

Second Edition!

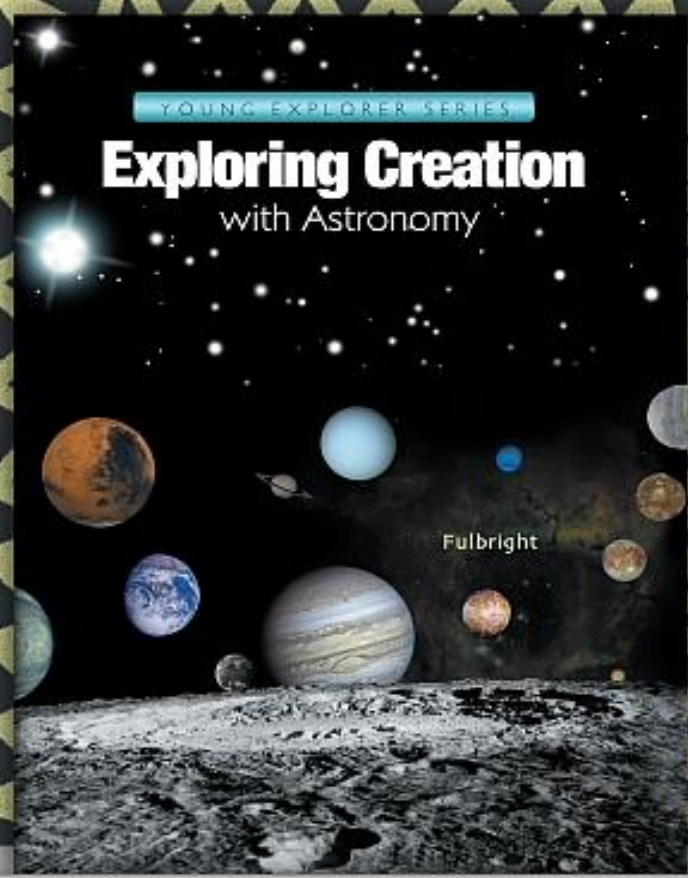
Grades
2-7

Exploring Creation with Astronomy

YOUNG EXPLORER SERIES



Learning Lapbook™



Lapbook Includes:

- All Mini-booklets
- Answer Key
- Hands-on Science
- Step-by-step Instructions
- Memorable Enrichment Activities



A Journey Through Learning

Exploring Creation with Astronomy
Learning Lapbook™ - Full Color Version **2nd Edition**

Authors: Nancy Fileccia and Paula Winget

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We would like to give a huge thank you to Jeannie Fulbright and Davis Carman
for their permission and support of this product.

Clip art from www.clipart.com

Materials Needed

What you need to get started

- *A printed copy of this Exploring Creation with Astronomy **2nd Edition** Learning Lapbook™ - Full Color Version by A Journey Through Learning
- * Exploring Creation with Astronomy **2nd Edition** textbook by Jeannie Fulbright
- *14 colored file folders
- *Scissors
- *Glue (We recommend Elmer's XTreme)
- *Hole puncher
- *Brads
- *Stapler
- *Crayons and/or colored pencils

To make the storage system

- *Duct tape
- *One 3-ring binder

How to Start

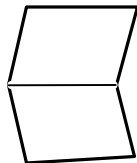
This Exploring Creation with Astronomy lapbook covers the entire Exploring Creation with Astronomy textbook. Gather your 14 folders and fold them so that they will be ready to use as you get to each lesson. Directions for folding are included on a following page.

At the top of each mini-booklet page are directions concerning the construction of your mini-booklet, pages to read from the Fulbright book (highlighted in bold text), and what your student will record in the mini-booklet after reading to show what is learned. A small key is also here to show you where to glue each mini-booklet into the folders.

When the first two folders are filled up with the mini-booklets, follow the directions for using duct tape and a three-ring binder to make a storage system. Do this for all of your folders as they are completed by the student.

In the back you will find an answer key, additional reading suggestions for each lesson, and enrichment pages.

Hamburger Fold-Fold horizontally



Hotdog Fold-Fold vertically



Folds-Labeled with a small line to show where the fold is and the words "hamburger fold" or "hotdog fold."

Dotted Lines-These are the cutting lines

Title Piece-Some of the booklets will have a title piece that will need to be glued to the top of a booklet.

Folding the folders



1. Gather the number of folders required for your particular lapbook.



2. Open up each folder and flatten it out.



3. Take the right side and fold it all the way over until the tab is just before the middle crease in the folder. Do not overlap this crease with the tab.



4. Fold the left hand-side over just to the crease but not overlapping it. Your folder now has two flaps. We like to run a ruler down each fold to make the fold neater and flatter. Do steps 3 and 4 to the remaining folders. Now it is time to begin your lapbook.



5. When your child has filled up the first two folders with the mini-booklets, take the two folders and apply a generous amount of glue to their flaps. Stick them together. Now you are ready to prepare them for the storage system. Do the same for the rest of the folders as they are completed.

Making a storage system for your lapbook(s)

This method of storage not only keeps your lapbooks from getting lost but also keeps them neat and readily available to show to dad, grandparents, friends, etc. When they are not being shown off, just place the binder on your bookshelf!



Roll out enough duct tape to go across the folders lengthwise.



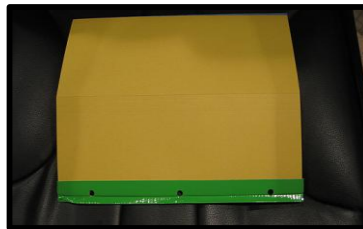
Put duct tape sticky side up. Place binded edge of lapbook on the duct tape (no more than $\frac{1}{4}$ inch!).



Then stick duct tape to the other side again about $\frac{1}{4}$ inch. There will need to be enough tape to hole punch.



Stick duct tape into hole puncher but be careful not to punch holes in your folders.



It will look like this.

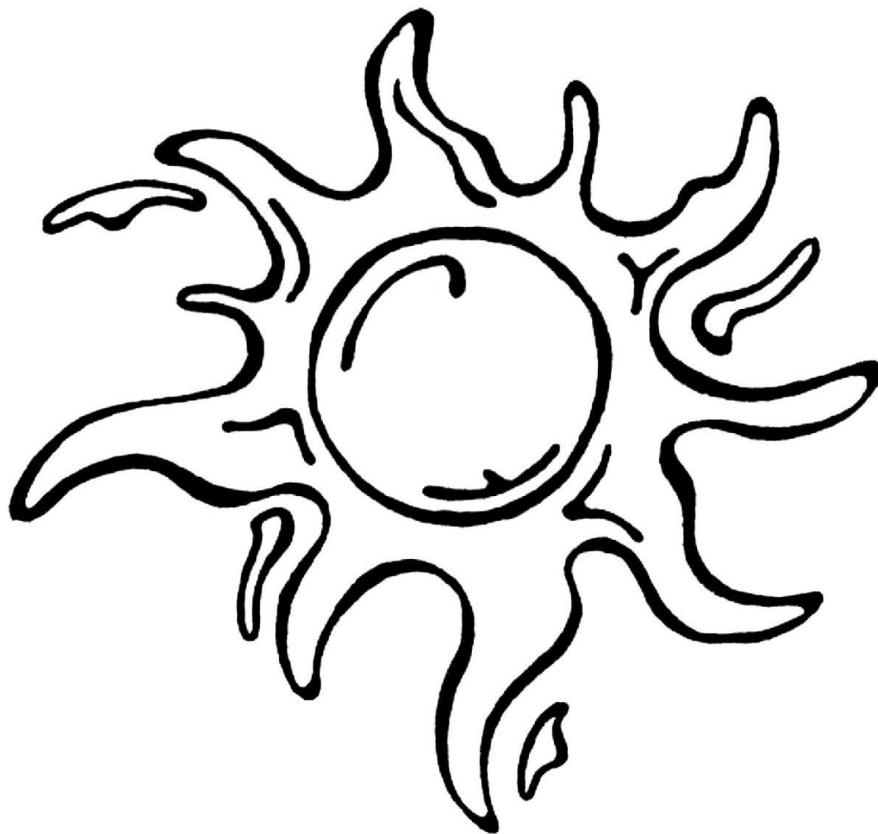


Store folders in 3-ring binder.

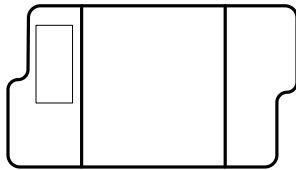
Cut out along the dotted line. Glue onto front of lesson (chapter) 1 folder. Color the pictures before the start of each lesson (chapter).

Lesson 1- What is Astronomy

Lesson 2- The Sun



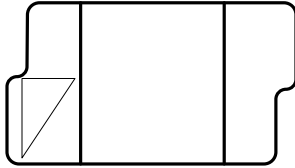
Lesson 1



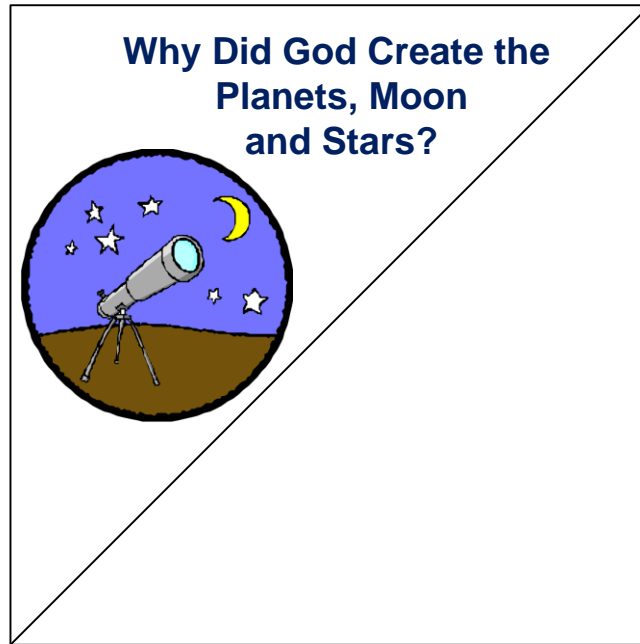
Cut out the booklet as one piece. Glue into lapbook. **Read Welcome, page 14.** Then answer the question on the lines using your best handwriting.



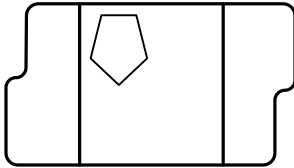
Lesson 1



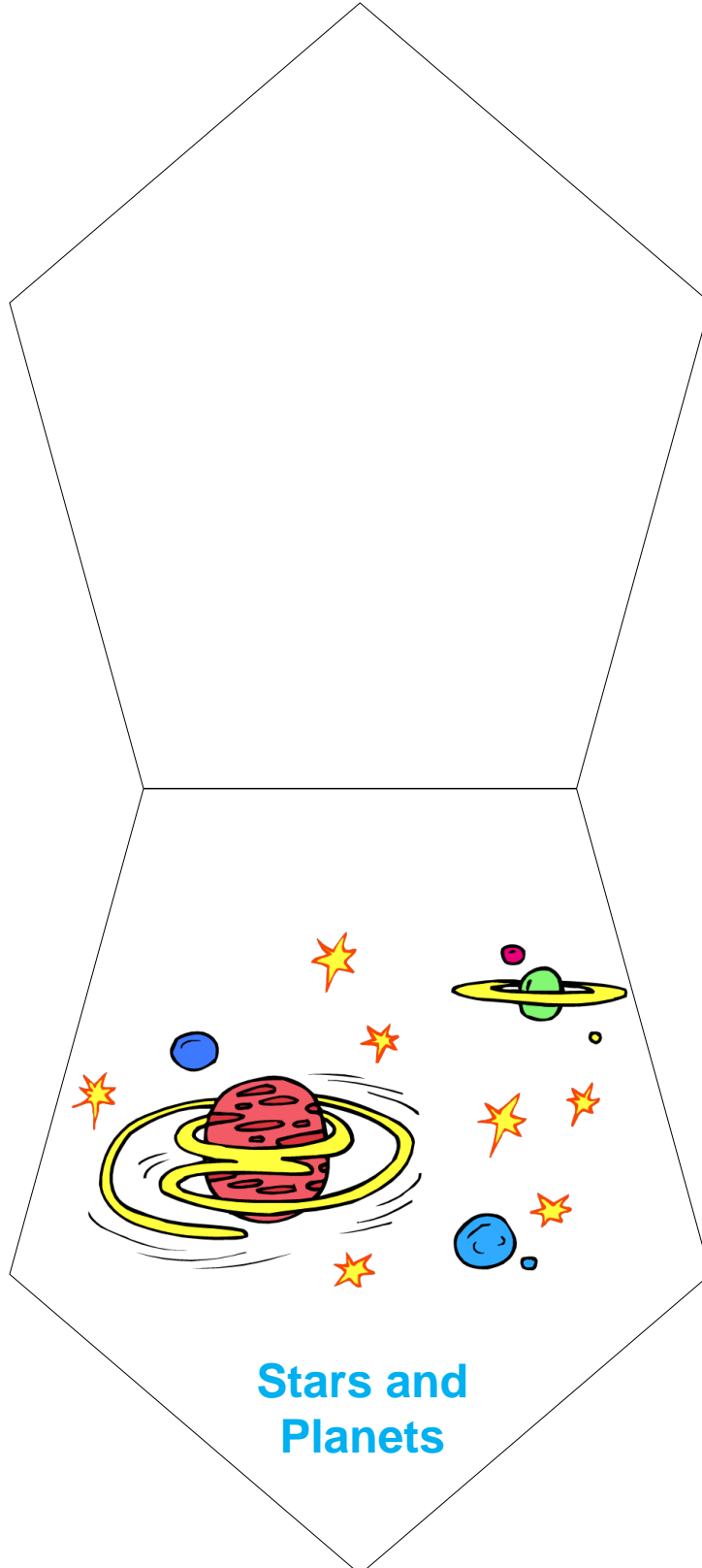
Cut out the big square. Fold in half along the middle line to form a triangle. Glue into lapbook with title showing. **Read The Night Sky and also Think about This, page 15.** Write your answer as to why God created the planets, moon and stars.



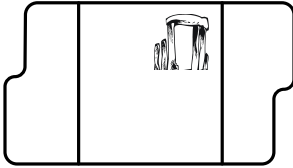
Lesson 1



Cut out as one piece. Hamburger fold on middle line. Glue into lapbook. **Read Stars and Planets, page 15.** Inside the booklet, write how you can tell how you can tell the difference between a star and a planet.



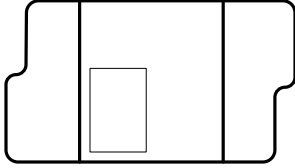
Lesson 1



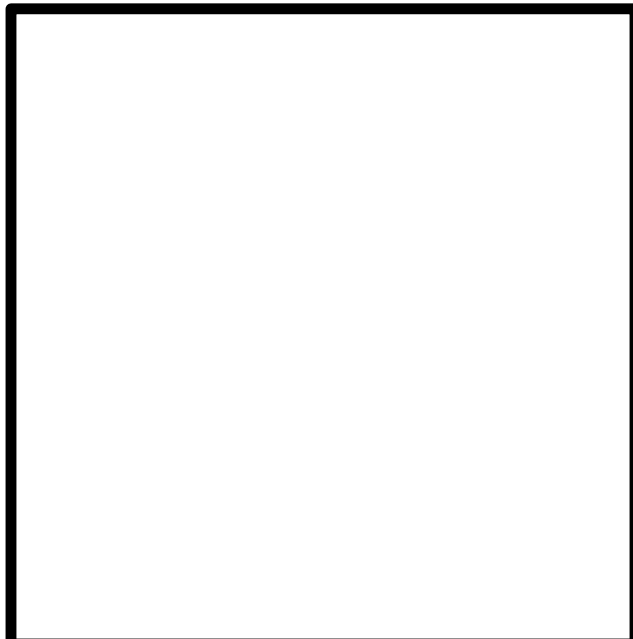
Hamburger fold in half along the middle line. Cut around shape of Stonehenge but do not cut the fold line. Glue into lapbook. **Read Clocks, Calendars, and Seasons pages 16-17.** Color the Stonehenge picture. Inside, write the various ways mankind has used the planets, moons, and stars as a calendar.



Lesson 1



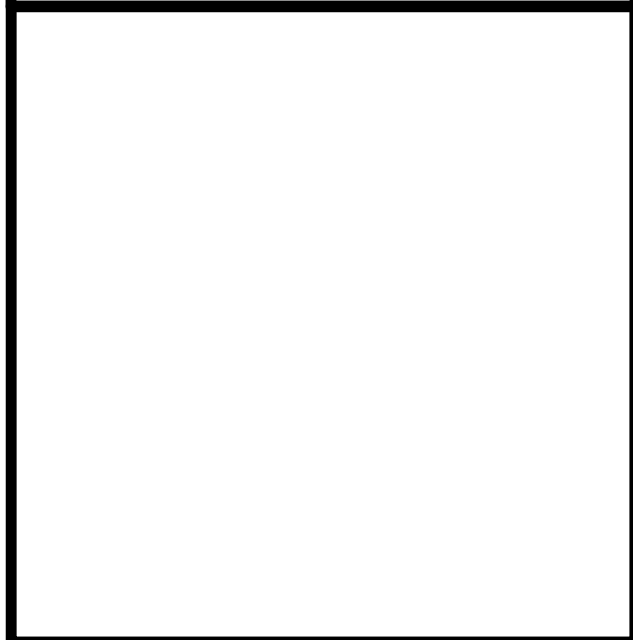
Cut out this piece and hamburger fold on middle line. (There will be a tab sticking out. Do not cut off) Fold tab up and over to keep booklet closed. (Like a matchbook) Glue into folder. **Read Think about This and Navigation, pages 17-18.** Inside the booklet, explain about navigating with stars, a compass, and a GPS.



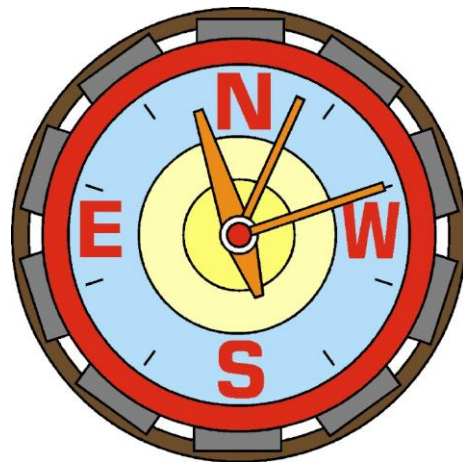
Stars

Compass

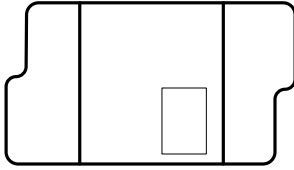
GPS



Navigation



Lesson 1



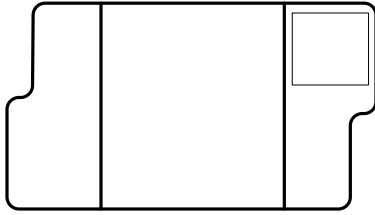
Cut out this piece and hamburger fold on middle line. (There will be a tab sticking out. Do not cut off) Fold tab up and over to keep booklet closed. (Like a matchbook) Glue into folder. **Read Gravity, page 18.** Inside the booklet, tell what you know about gravity.

Hamburger fold

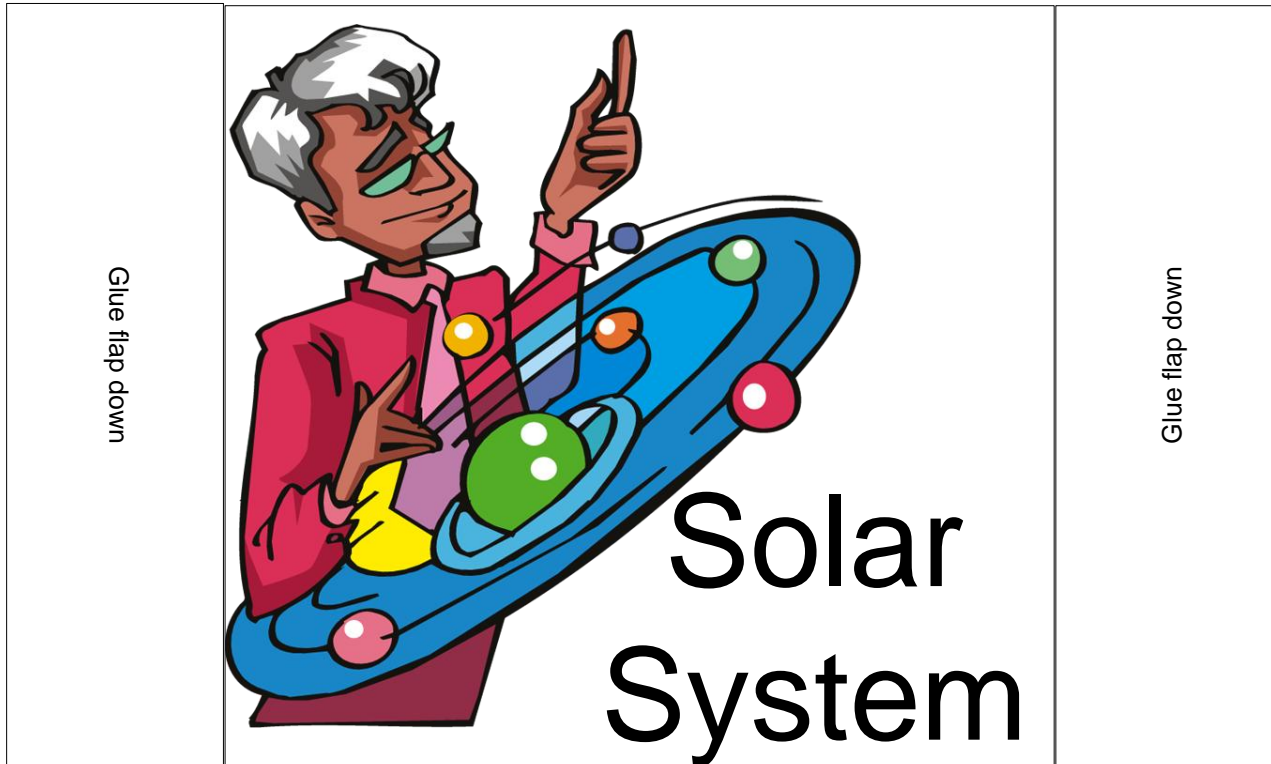
What is Gravity?



Lesson 1



Cut out the booklet as one shape. **DO NOT CUT OFF FLAPS.** Fold bottom square back, then fold back the two flaps over and glue. This will create a pocket. Glue into lapbook. Cut out squares from the next 5 pages. Hamburger fold each in half and glue together so that there is a front and a back. **Read Our Solar System, page 19.** Directions for using the cards are on the next page.



The planet side can be used to put the planets in order according to their size or in order from the sun. As you go through the book, there is enough room to right down interesting tidbits of information that you learn about each planet.

The letter side is to make a mnemonic phrase. In a mnemonic phrase, the first letter in each planet is made into a different word that makes a sentence. See page 19 for more details.

The last card serves as an answer key. On the back of it, write your entire mnemonic phrase. Store cards in the pocket that you just made.

Mercury



Planet closet to the Sun

M

Venus



The evening Star

V

Earth

Our own planet



Mars

The red planet



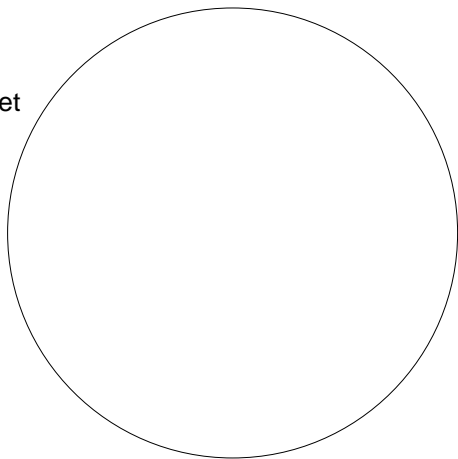
E



M

Jupiter

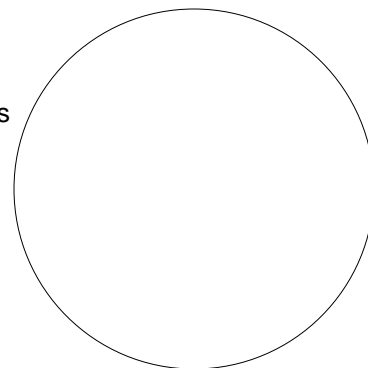
The greatest planet



J

Saturn

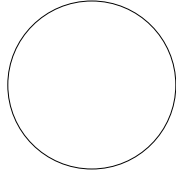
The planet with the rings



S

Uranus

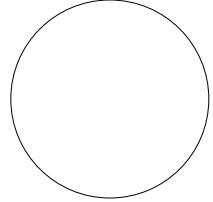
Herschel's Planet



u

Neptune

The farthest Planet



N

Answer Key

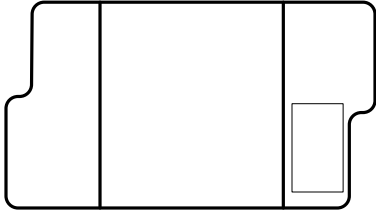
○ Mercury
○ Venus
○ Earth
○ Mars

Jupiter Saturn

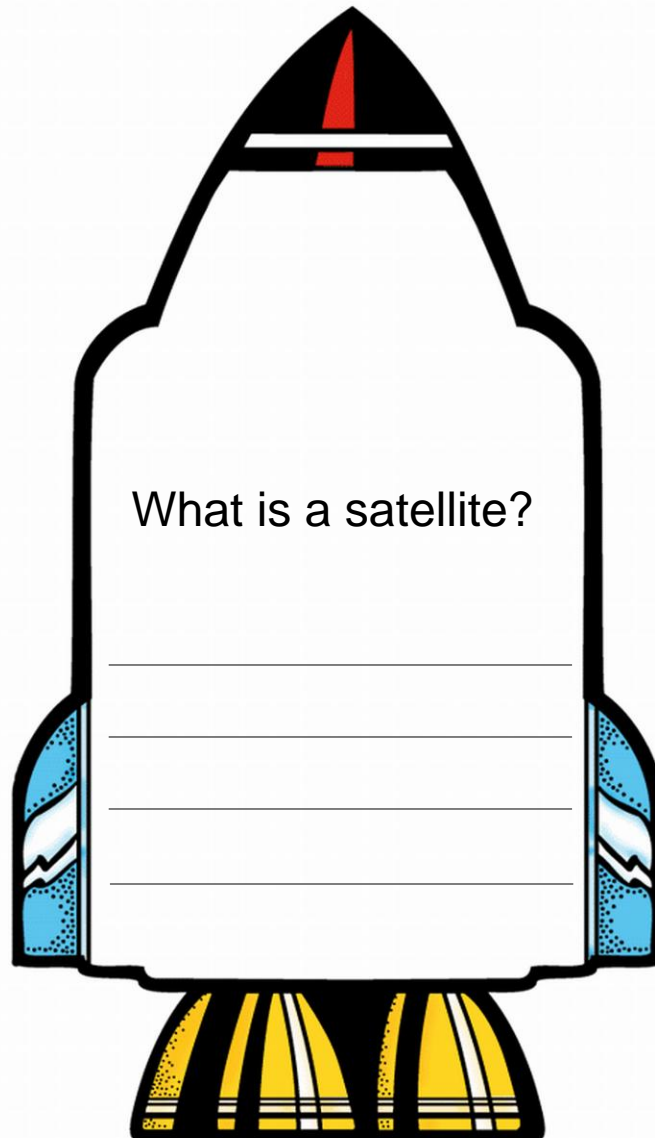
Uranus Neptune

My Mnemonic Phrase

Lesson 1



Cut out the rocket. Cut out the four rocket pieces from the next page. Stack the four pieces on top of the rocket in any order. Staple at the top. Glue booklet into lapbook. **Read Astronomers, Astronauts, and also Satellites, pages 20-22.** Answer the questions on each piece.



