

Astronauts | K-4 Unit Study

Welcome to this astronaut unit study. I hope the tools here give you and your little space explorer a chance to blast off into space as you learn about what it is an astronaut does up there.

I have created this schedule specifically for those who like to have things planned out and ready-to-go, however it is a guide and not a lesson plan. That means you can **feel free to change and adapt it for your needs**. There are a lot of activities included. Pick and choose what works well for your family and mark through the rest. As is, the schedule runs **about six weeks**, but can be shortened or lengthened to meet your needs.

Each unit study is intended for **grades K-4**, though it may be adapted for younger or older children. There is a lot of variance in ability between these ages. Some children read and write readily at five years old, others don't pick up those skills until eight or nine. Some children love to draw and others like to build. I have included lots of ideas to help you work with your child's unique skills and learning styles. You will get the most out of these unit studies if you choose activities suited to your child's abilities and interests.

There are no required purchases for these unit studies, however there are a few things that are highly encouraged. In all cases I have tried to include low-cost options. I know homeschool can be expensive, especially with multiple children.

Supplies

- Spine book
- 3 ring binder or 3 prong folder for your "All About" book
- Materials for science experiments
- Craft materials
- Possibly other books for your "astronaut library" (feel free to utilize your local library.)

Spine Book

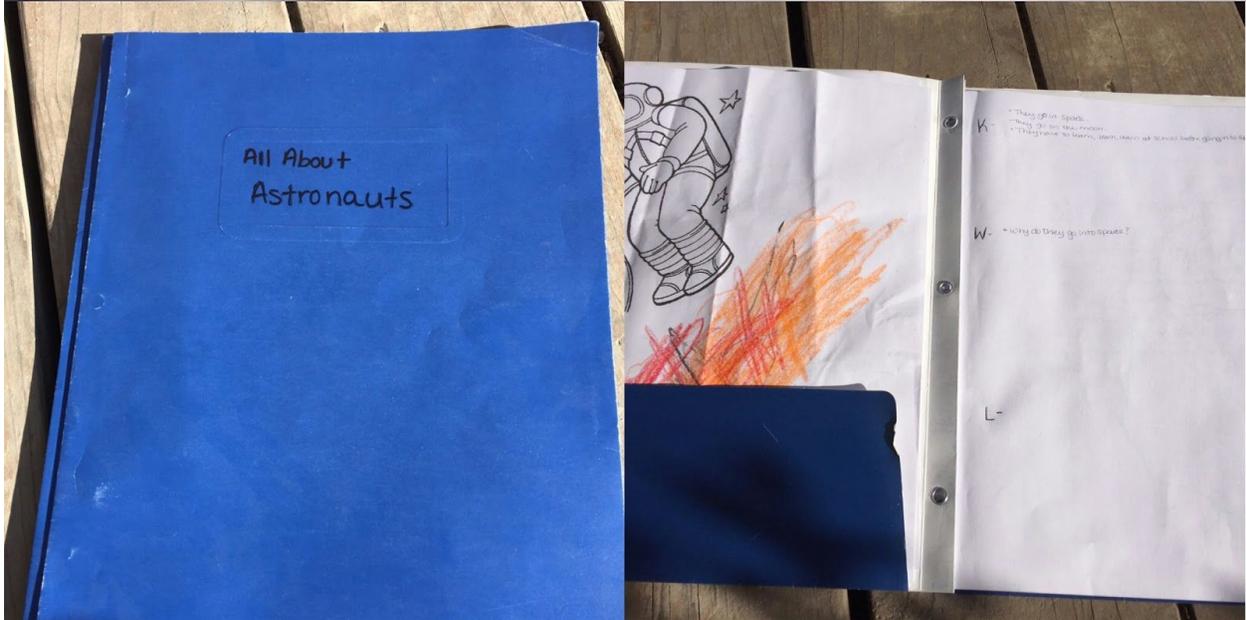
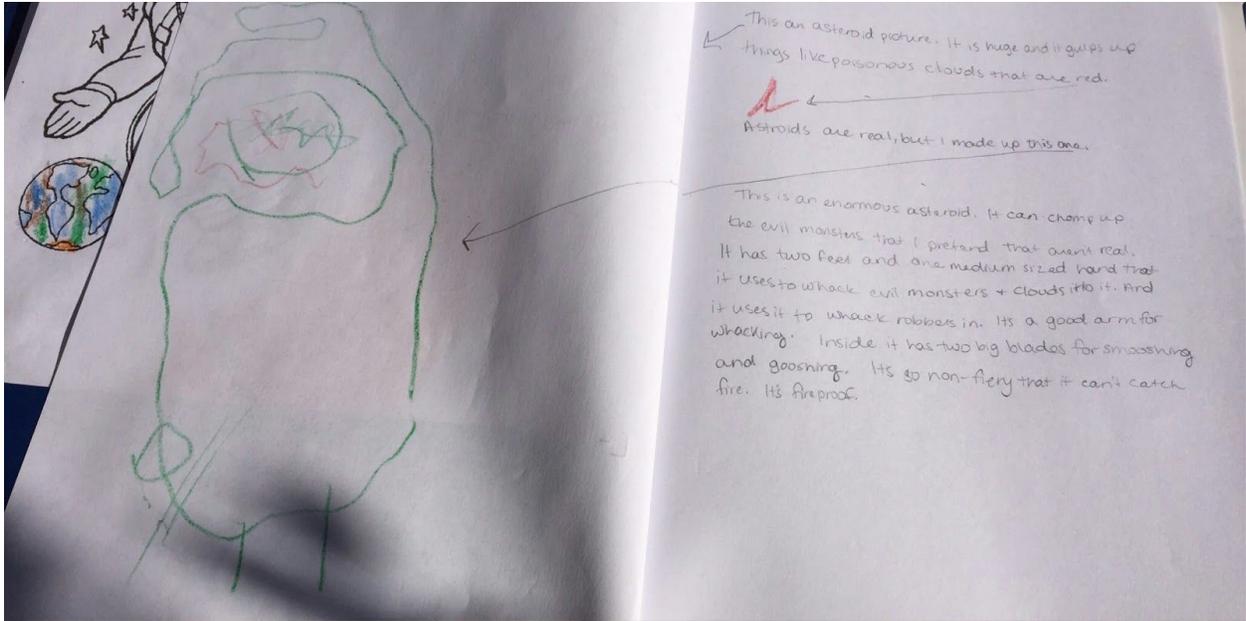
