

Astronomy Notebooking Journal

for

Exploring Creation with Astronomy

by
Jeannie Fulbright

Astronomy Notebooking Journal

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Note from the Author

Welcome to the wonderful adventure in learning called “Notebooking.” This notebooking journal correlates with Apologia’s *Exploring Creation with Astronomy*, by Jeannie Fulbright. The activities in this journal provide everything your child needs to complete the assignments in *Exploring Creation with Astronomy* and more. It will serve as your child’s individual notebook. You only need to provide scissors, glue, colored pencils, a stapler and some brass fasteners.

The concept of notebooking is not a new one. In fact, keeping notebooks was the primary way the learned men of our past educated themselves, from Leonardo Da Vinci and Christopher Columbus to George Washington, John Quincy Adams and Meriwether Lewis. These men and many others of their time were avid notebookers. As we know, they were also much more advanced in their knowledge—even as teens—than we are today. George Washington was a licensed surveyor during his teenage years, and John Quincy Adams graduated from law school at age 17.

It would be wise for us to emulate the methods of education of these great men, rather than the failing methods used in our schools today. Common modern methods, namely fill-in-the-blank and matching worksheets, do not fully engage the student’s mind. Studies show that we remember only 5% of what we hear, 50% of what we see and hear and 90% of what we see, hear and do. When we participate in activities that correspond with learning, we increase our retention exponentially. This is exactly what the Astronomy Notebooking Journal is designed to do—offer engaging learning activities to increase your student’s retention.

The National Center for Educational Statistics shows us that American school children, by twelfth grade, rank at the bottom of international assessments, and do not even know 50% of what students in top ranked countries know. As home educators, we have the opportunity to discard methods that are detrimental and ineffective, and adopt the methods which will genuinely educate our children.

In addition to academic achievement, notebooking offers many benefits to students and parents. For students, it provides an opportunity to uniquely express themselves as they learn. It also provides a treasured memento of educational endeavors. For parents, it is a record of the year’s studies and can easily be transferred to a portfolio if needed.

This journal will make notebooking easier for both you and your student by supplying a plethora of templates, hands-on crafts and projects, additional experiment ideas, and many activities that will engage your student in learning. It will prove invaluable in helping students create a wonderful keepsake of all they learned in astronomy. Remember that everything in this notebooking journal is optional. Because it will serve as your student’s own unique notebook, you may customize it by simply tearing out the activity pages that you choose not to use. You, as the teacher, will decide what truly benefits your student’s learning experience, encourages a love for learning and builds his confidence in science. Every child is different, learns differently and will respond differently to the array of activities provided here. Use discernment in how many of the activities and assignments you use with your child. Your goal is not to complete every activity, but to make learning a joy.

However, as a seasoned home educator, let me encourage you not to attempt to do every single activity in this notebooking journal. Choose the projects and activities that will be enjoyable and inspire a love of learning. If something is a drudgery, it will not serve to increase your student’s retention, but will only discourage their enjoyment of science—resulting in an unmotivated learner.

It is my hope and prayer that you and your students will benefit from your studies this year, growing closer to God as you learn of His creation, and finding joy in the learning process.

Warmly,

A handwritten signature in black ink, appearing to read "Jeannie Fulbright". The signature is fluid and cursive, with a large initial "J" and "F".

Astronomy Notebooking Journal

Below are descriptions of a suggested schedule and the activities included in this notebooking journal. The first three activities are taken directly from the coursework contained in *Exploring Creation with Astronomy*. The others are additional optional activities coordinating with the book.

Suggested Schedule

A suggested schedule for reading the *Exploring Creation with Astronomy* text and completing the activities contained in the book and in this journal has been provided. Though not every student or parent will choose to utilize the schedule, those who do may find it very beneficial. Some parents will appreciate having their student's daily reading and assignments organized for them. Older students will find it easy to complete the book and journal by following the schedule on their own. Though the suggested schedule provides for the astronomy course to be completed in twenty-eight weeks, two days per week, it is flexible and can be made to fit your goals. The course can be expedited by completing three or four days of science per week. You can lengthen the course by studying science only one day per week. If you wish to do the extra activities found in the Take It Further pages, still another day of science can be added. Above all, use the suggested schedule in a way that best suits your family.

Fascinating Facts

Exploring Creation with Astronomy contains many facts, ideas and interesting notions. Although oral (verbal) narration is an effective means for retention, your student may wish to record some of the information either through drawing or writing. The Fascinating Facts pages can be used for written narrations. Some of the lessons provide two Fascinating Facts pages for our student's use. If your student is an avid writer, you can access more Fascinating Facts pages to print (free of charge) on the Apologia website. To do so, simply login to www.apologia.com/bookextras and type in this password: Godcreateditall. These additional pages can be included in this notebooking journal by simply stapling them onto one of the existing Fascinating Facts pages.