Two well-known
astronomers

What does NASA
stand for?

N _____

A _____

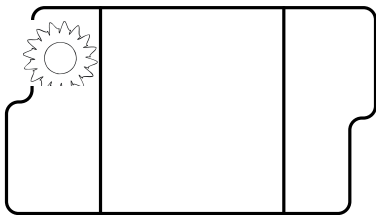
S _____

A _____

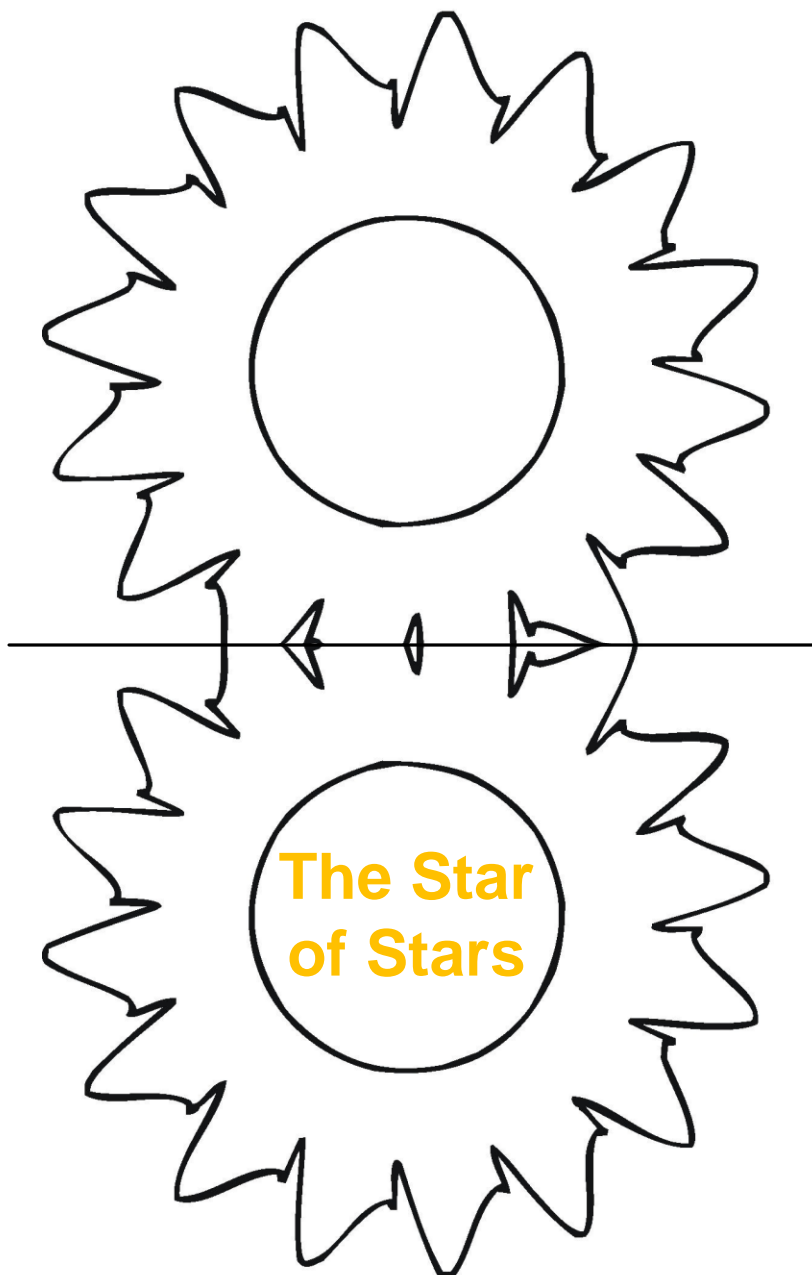
What does NASA
do?

What is the Hubble
Space Telescope?

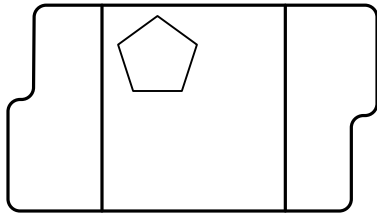
Lesson 2



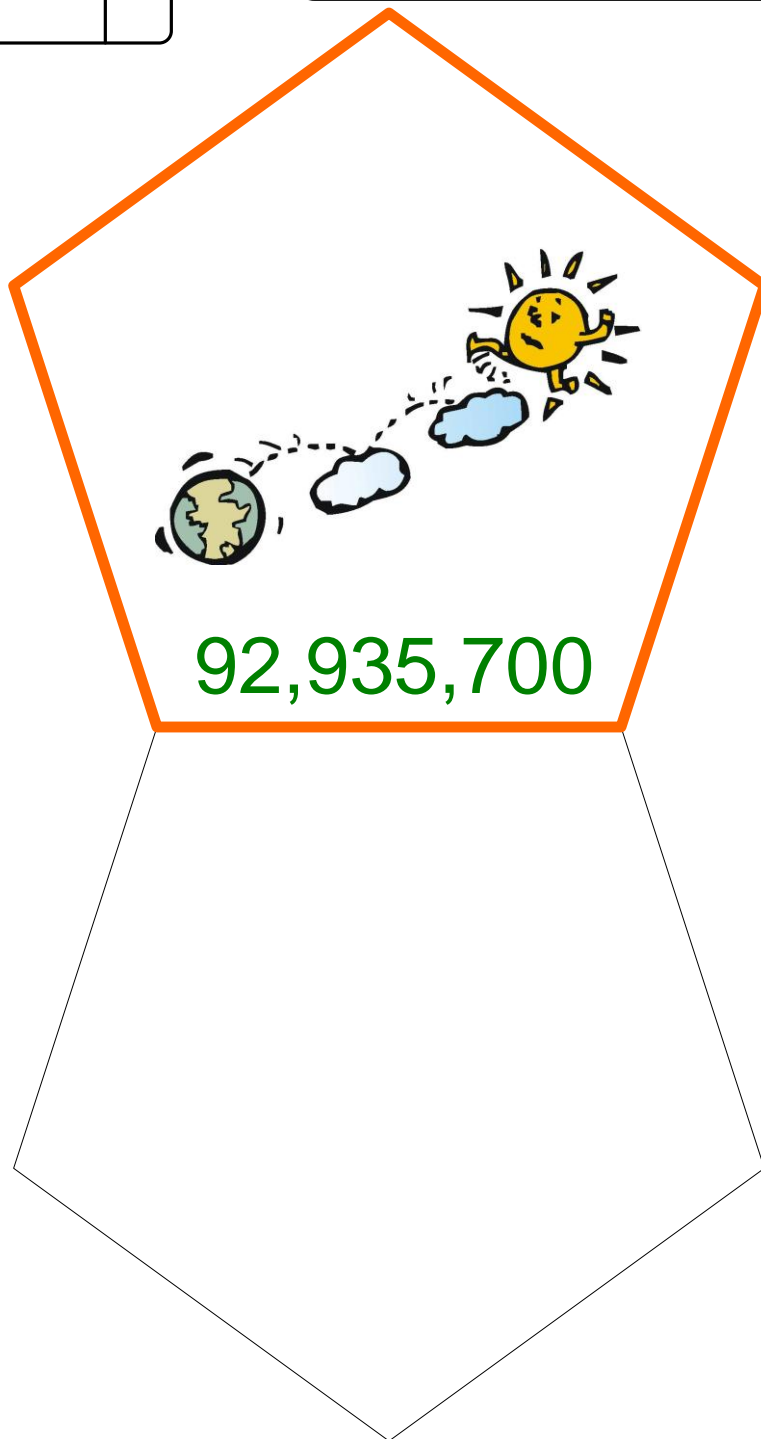
Hamburger fold on the middle line. Cut around shape but do not cut fold line. Glue into lapbook. **Read *The Star of Stars*, page 26.** Inside the booklet, write how many earths can fit inside the sun.



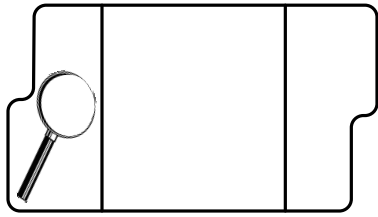
Lesson 2



Hamburger fold on the middle line. Cut out around shape but do not cut fold line. Glue into lapbook.
Read 92,935,700 page 27. Inside the booklet, tell what is important about this number.



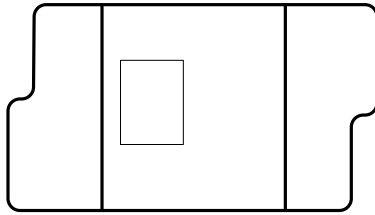
Lesson 2



Cut out the magnifying glass. Glue into your lapbook. Read **Don't Stare**, page 28. Should you stare at the sun? Circle yes or no. Explain your answer out loud.

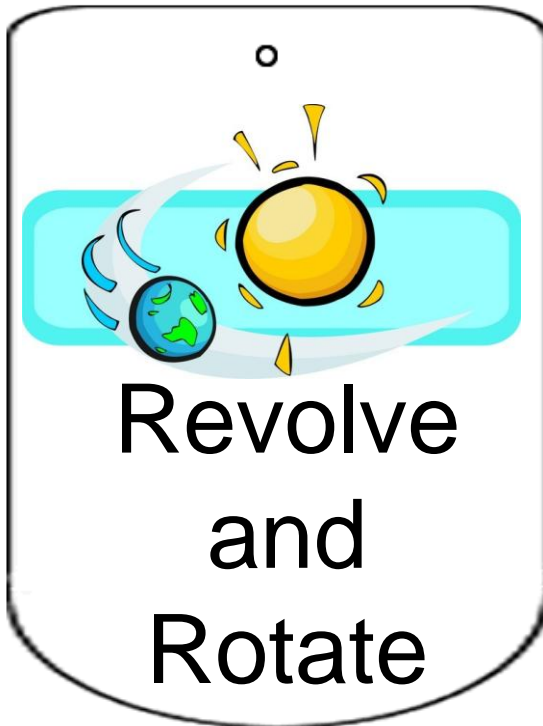


Lesson 2



* This section has TWO booklets. This is booklet #1. Booklet #2 is on the next page. Do both of these booklets on the same day.

Cut out all shapes. Stack on top of each other with the title piece on top. Fasten together with a brad at the top. Glue into lapbook. **Read Revolve and Rotate, page 30-31.** Draw or write about each of the topics.

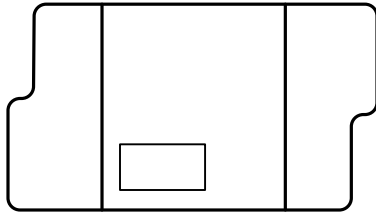


What does revolve mean?

Draw a picture of the earth revolving around the sun.

What is the earth's only natural satellite?

Lesson 2



* This is booklet #2 for this section.

Cut out as one piece. Accordion (fan) fold so that title is on top.
Glue into lapbook. **Read Revolve and Rotate, page 30-31.**
Answer the questions.

Draw the orbit path of a planet going around the sun. (See image at top of page 30.)

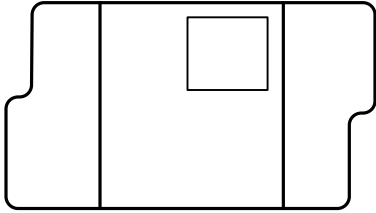
When the earth completes one revolution around the sun, how much time has passed?

When the earth spins (rotates) one time around, how much time has passed?

What does rotating mean?

Revolve and Rotate

Lesson 2



Cut out as one booklet. Fold down flap and then fold over the other. Cut out the labels and glue onto blank sides of booklet. Glue into lapbook. **Read Solar Flares, Auroras, and Sun Spots, pages 32-33.** Write about each topic.

SOLAR FLARES

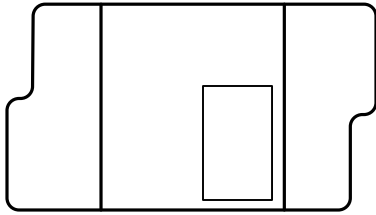
SUN SPOTS

AURORAS

**Solar Flares, Auroras,
and Sun Spots**



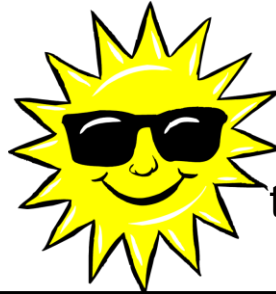
Lesson 2



Cut out both pieces. Hamburger fold smaller booklet in the middle and glue into white space at top of bigger piece. Now glue big piece into lapbook. **Read Think about This, page 33.** Inside the smaller booklet, write the definition of thermonuclear fusion. On the lines, tell how thermonuclear fusion proves the earth is not billions of years old.

Glue smaller booklet here

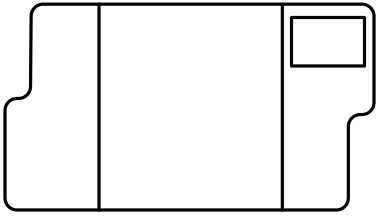
How does thermonuclear fusion prove the earth is not billions of years old?



**Creation
Confirmation**

What is
thermonuclear
fusion?

Lesson 2



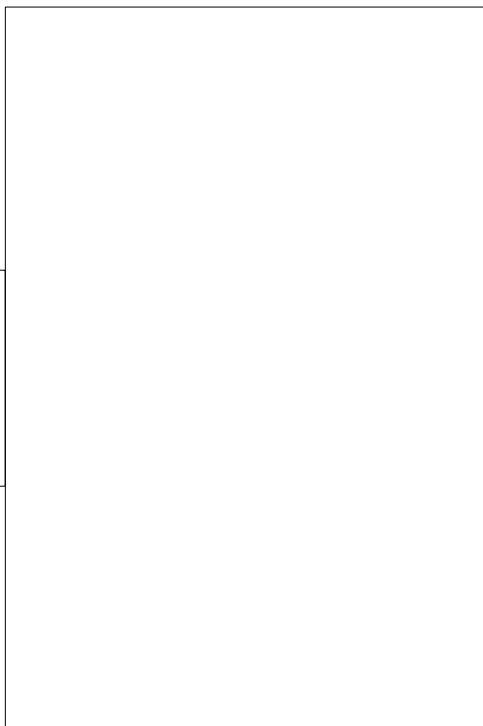
Cut out the 4 pieces. Stack together so that tabs are in order and cover page is on top. Staple together down the left hand side. Glue into lapbook. **Read The Color of God's Love, pages 34-36.** Answer each question on the booklet.



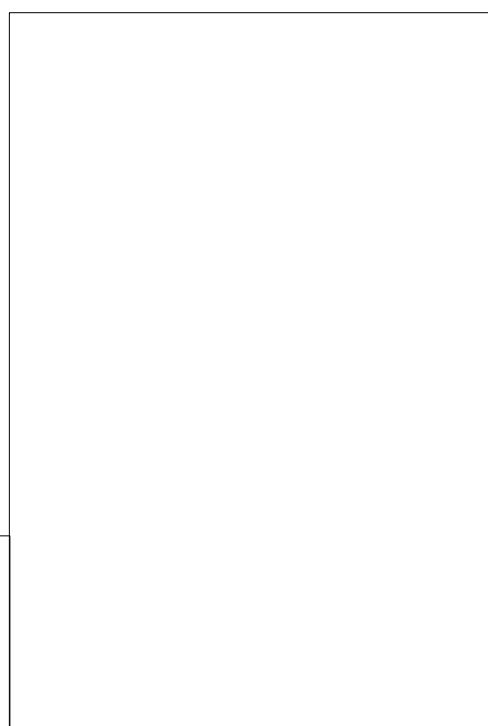
How do we get
the color
black?



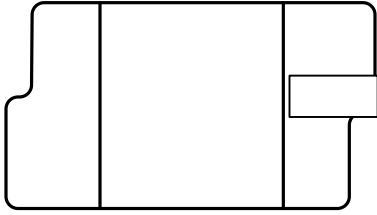
How do we
color?



How do we know
that light travels in
a straight line?



Lesson 2

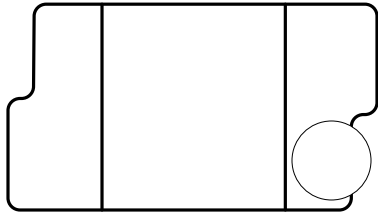


Hamburger fold on the middle line. Cut out around shape but do not cut fold line. Glue into lapbook.

Read Think about This, page 36. Inside the booklet, answer the question.

<p>What is brighter than the sun?</p>	

Lesson 2



Cut out each circle. Stack one on top of the other with title piece on top. Fasten with a brass fastener. Glue into lapbook. **Read Solar Eclipse, A Spacecraft to Study the Sun, and Who Named the Sun, pages 37-42.** Answer the questions on the circles.

Solar Eclipse

What is a solar eclipse?



What is a total eclipse?



What is an annular eclipse?

Goes with previous booklet



What is a partial eclipse?

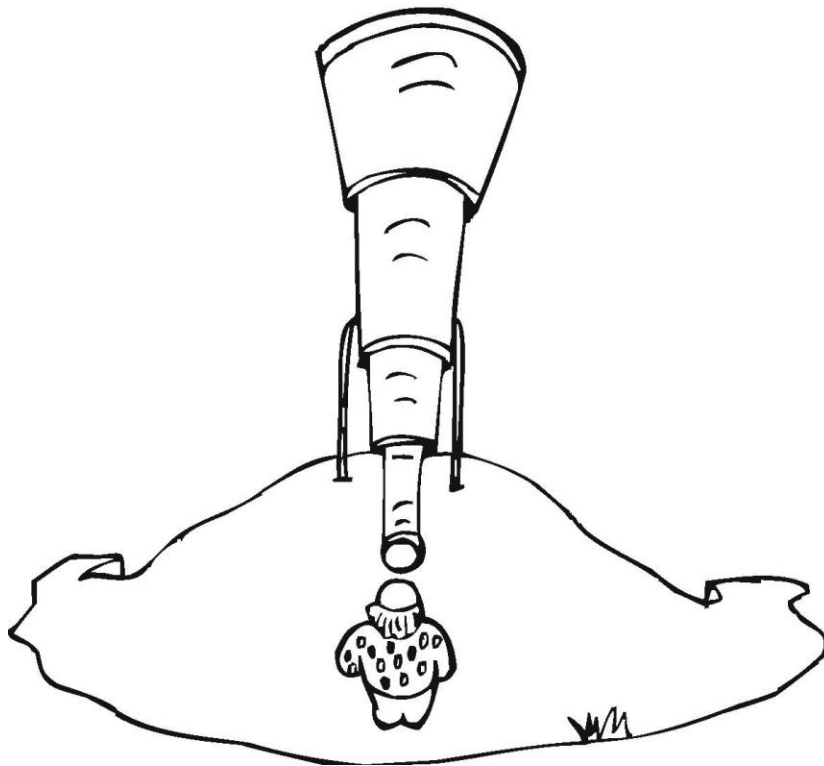


What is Bailey's Beads?

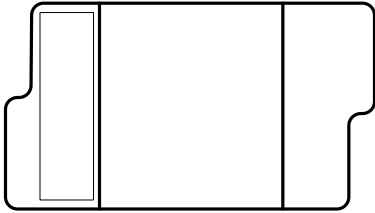
Cut out along the dotted line. Glue onto front of lesson (chapter) 3 folder. Color the pictures before the start of each lesson (chapter).

Lesson 3- Mercury

Lesson 4- Venus

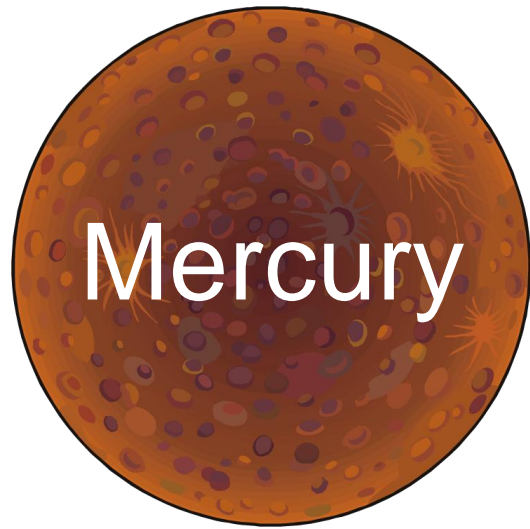


Lesson 3

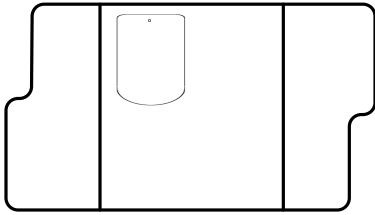


Cut out the booklet as one piece. Hotdog fold in the middle. Glue into lapbook. **Read *The Planet Closest to the Sun*, pages 44.** Write down some of the interesting things you have learned about Mercury from this reading.

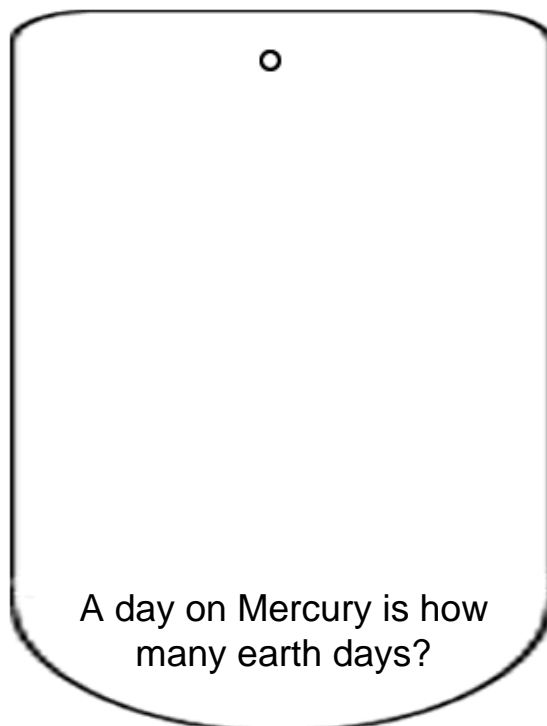
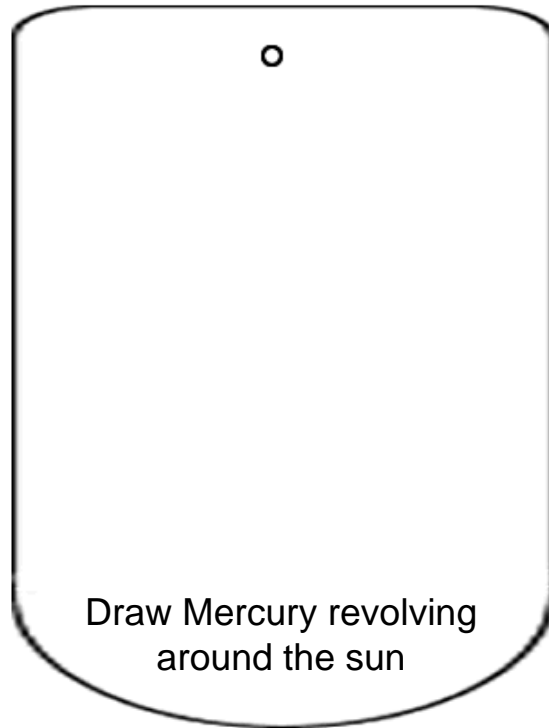
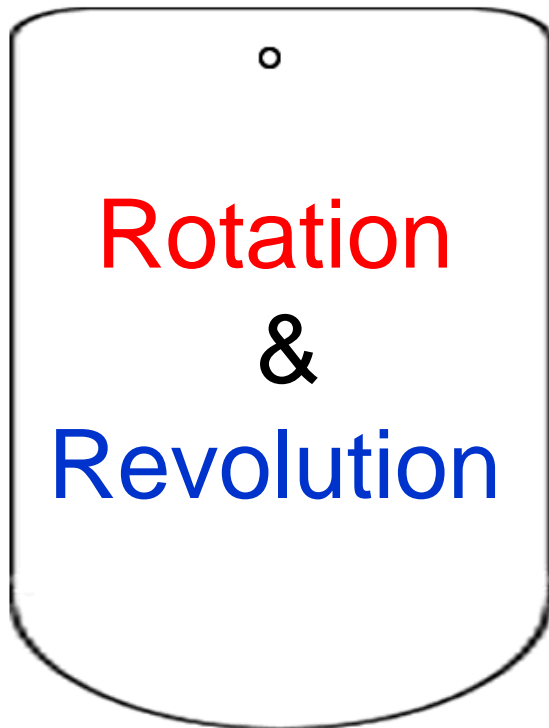
The Planet Closest to the Sun



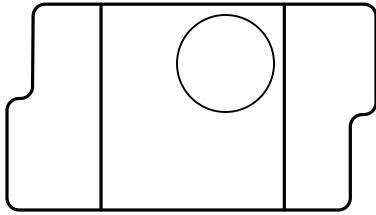
Lesson 3



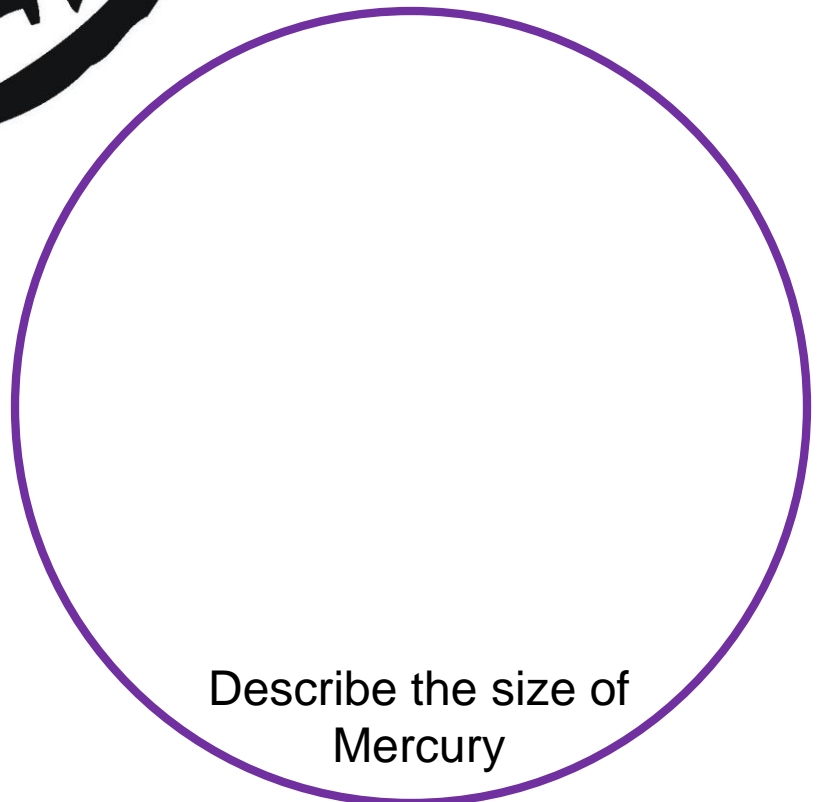
Cut out all shapes. Stack on top of each other with the title piece on top. Fasten together with a brad at the top. Glue into lapbook. **Read Rotation and Revolution, pages 45.** Draw or write about each of the topics.