The spine book is the backbone for this unit study. While it is possible to do a unit study without it, the spine book will tie everything together and add a sense of flow to your unit study. It's sort of like your textbook. I have purposely chosen books that are very low cost to help your budget. You may find these books at the library or second hand, and that's totally fine! I do ask that you consider purchasing your spine book as well as any supporting books from Usborne Books & More you are interested in from my [online store](#). (You can save by purchasing multiple books at

a time, having only one shipping charge.) Doing this helps support my work so I can continue to provide free unit studies.

“All About” Books

For each unit study, I encourage each child to make an All About book. This is her “scrap book” of learning so-to-speak. I find that giving kids a bit of freedom and letting them decide what facts and information to add to their books helps them retain a lot more. That being said, feel free to assign things for your child’s book. However, I recommend keeping the assignments open-ended. None of the activities I have listed are required and are simply ideas for inspiration. Choose things that work for your child. You might even see him add his own things to the book. When you are done, keep it somewhere visible so he can easily strike up a conversation and share his work.

To make your book, all you need is some blank white or lined paper and a 3-ring binder or a three-prong folder. Here is a sample of an in progress “All About Astronauts” book.



You will notice the **KWL** chart at the beginning. You can print a fancy one off, or just make your own. It's just a simple way to keep track of what your kids are learning and what they want to learn. The K stands for "know". When you start a unit, you can write the things here that your child knows about the topic (let him or her tell you what to put there). You will also do the W, which stands for "want to know". You will want to try to make sure you provide opportunities for your child to learn about these things as they are of particular interest. Feel free to add to your list as you go along. You will fill out the "L" as you go along and at the end of the unit. It's a place to write all the things your child has "learned".