What Do You Remember? Review Questions

These review questions are the same questions asked in the "What Do You Remember?" section found in each chapter of the book. They can be answered orally (verbally) or, for older students, as a written narration assignment. For co-ops or classroom use, these questions may also serve as a way to evaluate how much the students have retained from the reading. However, I would encourage you to review the material with the students before giving the questions as a written narration assignment. This will encourage better retention of the material and increase both the students' confidence and their ability to restate their learning. The answers to the review questions can be found on page 173 through 175 of *Exploring Creation with Astronomy*.

Notebook Assignments, Activities and Projects

The lessons in *Exploring Creation with Astronomy* offer suggested notebook assignments, activities and projects typically found at the end of each lesson. Provided in this journal are templates (blank pages with lines for writing or space for drawing) which your student can use for completing these activities. Most often the assignment is to create or illustrate a cover page for that lesson. Colored pencils can be used to encourage creative, high quality work.

Scripture Copywork

Incorporating the Word of God in your science studies through Scripture copywork will provide many benefits to your student. It will encourage stronger faith and memorization of Scripture, as well as better writing, spelling and grammar skills. Each lesson has a corresponding verse for your child to copy, which may be printed or written in cursive.

Vocabulary Crosswords

If you desire to expand your child's studies with vocabulary activities, the Vocabulary Crosswords can be used to review the new words and concepts mentioned in the chapter. Remember, working with the vocabulary in this manner is not a "test" of your child's knowledge, but should be viewed as a reinforcement and reminder of what he has learned. The answers to the Vocabulary Crosswords can be found on pages 153 and 154.

Project Pages

Many of the projects and experiments in *Exploring Creation with Astronomy* are "hands-on" and therefore cannot be preserved in a notebook. Each lesson in this notebooking journal provides a Project Page in which your student can write about what he did and learned from the various projects and experiments contained in the coursework. Be sure to take pictures of the finished products and glue them onto the Project Pages. Your child will enjoy looking back and remembering the fun he had learning astronomy!

Cut and Fold Miniature Books

At the back of this journal, you will find Cut and Fold Miniature Book educational activities that correspond with the reading. These miniature books are designed to assist the students' review and retention of the concepts learned in each lesson. They also provide a record of the course work performed. Students will cut out the pattern, write what they have learned in the designated places, then assemble the books according to the directions. Paste Pages are included for each miniature book activity. The Paste Pages provide a place for your students to preserve and display their Cut and Fold Miniature Books. Instructions are included for pasting the miniature books onto the Paste Pages.

However, these books are entirely optional, and you can decide whether or not to allow your student to utilize these miniature books.

Take It Further

The Take It Further assignments are designed to give your student additional ideas and activities that might enhance his studies such as: experiments, hands-on activities, research and living book titles, as well as audio and video resources. Because these assignments are entirely optional, they are not included in the suggested schedule for completing the notebooking journal.

Field Trip Sheets

Your family may wish to further enhance your studies by visiting a planetarium or space museum. You can also spend an evening with the local astronomy club to view the planets through their powerful telescopes. Field Trip Sheets are provided at the back of this notebooking journal to record your visits. You can make a pocket on the back of these sheets to hold any brochures or additional information you receive. Simply glue three edges (sides and bottom) of a half piece of construction paper to the bottom of the field trip sheet.

Final Review

At the end of this journal are 50 questions that review the entire course. They can be answered orally or in writing. This is an optional activity; however, I believe your students would be pleasantly surprised to see how much they know about astronomy after answering the questions. The answers to the Final Review can be found on page 155.

