

We hope you'll file this issue for future use!

# Astronomy

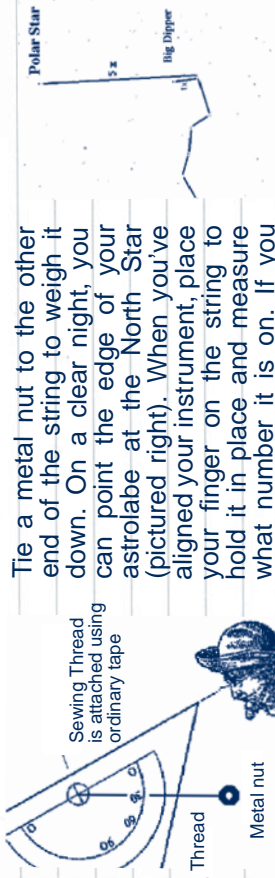
## Be a little Galileo with your own telescope!

**Materials:**  
Cardboard tube from paper towels  
Black construction paper  
Rubber band  
Pen or sharp pencil

Cover one end of the cardboard tube with the construction paper. Fasten in place with the rubber band. Use a pen or pencil to poke small holes in the paper so that the light can shine through. When you look through your telescope in the sunlight, it will be like a dark night with stars shining. Make your own constellation or just a beautiful night sky.

## Following the Stars: Celestial Navigation

Before GPS, cell phones, and satellites, explorers had to find their location using specialized instruments, careful calculations, and the stars. One of these instruments is called an astrolabe and was used during Columbus' time to determine latitude based on the North Star. You can make your own astrolabium by attaching a piece of sewing thread to the flat edge of a protractor with scotch tape as shown below-left:



you will know the altitude of the North Star above the horizon — and your latitude!

## Out of This World Kids Books!

**Nonfiction:**  
J 520. K41U Universe (DK Eyewitness)  
J 520. L765A Astronomy (DK Eyewitness)  
J 520. S974G The Greatest Intergalactic Guide to Space Ever

**J-Fiction:**  
Go Big or Go Home Hobbs, Will  
Sondok, Princess of the Moon and Stars (Royal Diaries series) Holman, Sheri

**J-Easy (picture books)**  
Moon Over Star Aston, Dianna Hutts  
If I Were an Astronaut Braun, Eric

On the Launch Pad: A Counting Book About Rockets Dahl, Michael

**The Outer Space Mystery** (Boxcar Children series) Warner, Gertrude Chandler

A Real Scientist Investigates Space

J 523.4 S737O The Outer Planets

## Space and Astronomy Booklist (Teen)

### Nonfiction

520.5078 W183S Space and Astronomy Experiments

520. A584F The Facts on File Space and Astronomy Handbook

### Fiction

The Hitchhiker's Guide to the Galaxy Adams, Douglas

Taking Off Moss, Jenny

How I Stole Johnny Depp's Alien Girlfriend Ghislain, Gay

## Web Picks

Find articles on astronomy topics that you and your child can understand. From the home page at [ppld.org](http://ppld.org), click on the Kids Web link, then Homework Help. Look for the Kids Magazine! link on the left. Searchasaurus is extremely kid friendly. The Lexile rating tells you how easy/hard the article will be to read.

Library shelves are one of the very best places to look for information on planets, stars, and such. The Dewey numbers 520 to 525 will cover the expanse of the sky.

Watch the International Space Station pass overhead! Check this website to see when and where this will happen: [spaceflight.nasa.gov/realdata/](http://spaceflight.nasa.gov/realdata/).

Stardate is the public education and outreach arm of the McDonald Observatory in Texas. There is a "radio" version that you can listen to on your computer. Their website is also one of the most beginner-friendly sites. [stardate.org/](http://stardate.org/)

Sky and Telescope is another helpful stop on the Internet. Look for "This week's sky at a glance" to discover what to be looking for when you are outside. They also have a great "How to start right" article that mentions visiting the public library for books! [skyandtelescope.com/observing/ataglance](http://skyandtelescope.com/observing/ataglance) [skyandtelescope.com/howto/basics](http://skyandtelescope.com/howto/basics)

Print out a great moon calendar or just look to see how the moon will change in appearance over the course of the month. [moonconnection.com/moon\\_phases\\_calendar.phtml](http://moonconnection.com/moon_phases_calendar.phtml)

Meteor Showers are other astronomical events to watch for. Sea and Sky has a great year overview calendar that will remind you of full moons, meteor showers, at notable eclipse dates (May 20, 2012 – annular solar eclipse for parts of the western United States!). [seasky.org/astronomy/astronomy-calendar-2012.html](http://seasky.org/astronomy/astronomy-calendar-2012.html)

## An Educational Resource Tool

Spring 2012

## Starry, Starry Night

Most people believe that you need a telescope to do anything with astronomy, and since there is no telescope at their house, there is no need to even think about astronomy. This simply is not true. Astronomy should begin at home. We can teach our children the simplest elements of astronomy. Here is how to begin astronomy at home.