Vocabulary

I debated on including vocabulary words with each unit, but decided to go ahead and add them. You can use them or skip them. For younger children, you may simply discuss the words and make sure you use them a lot in conversation. As children get older, you can have them learn to read them, practice their handwriting with them, look them up in the dictionary, spell them and more. Here are a few ideas for incorporating the vocabulary words into your lesson:

- You can make [handwriting sheets](#) with the vocabulary words.
- Have your children illustrate each word.
- Make the word with alphabet stamps, shaving cream, or any number of crafty or creative ways.
- Make an acrostic poem.
- Make the word and build a corresponding model with LEGOs
- Keep a tally of how many times you see each vocabulary word as you read and learn more about the topic.

Astronaut Library

It's important to have lots of books on hand about the topic you are exploring, in this case astronauts. If you have a good local library, I recommend using it. If library trips are stressful, you can usually go online and put books on hold. The librarians will pull the books for you so you can just pick up the stack when you visit the library, no searching required. It's important to pick books your child would be interested in. You can chose read alouds, books your child can read independently, or both. Don't forget chapter books.

At the beginning of the unit, you can set out all the books at once or rotate out a few a week keeping your child's favorites out for the whole unit. If she isn't interested in some of the books, that's fine. The purpose of the themed library is giving your child a chance to build her knowledge and to offer free exploration of the topic you are studying.

Adapting for Kindergarteners and Young Learners

For kindergarteners and really young learners, education is mostly about exposure and exploration. Please do not feel as though your kindergartener needs to complete every activity in the schedule. You may only do activities three days a week. Chose the activities that fit your child's interests and capabilities and focus on having fun exploring together. Make sure to spend plenty of time outside and talk about the books you are reading and things you are learning. You may use your "All About" book as a place to store your child's artwork or to write the stories your little astronaut dictates to you. You may decide it's best simply to talk to your child about the vocabulary words. Use them in your conversation. Think about these activity ideas as a springboard to imaginative play. Mostly, have fun, pique your child's curiosities, and follow his questions and inquisitiveness throughout your journey.

Learning Together

These are **community-based, interactive plans**. **I want your feedback!** Is there a cool activity, project, or resource you found while doing this unit study that isn't included in the plan? Share it with me so I can add it and other families can benefit! Is there a broken link or a problem with a suggested resource? Tell me so I can fix it. Is there a unit study resource you really want, but it isn't there? Tell me and I will hunt it down or create it. Do you have questions, ideas or thoughts? I'm all ears and ready to help! By working together I believe we can make these unit studies the best, most easy to use resource out there.

Make this study **interactive for your kids!** They can share videos, pictures, essays, stories and more with me and I will feature them in the gallery for each unit. This gives the kids a chance to see what others are doing, share what they are learning, and get even more ideas for their exploration.

More Astronaut Fun

If you want a little more math, check out [Launch a Rocket Into Space](#) from the You Do The Math series by Hilary Koll and Steve Mills. There are thirteen real-life astronaut math challenges in the book. This book is targeted for grades 1-3. You may find some of the math difficult for younger learners or children who struggle with math, but the way the problems are presented makes it easy for you to work through the problems with your children on an age-appropriate level. You can use it as a springboard and practice similar problems from other sources as well. I recommend doing no more than one problem or challenge a day as you work with your child to build your crew and solve the necessary problems for a successful launch and mission.

If you want to do PE 1-2 times a week, use the activities on day 5, [train like an astronaut](#). There are ten different activities outlined and you can spread them out throughout your unit study rather than doing them all in one day. You can even do one activity for several days in a row, trying to perfect it before moving to the next one.