Lesson 3



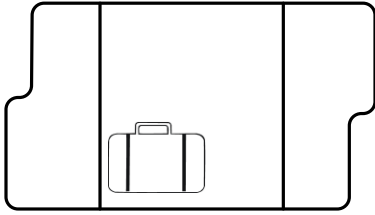
Cut out the two pieces on this page and the two pieces on the next page. Stack with title on top. Staple at the top. Glue into lapbook. **Read Features of the Planet Mercury, pages 46-47.** Answer each of the questions.



What is Mercury like?

What is a “terrestrial”
planet?

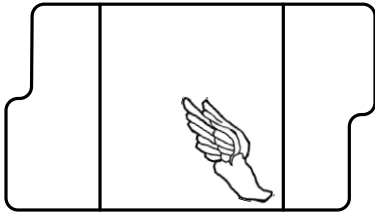
Lesson 3



Hamburger fold on the middle line. Cut out around shape but do not cut fold line. Glue into lapbook. **Read A Trip Across the Sun, page 48.** Inside of the booklet, draw a picture of the sun and draw the a little dot to represent Mercury traveling across it. *See image on page 48.



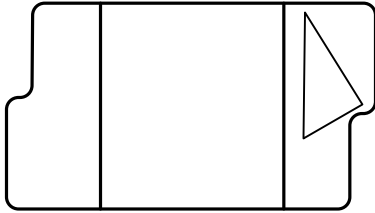
Lesson 3



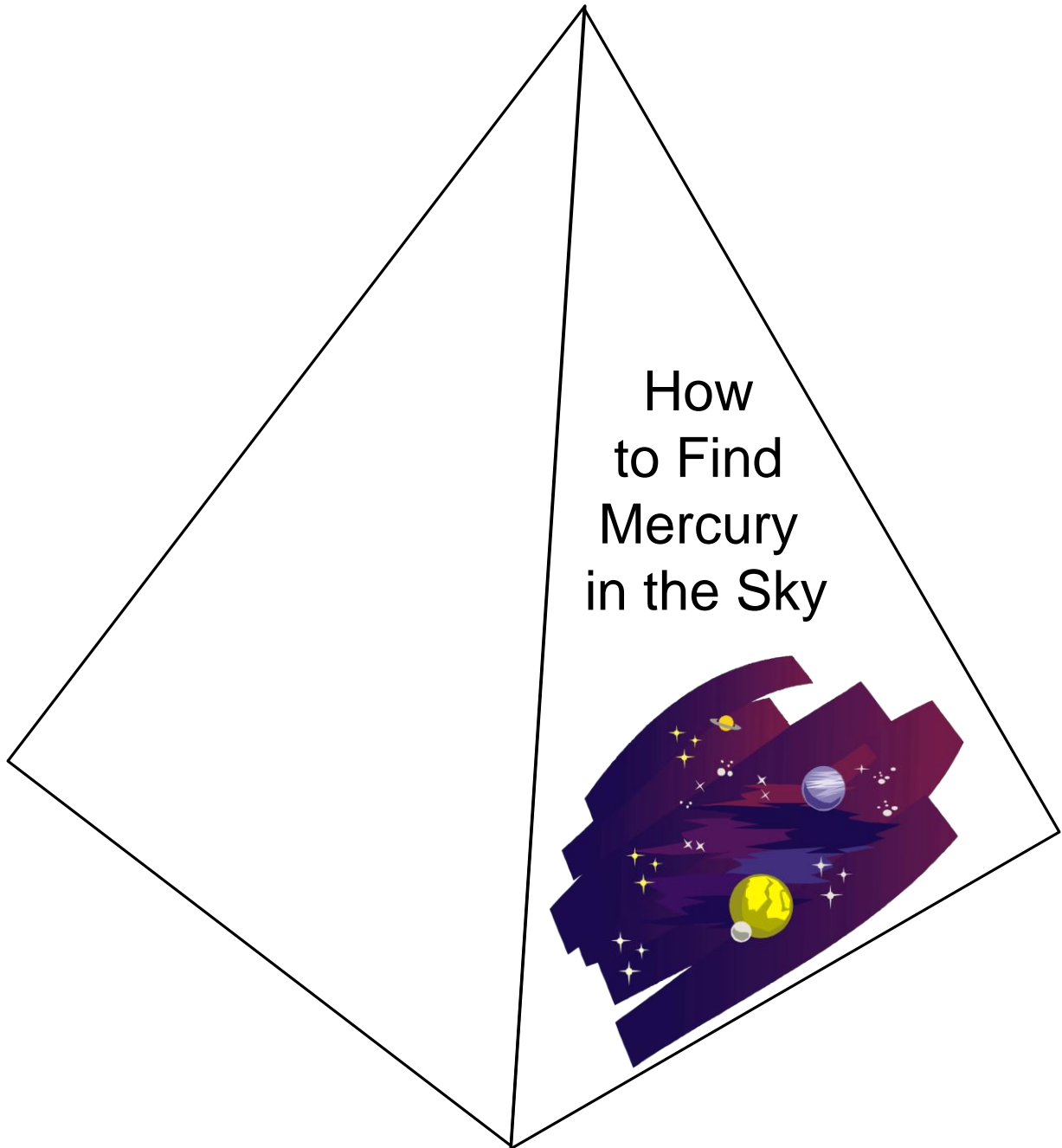
Cut out around shape of shoe and wings. Glue into lapbook. **Read Who Named Mercury, page 48.** Write the answer to this question on the white part of the shoe.



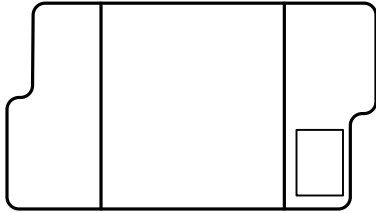
Lesson 3



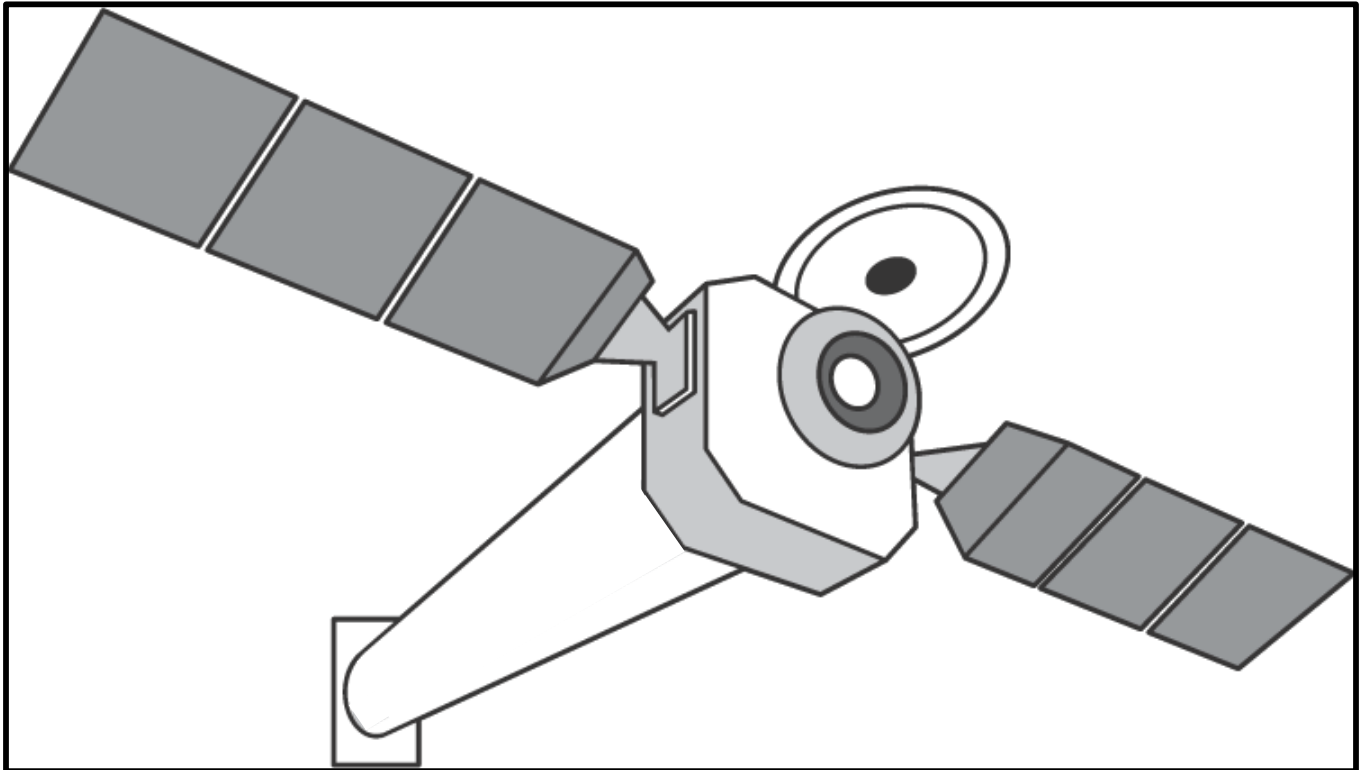
Cut out as one piece. Hotdog fold down the middle line. Glue into lapbook. **Read How to Find Mercury in the Sky-page 48-49.** Inside the booklet write the answer to when and how can you see Mercury up in the sky.



Lesson 3

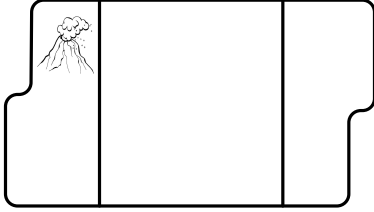


Cut out around the shape of the spaceship. Then cut out small title piece below. Staple on top of spaceship to the area that is the same shape as the small title piece. Glue into lapbook. **Read *Spacecraft to Mercury*, pages 49-52.** Color the spacecraft inside the booklet. Also write the names of the TWO spacecrafts that got information about Mercury.

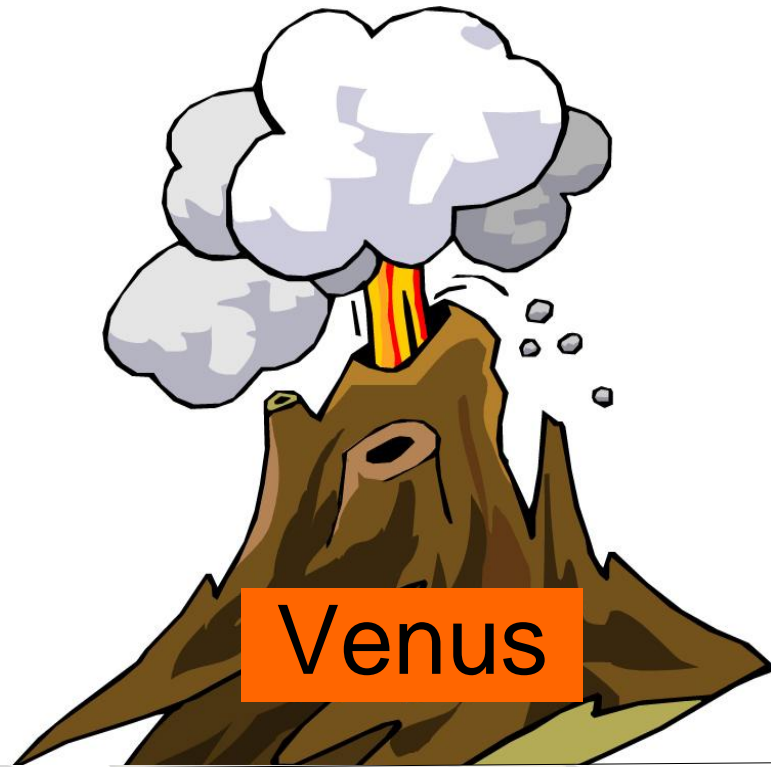


Spacecraft
To
Mercury

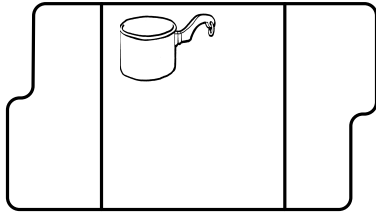
Lesson 4



Hamburger fold on the middle line. Cut around the shape of the volcano but do not cut fold line. Glue into lapbook. **Read Venus, page 54-55.** Inside, tell why Venus is so hot.



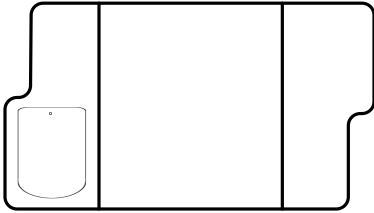
Lesson 4



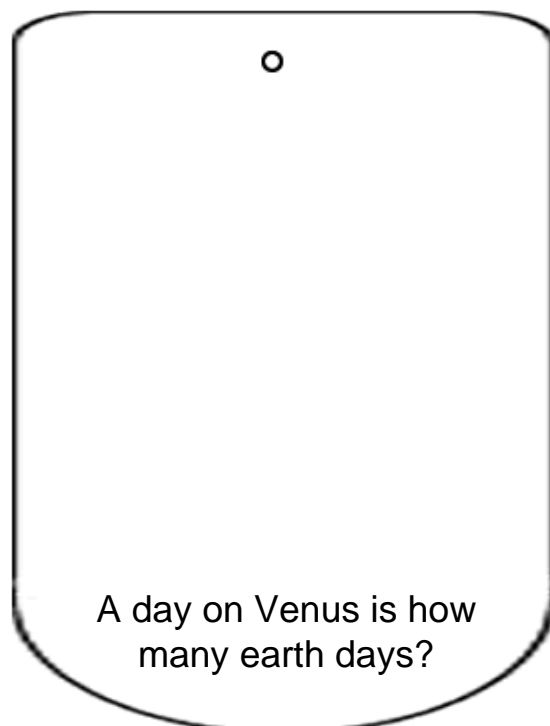
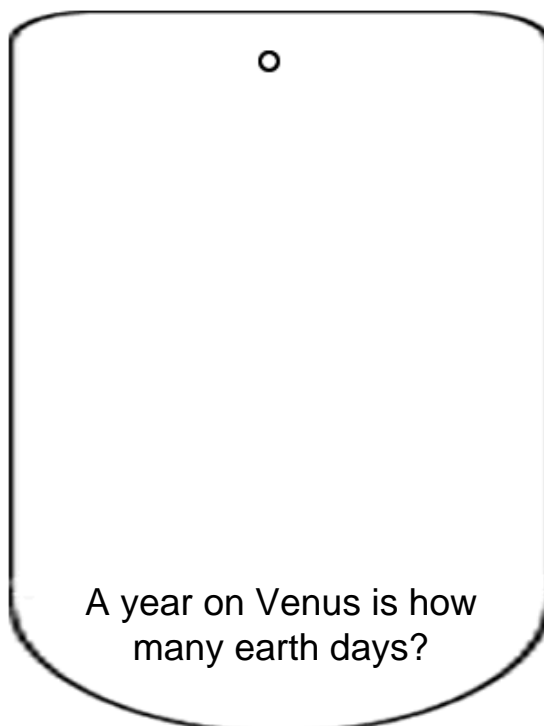
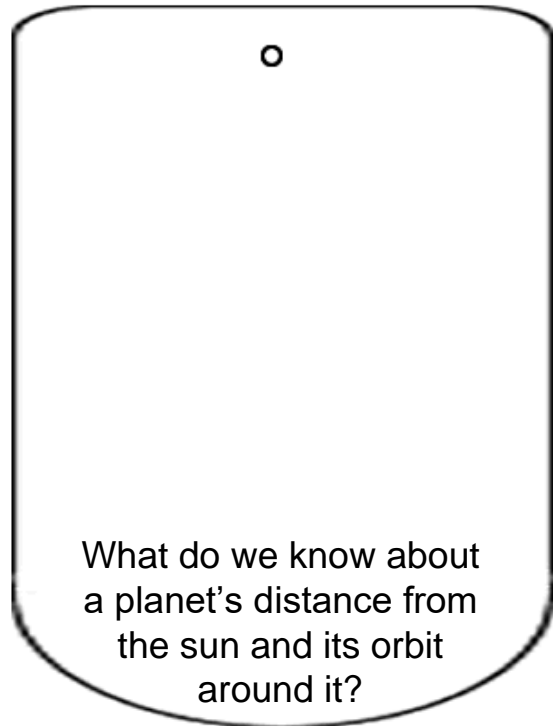
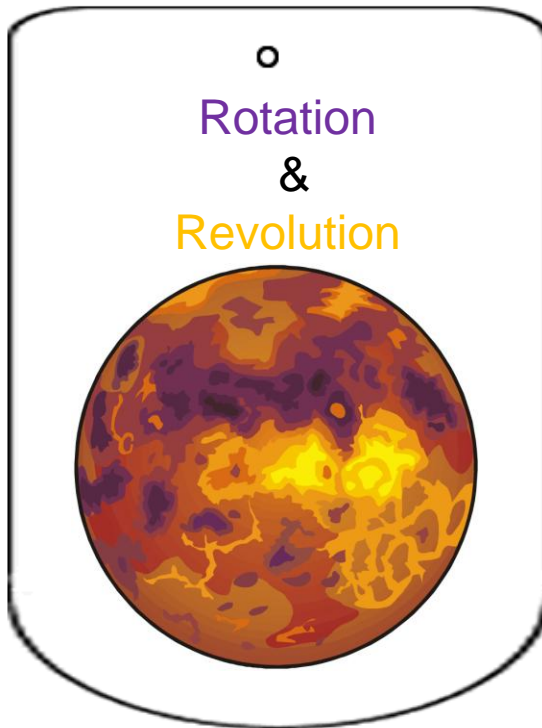
Hotdog fold down the middle line. Cut around shape of pot but do not cut fold line. Glue into lapbook. **Read Too Much Atmosphere, page 56.** Color the pot. Color a lid on it and put a knob on the top. Inside the booklet, write why heat does not escape from Venus. Then tell out loud how this relates to a pan of boiling water that has a lid on it.



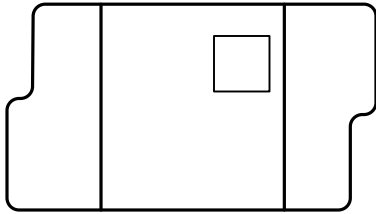
Lesson 4



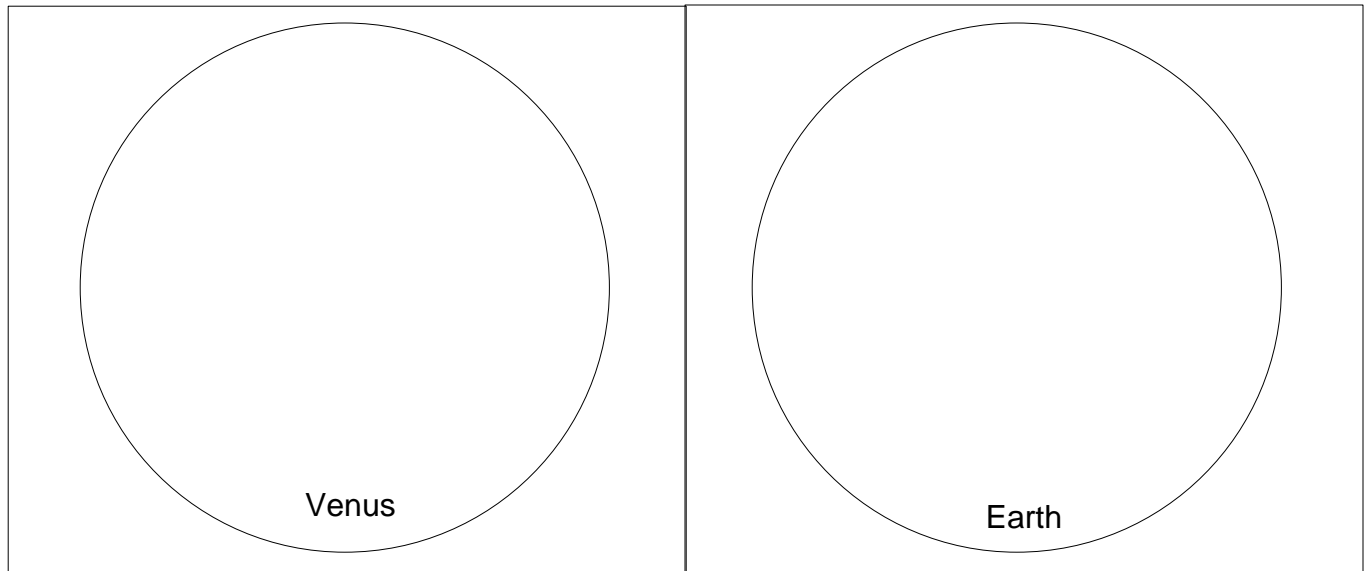
Cut out all shapes. Stack on top of each other with the title piece on top. Fasten together with a brad at the top. Glue into lapbook. **Read Rotation and Revolution, pages 57.** Draw or write about each of the topics. On the last page, circle the correct answer for both questions.



Lesson 4

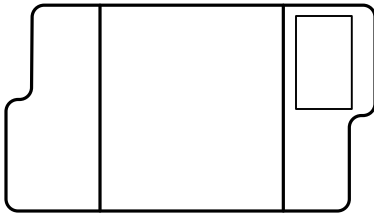


Cut out as one piece. Hotdog fold in half. Cut out title piece and glue on top of closed booklet. Glue into lapbook. **Read Not a Twin, page 57-58.** Looking through a telescope, Venus and Earth seem like twins, but they are actually not. Inside the booklet, use the picture on page 58 to color Venus and Earth.



Not
A
Twin

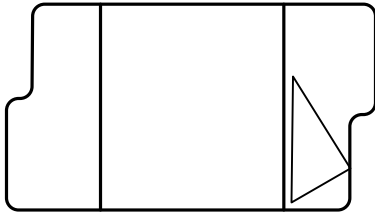
Lesson 4



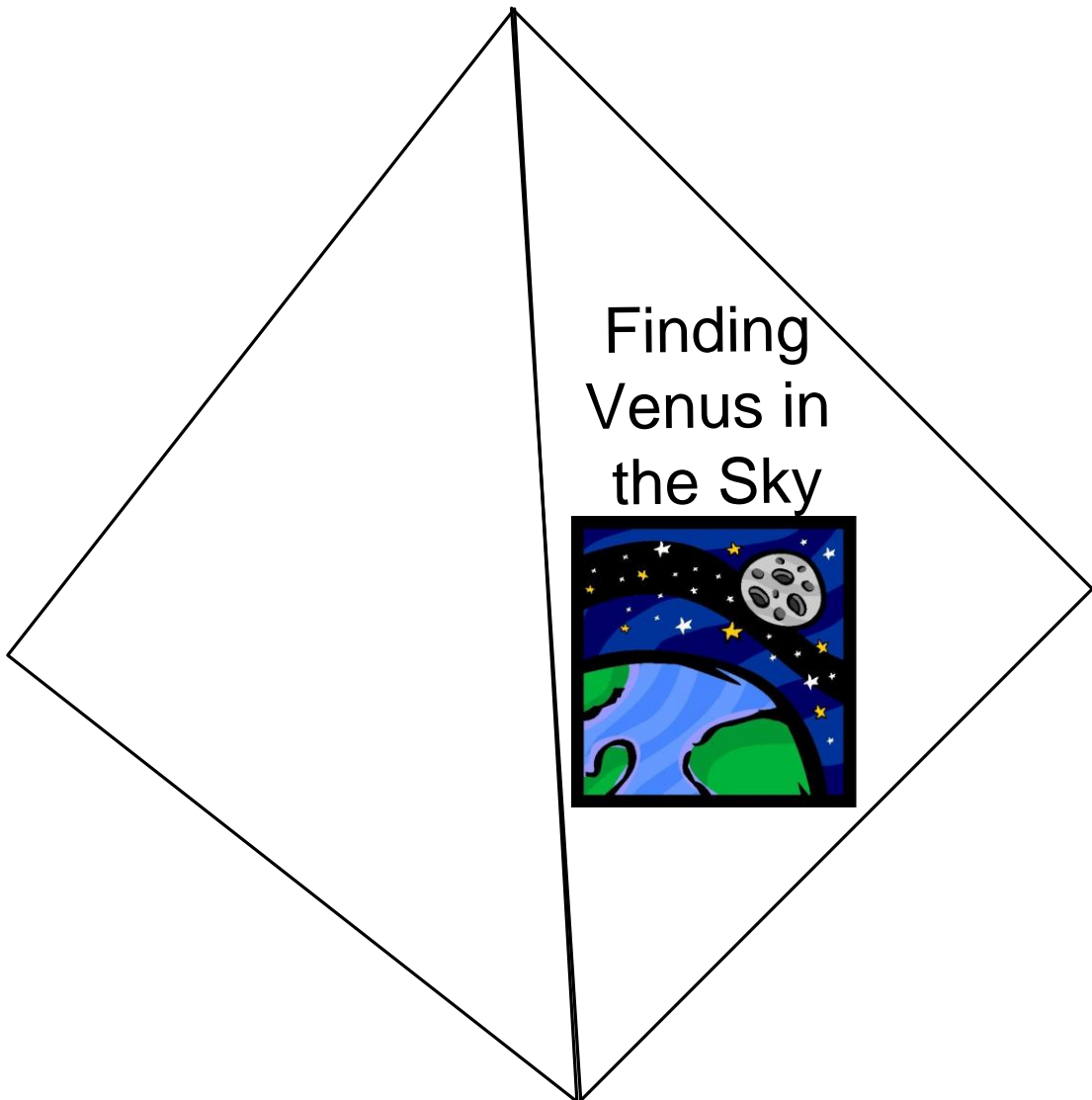
Cut out as one piece. Tri-fold (fold over 3 times) making sure title is on top. Glue into lapbook. **Read The Phases of Venus and Who Named Venus, pages 58-59.** Using the drawing on page 59 as a guide, draw the phases of Venus inside your booklet.