Week:	Day 1	Day 2
1	Lesson 1 - What is Astronomy? Read pp. 2-5 & Narrate Begin working on <i>Fascinating Facts</i>	Read pp. 5-8 & Narrate Narration: <i>What Do You Remember? Review Questions</i> Notebook Assignment: <i>Illustrate a Cover Page</i>
2	Lesson 1 - What is Astronomy? Notebook Assignment: <i>Mnemonic Scripture Copywork</i>	<i>Vocabulary Crossword</i> Project: <i>Solar System</i> pp. 9-10 <i>Cut and Fold Miniature Books</i>
3	Lesson 2 - The Sun Read pp. 12-17 & Narrate Answer questions on pp. 14 & 16 & Narrate Begin working on <i>Fascinating Facts</i>	Read pp. 18-19 Mid-lesson Activity: <i>Illustrate a Cover Page</i> Mid-lesson Activity: <i>Write a Speech</i>
4	Lesson 2 - The Sun Read pp. 20-25 & Narrate Answer question on p. 22 Narration: <i>What Do You Remember? Review Questions</i> Notebook Assignment: <i>Sun Collage Scripture Copywork</i>	<i>Vocabulary Crossword</i> Activity: <i>Make a Solar Eclipse</i> p. 26 Project: <i>Pinhole Viewing Box</i> pp. 27-28 <i>Cut and Fold Miniature Books</i>
5	Lesson 3 - Mercury Read pp. 30-34 & Narrate Answer question on p. 32 & Narrate Begin working on <i>Fascinating Facts</i>	Read pp. 34-36 & Narrate Narration: <i>What Do You Remember? Review Questions</i> Notebook Assignment: <i>Illustrate a Cover Page</i>
6	Lesson 3 - Mercury Activity: Craters p. 37 <i>Scripture Copywork</i>	<i>Vocabulary Crossword</i> Project: <i>Make a Model of Mercury</i> p. 38 <i>Cut and Fold Miniature Books</i>
7	Lesson 4 - Venus Read pp. 40-41 & Narrate Do Mid-lesson Activity p. 41 Begin working on <i>Fascinating Facts</i>	Read pp. 42-47 & Narrate Narration: <i>What Do You Remember? Review Questions</i>
8	Lesson 4 - Venus Notebook Assignment: <i>Illustrate a Cover Page</i> Notebook Activity: <i>Comic Strip Scripture Copywork</i>	<i>Vocabulary Crossword</i> Project: <i>Learn How Radar is Used</i> p. 49 <i>Cut and Fold Miniature Books</i>
9	Lesson 5 - Earth Read pp. 52-57 & Narrate Begin working on <i>Fascinating Facts</i>	Read pp. 57- 63 & Narrate Narration: <i>What Do You Remember? Review Questions</i>
10	Lesson 5 - Earth Notebook Assignment: <i>Illustrate a Cover Page</i> Notebook Activity: <i>Advertisement Scripture Copywork</i>	<i>Vocabulary Crossword</i> Project: <i>Make a Compass</i> p. 64 <i>Cut and Fold Miniature Books</i>
11	Lesson 6 - Moon Read pp. 66-70 & Narrate Begin working on <i>Fascinating Facts</i>	Read pp. 70-74 & Narrate Narration: <i>What Do You Remember? Review Questions</i>
12	Lesson 6 - Moon Notebook Assignment: <i>Illustrate a Cover Page</i> Notebook Activity: <i>Moon Phase Chart Scripture Copywork</i>	<i>Vocabulary Crossword</i> Project: <i>Make a Telescope</i> pp. 75-76 <i>Cut and Fold Miniature Books</i>
13	Lesson 7 - Mars Read pp. 78- 82 & Narrate Begin working on <i>Fascinating Facts</i>	Read pp. 82- 85 & Narrate Narration: <i>What Do You Remember? Review Questions</i>
14	Lesson 7 - Mars Notebook Assignment: <i>Illustrate a Cover Page Scripture Copywork</i>	<i>Vocabulary Crossword</i> Project: <i>Build Olympus Mons</i> pp. 87- 88 <i>Cut and Fold Miniature Books</i>