For more information, ideas, book lists and resources not mentioned in this document, please visit: [<this will link to blog post, but I currently have given you this post in a separate document>](#)

I hope you and your family thoroughly enjoy your time learning together. May the learning never end!

Day 1	Introduction	Notes
☐	Discuss Astronauts and fill out KWL chart	

<input type="checkbox"/>	Read <i>Living in Space</i> by Katie Daynes. Talk about the book as you read. Is there anything you want to add to your KWL chart?	
<input type="checkbox"/>	Decorate and start your All About Astronauts Book	
<input type="checkbox"/>	Read a book from your astronaut library	
Day 2	Earth and Space	
<input type="checkbox"/>	Read p. 3 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	Look at pictures from space using Google Earth , or look at a globe and talk about what astronauts would see. Identify the continents. Talk about what you see. What are the white parts? Blue? Green? Brown? What else do you see?	
<input type="checkbox"/>	<p>Make an earth craft. You can simply set out craft supplies and let your child create her own artistic interpretation of earth or you can do one of these crafts and add it or a picture of it to your “All About Astronauts” book:</p> <ul style="list-style-type: none"> ● Paint a paper plate ● Crinkle small pieces of tissue paper and glue them to a paper plate ● Make a stained glass earth ● Make an earth collage ● Make a paper mache globe 	
<input type="checkbox"/>	Read a book from your astronaut library	
<input type="checkbox"/>	Vocabulary word: Planet	
Day 3	Space School Part 1	
<input type="checkbox"/>	Read pp. 4-5 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	<p>Do some gravity experiments</p> <ul style="list-style-type: none"> ● Try dropping things of different weights. Talk about how fast they fall. ● Crater marble drop: Cover the bottom of a shallow pan with flour. Drop a marble from different distances. Look at the craters they make. Are they different? What's happening? ● Gravity jump: Gravity is what keeps us from floating away. Jump as far as you can. Measure your jump. Try to jump farther and farther. How far can you go? Young children can use 	

	non-standard measurements like a stick. For more advanced children, have them figure out the difference between the lengths of their jumps.	
<input type="checkbox"/>	Write about, draw pictures of or add field notes from your experiments to your "All About Astronauts" book. Let your child decide what to add - it can even be photos you took.	
<input type="checkbox"/>	Read a book from your astronaut library	
<input type="checkbox"/>	Vocabulary Word: Gravity	
Day 4	Space School Part 2	
<input type="checkbox"/>	Take a field trip to a pool. Swim around to try to find out what it feels like in space. -OR- Take a field trip to a playground. Notice all the ways and places you experience gravity.	
<input type="checkbox"/>	Add something from your field trip to your "All About Astronauts" book.	
<input type="checkbox"/>	Read a book from your astronaut library	
Day 5	Space School Part 3	
<input type="checkbox"/>	Read about how to become an astronaut and look at current space schools.	
<input type="checkbox"/>	Physical exercise is a big part of astronaut training. Get active and train like an astronaut .	
<input type="checkbox"/>	Read a book from your astronaut library.	
Day 6	Preparing to Go	
<input type="checkbox"/>	Read pp. 6-7 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	Watch real shuttle launch preparations. <ul style="list-style-type: none"> • Endeavor's crew suiting up for their 2011 launch • See the launch of space shuttle discovery (2008) from inside the cockpit. 	
<input type="checkbox"/>	Take a photo tour of space shuttle Discovery's cockpit .	
<input type="checkbox"/>	Read a book from your astronaut library.	