The Phases of Venus

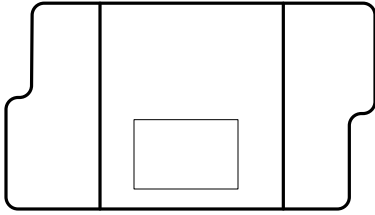
Lesson 4



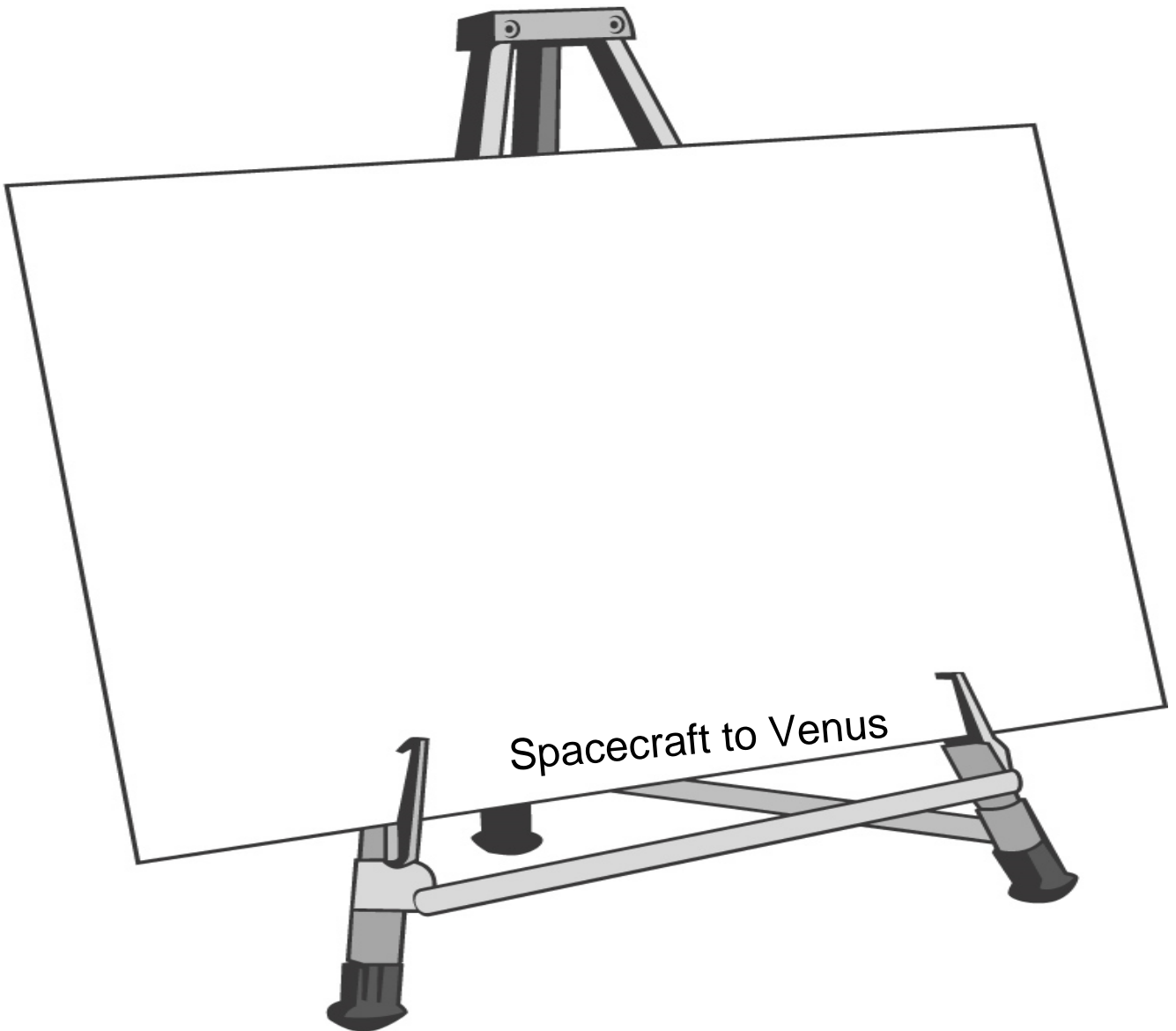
Cut out as one piece. Hotdog fold down the middle line. Glue into lapbook. **Read Finding Venus in the Sky, page 60.** Write when you see Venus up in the sky inside the booklet.



Lesson 4



Cut out the booklet as one piece. Glue into lapbook.
Read *Spacecraft to Venus and Understanding Radar*, pages 60-61. Color the easel. On the drawing paper, draw what you think the Mariner 2 looked like as it passed by Venus.



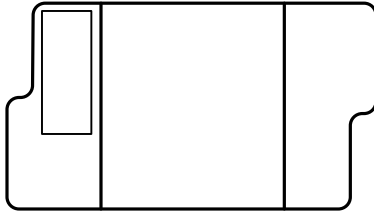
Cut out along the dotted line. Glue onto front of lesson (chapter) 5 folder. Color the pictures before the start of each lesson (chapter).

Lesson 5-Earth

Lesson 6- The Moon



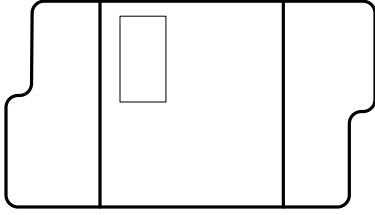
Lesson 5



Cut out the booklet as one piece. Glue into lapbook. **Read Perfect Design by a Perfect Designer, page 66.** Copy the bible verse on the lines using your very best handwriting.

In the beginning God
created the heavens and the
earth. Genesis 1:1

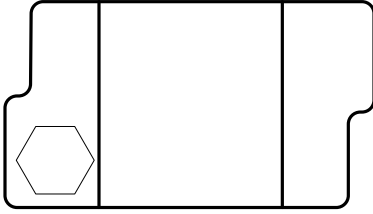
Lesson 5



Cut out the booklet as one piece. Fold the two outside flaps inward on the line. Glue into lapbook. **Read Perfect Distance, pages 66.** Write what would happen if the earth was too close to the sun and if the earth was too far from the sun. In the middle, using the drawing on page 66, draw the sun and the earth.

Too close to the sun	<h1>Perfect Distance</h1> <p>Draw a picture of the sun and earth</p>	Too far from the sun
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Lesson 5

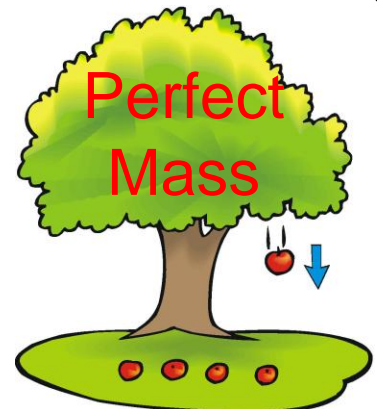


Cut out the large shape as one booklet. Fold the left flap over the center flap. Next, fold the right flap over the center. Cut out the cover label and glue on to front. Glue into lapbook. **Read Perfect Mass, pages 67-68.** Inside, write the meaning of mass, write one or more of the problems we would have if the earth had less mass, and do the same for if the earth had more mass.

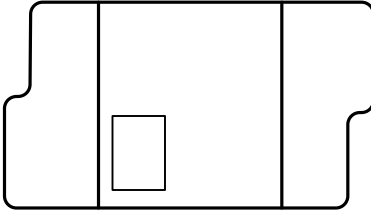
Less mass

More mass

What is mass?



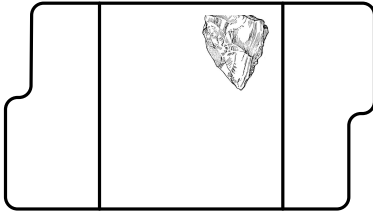
Lesson 5



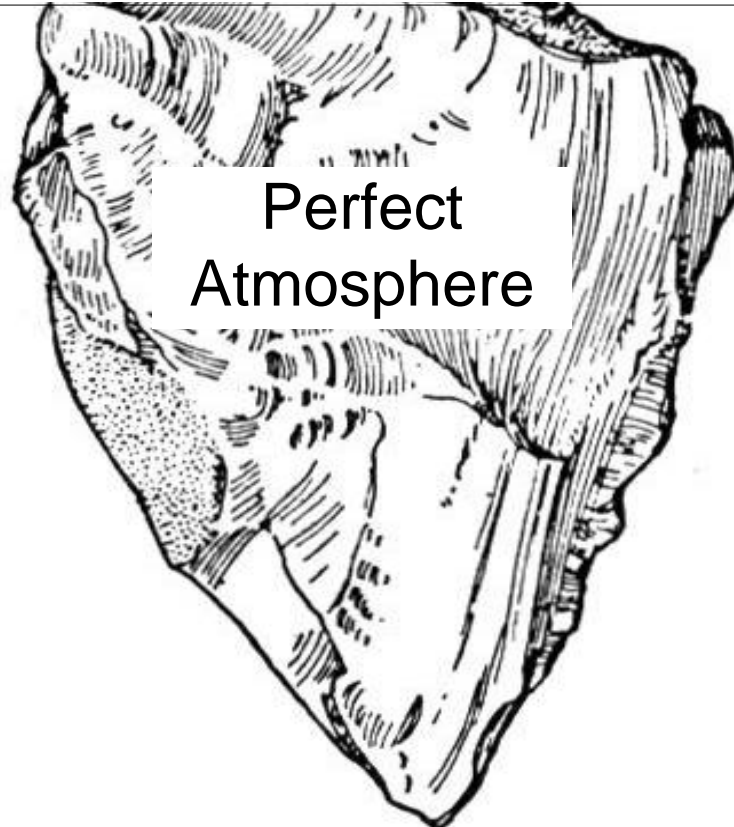
Cut book out as one piece. Tri-fold so that title is on the front. Glue booklet into lapbook. **Read Perfect Rotation, page 68-69.** Inside your booklet write what would happen if the earth rotated faster and if it rotated slower.

Perfect Rotation

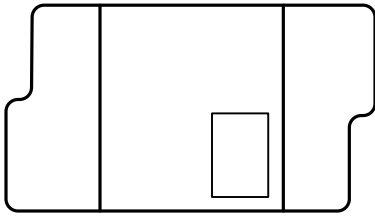
Lesson 5



Hamburger fold on the middle line. Cut out around shape. Glue into lapbook. Read **Perfect Atmosphere**, pages 69-70. Inside the booklet, tell why the earth's atmosphere is perfect.



Lesson 5



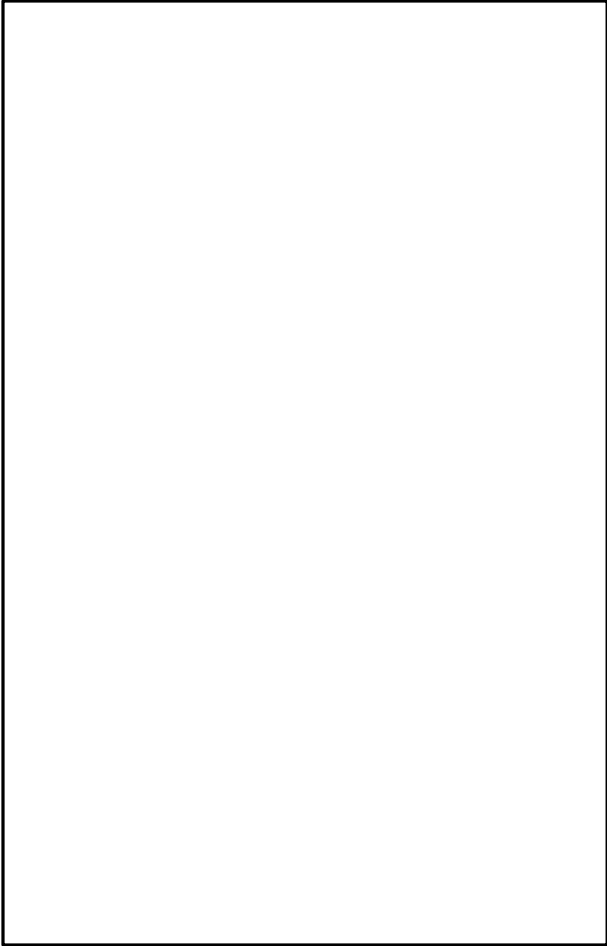
Cut out the pieces. DO NOT CUT OFF TABS. Stack together with title on top and tabs in order. Staple at the top. Glue into lapbook. **Read Perfect Tilt, pages 71-75.** Write about what happens when the earth tilts towards the sun, when it tilts away from the sun, and what the Northern and Southern hemisphere are.

Towards sun

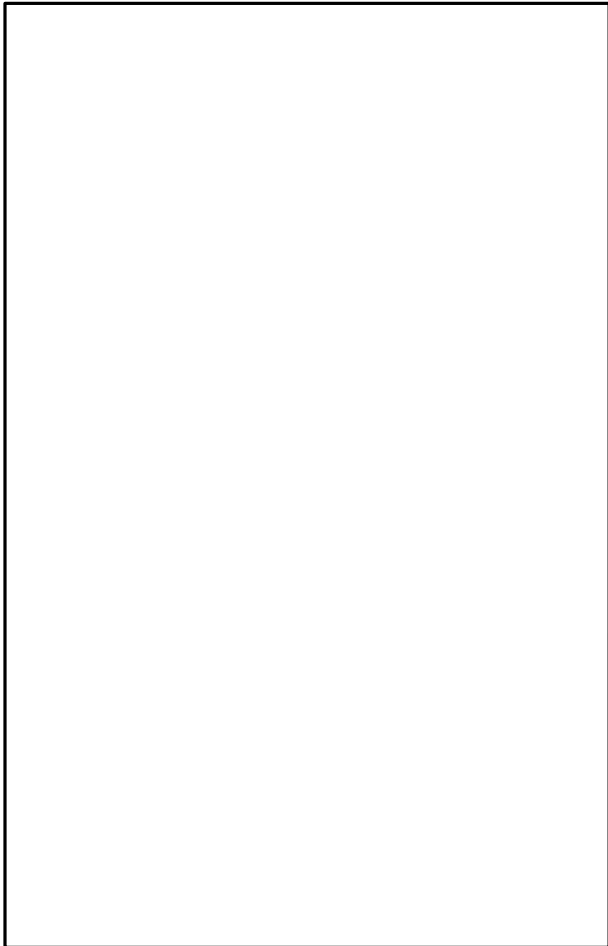
Perfect



Tilt

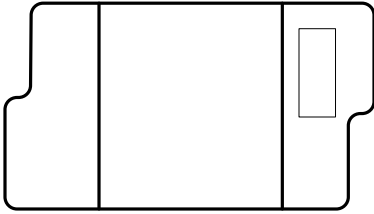


Away
from sun



Hemisphere

Lesson 5



Cut out the booklet as one shape. **DO NOT CUT OFF FLAPS.** Fold bottom square back, then fold back the two flaps over and glue. This will create a pocket. Glue into lapbook. Cut out cards from the next page. Store in pocket. **Read Perfect Land, page 76.** Using the cards, match the word to the definition.



Mantle

Hot section of SOLID metals like nickel and iron.

Crust

Hot section of MELTED metals like nickel and iron. The magnetic field is formed here.

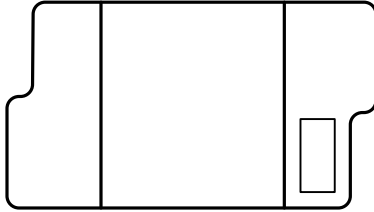
Inner Core

Hot, semisolid rock that is thousands of miles thick.

Outer Core

Top layer of the earth.

Lesson 5



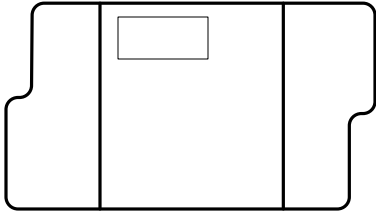
Hamburger fold on the middle line. Cut out around shape but do not cut fold line. Glue into lapbook.

Read Perfect Magnetosphere, Who Named Earth, and Spacecraft for Studying Earth, pages 77-81. Inside the booklet, explain what you have learned about the earth's magnetosphere.

Perfect Magnetosphere



Lesson 6

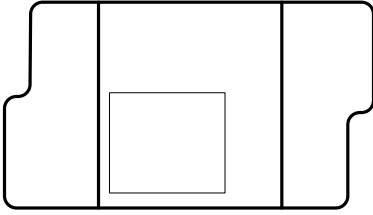


Cut out the four pieces. Stack from shortest on top down to longest on the bottom. Staple on the left. Glue into lapbook. **Read The Moon, pages 84.** Write one fact on each tab that you learned about the moon from your reading.

The Moon

A large empty rectangular box with a dark blue border, intended for writing a fact about the moon.A large empty rectangular box with a green border, intended for writing a fact about the moon.A large empty rectangular box with an orange border, intended for writing a fact about the moon.

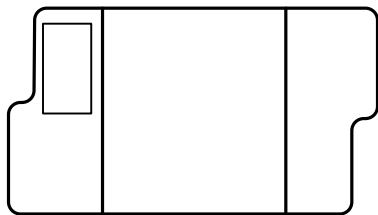
Lesson 6



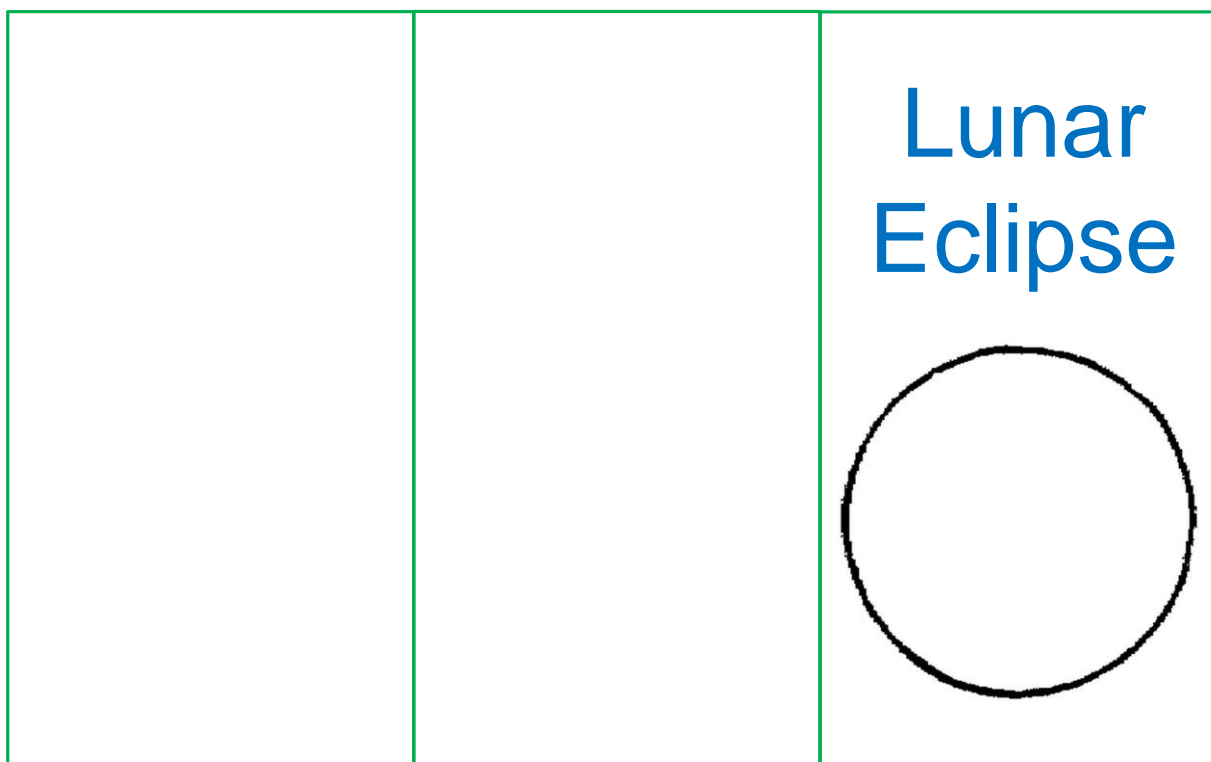
Cut out as one piece and glue into lapbook.
Read **The Moon's Phases**, pages 85-88.
Using the TWO drawings on page 86, color in
the moon's phases. Write the phase on the
line beside each moon.

The Moon's Phases

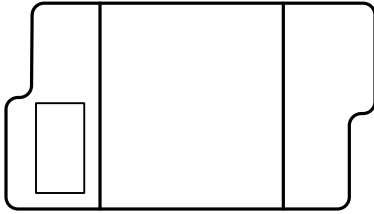
Lesson 6



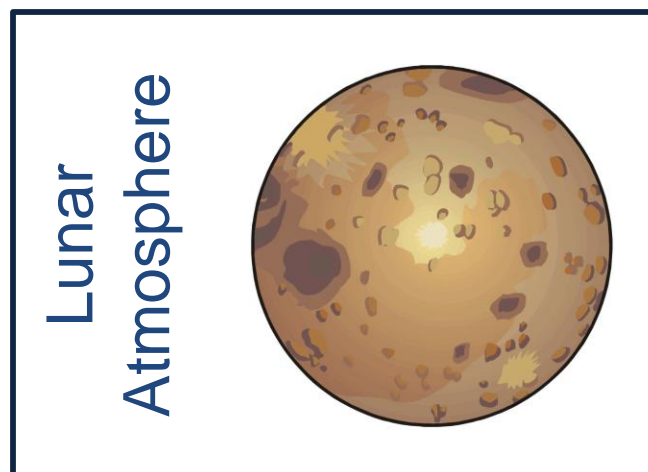
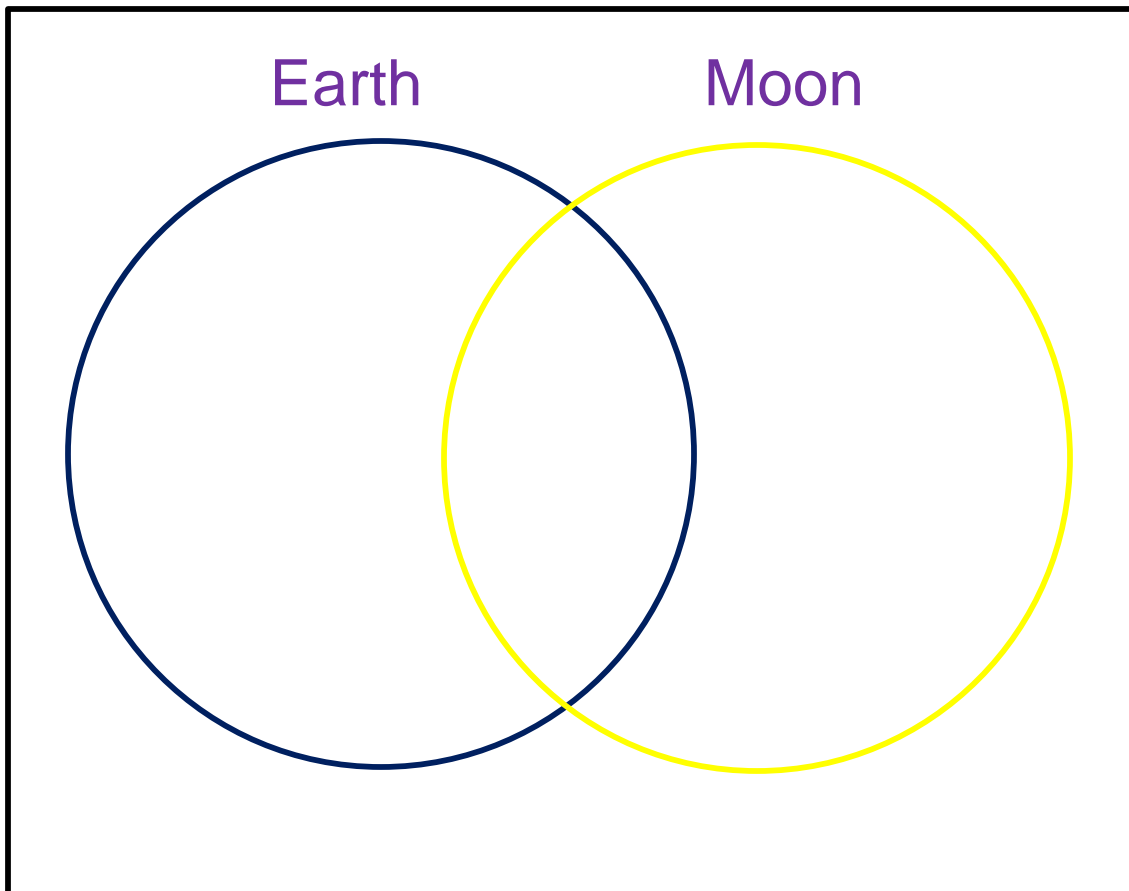
Cut out as one piece. Tri-fold so that title is on top. Glue into lapbook. **Read Lunar Eclipse, page 89.** Using the lower drawing on page 89 as a guide, draw the moon as it looks during a total eclipse.



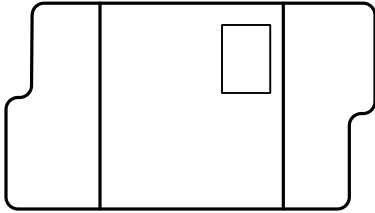
Lesson 6



Cut out Venn Diagram around outside lines and also cut out title piece. Hotdog fold Venn Diagram down the center. Glue title piece on top of closed booklet. **Read Lunar Atmosphere, page 90.** The earth and the moon are very different. Fill out the Venn Diagram to show their differences. Where the circles intersect, write a few ways that they are similar.



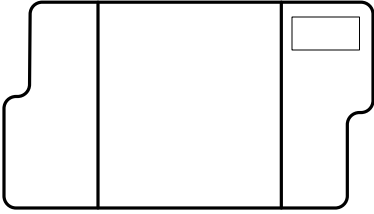
Lesson 6



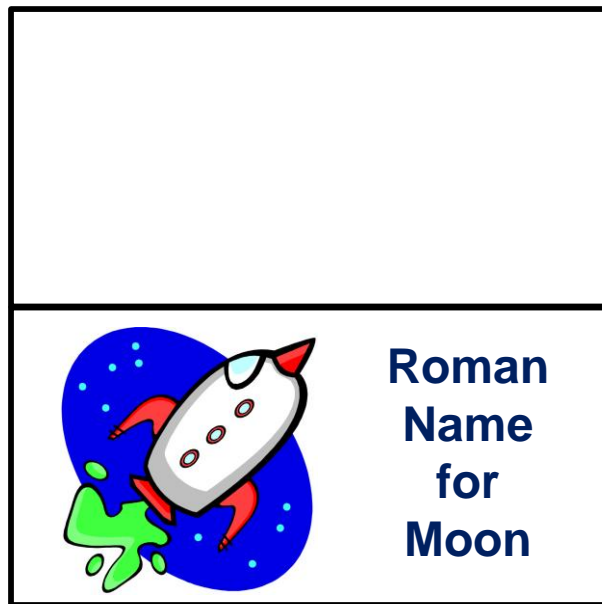
Hamburger fold down the middle. Cut out around shape of booklet but do not cut fold. Glue into lapbook. **Read The Moon's Gravity, pages 91-92.** Using the chart on **page 91** as your guide, figure out and write what your weight would be on the moon.

How
much
would you
weigh
on the
moon?

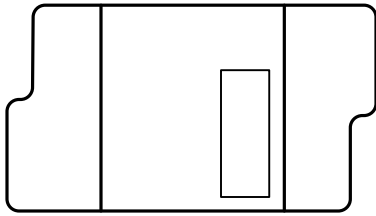
Lesson 6



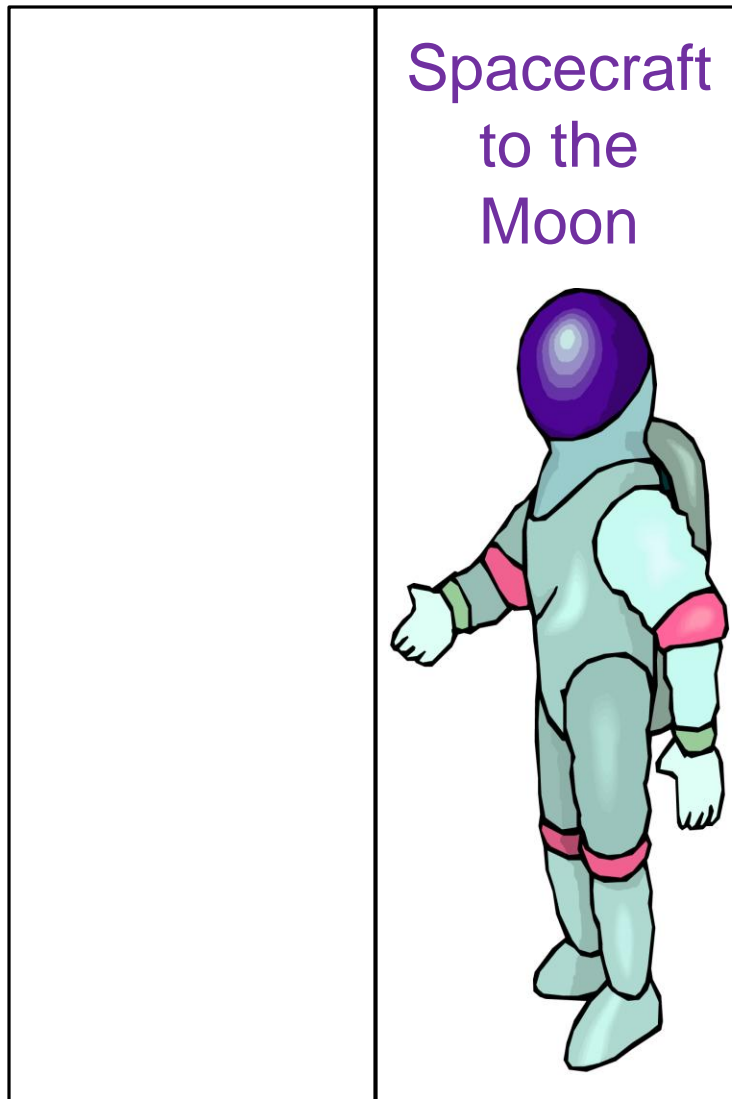
Hamburger fold on the middle line. Cut out around shape but do not cut fold. Glue into lapbook. **Read Who Named the Moon, page 94.** What did the Romans call the moon? Write it in the booklet.