Week:	Day 1	Day 2
15	Lesson 8 - Space Rocks Read pp. 90-94 & Narrate Answer questions on p. 93 Begin working on <i>Fascinating Facts</i>	Read pp. 95-99 & Narrate Narration: <i>What Do You Remember? Review Questions</i>
16	Lesson 8 - Space Rocks Notebook Assignment: <i>Illustrate a Cover Page</i> Notebook Assignment: <i>Meteor Showers</i> <i>Scripture Copywork</i>	Vocabulary Crossword Project: <i>Create a Scale Model Solar System</i> pp. 101-102 <i>Cut and Fold Miniature Books</i>
17	Lesson 9 - Jupiter Read pp. 104-106 & Narrate Begin working on <i>Fascinating Facts</i>	Read pp. 107-110 & Narrate Narration: <i>What Do You Remember? Review Questions</i>
18	Lesson 9 - Jupiter Notebook Assignment: <i>Make a Newspaper</i> <i>Scripture Copywork</i>	Vocabulary Crossword Project: <i>Make a Hurricane Tube</i> p.112 <i>Cut and Fold Miniature Books</i>
19	Lesson 10 - Saturn Read pp. 114-118 & Narrate Begin working on <i>Fascinating Facts</i>	Narration: <i>What Do You Remember? Review Questions</i>
20	Lesson 10 - Saturn Notebook Assignment: <i>Illustrate a Cover Page</i> Notebook Assignment: <i>Make a Venn Diagram</i> <i>Scripture Copywork</i>	Vocabulary Crossword Project: <i>Make a Centaur Rocket</i> pp. 119-120 <i>Cut and Fold Miniature Books</i>
21	Lesson 11 - Uranus & Neptune Read pp. 122-124 & Narrate Begin working on <i>Fascinating Facts</i> Narration: <i>What Do You Remember? Review Questions</i> <i>Uranus</i>	Read pp. 125-127 & Narrate Narration: <i>What Do You Remember? Review Questions</i> <i>Neptune</i>
22	Lesson 11 - Uranus & Neptune Notebook Assignment: <i>Illustrate a Cover Page</i> <i>Scripture Copywork</i>	Vocabulary Crossword Project: <i>Make Clouds</i> p. 130 <i>Cut and Fold Miniature Books</i>
23	Lesson 12 - Pluto & Kuiper Belt Read pp. 132-135 & Narrate Begin working on <i>Fascinating Facts</i>	Read pp. 136-138 & Narrate Narration: <i>What Do You Remember? Review Questions</i>
24	Lesson 12 - Pluto & Kuiper Belt Notebook Assignment: <i>Illustrate a Cover Page</i> Notebook Assignment: <i>Pluto Debate</i> <i>Scripture Copywork</i>	Vocabulary Crossword Project: <i>Make Ice Cream!</i> p. 140 <i>Cut and Fold Miniature Books</i>
25	Lesson 13 - Stars & Galaxies Read pp. 142-148 & Narrate Begin working on <i>Fascinating Facts</i>	Read pp. 149-155 & Narrate Narration: <i>What Do You Remember? Review Questions</i>
26	Lesson 13 - Stars & Galaxies Notebook Assignment: <i>Illustrate a Cover Page</i> <i>Scripture Copywork</i>	Vocabulary Crossword Project: <i>Make an Astrometer</i> p. 157 Project: <i>Create a Constellation Planetarium</i> p. 158 <i>Cut and Fold Miniature Books</i>
27	Lesson 14 - Space Travel Read pp. 160-167 & Narrate Begin working on <i>Fascinating Facts</i>	Read pp. 167-169 & Narrate Narration: <i>What Do You Remember? Review Questions</i>
28	Lesson 14 - Space Travel Notebook Assignment: <i>Illustrate a Cover Page</i> Notebook Activity: <i>Let's Visit the Planets!</i> <i>Scripture Copywork</i>	Vocabulary Crossword Project: <i>Build a Model Space Station</i> p. 172 <i>Cut and Fold Miniature Books</i>



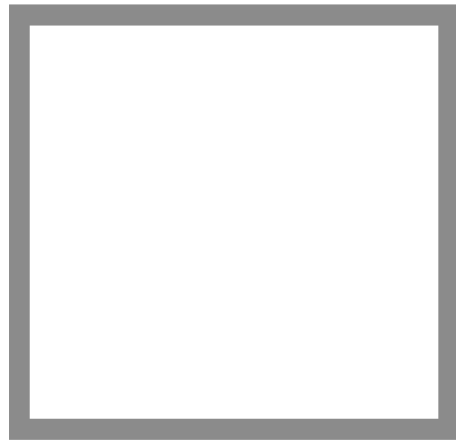
This Notebook Belongs to:

FASCINATING FACTS

ABOUT

Astronomy





What Do You Remember?