### Go out and look for the moon in the night sky

Is it full, or just a sliver? Where is it in the sky? Where was it last night? Congratulations! You have begun "naked eye" astronomy: which requires only looking up – no equipment necessary. Everyone should learn basic moon facts. A full moon always rises in the east as the sun sets in the west. If your children do not know this already, you could help them discover this over the course of the year. A good wall calendar will show full and new moon dates. The waning moon rises later and later until the new moon, or the dark moon, is setting almost with the sun. Look for the first, tiny sliver of the moon at dusk in the western sky the day after the new moon, as this can be seen with the naked eye. Then, keep track of the moon each night, watching it "grow" as it moves further east each night.

### Learn at least a few constellations each season

Find the *Constellations* by H. A. Rey, first published in 1954, is still a great book for beginners; adults included. If there is a lot of "light pollution" in your area, you may need to look for a darker spot. Some constellations have big, bright stars, and kids can learn their names.

### Planets are the most fun to spot in the night sky

Venus and Jupiter put on the best displays, but planets may or may not be visible on any night. They move slowly through the night sky, so a quick check with a website that tells you which direction to look (east, west, southeast, etc.) will make all the difference. Look for bright objects that do not twinkle like stars. On March 14, 2012, Venus and Jupiter will be within three degrees of each other in the night sky. (Hold up one finger for one degree, three fingers for five degrees, your fist for ten degrees.) But do not wait until this date – look for them before and after this closest-together event.

With these beginning pointers, you will be able to write "astronomy" into your children's science topics for your homeschool studies.

## Astronomy and Space, by the Numbers

6,000,000,000,000 (6 trillion) miles — distance light travels in one year (light year)

93 million miles — distance from Earth to Sun

48.6 million miles — distance from Earth to Mars

238,857 miles — distance from Earth to Moon

17,400 miles per hour — speed space shuttle traveled to stay in orbit

3,000 degrees Fahrenheit — temperature a Space Shuttle experiences during re-entry into Earth's atmosphere

1969 — year of first moon landing

1781 — year Uranus discovered by William Herschel

135 — number of Space Shuttle missions

90 minutes — time it takes for the International Space Station to circle the Earth

77 years — age of oldest person ever to fly in space (John Glenn on the Shuttle Discovery)

30 years — how long the Space Shuttle program lasted

7 seconds — time it takes for light to get from the Sun to Earth

5 — number of Shuttles that were launched into space

2 — Shuttle missions that ended in disaster

1 — the International Space Station is the largest spacecraft ever built

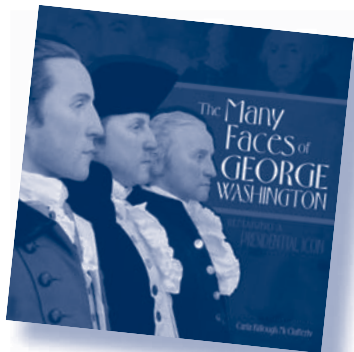


*Me ... Jane*  
 by Patrick McDonnell  
 This is the most child-friendly biography I have read in a long time, and it focuses on Jane Goodall's childhood – her love of nature, tree climbing, stuffed animal-carrying, watching chickens until an egg was laid, and eventually dreaming about going to Africa. The last story page has a photo of her and a baby chimpanzee reaching out to touch her; photos can help kids "see" that this is a true story.

Biography, Science  
 Ages 4 - 10

*The Many Faces of George Washington: Remaking a Presidential Icon*  
 by Carla McClafferty

The Mount Vernon Historical Society wanted to make some life-size wax figures of George Washington when he was a young man of 19, as the general when he was 45, and as he was at 57, when taking the oath of office. This book is a combination of the high-tech methods used to make these three Georges, as well as the historical background of what George Washington, the man, was like at each of these stages.