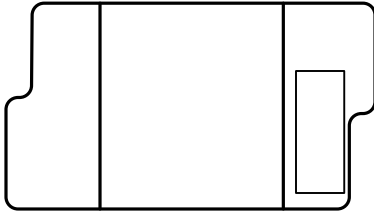
Lesson 6



Hotdog fold down the middle. Cut out around shape of booklet but do not cut fold. Glue into lapbook. **and also Spacecraft to the Moon, pages 94-96.** Inside of your booklet, write some things you learned from your reading. Don't forget to write the name of the first man to walk on the moon!

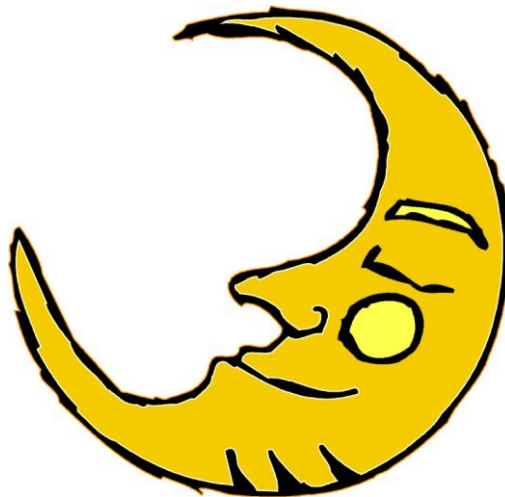


Lesson 6



Cut out this title piece. Cut out word search from next page. Hotdog fold down the middle of the word search sheet. Glue title piece onto front of closed booklet. Glue into lapbook. The word search words have been taken from lesson 6-The Moon. They can be found horizontally, vertically, and diagonally. The solution is in the answer key.

Moon Word Search



Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

X M Z Q U A R T E R M O O N R
N X E C L I P S E D T K G A F
B O N O O M L L U F B X N R P
G K O T S R E T A R C U N W N
N G Z M P Z N T T F L R F N O
T T L R W C Y W J N L K S O O
K V T P V E L B Y O U G A O M
N M K W Q Q N T M O N N T M T
E D I T H G I H L M A O E S N
B F P L T V V O D D R R L U E
Z P P M A M W Z J Y R T L O C
P J L R A T V M Z P O S I B S
X W G Z I R N G G G V M T B E
P O M D K R I M T K E R E I R
N X E Z Q K T A Z N R A Y G C

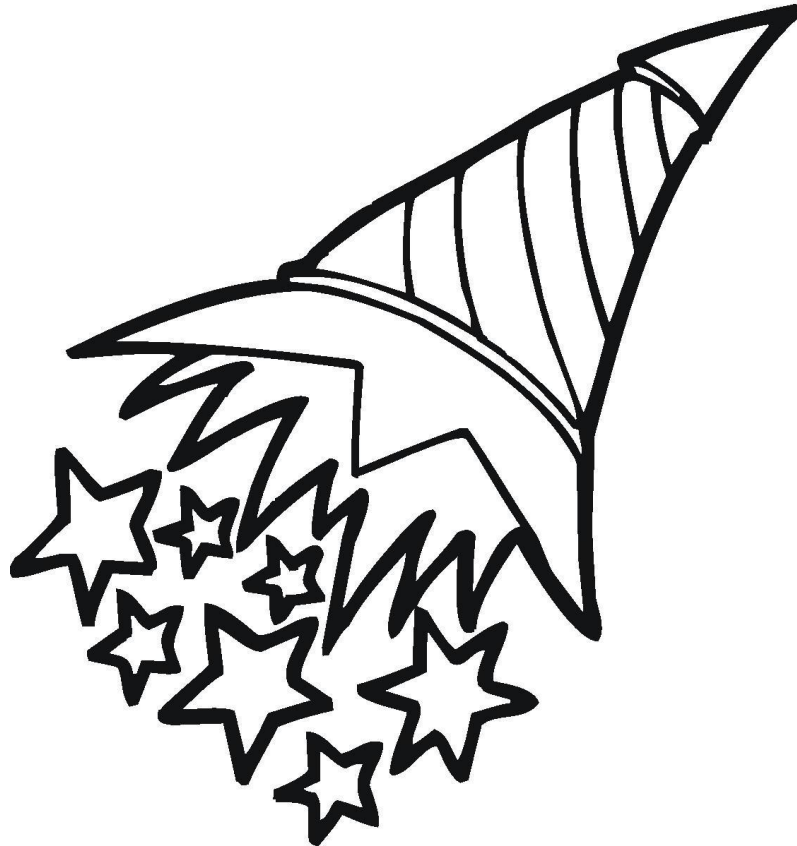
www.WordSearchMaker.com

ARMSTRONG	LUNAR
CRATERS	LUNAR ROVER
CRESCENT MOON	MARIA
ECLIPSE	MOON
FULL MOON	NEW MOON
GIBBOUS MOON	NO GRAVITY
HIGH TIDE	QUARTER MOON
LOW TIDE	SATELLITE

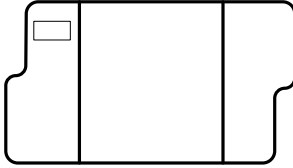
Cut out along the dotted line. Glue onto front of lesson (chapter) 7 folder. Color the pictures before the start of each lesson (chapter).

Lesson 7- Mars

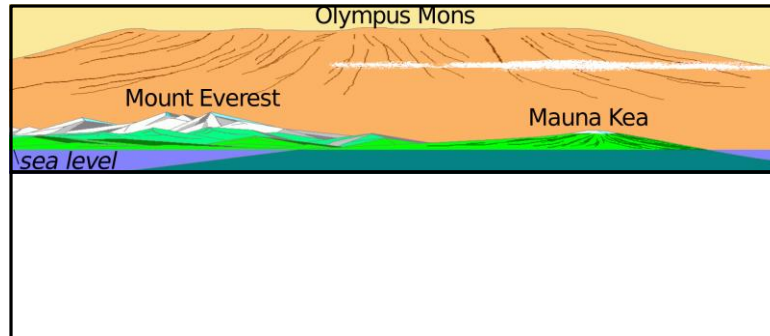
Lesson 8-Space Rocks



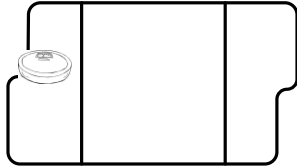
Lesson 7



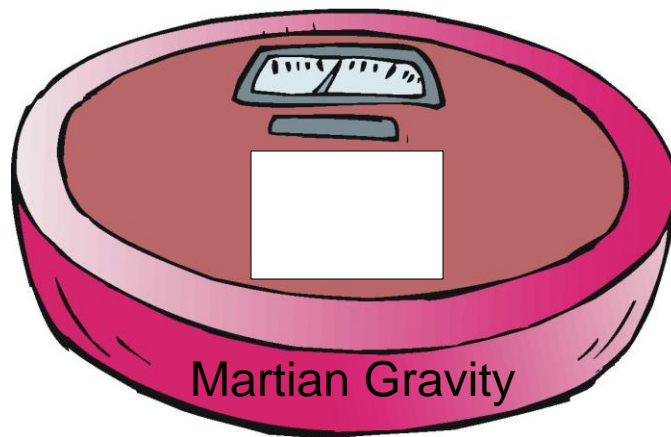
Cut out booklet as one piece. Hamburger fold on middle line. Glue booklet into lapbook. **Read Mars, page 98.** Inside the booklet, write what is special about Olympus Mons.



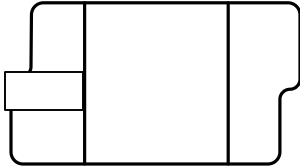
Lesson 7



Cut out booklet as one piece. Glue booklet into lapbook. **Read Martian Gravity, page 100.** Using the key on page 80, find what your weight would be on Mars. Write it in the little box on the scale.



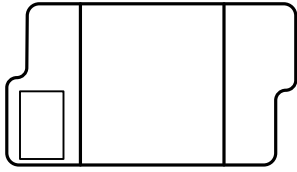
Lesson 7



Cut out the booklet as one piece. Accordion (fan) fold on the lines, ending with title on top. Glue into lapbook. **Read Martian Atmosphere, page 100-101.** On the blank spaces, list some things you learned about Mars from your reading.

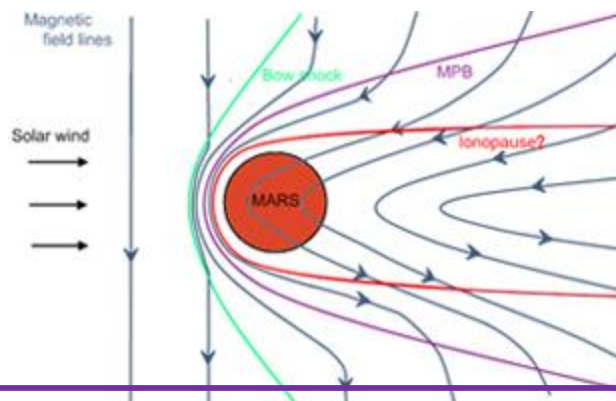
**Martian
Atmosphere**

Lesson 7

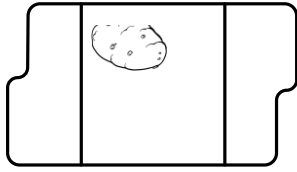


Cut out the booklet as one piece. Hotdog fold on middle line. Glue into lapbook. **Read God's Gift of Magnetism and Think about This, page 102.** Inside the booklet, explain the magnetosphere surrounding Mars.

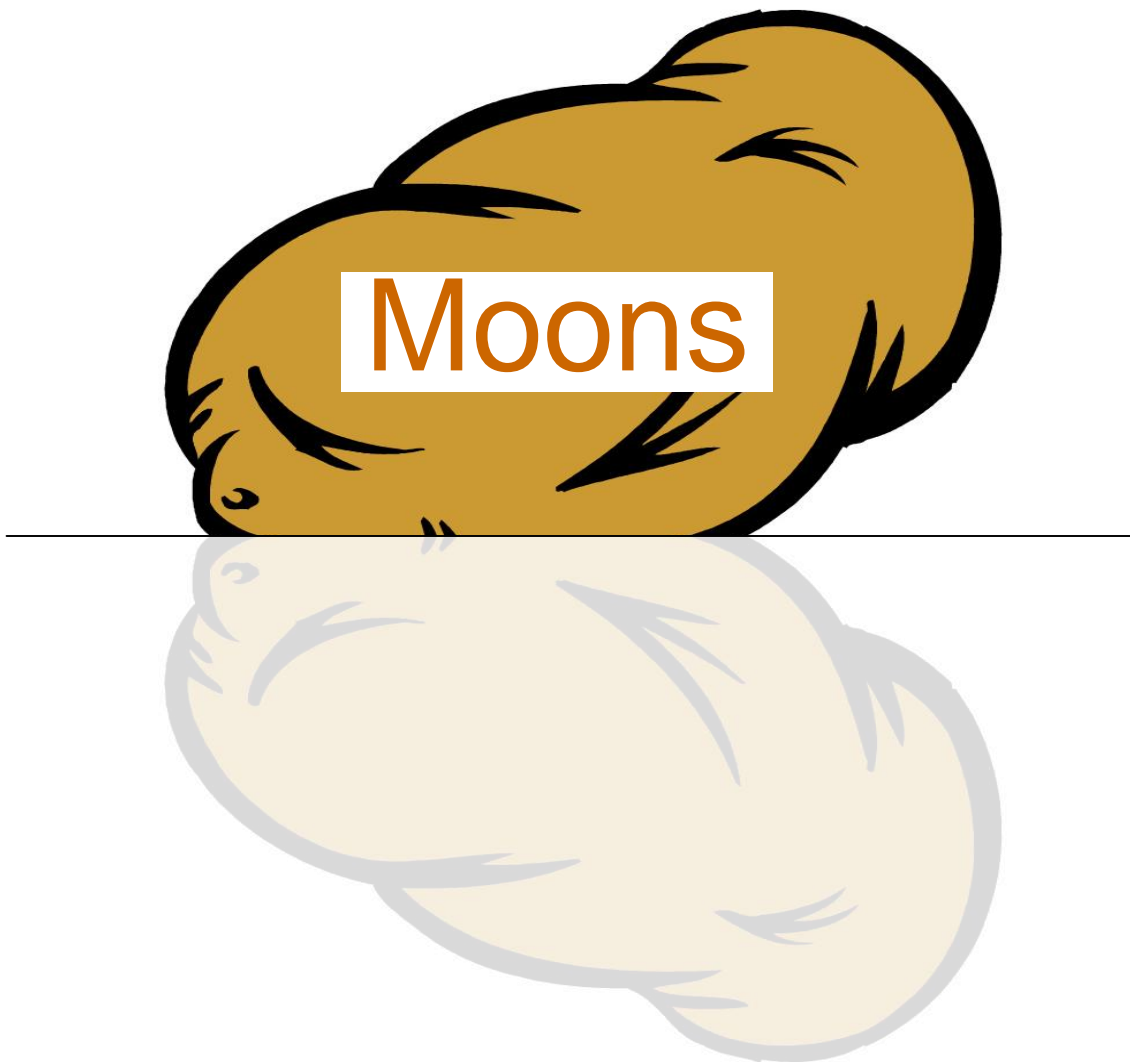
God's Gift Of Magnetism



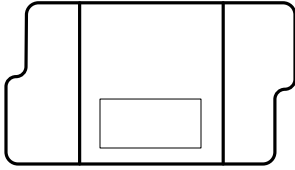
Lesson 7



Hamburger fold in half on the line so that title is on top. Cut out around the shape of the potato. Glue into lapbook. **Read Moons, pages 102-103.** Inside of the booklet, write the name of the two potato shaped moons of Mars.



Lesson 7



Cut out large box. Cut out four small booklets. Hamburger fold in half and fold the excess part up over the top like a matchbook. Glue all four matchbooks onto box. Glue booklet into lapbook. **Read Martian Orbit and also Martian Rotation, pages 103-105.** Inside each matchbook, fill out information on each subject.

Mars Orbit and Rotation

Glue booklet here

Glue booklet here

Glue booklet here

Glue booklet here

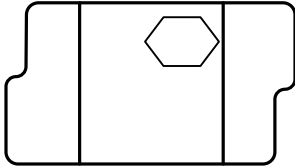
Mars
orbit

Mars
rotation
hours

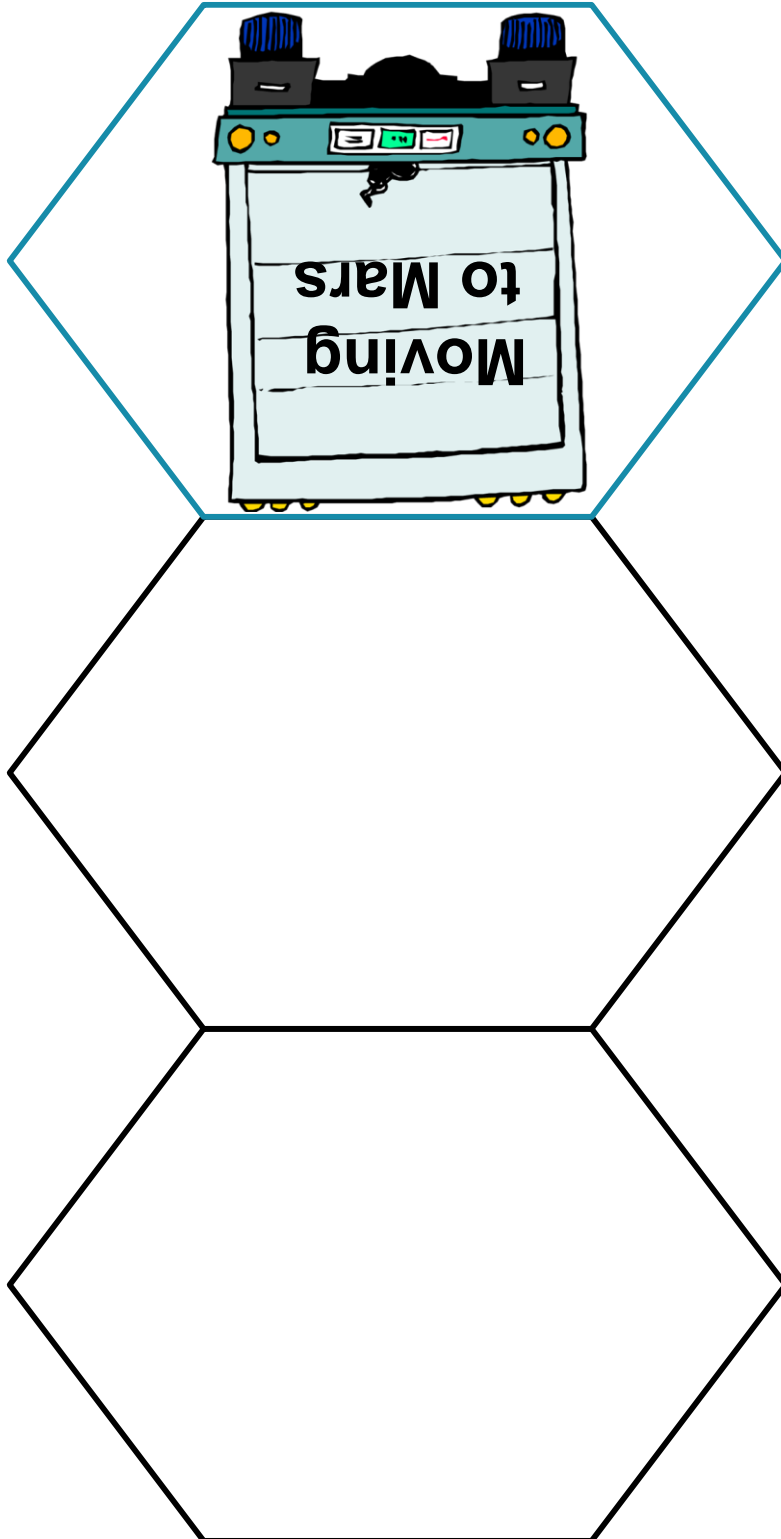
Mars average
temperature

Mars
weather

Lesson 7



Cut out booklet as one piece. Tri-fold with title on top. Cut out words tabs. Glue one word on each booklet piece inside of booklet. Glue booklet into lapbook. **Read *Moving to Mars*, pages 105-106.** Answer the questions on the tabs.



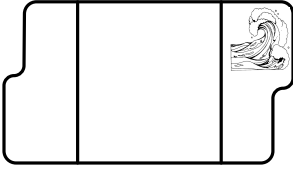
What is an artificial ecosystem?

Why is an artificial ecosystem needed on Mars?

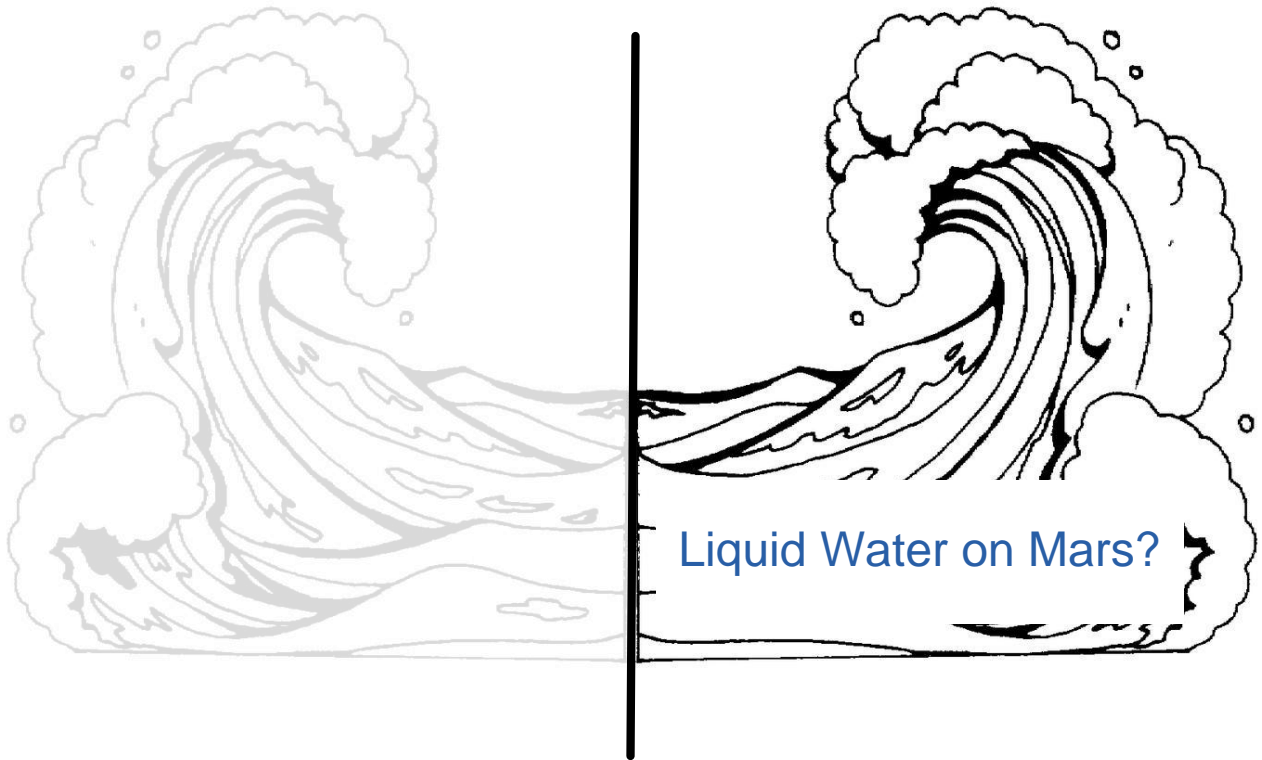
What would you **HAVE** to take with you to Mars?

What would you **LIKE** to take with you to Mars?

Lesson 7



Cut out as one piece. Hotdog fold down the middle line. Cut out around shape. Glue into lapbook. **Read Mars Surface and also Liquid Water on Mars, page 107.** Inside the booklet write why scientists think there once was water on Mars?



Lesson 7



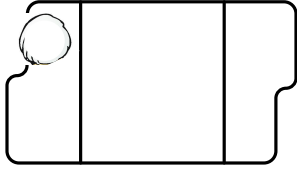
Cut out as one piece. Hotdog fold down the middle line. Glue into lapbook. **Read *Finding Mars in the Sky, Who Named Mars, and Spacecraft to Mars*, pages 108-109.** Inside the booklet, explain why we send spacecraft to Mars.

Spacecraft to Mars

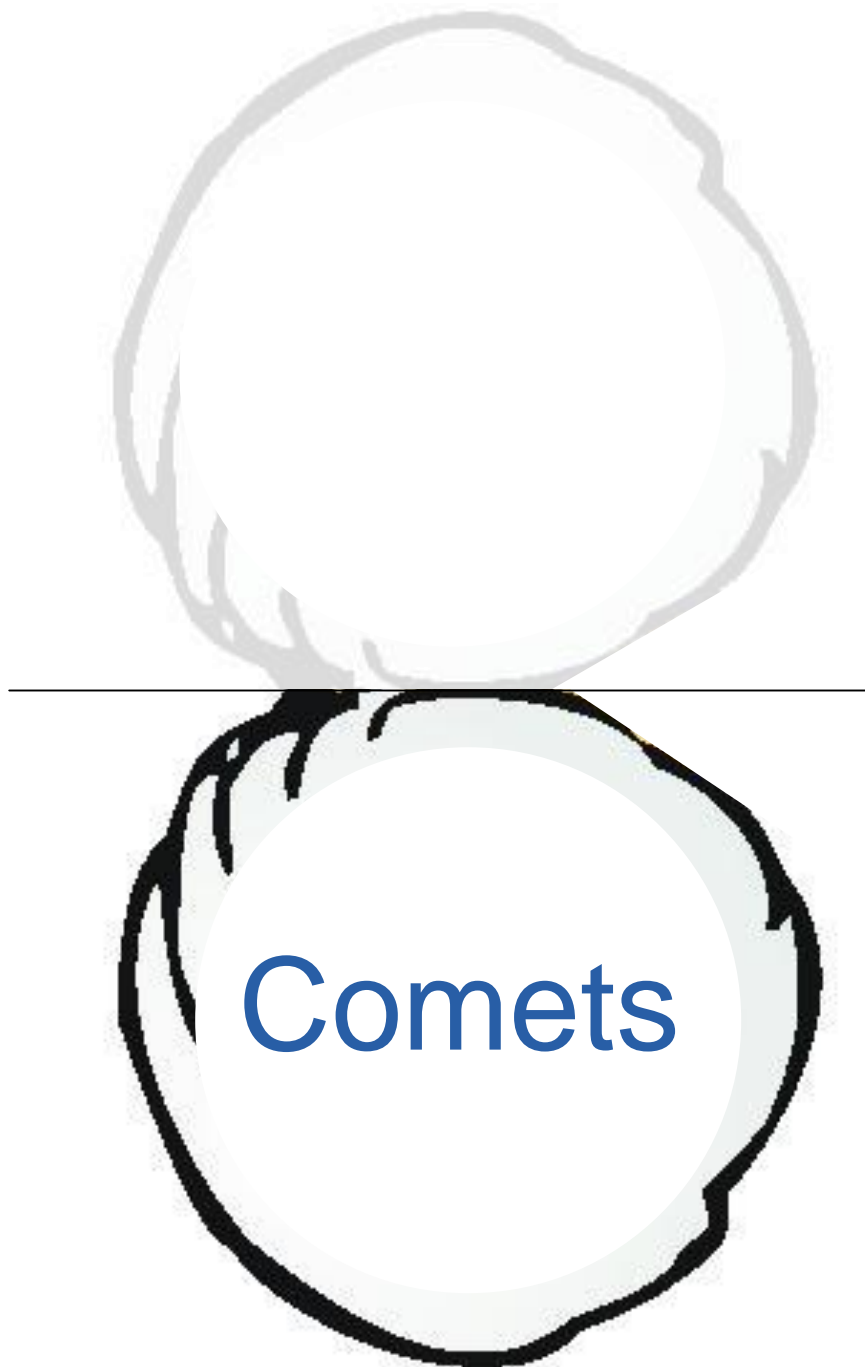


Curiosity rover

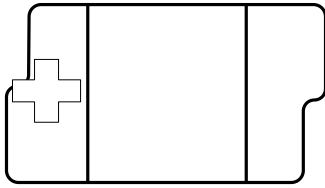
Lesson 8



Hamburger fold in half on the line so that title is on top. Cut out around the shape of the snowball. Glue into lapbook. **Read Comets and Think about This, pages 112-113.** Inside of the booklet, write what comets are made of.