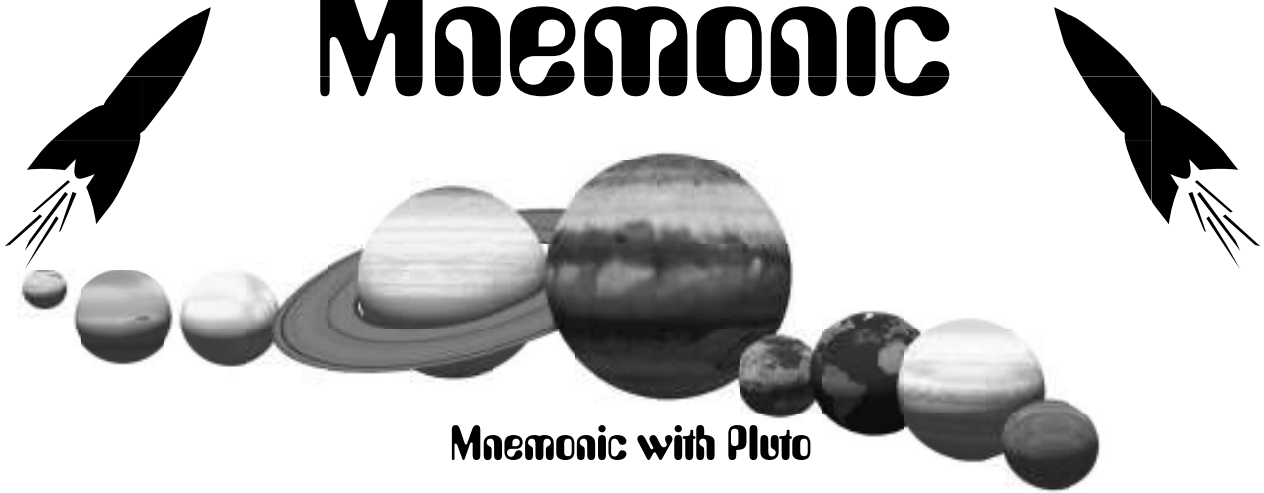
Lesson 1 Review Questions

1. Why did God create the stars and planets?
2. What are the names of the planets?
3. What is the name of America's space program?
4. What does NASA do?
5. Which astronomer first said the earth revolves around the sun?
6. Who learned how to study space with a telescope?

Astronomy

A large decorative frame with an arched top and three rectangular boxes at the bottom. The frame is composed of two parallel lines. The top part is a semi-circle, and the sides are vertical lines. At the bottom, there are three rectangular boxes, each with a double-line border, connected by small horizontal lines. The boxes are empty and intended for text or drawings.

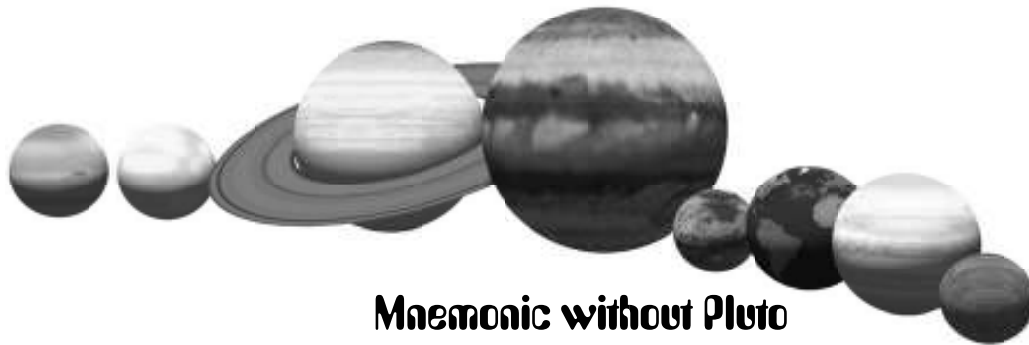
Mnemonic



Mnemonic with Pluto

Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune	Pluto

Write Your Sentence Here:



Mnemonic without Pluto

Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune

Write Your Sentence Here:

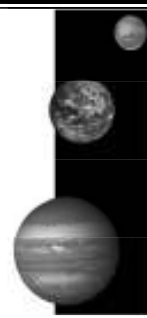
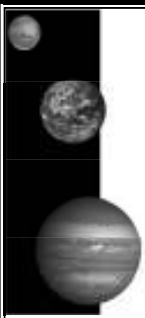


The heavens are telling of the glory of
God; and their expanse is declaring the
work of His hands. Psalm 19:1

The heavens are telling of the
glory of God; and their expanse
is declaring the work of His
hands. Psalm 19:1

Vocabulary Crossword

Lesson 1



NASA

GALILEO

COPERNICUS

INSTINCT

UNIVERSE

STONEHENGE

GRAVITY

						1		2		
		3								4
			5							
			6							
7										

Across

1. America's space agency, called the National Aeronautics and Space Administration.
3. A scientist who built telescopes and studied astronomy.
6. A special gift God gives to creatures, causing them to behave in a certain manner that is helpful to their survival, such as with birds flying south for the winter.
7. A scientist who discovered that the earth revolves around the sun, rather than the sun revolving around the earth, as was believed at the time.

Down

2. An ancient monument in England that may have been used to predict the arrival of spring and other seasons.
4. A physical force causing objects to pull on other objects, such as with the sun pulling on the earth.
5. Everything that exists in space, including the earth, planets, sun, and stars.

My Astronomy Project

What I did:

What I learned:

What is Astronomy?