<input type="checkbox"/>	Vocabulary Word: Fuel	
Day 7	Lift Off Part 1	
<input type="checkbox"/>	Read pp. 8-9 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	Find out about NASA's space shuttles on their interactive website .	
<input type="checkbox"/>	Read about Orion , the space shuttle NASA is building for a journey to Mars.	
<input type="checkbox"/>	Schedule to watch a live launch. Spaceflight Now broadcasts many live rocket launches. When rockets aren't launching, they may be streaming a live Q&A session with astronauts currently on the ISS. This is a website you don't want to miss out on.	
<input type="checkbox"/>	Read a book from your astronaut library.	
Day 8	Lift Off Part 2	
<input type="checkbox"/>	Build and launch a simple baking soda rocket (or any other kind of rocket). Add pictures, stories, notes, or anything about your rocket building and launch to your "All About Astronauts" book. Alternately, you could build a cardboard rocket to play in.	
<input type="checkbox"/>	Read a book from your astronaut library.	
<input type="checkbox"/>	Vocabulary Word: Shuttle	
Day 9	In Orbit Part 1	
<input type="checkbox"/>	Read pp. 10-11 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	Take a video tour inside space shuttle Discovery	
<input type="checkbox"/>	Watch a timelapse of orbit around the earth .	
<input type="checkbox"/>	Read a book from your astronaut library.	
<input type="checkbox"/>	Vocabulary Word: Orbit	
Day 10	In Orbit Part 2	

<input type="checkbox"/>	Do an experiment and learn how planets orbit. Record your experiment however you would like in your “All About Astronauts” book.	
<input type="checkbox"/>	Do the math. If the circumference of the earth is 24,901 miles, and it takes 90 minutes to orbit the earth, how fast is the space shuttle moving?	
<input type="checkbox"/>	Read a book from your astronaut library	
Day 11	A Home in Space Part 1	
<input type="checkbox"/>	Read pp. 12-13 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	Watch the space shuttle Atlantis dock with the International Space Station.	
<input type="checkbox"/>	Do the math. If the international space station is the size of two soccer fields, how big is it? A soccer field is about 110 yards by 70 yards? What is the area?	
<input type="checkbox"/>	Read a news article about the new space station NASA plans to build with Russia.	
<input type="checkbox"/>	Look at a map of all the countries that took part in building the current International Space Station .	
<input type="checkbox"/>	Read a book from your astronaut library.	
<input type="checkbox"/>	Vocabulary Word: International	
Day 12	The Space Station	
<input type="checkbox"/>	Read pp. 14-15 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	Take a video tour of the space station with astronaut Suni Williams (25 mins).	
<input type="checkbox"/>	Did you know you can actually see the space station from earth? Check to see the next time you should be able to spot the space station from your area .	
<input type="checkbox"/>	Watch live video streaming from the ISS. You could even watch the live stream when the space station is passing over your area.	
<input type="checkbox"/>	Read a book from your astronaut library.	
<input type="checkbox"/>	Vocabulary Word: Payload	

Day 13	Eating and Drinking	
<input type="checkbox"/>	Read pp. 16-17 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	Read about the history of food in space .	
<input type="checkbox"/>	Watch astronaut Chris Hadley <ul style="list-style-type: none"> • Eat dessert in space • Make a sandwich in space 	
<input type="checkbox"/>	Get in the kitchen and make some astronaut food. Try a peanut butter and honey sandwich with a tortilla or one of these three astronaut food recipes .	
<input type="checkbox"/>	Pretend you are an astronaut, write a speech, draw a picture, make a video or write a how to document about eating in space.	
<input type="checkbox"/>	Read a book from your astronaut library.	
<input type="checkbox"/>	Vocabulary Word: Astronaut	
Day 14	Keeping Clean	
<input type="checkbox"/>	Read pp. 18-19 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	Check out this youtube playlist to watch videos on how to shower, shave, brush your teeth and wash your hands in space.	
<input type="checkbox"/>	Think about some other things that might be difficult to use in space. When do you use water? What about other liquids? Talk about all the things that would be different. If you like to write, write a story about waking up one day and finding your whole house in space. How would you do basic, everyday things? If you are an artist, illustrate your story.	
<input type="checkbox"/>	Read a book from your astronaut library.	
<input type="checkbox"/>	Vocabulary Word: Mission	
Day 15	A Day in Space Part 1	
<input type="checkbox"/>	Read pp. 20-21 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	Astronauts eat, sleep and make videos in space, but what else do they do all day? Read about all the different	