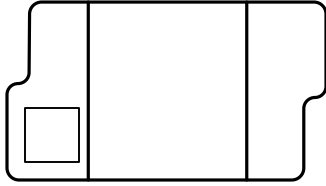
Lesson 8



Cut out as one piece. Hamburger fold on the middle line. Glue into lapbook. **Read The Coma, page 114.** Inside the booklet, tell what a coma is and how it is made.



Lesson 8



Cut out and fold tabs inward on lines to make a square. Glue into lapbook. **Read A Comet's Orbit, pages 114-116.** Open up each flap and answer each question. In the middle, draw the orbit of a meteor. Use the picture on page 114 as a guide.

Describe the orbit of a comet

What is a long-period comet

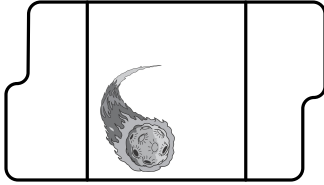
A Comet's

When is the Perseid meteor shower

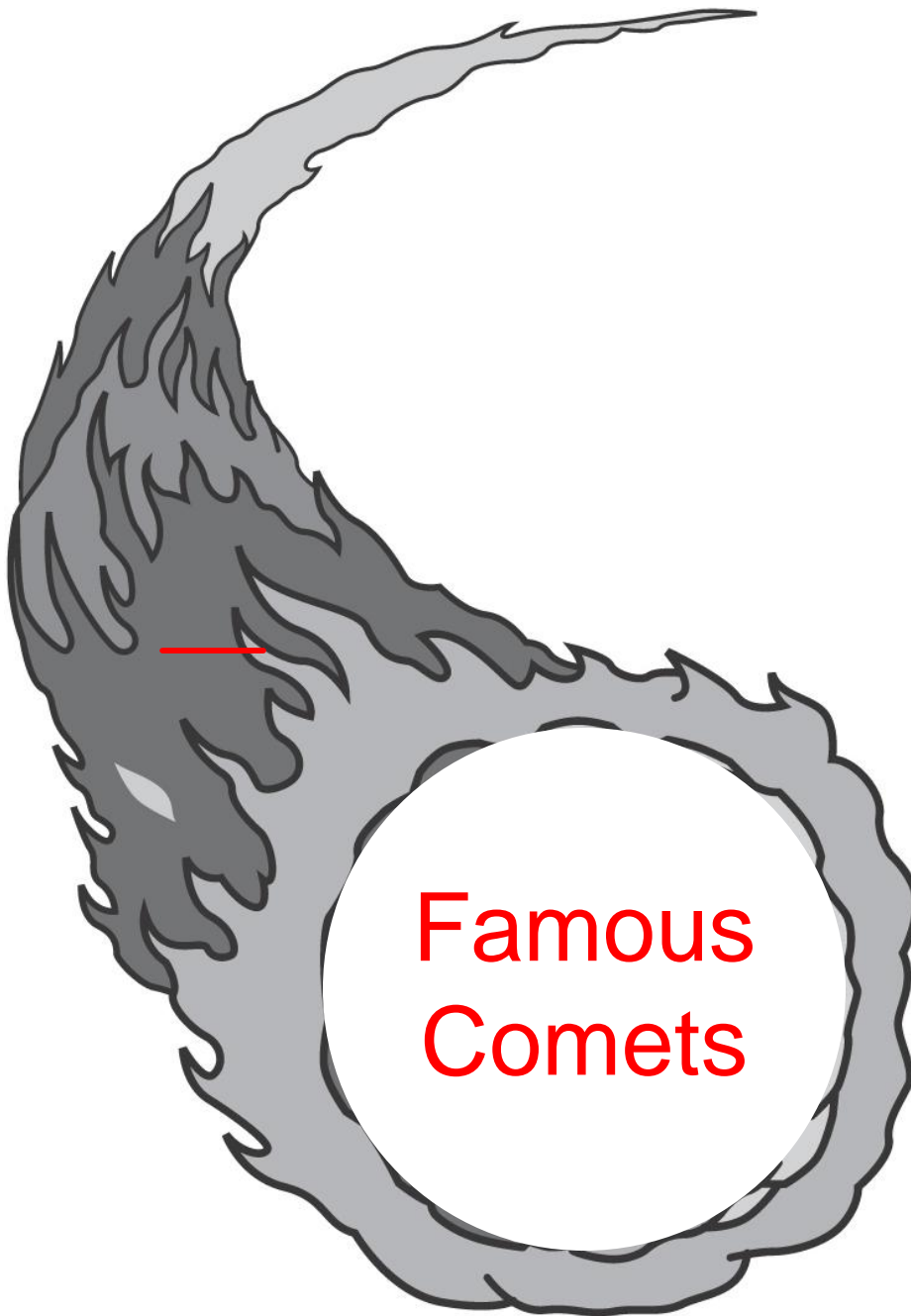
Orbit

What is a short-period comet

Lesson 8

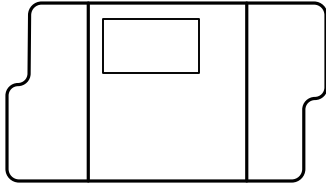


Cut out this piece and the piece on next page. Stack with title on top and staple on the red line found above title. Glue into lapbook. **Read Famous Comets, pages 116-117.** Inside the booklet, list some of the famous comets you read about. Write them on the white circle.





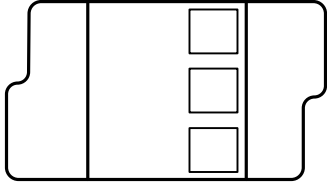
Lesson 8



Cut out as one piece. Hamburger fold in half so that title is on top. Glue into lapbook. **Read How Comets Get Their Official Names, page 117.** Inside the booklet, explain how comets usually get their names.

How Comets Get Their Official Names

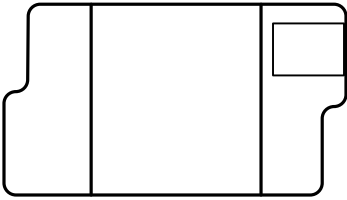
Lesson 8



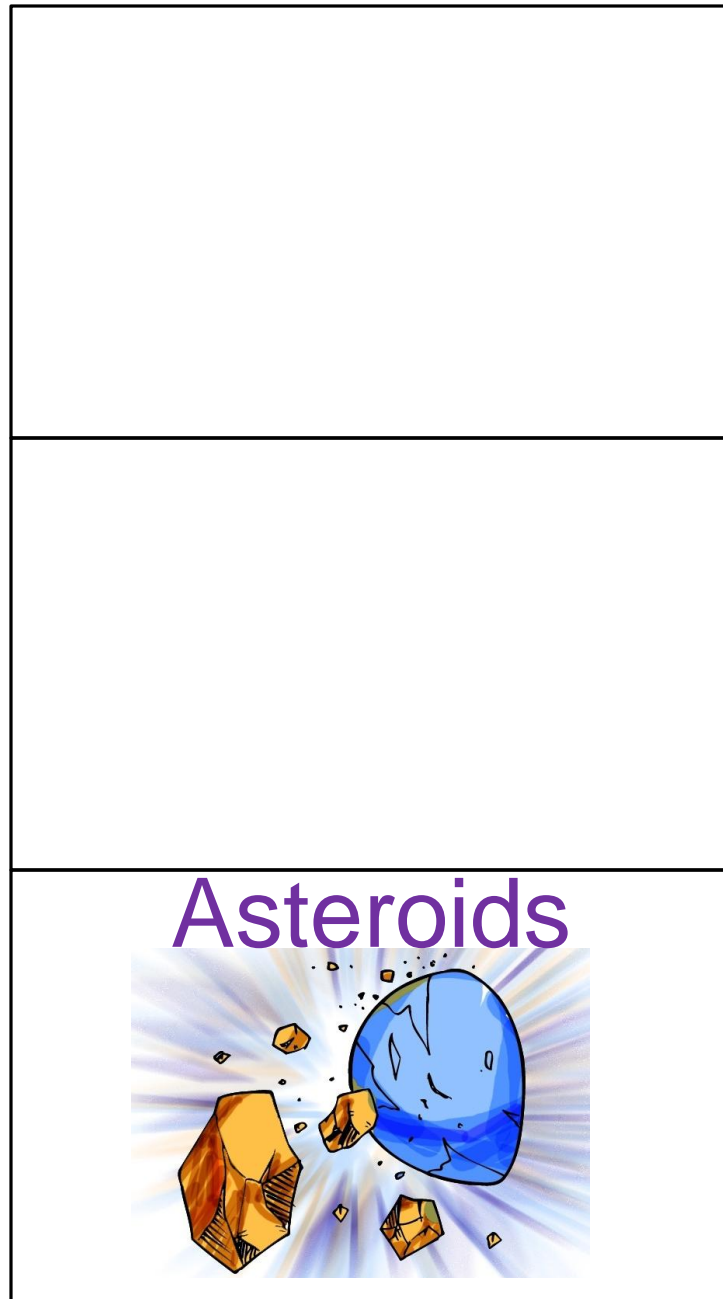
Cut out all three pieces. This is three separate booklets. Hamburger fold on the middle line and then fold the flap that is now at the bottom up and over to keep the booklet closed (like a matchbook). Glue them into the lapbook according to the key but the order does not matter. **Read Meteoroids, Meteors, Meteorites, pages 117-118.** Write about each topic inside the box.

Meteorites	Meteoroids	Meteors

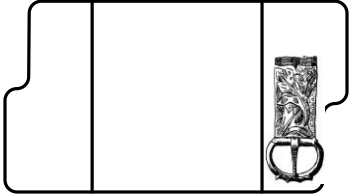
Lesson 8



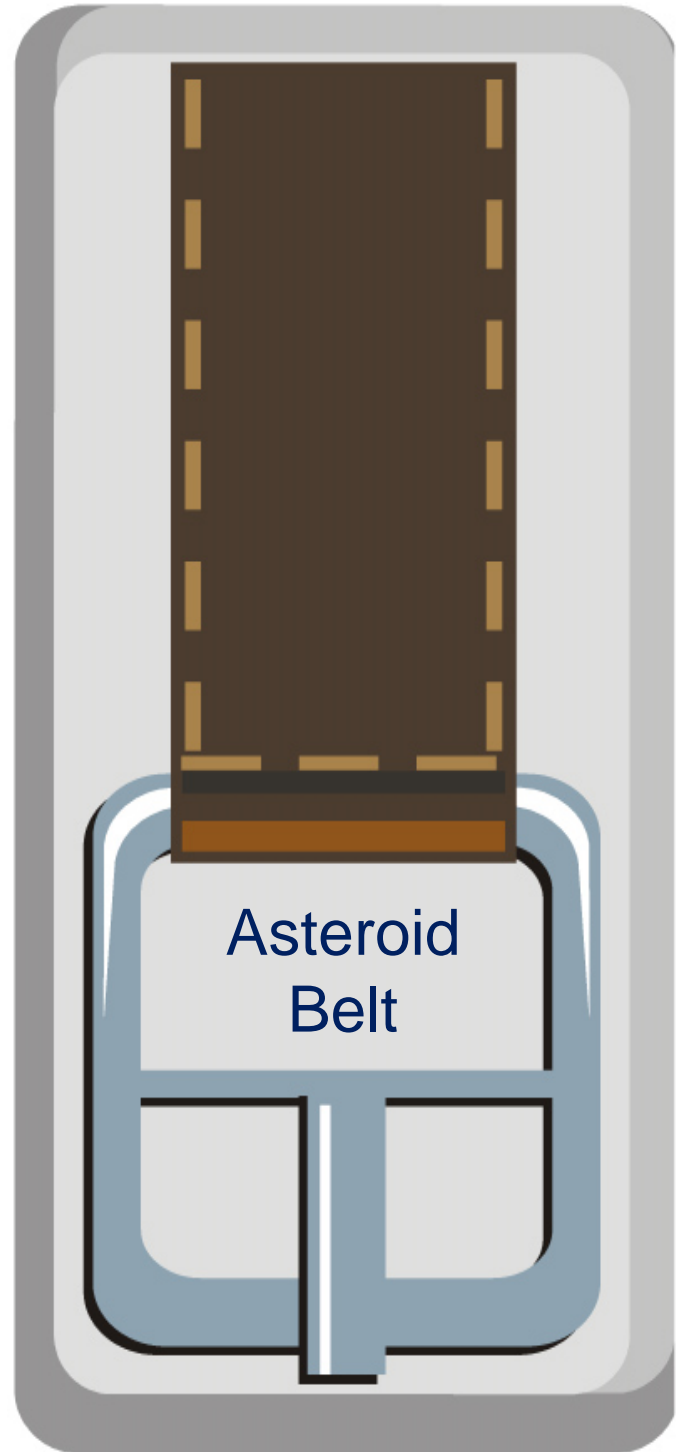
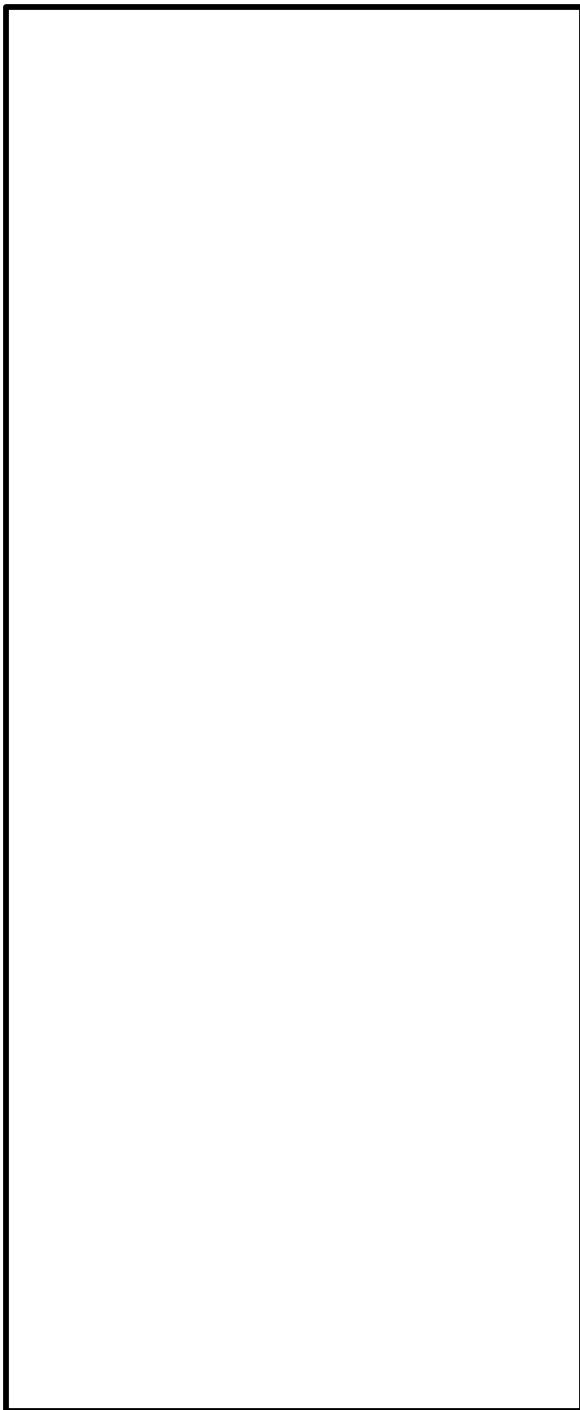
Cut out as one piece. Accordion (fan) fold with title on top. Glue into lapbook. **Read Asteroids, pages 118-119.** Inside of the booklet, write things you have learned about asteroids from your reading.



Lesson 8



Cut out this piece and the piece next to it. Stack with title on top and staple at the top. Glue into lapbook. **Read *Asteroid Belt, Who Named Asteroids, and Spacecraft*, pages 120-123.** Inside the booklet, write some things you learned about the asteroid belt from your reading.



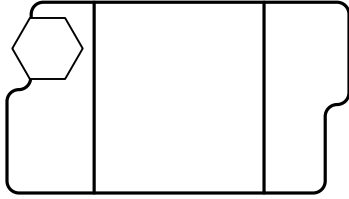
Cut out along the dotted line. Glue onto front of lesson (chapter) 9 folder. Color the pictures before the start of each lesson (chapter).

Lesson 9- Jupiter

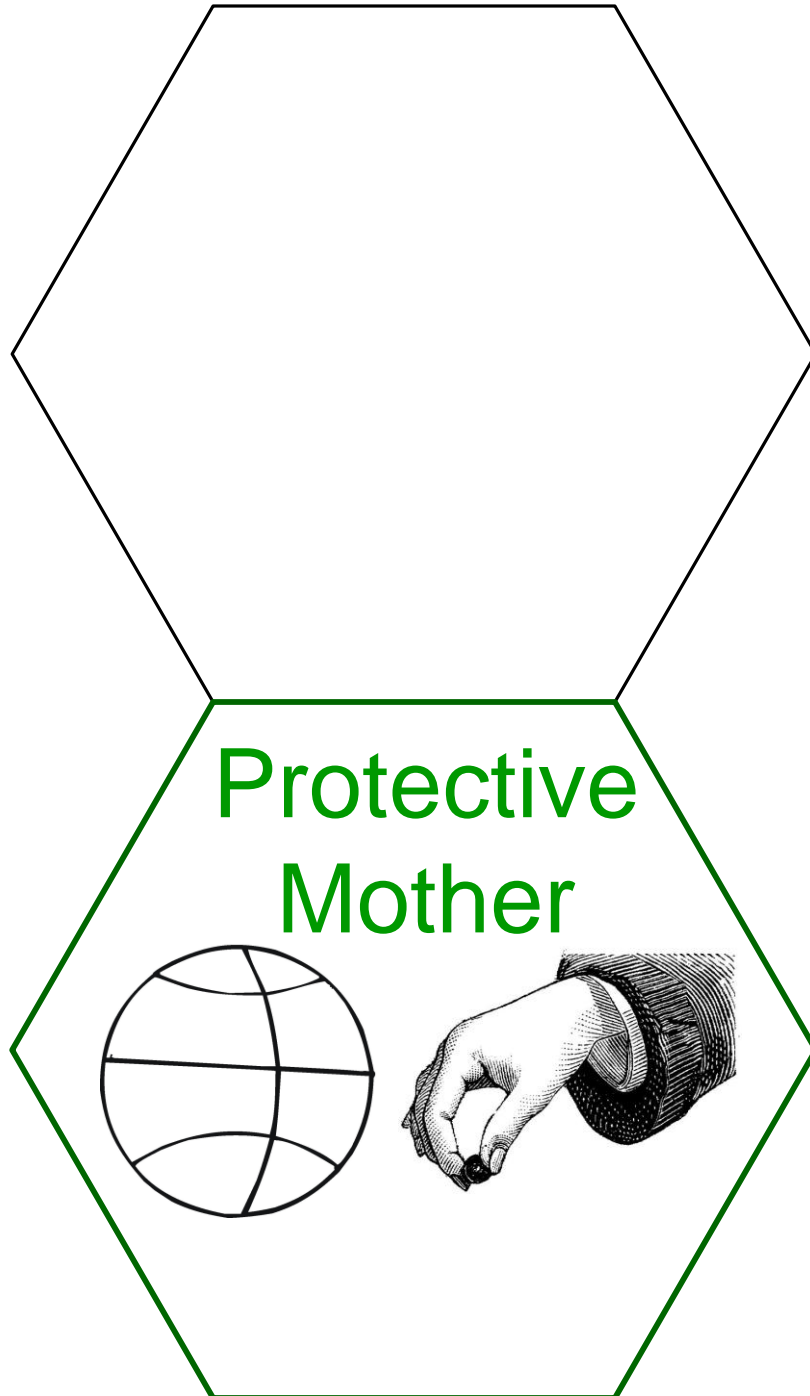
Lesson 10- Saturn



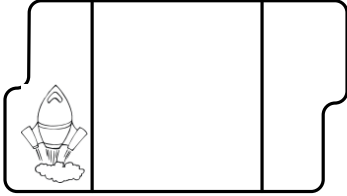
Lesson 9



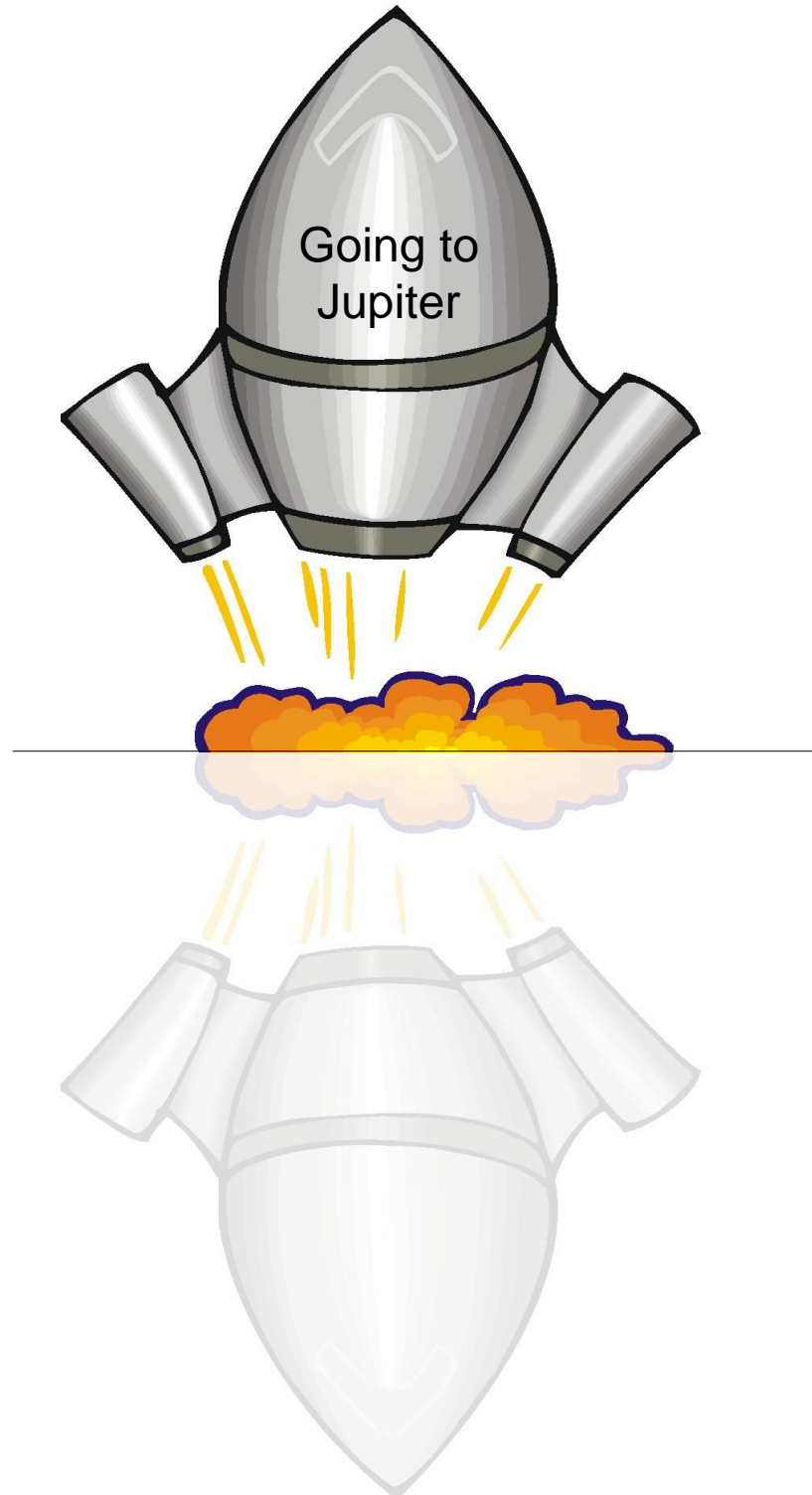
Cut out as one piece. Hamburger fold in half so that title is on top. Glue into lapbook. **Read Protective Mother, page 126.** Inside, explain how Jupiter protects earth.



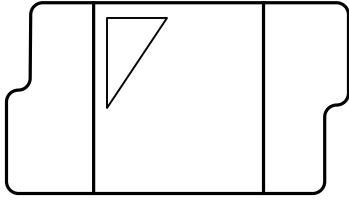
Lesson 9



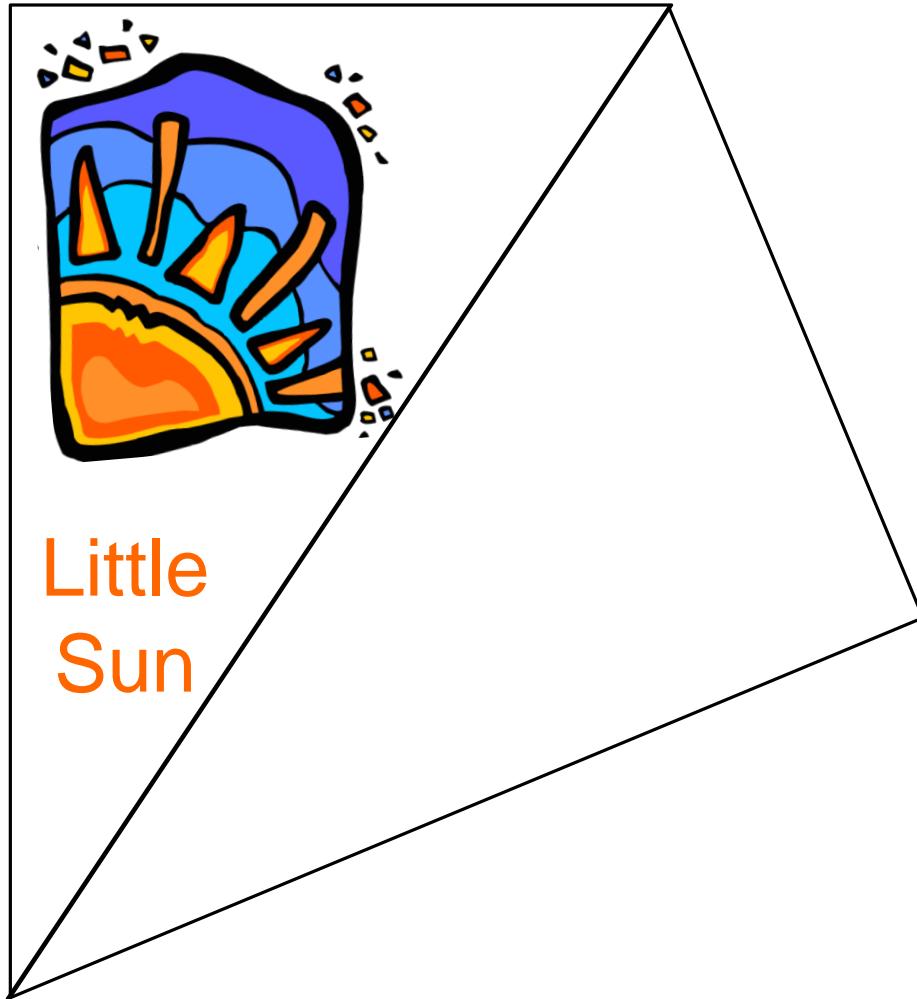
Hamburger fold in half on the middle line so that title is on top. Cut around the shape of the spacecraft. Glue into lapbook. **Read Going to Jupiter, pages 126-127.** Inside the booklet, write why it is hard for a spacecraft to go to Jupiter. Also write why Jupiter is called a gas giant.