TAKE IT FURTHER

LESSON 1



Hanging Solar System in a Box

You will need:

Clay
Thread
A copy paper box (found at office supply stores)
A sharp pencil
Duct tape (or other strong tape)

Using the sizes for the planets on page 10 of *Exploring Creation with Astronomy*, you can create a smaller scale solar system using clay. Simply reduce the sizes to millimeters or centimeters and model each planet out of clay, forming balls. If you are not worried about making it perfectly to scale, you can make the smaller planets a little larger for ease of handling. You will want to insert a piece of thread in the center of each planet before it dries, using a threaded needle. Hang the planets inside the box by using the sharp pencil to make holes in the top of the box, inserting the free ends of the thread through the holes and taping them down with duct tape.

Solar System Mobile

You will need:

Cardstock
Colored markers
Tacks
String
Tape

An even simpler idea is to create a solar system mobile using cardstock and markers. Reduce the sizes on page 10 of *Exploring Creation with Astronomy* to centimeters and draw circles on the cardstock to represent each planet. For larger planets, you will need to piece two pages together. Color the planets and cut them out (or use colored construction paper). Tape the string to them and tack the paper planets to the ceiling as you would the balloons.

Make a Model of Stonehenge

Make a model of Stonehenge with clay. Look at pictures on the Internet to see how it is formed from different perspectives. Be sure to photograph it for your Astronomy Project Page!

Books

Along Came Galileo by Jeanne Bendick
Starry Messenger by Peter Sis
Nicolaus Copernicus: The Earth Is a Planet by Dennis Fradin
Signs and Seasons by Jay Ryan

Audio CD

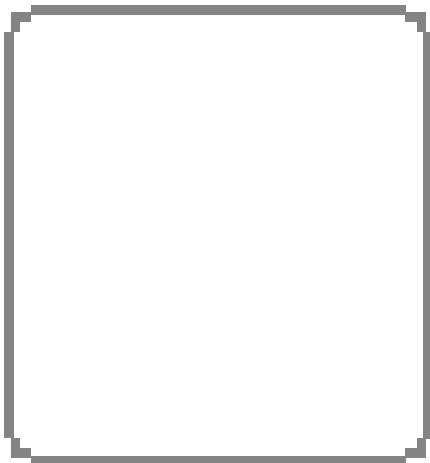
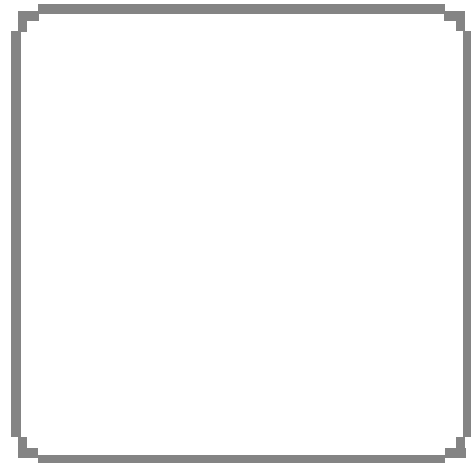
Galileo and the Stargazers by Jim Weiss

FASCINATING FACTS

ABOUT

THE SUN



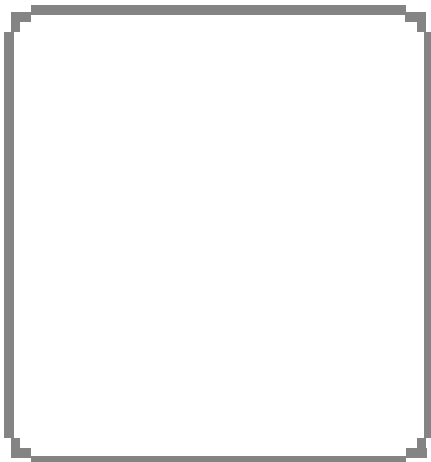
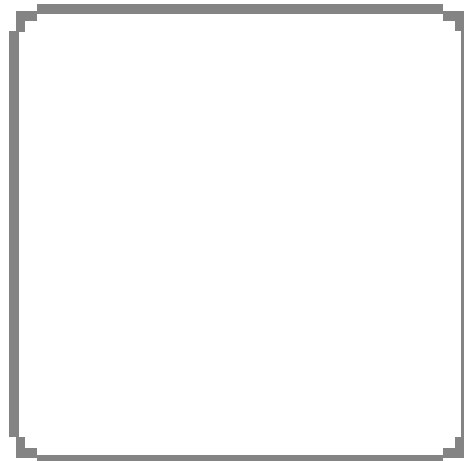


