floor of East Library to explore these models! Visit ppld.org/erc for hours and more info.

Teens

Colorado Springs Astronomical Society

Learn about astronomy with the Colorado Springs Astronomical Society! Topics vary by location. See online calendar for details.

Murder Mystery Masquerade

Will you be able to solve the murder? Or did you commit it? Play a role in this murder mystery extravaganza! Ages 12 - 18.

Mon., June 3 • 3 - 5 p.m. • MA

Sat., July 13 • 3 - 5 p.m. • EA (registration required)

Thu., Aug. 22 • 6 - 8 p.m. • LI (registration required)

Marbelous Machines

Enter a world where marbles power kinetic machines, act as electrons moving through physical logic, and combine to create calculations and games unlike any you've seen before. You'll learn a 'bit' about binary numbers and have plenty of hands-on fun! Presented by STEMPunk Ed. Ages 9 - 15. Registration required.

Sat., June 1 • 2 - 4 p.m. • LI

Sat., June 29 • 2 - 4 p.m. • MO

Coding Camp

In this eight-session program, kids will learn computational thinking concepts, design their own stories, create and share their animations, and learn how technology is used in the film and media industry! Participants need to be able to attend six of the eight sessions. Registering for the first session automatically registers you for all eight sessions. Ages 9 - 15. Programs at HI, LI, and EA. See online calendar for details.

Paint a Sci-Fi Landscape

Paint a sci-fi landscape that's out of this world! Instructor Deb Ross will teach you watercolor skills while you create paintings of other planets. Ages 12 - 18. Registration required.

Tue., June 18 • 4 - 5:30 p.m. • RO

Thu., June 20 • 4:30 - 6 p.m. • EA

Thu., July 18 • 2 - 4 p.m. • MO

Wed., July 24 • 3 - 5 p.m. • HI

Homeschool Events

Homeschool Curriculum Give & Take

Thu., June 27 • 1:30 - 2:30 p.m. • East Library

Revitalize your family's learning resources or start your homeschool library at our annual Curriculum Give & Take! You can bring gently used curriculum items, educational games, books, and more to give away at this event while discovering resources that other families are ready to part with. No money will be exchanged. Contact Joy at jfleishhacker@ppld.org or (719) 531-6333, x6048 if you plan on bringing items to give away so that we can have a table ready for you. If you're looking for materials but not looking to give anything away, just drop in during the hour to see what treasures you can find.

Homeschool Resource Fair

Fri., Aug. 16 • 10 a.m. - 1 p.m. • Library 21c

Come visit with representatives from local organizations offering educational and extracurricular opportunities, and learn about how they can help you educate your children. Exhibitors will include enrichment programs, arts and music offerings, sports programs, field trip destinations, support groups, and more. We hope to see you there!

Homeschool Game Day

Fri., Aug. 23 • 11 a.m. - 12:30 p.m. • East Library

Come and play outdoors in the park behind East Library with other homeschool families at our annual Game Day. We'll provide balls, jump ropes, chalk, bubbles, and ideas for some fun games. All ages are welcome. In case of bad weather, the event will be cancelled. Questions? Contact Joy at jfleishhacker@ppld.org or (719) 531-6333, x6048. Come and have some fun!

Summer Adventure 2019

June 1 - July 31 • Ages 0 - 18

Have an adventure with Pikes Peak Library District this summer! Kids and teens can win prizes through reading and activities. We will be hosting many free, fun events! Starting Sat., June 1, register and enroll at ppld.beanstack.org. Go to ppld.org/summer-adventure to learn more.



Homeschool Connections ♦ Summer 2019