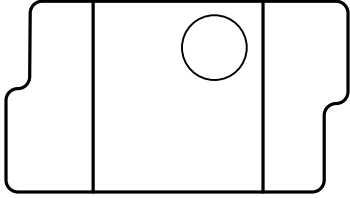
Lesson 9



Cut out as one piece. Hamburger fold in half so that title is on top. Glue into lapbook. **Read Little Sun, page 127.** Inside, explain two ways that Jupiter is like the sun.



Lesson 9



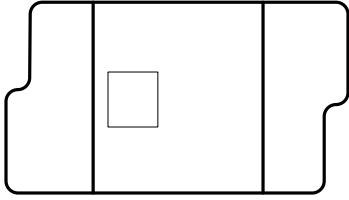
Cut out the three pieces. Stack with title piece on top. **Read Stormy Skies, page 127.** On the title page, color the circle to look like Jupiter. Inside the booklets, answer the questions.



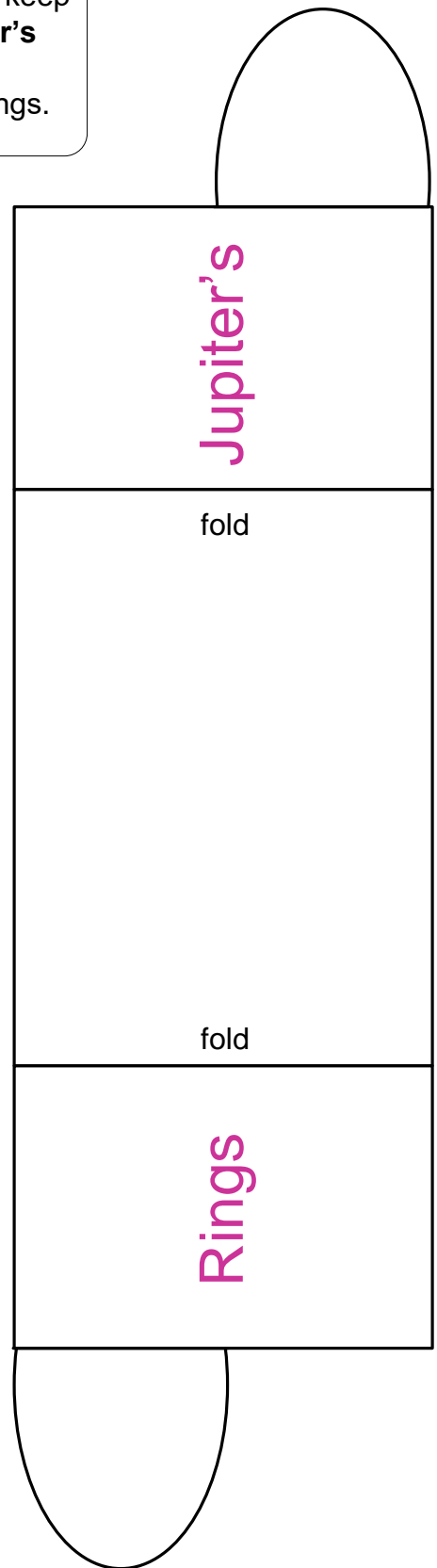
What is the Giant Red Spot?

Describe the red stripes you see across Jupiter.

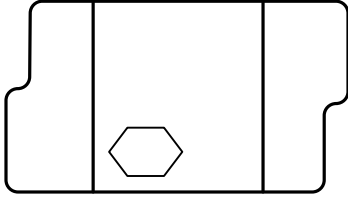
Lesson 9



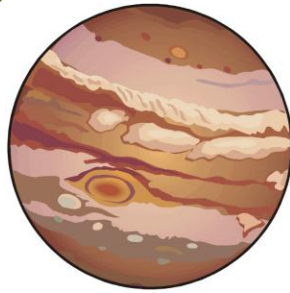
Cut out as one piece. Fold each side on the line so that title is on top. Interlock the two tabs to keep booklet closed. **Read Jupiter's Rings, page 128.** Inside the booklet, describe Jupiter's rings.



Lesson 9



Cut out as one piece the booklet piece. Accordion fold booklet so that title is on top. **Read Rotation and Revolution, page 129.** Answer each of the questions.

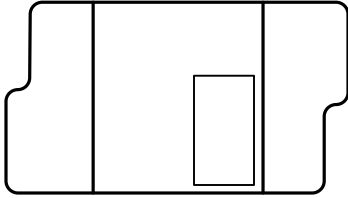


Rotation And Revolution

A year on Jupiter is how many earth years?

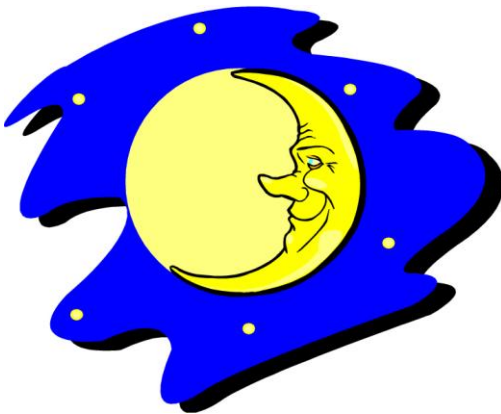
A day on Jupiter is how many earth days?

Lesson 9



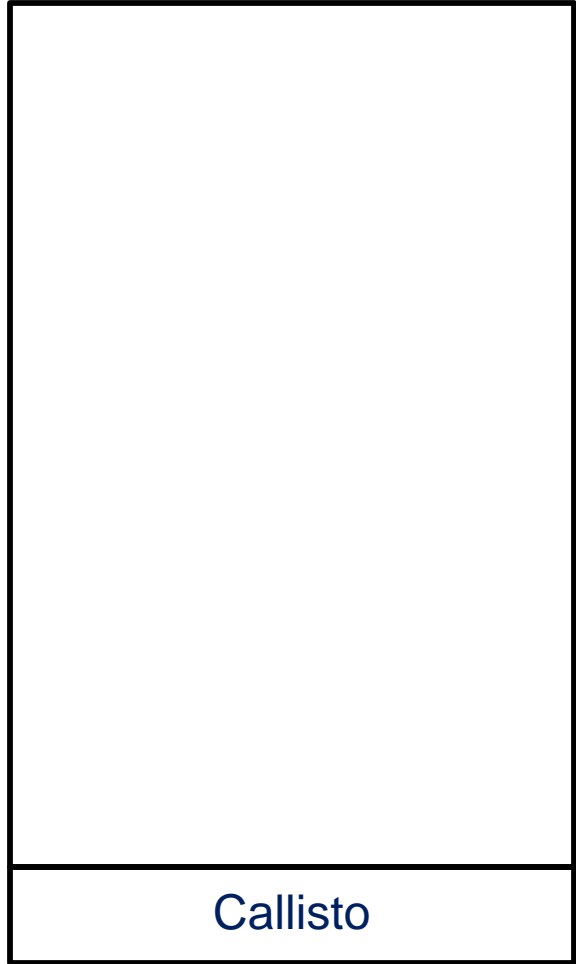
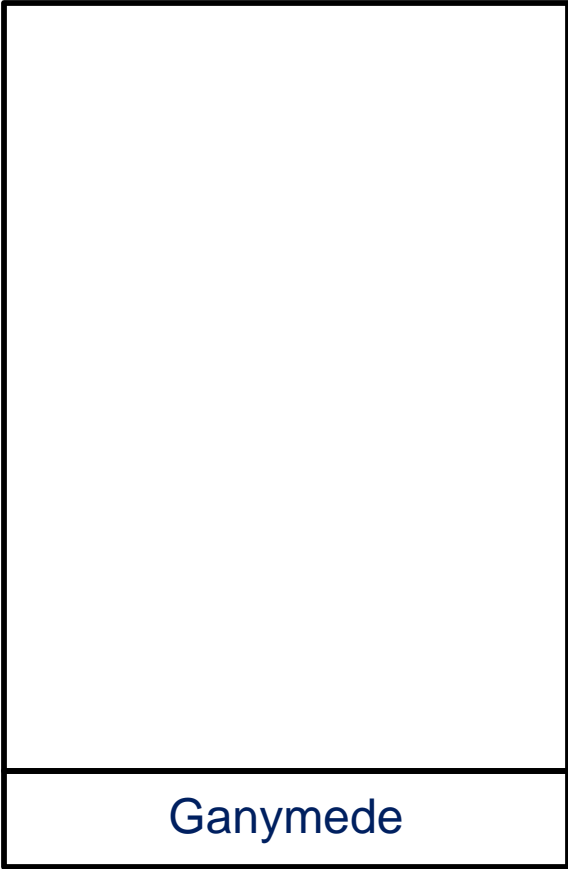
Cut out these pieces and the pieces on the next page. Stack in order with title on top. Staple at the top. Glue into lapbook. **Read Many Moons, pages 129-131.** Write about and draw and color each moon on its piece.

Many Moons

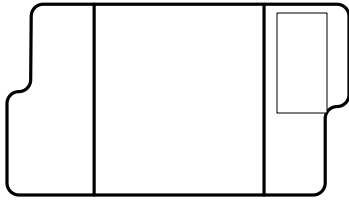


Io

Europa



Lesson 9



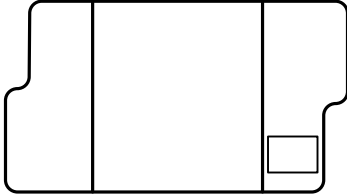
Hamburger fold in half on the middle line so that title is on top. Cut around the shape of the telescope. Glue into lapbook. **Read *Finding Jupiter in the Night Sky and Who Named Jupiter*, page 131.** Inside the booklet, write how to find Jupiter in the sky. Also write about how Jupiter got its name.

Finding Jupiter

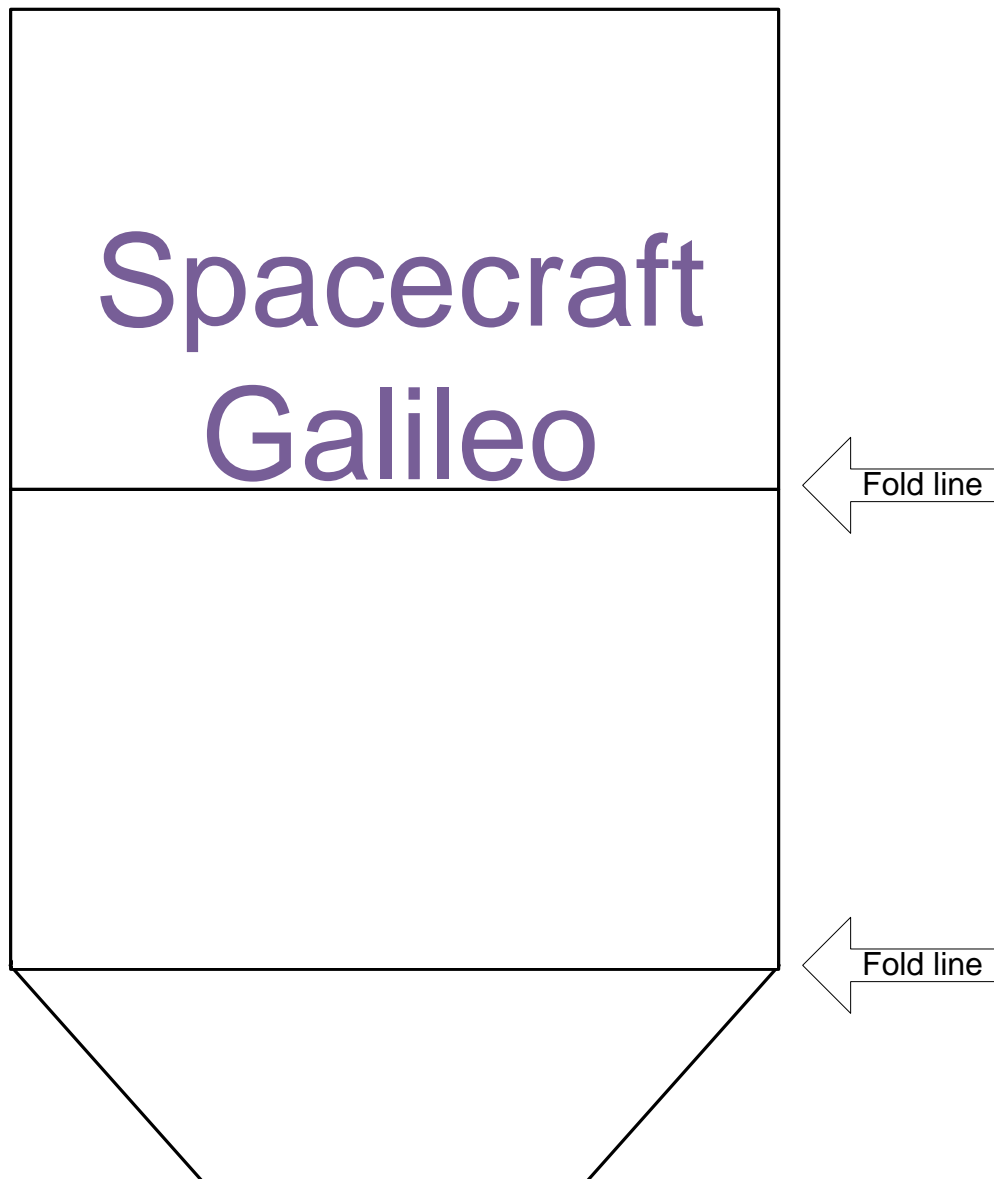


How Jupiter Got Its Name

Lesson 9



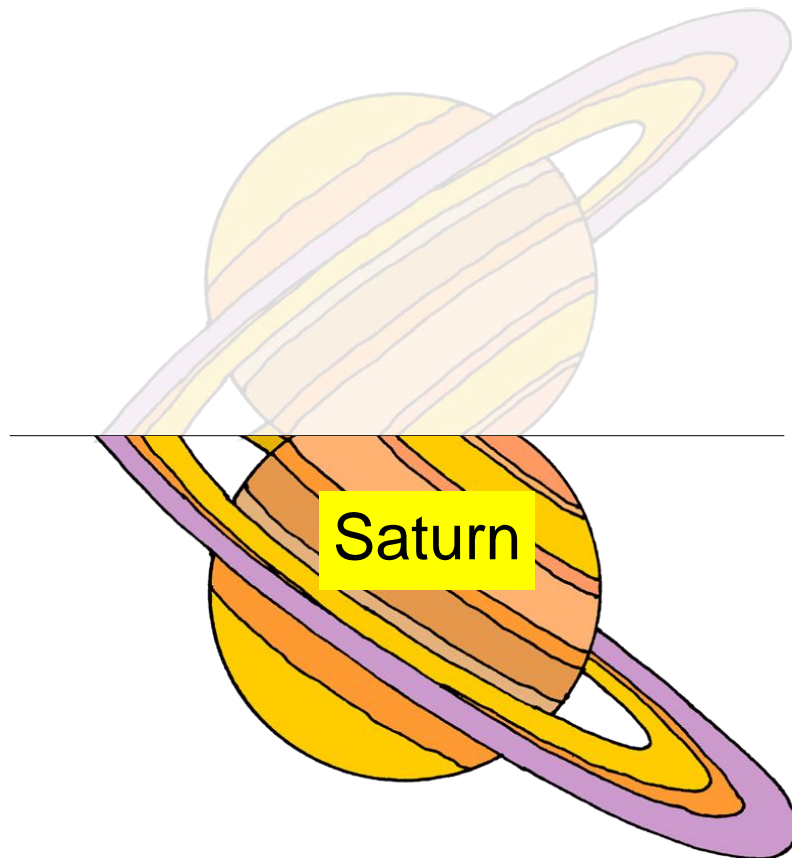
Cut out as one piece. Fold on both fold lines with title on the outside so that booklet looks like an envelope. Glue into lapbook. **Read *Spacecraft Galileo*, pages 131.** Inside the booklet, write about the job of the Galileo.



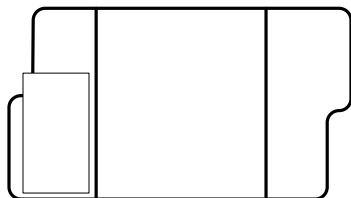
Lesson 10



Hamburger fold in half on the middle line so that title is on top. Cut around the shape of Saturn. Glue into lapbook. **Read Saturn, pages 136-137.** Inside, tell why everyone remembers Saturn.



Lesson 10



Cut around the shape of the booklet. Hotdog fold in half. Cut out cover label and glue to the closed top of booklet. Glue into lapbook. This is a fun word search for you to do anytime. Circle the words from the word list as you find them in the puzzle.

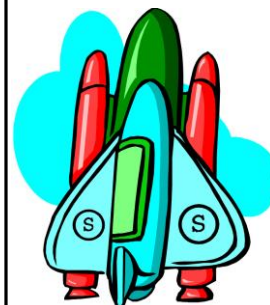
Outer Space

U C A M S P S A A T E R A E O T E E I E
S T A O U T M O N E K U O R X C E N R T
C T O B E R Q R O E E T T C I A H M O E
A U P M O C S G E M N T B M Z S J O Y E
S N O S T N A P L Q O U C E R S V O R P
O C W Y E E C O P E O A C E I O P H O O
N I T M N R B L P K M U P Z O R Q M I C
O N T E Z E T T E O M A J P E B J M A S
B U P E E A N T N L T P E N P I F N A E
N S E O T E N A L P Q T B L R T H D R L
T D A W X E M O E B B E R C A T A C E E
V Y A N N L T P E L R O E T E M L J D T
N Q S O P A T U A N O R T S A U L A R U
N Z I O M C S N Z V J M E X O P B A P M
O S I O S T A R P E E B B O E T D X E R

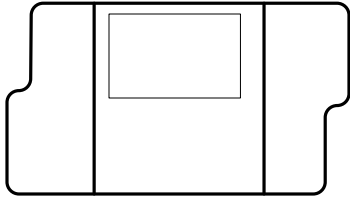
WORD LIST

COMET	STAR	SUN
PLANET	MOON	ORBIT
TELESCOPE	ASTRONAUT	METEOR

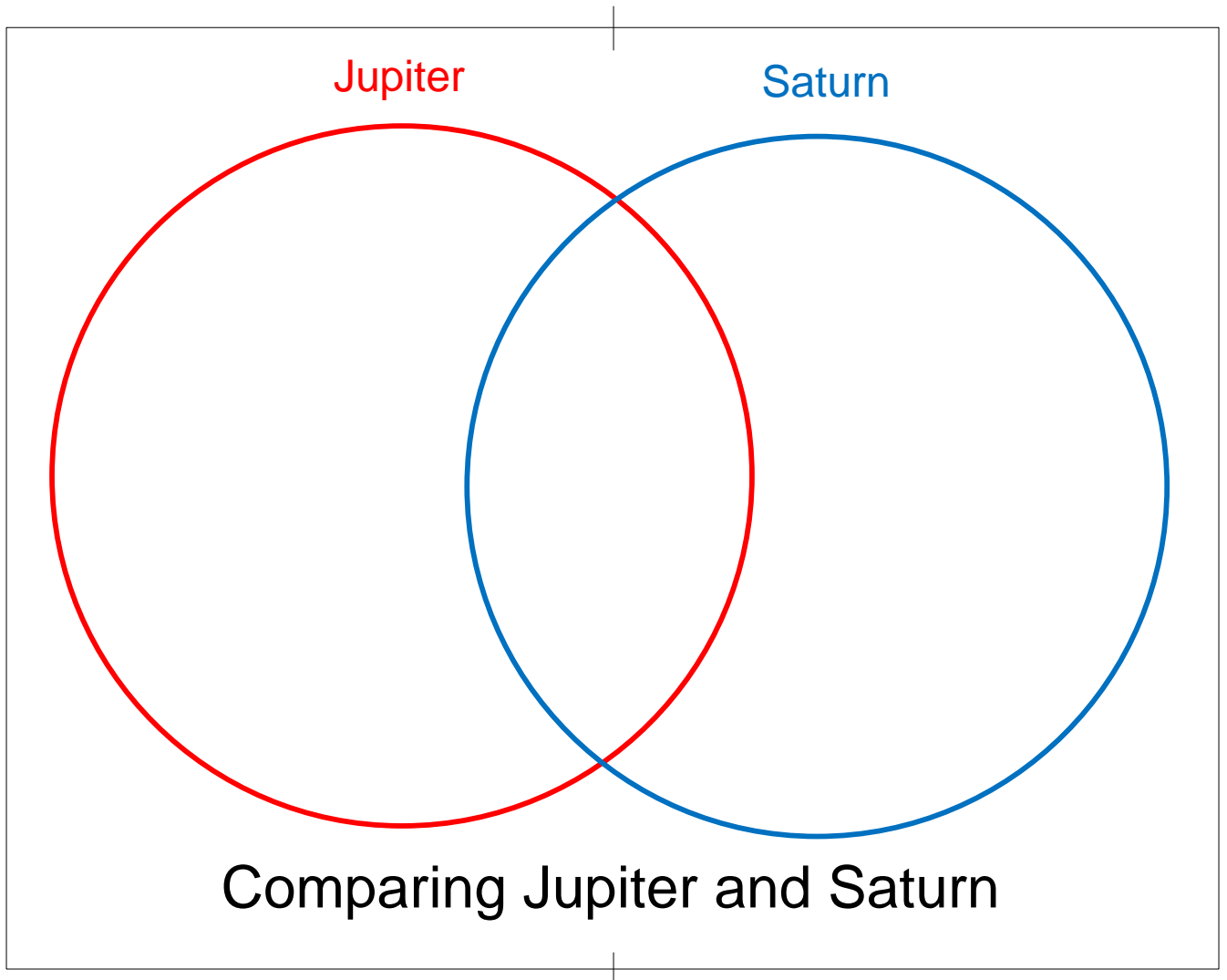
Outer Space Word Search



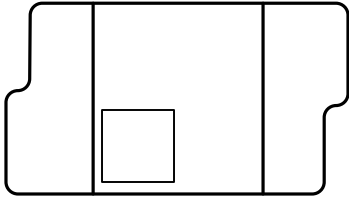
Lesson 10



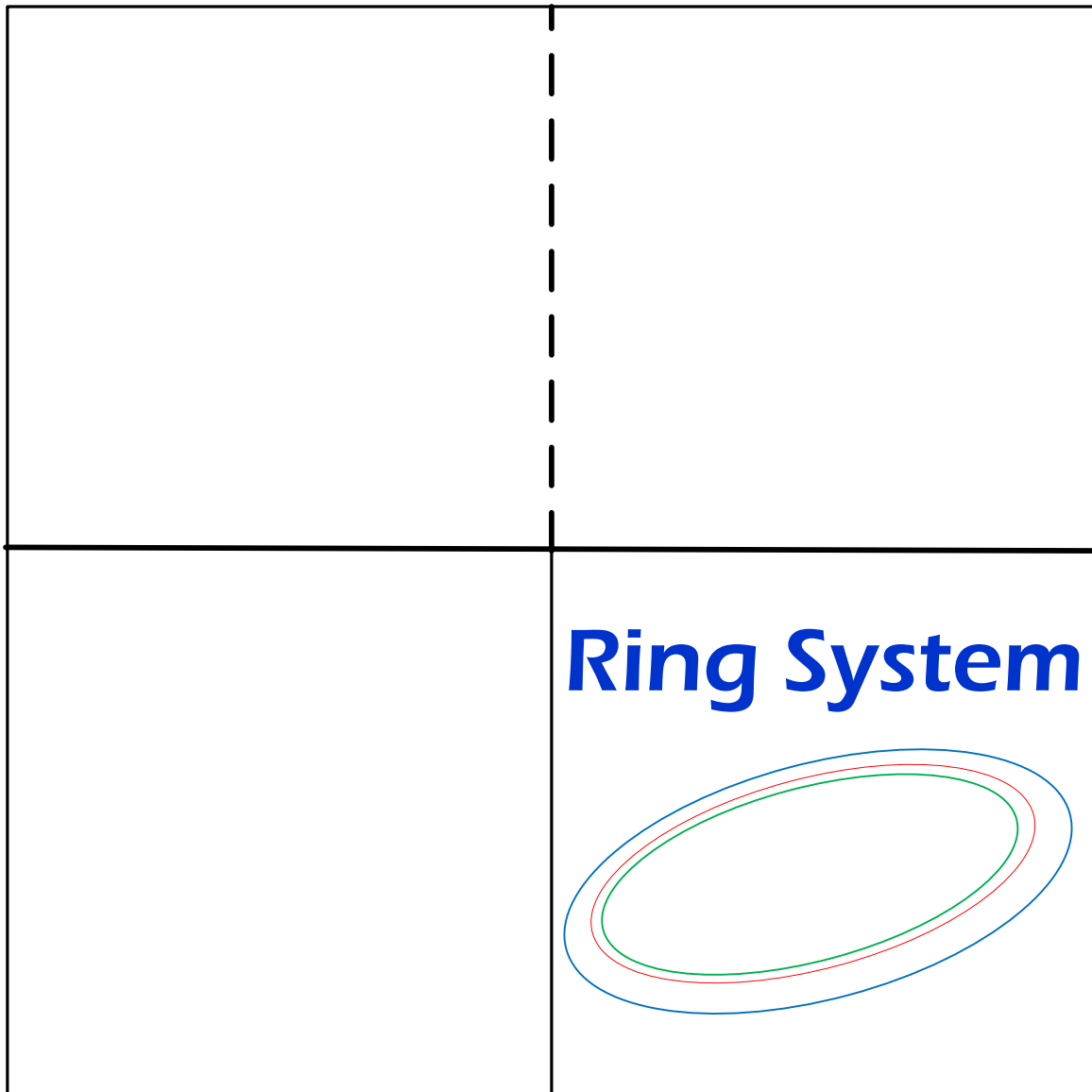
Cut out the booklet as one piece. Fold in half with a hotdog fold. Cut out the “cover sheet” and glue onto the front of booklet. Glue into lapbook. **Read Twins, page 137-138.** Fill out the Venn Diagram to show Jupiter’s and Saturn’s differences. Where the circles intersect, write a few ways that they are similar.



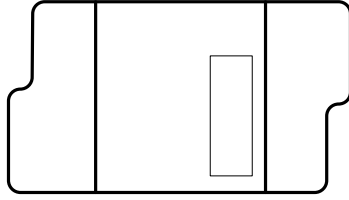
Lesson 10



Cut out as one piece. Fold backwards on the solid middle line. Turn over and cut on the dotted line. Turn back over so that title is facing you. Now fold booklet backwards on the black line so that only title is showing. Glue into lapbook. **Read Ring System and Think about This, pages 138-139.** Inside the booklet, write what Jupiter's rings are made up of. On the biggest area of the booklet draw a picture of Jupiter and all its rings.



Lesson 10



Hotdog fold in half on the middle line so that title is on top. Cut around the shape of the booklet. Glue into lapbook. **Read Fast Rotation, page 140.** The rabbit represents that Saturn rotates fast. Inside, write how many earth hours are in one day on Saturn.