FASCINATING FACTS

ABOUT

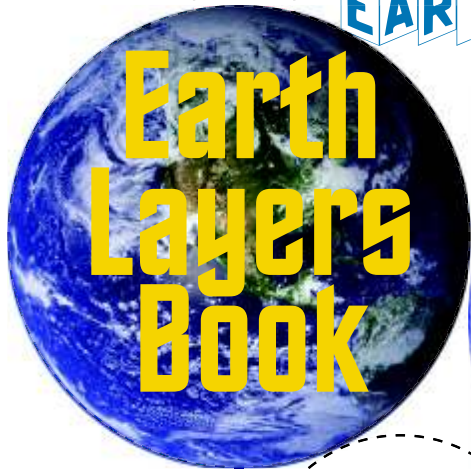
THE SUN



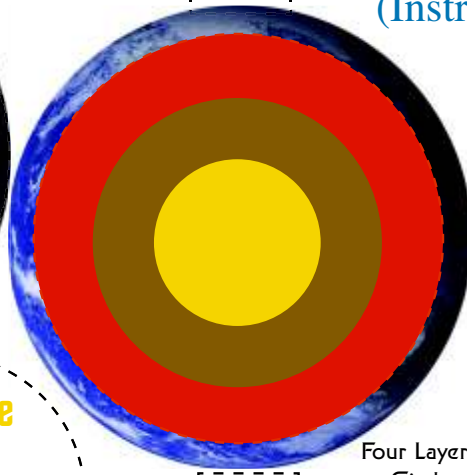


EARTH LAYERS BOOK

(Instructions on back)