Biography, History  
 Ages 11 and up

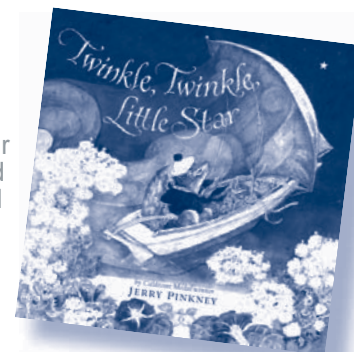


*Mind Your Manners, Alice Roosevelt* by Leslie Kimmelman  
 What a fun, picture book biography this is! Learn about Alice AND her father, Teddy Roosevelt. The illustrations add to the story, as Alice is seen riding a pig, making faces, with her pet snake, Emily Spinach, and much more.

Biography, History  
 Ages 6 - 12

And for your preschoolers ...

*Twinkle, Twinkle, Little Star*  
 by Jerry Pinkney  
 This is a beautiful book; you and your child will be able to read through and look at the pictures over and over and over. Have your child tell you what is happening when you reach pages with no words.



Poetry, Art  
 Ages 2 - 12



## Little Known Secrets

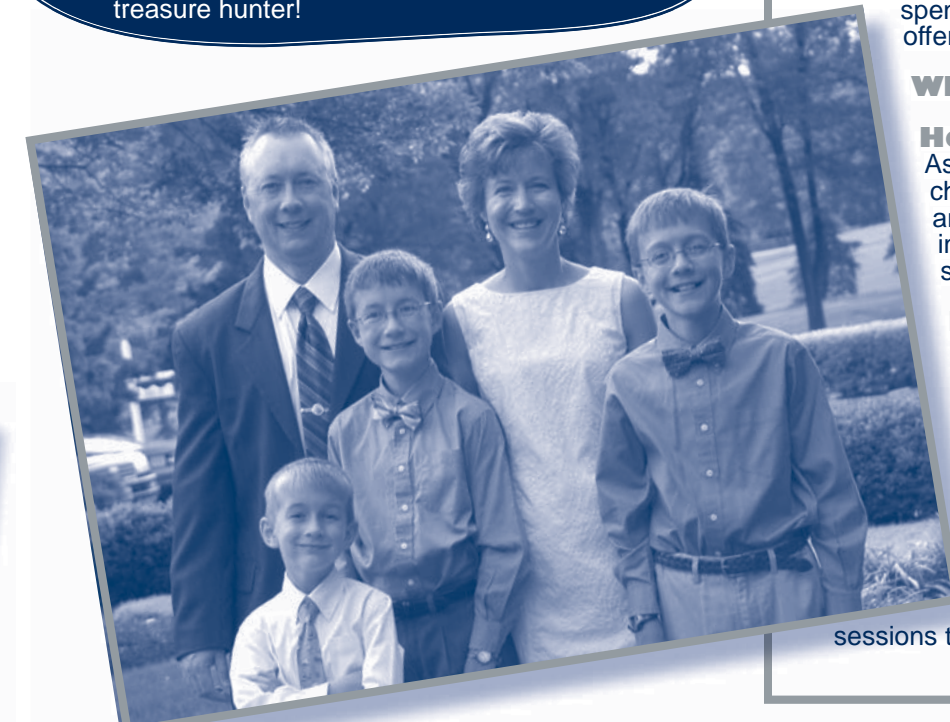
### Searching for Buried Treasure

Captain Jack Sparrow, Indiana Jones, and others of their ilk have been tracking down treasure for decades. Fortunately for us, we aren't limited to experiencing these adventures vicariously! There's a fun new (well, halfway new) activity called geocaching which gains eager participants every year. What is geocaching? It's a treasure hunt!

First off, for the official geocaching website, go to ppld.org and click on the By Subject research link on the left side of the screen. This will take you to a list of databases and website genres. What you want is the Hobbies/Handicrafts link. Then you'll scroll down to link #20 which should read Geocaching. This will take you to a website outside of the Library District.

Now, what exactly is geocaching? This activity is comprised of people all around the world who hide boxes known as a cache with the intent that others will find them. It's controlled by a GPS system that can either be active through an actual GPS device or through an app loaded on a smartphone. The purpose of geocaching is to learn about other people. You can add to a geocache once it's been found, which also means you can take something from it, as well. These geocaches are located throughout the world in various locations, usually places that have a special meaning to the original owner of the cache.

Simply go to the website [www.geocaching.com](http://www.geocaching.com) for more information. You do need an account but it's easy and simple to sign up. The best thing is that when you travel on vacation you can hunt down those geocaches and see what people in other cities, states, or countries have left before you. This is a dream come true for any treasure hunter!