	things astronauts do in space .	
<input type="checkbox"/>	Did you know that there are lots of experiments going on all the time on the ISS? You can read an overview of them here .	
<input type="checkbox"/>	Watch a video to see how astronauts sleep in space .	
<input type="checkbox"/>	Read a book from your astronaut library.	
<input type="checkbox"/>	Vocabulary Word: Laboratory	
Day 16	A Day in Space Part 2	
<input type="checkbox"/>	Read about a day in space with astronaut Samantha Cristoforetti.	
<input type="checkbox"/>	Astronaut Garrett Reisman filmed a video series about his day aboard the ISS. Feel free to watch all seven clips or just watch a bit here and there to see a day in the life of an astronaut.	
<input type="checkbox"/>	Pretend you are an astronaut and make a comic strip, story, poem or picture about your day in space. Add it to your "All About Astronauts" book.	
<input type="checkbox"/>	Read a book from your astronaut library.	
Day 17	Spacesuits Part 1	
<input type="checkbox"/>	Read pp. 22-23 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	Dress an astronaut and learn the parts of a spacesuit - did you know when astronauts go on a spacewalk, they have to wear a diaper?	
<input type="checkbox"/>	Watch a video about how an astronaut puts on his space suit.	
<input type="checkbox"/>	Look at pictures of space suits from the past, present, and future.	
<input type="checkbox"/>	Read more about space suits and see a labeled diagram of all the parts .	
<input type="checkbox"/>	Read a book from your astronaut library.	
<input type="checkbox"/>	Vocabulary Word: Training	

Day 18	Space Suits Part 2	
<input type="checkbox"/>	Make an astronaut helmet: <ul style="list-style-type: none"> • simple paper plate astronaut photo craft • paper mache astronaut helmet 	
<input type="checkbox"/>	Look at pictures and read about the new space suit being designed to wear on Mars .	
<input type="checkbox"/>	Design your own space suit. What would it look like? What features would you include, tell or write about it or draw a picture of what it will look like and add it to your "All About Astronauts" book	
<input type="checkbox"/>	Read a book from your astronaut library.	
Day 19	Going Outside Part 1	
<input type="checkbox"/>	Read pp. 24-25 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	What is a space walk? How do astronauts prepare? Read all about it right here .	
<input type="checkbox"/>	Watch a spacewalk .	
<input type="checkbox"/>	See images of 50 years of spacewalks .	
<input type="checkbox"/>	Read a book from your astronaut library.	
<input type="checkbox"/>	Vocabulary Word: Airlock	
Day 20	Going Outside Part 2	
<input type="checkbox"/>	See a video of the very first moonwalk .	
<input type="checkbox"/>	Read about all the moonwalks that have ever happened.	
<input type="checkbox"/>	Figure out how much you would weigh on the moon. <ul style="list-style-type: none"> • Use your own math skills. On the moon, you weigh 1/6 of what you weigh on earth, so you can solve this problem by dividing your weight by 6. • Plug your weight into a calculator 	
<input type="checkbox"/>	Read a book from your astronaut library.	
Day 21	Back to Earth	
<input type="checkbox"/>	Read pp. 26-27 <i>Living in Space</i> by Katie Daynes	

<input type="checkbox"/>	Watch a video about some of the challenges of coming from a zero gravity environment back to earth .	
<input type="checkbox"/>	Watch space shuttle Discovery land at Kennedy Space Center .	
<input type="checkbox"/>	Read a book from your astronaut library.	
Day 22	Space Trips	
<input type="checkbox"/>	Read pp. 28-29 <i>Living in Space</i> by Katie Daynes	
<input type="checkbox"/>	Check out this infographic about animals in space .	
<input type="checkbox"/>	Visit mars-one.com to learn more about plans to journey to mars.	
Day 23	Wrap Up Day	
<input type="checkbox"/>	Finish your KWL chart	
<input type="checkbox"/>	Finish your All About Astronauts book	
<input type="checkbox"/>	Complete any projects or books to wrap up the unit	