Earth Title Circle



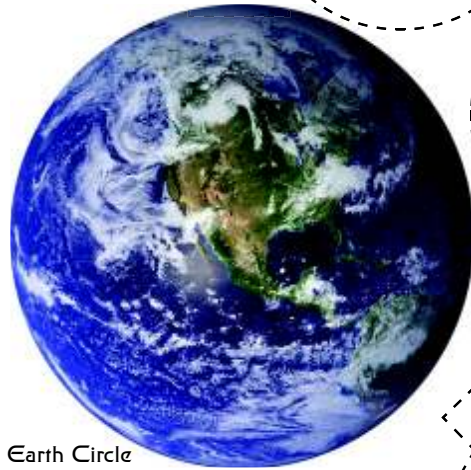
Four Layers Circle

Inner Core

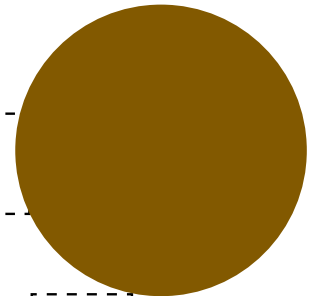
Inner Core Facts Circle

Crust

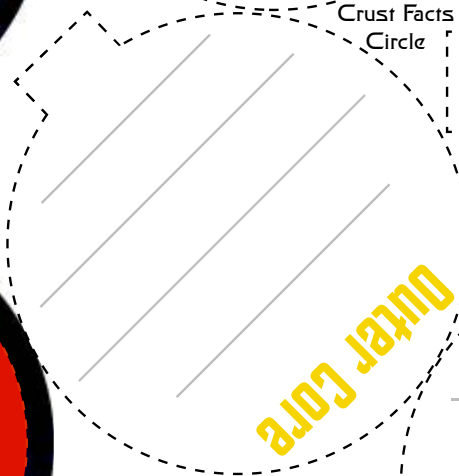
Crust Facts Circle



Earth Circle



Outer Core Circle

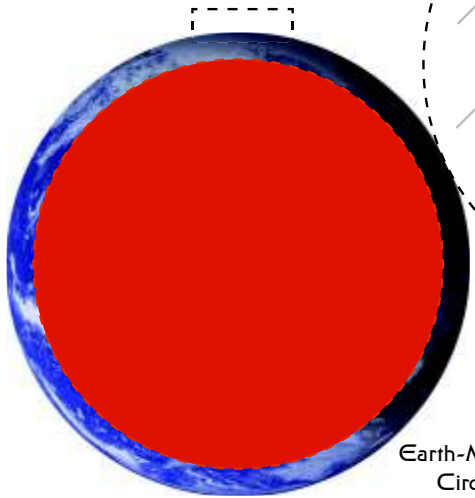


Outer Core

Outer Core Facts Circle

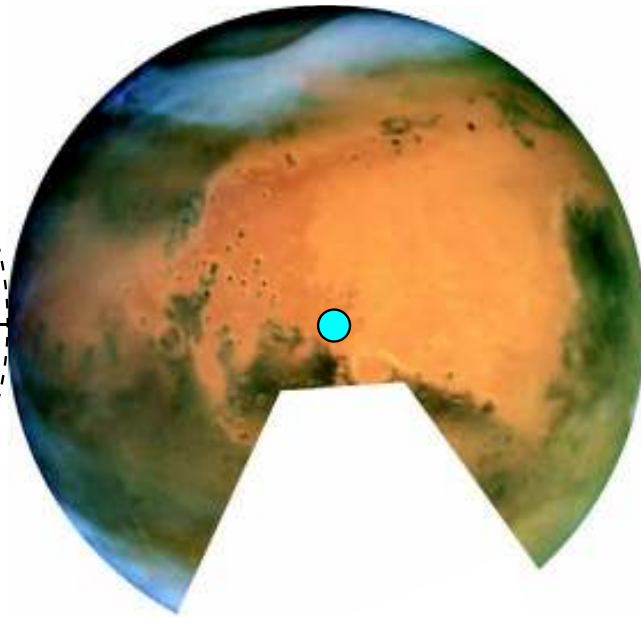
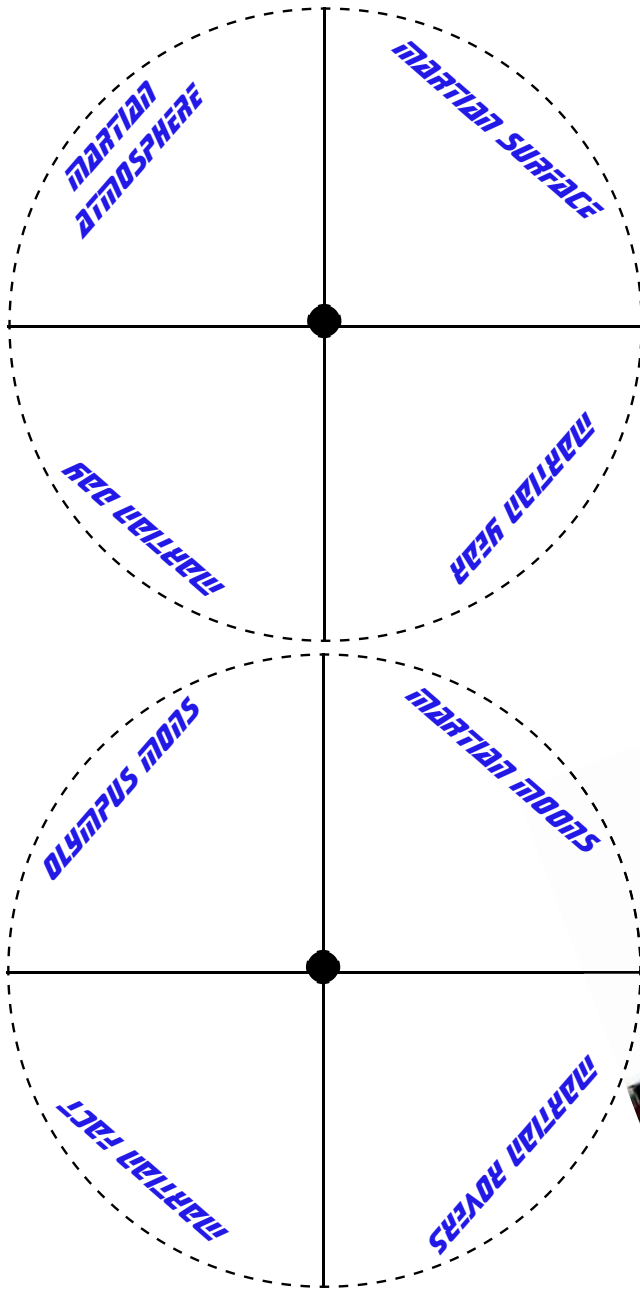
Mantle

Mantle Facts Circle



Earth-Mantle Circle

MARS WHEELS



Instructions:

1. Write an interesting fact you learned under the title in each fact wheel.
2. Cut out all four circles, along with the cutout in the picture circles.
3. Place each picture circle on top of a fact wheel circle.
4. Secure the top circle to the bottom circle by placing a brass fastener in the center of each circle.
5. Turn the wheel to reveal the facts about Mars.
6. Glue the bottom of each fact wheel to your "Mars" paste page.

JUPITER SHUTTER BOOK



Glue this side to your paste page.



Instructions:

1. Cut out the Jupiter Shutter Book rectangle. **Do not cut the gold fold lines!**
2. Fold the flaps of the shutter book inward so that the image meets, revealing the complete planet of Jupiter when the book is shut.
3. Fill in facts and information you learned about Jupiter on the lines inside the book.
4. Glue the back down onto your "Jupiter" paste page.