## Homeschool

### The Art Show is Here!

Homeschooled students of all ages can submit one drawing, painting, photo, sculpture, etc. to the Children's Department at East Library during the week of March 26, 2012. All artwork will be on display during the entire month of April. We'll have a reception for artists, their families and friends on Sunday, April 29 from 2 - 3 p.m. This art show will not be juried.

### Lunch Bunch

There's a different family learning experience every time. Bring a sack lunch to enjoy while socializing with other homeschooling families after the program.

#### Fountain Library

1<sup>st</sup> Wed. and 2<sup>nd</sup> Tue. of each month ♦ 11:30 a.m. - 1:30 p.m.  
 (contact Jessica at [jfreeland@ppld.org](mailto:jfreeland@ppld.org) to register)

#### High Prairie Library

4<sup>th</sup> Wed. of each month ♦ 11:30 a.m. - 1 p.m.  
 (contact Becky at [bcampbell@ppld.org](mailto:bcampbell@ppld.org) for more information, or call 260-3650 to register)

### Penrose Novel Ideas Book Club

Join other homeschooled teens for a snack and discussion on a great book! Contact Molly at [mpace@ppld.org](mailto:mpace@ppld.org) or 531-6333, x2338 for the month's book title.

4<sup>th</sup> Wed. of each month ♦ 2 - 3:30 p.m. ♦ Penrose Library

### Science Lab

Use PPLD's science equipment for parent-assigned experiments. Watch for news about occasional special lessons and programs planned during lab time. Contact Cara at [cramsey@ppld.org](mailto:cramsey@ppld.org) for more information.

1<sup>st</sup> and 3<sup>rd</sup> Fri. of each month ♦ 1 - 3 p.m. ♦ East Library

## Fun Spring Break Programs for kids

March 26 - 30

Enjoy Inspector Magic, Bonnie Phipps, Denise Gard (and her dog, Sienna), Hunk-ta-Bunk-ta, and more! Check with your local library for dates and times.

## Children's Book Reports

### Monument Library NEW - NEW - NEW!

Bring a favorite book that you've read this month and a prepared book report (written or oral) to share with our group. All ages are welcome. We will begin with preschoolers and progress upward. This is a great opportunity, especially for homeschooled children, to practice speaking in front of a friendly group. Props, visual aids, and costumes are allowed for those who like to add flair to their reports. Please practice your presentation and try to keep it to about 3 - 4 minutes in length. Contact Children's Specialist Sandy Yates at 488-2370, x1838 or [syates@ppld.org](mailto:syates@ppld.org).

First Tuesday of every month  
 11:30 a.m. - 12:30 p.m.

## Featured Homeschool Family:

### The Bushes

#### How does homeschooling work for your children?

Homeschooling allows us to focus our kids' education around a foundation that meets our moral values, and keeps us continuously engaged in their development. We also felt it offered a lot of freedom to advance our kids if they excelled in certain topics, or spend extra time nurturing them if they were struggling, without the fear of being left behind. Of course, homeschooling offers a lot of flexibility for time related to travel and other recreational activities.

**What are their ages?** Our boys are 15, 12, and 8.

#### How does homeschooling change going from elementary to high school?

As the grade levels increase, so does the complexity of some of the topics. High school has presented some challenges for us with time and knowledge. We found that the higher math or science classes required more planning and research in order to give a good lesson, simply because we were not experts in the topic. We were moving into realms beyond common knowledge. Many of the differences between elementary, junior high school, and high school courses begin with the students' changing maturity levels, interests, and changes in how they learn.

#### How do you find solutions for the specific needs of these homeschool challenges?

We are advocates for outside tutoring in specific areas. Having access to experts in the field is a bonus for rounding off some of those more complex sciences and literature education.

#### What are other challenges you face homeschooling?

Another challenge with homeschooling is to avoid falling behind. It sounds easy, but sometimes education can play second fiddle to other family priorities. We find ourselves thinking that we can simply catch up later. Then, if we are facing a more complex topic, such as physics, this challenge becomes more difficult.

#### Where did you find resources to solve these needs in the homeschool community?

We use the After School University. They charge for their time, but in our experience, they have been extremely focused on the performance of the student, not the fees they collect. If they recommend additional one-on-one sessions to catch up, then they are geared toward the best possible education for the student.

Would you like to be a Featured Family? Contact Deborah at [dworthey@ppld.org](mailto:dworthey@ppld.org).