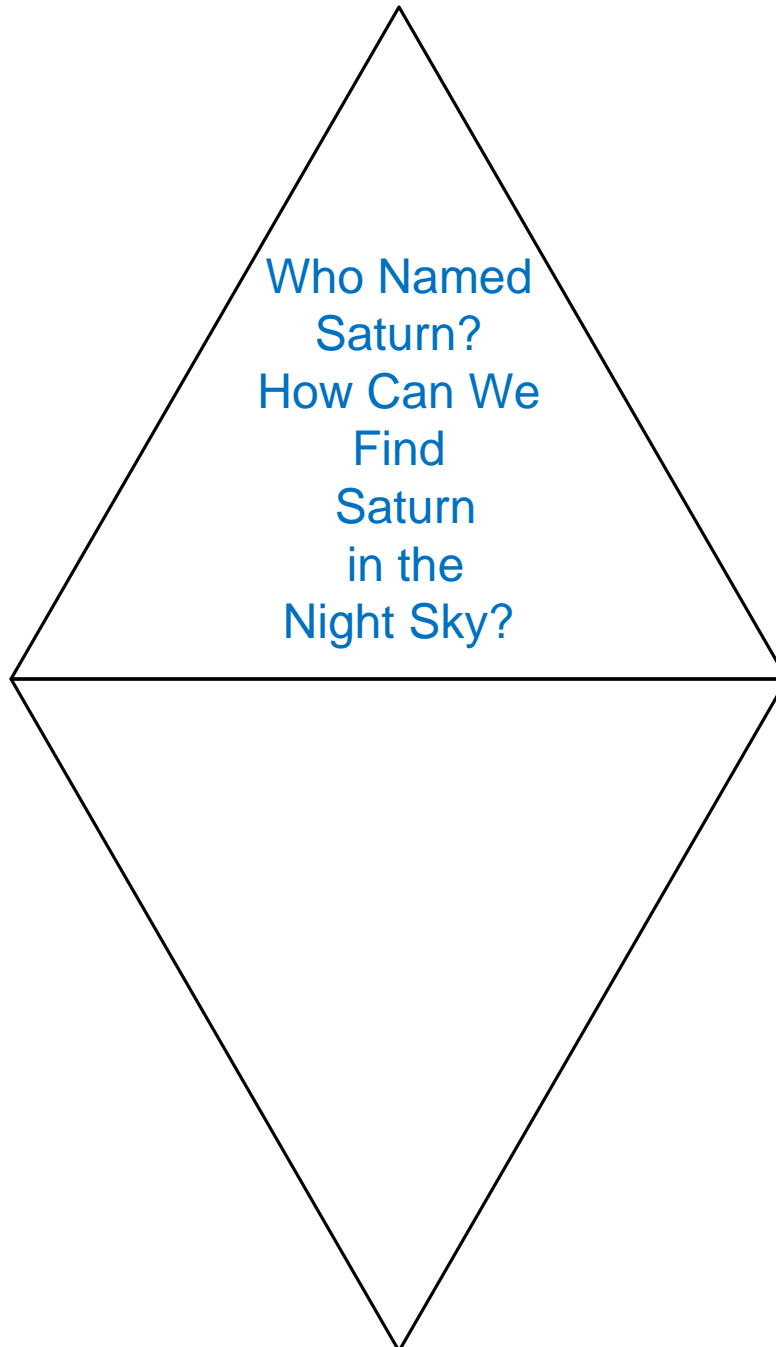
Fast Rotation



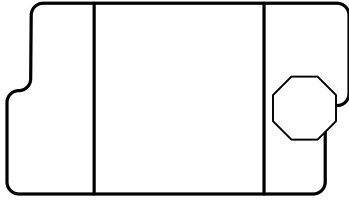
Lesson 10



Hamburger fold in half on the middle line so that title is on top. Cut around the shape of the booklet. Glue into lapbook. **Read Who Named Saturn and also Finding Saturn in the Night Sky, page 140.** Inside the booklet write how Saturn got its name. Also, write how you can find Saturn.



Lesson 10



Cut out the large shape as one booklet. Fold the left flap over the center flap. Next fold the right flap over the center. Cut out cover piece and glue to front of closed booklet. Glue into lapbook. **Read Cassini Mission, pages 140.** Answer the questions and do the drawing inside.

What is its purpose?

Describe the Cassini spacecraft

Draw what you think the Cassini looks like

Cassini

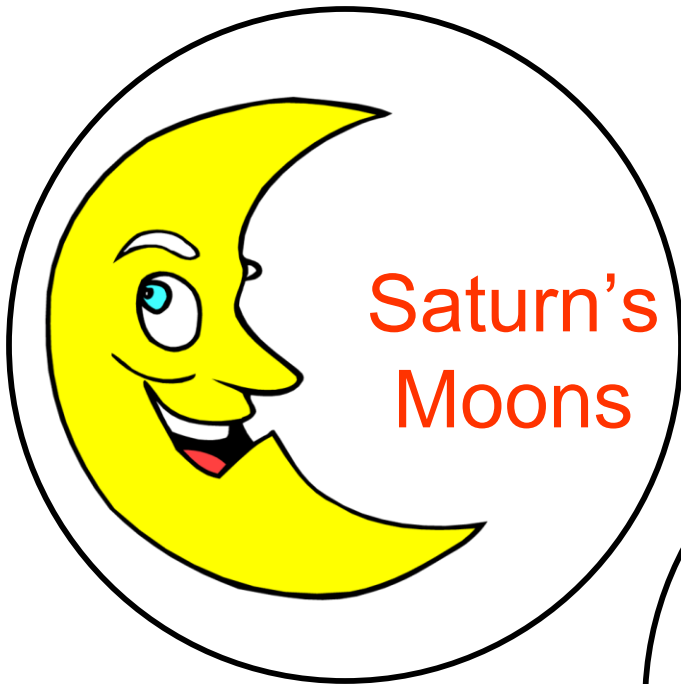


Mission

Lesson 10



Cut out all three pieces. Stack with title on top. Staple at the top. Glue into lapbook. **Read Saturn's Moons, page 141-142.** Answer the questions inside.



Saturn's Moons



How many moons does Saturn have?



List the seven largest moons of Saturn.

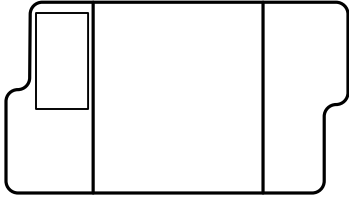
Cut out along the dotted line. Glue onto front of lessons (chapters) 11,12 folder. Color the pictures before the start of each lesson (chapter).

Lessons 11 and 12- Uranus and Neptune

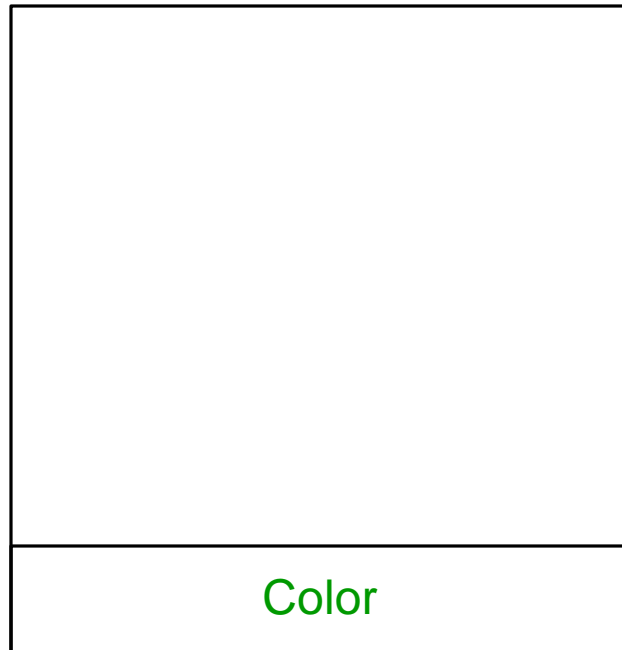
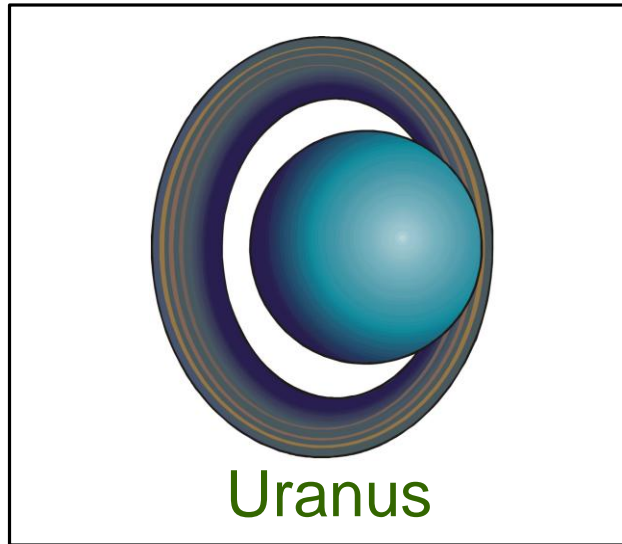
Lessons 13- Kuiper Belt Dwarf Planets

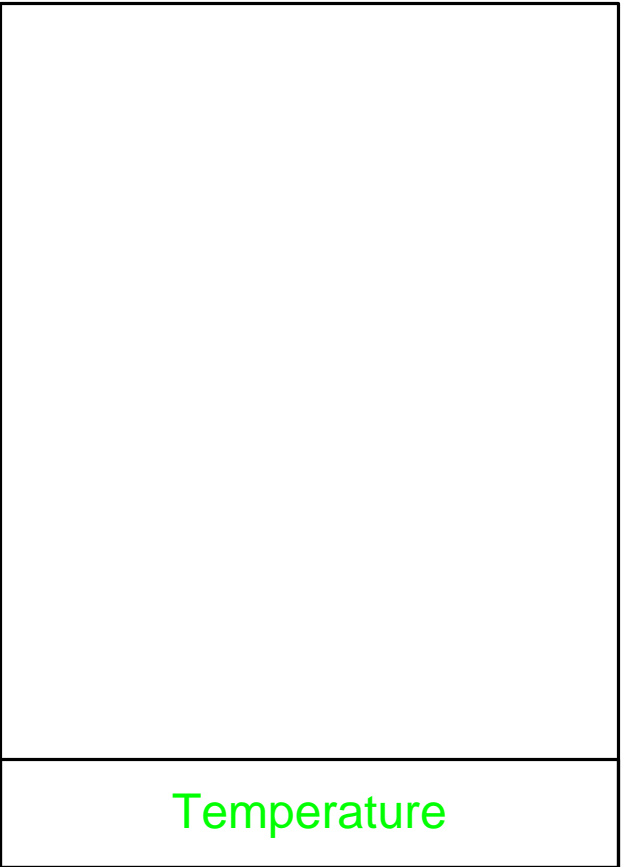


Lesson 11

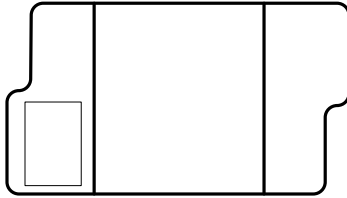


Cut out each piece on this page and the next. Stack pieces together in order of length with title on top. Staple on the top. Glue into lapbook. **Read Uranus page 146.** Write information about each topic found on the tabs.

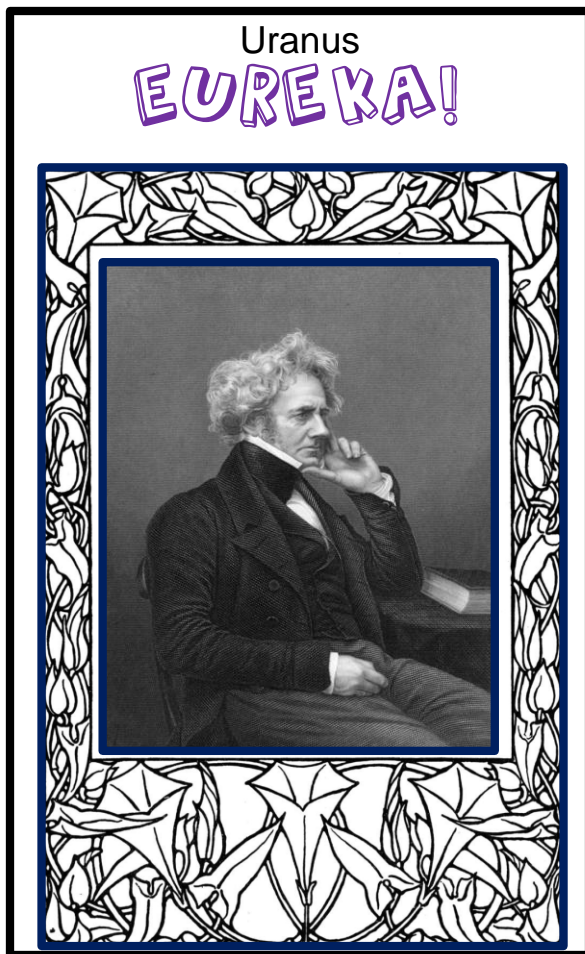




Lesson 11



(This section is rather lengthy. Depending on your child, you may need to do this activity over a 2 day period) Cut out the pieces. DO NOT CUT OFF TABS. Stack together and staple down the left side. Glue into lapbook. **Read Eureka and Think about This, page 147.** Color the frame containing the picture of William Herschel. Answer the questions about Uranus found on each of the tabs.



	Year Uranus Discovered
--	------------------------------

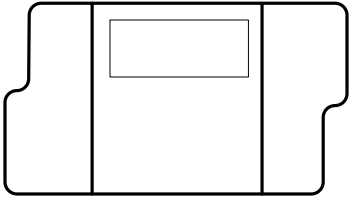
A large, empty rectangular box with a black border, intended for taking notes or drawing.

Who
Discovered
Uranus

A large, empty rectangular box with a black border, intended for taking notes or drawing.

How was
Uranus
Discovered

Lesson 11



Cut out the three pieces. Stack from shortest on top down to longest on the bottom. Staple on the left. Glue into lapbook. **Read Orbit and Rotation, page 150.** Answer the questions on each piece.

Uranus

Orbit and Rotation

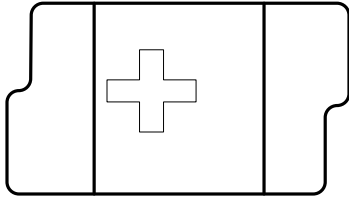
Years

How many earth years for Uranus
go around the sun?

Hours

How many hours in a
day on Uranus?

Lesson 11



Cut out as one piece. Hamburger fold on the middle line. Glue into lapbook. **Read Moons, Titania, Oberon, Cordelia and Ophelia, Miranda, Ariel, and Umbriel pages 151-152.** Inside the book, write at least four of the moons of Uranus. Tell your teacher where the names come from.



William Shakespeare

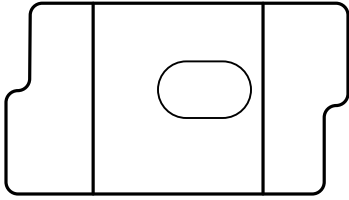
Uranus

Moons

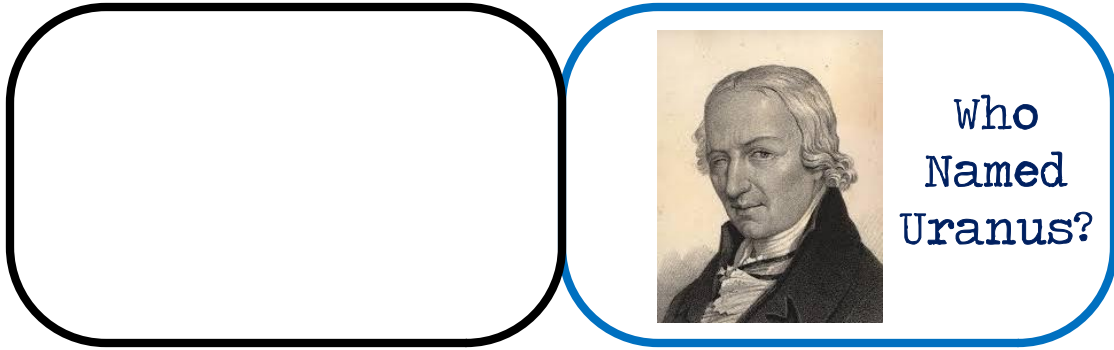


Alexander Pope

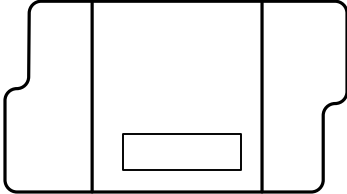
Lesson 11



Hotdog fold in half on the middle line so that title is on top. Cut around the shape of the booklet. Glue into lapbook. **Read Who Named Uranus, page 152.** Inside the booklet tell who named Uranus?



Lesson 12



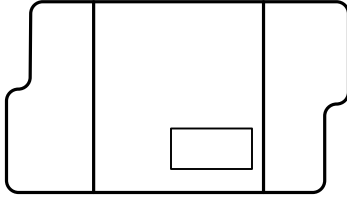
Cut out as booklet as one piece. Hamburger fold in the middle. Cut out the two inserts, put inside booklet and staple. Glue into lapbook. **Read Neptune and also Eureka, pages 156-158.** Answer the questions inside the booklet.

NEPTUNE AND EUREKA!

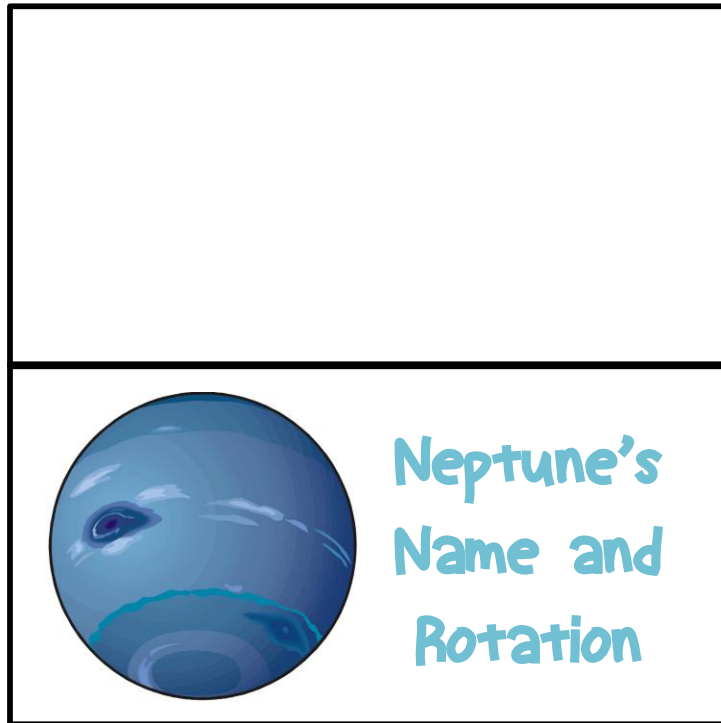
Describe Neptune

Describe Neptune's discovery

Lesson 12



Cut out booklet. Hamburger fold on middle line. Cut out the other three pieces, place inside booklet and staple at the top. Glue into lapbook. **Read Who Named Neptune and also Orbit and Rotation, pages 158-159.** Then write in the answers to each question.



Who named Neptune?

How many Earth years does it take for Neptune to get around the sun?

How many hours is a day on Neptune?

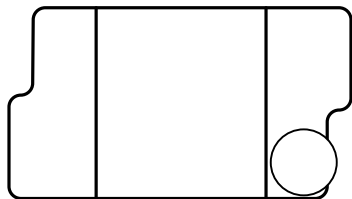
Lesson 12



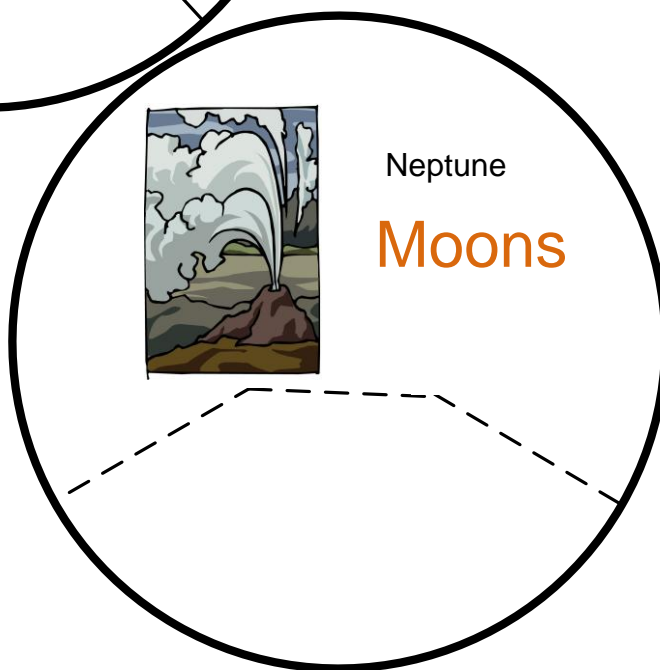
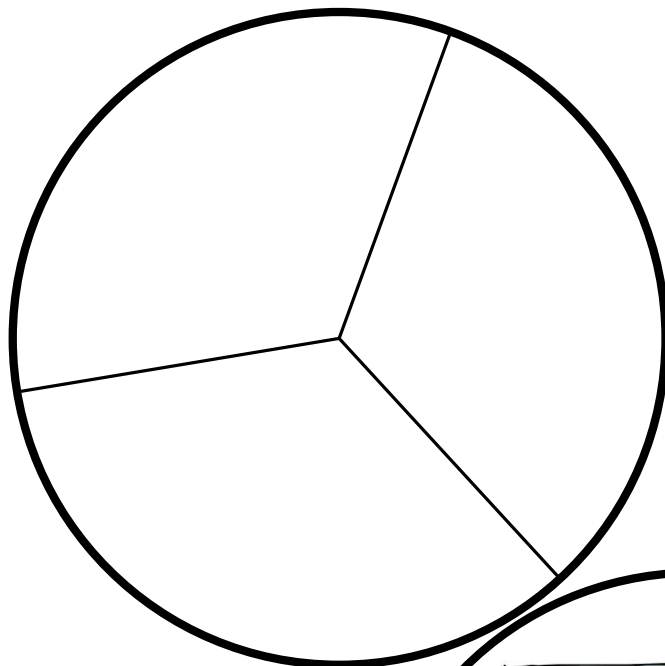
Cut out as one piece. Hamburger fold in half. Cut along the two dotted lines to form three flaps. Glue into lapbook. **Read Atmosphere and Think about This, pages 159-160.** Explain each topic by writing about it under each flap.

	NEPTUNE
	STRIPES
	Great Dark Spot
	Gases

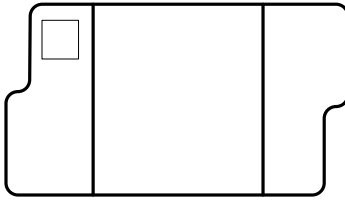
Lesson 12



Cut out both circles. Cut out dotted wedge on title circle. Stack title circle on top of circle with wedges. Connect with a brass fastener in the middle so that “wheel” will turn. Glue into lapbook. **Read Moons, page 160-161.** Write three things you have learned about Triton, the biggest moon around Neptune. Or, write the names of the three biggest moons of Neptune. It’s your choice.



Lesson 13



Cut book out as one piece. Tri-fold so that title is on the front. Cut out question boxes and glue inside the booklet, putting one in each box. Glue booklet into lapbook. **Read God's Creativity, What is a Planet and Kuiper Belt, pages 164-166.** On the front of your booklet, draw in the objects of the Kuiper belt. Use the picture on page 165 as a guide to help you with your drawing. Answer the questions.

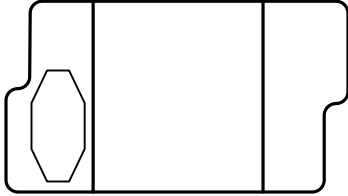
A large vertical rectangular area divided into three horizontal sections. The top section is empty. The middle section is empty. The bottom section contains the text "Kuiper Belt" in green, centered above two concentric circles. The inner circle is light blue and the outer circle is purple.

Who is the Kuiper belt named after?

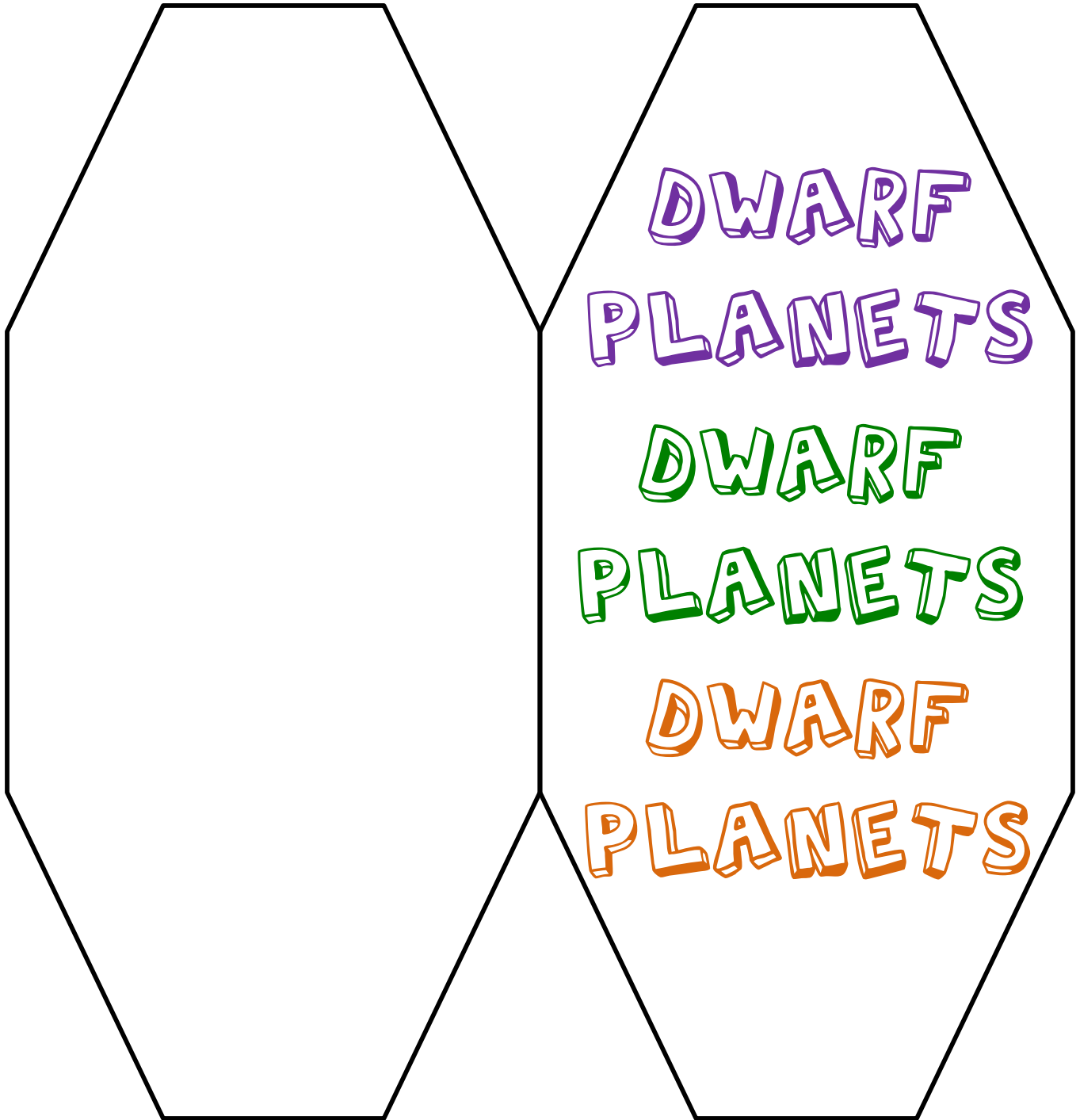
What is the Kuiper belt?

Why do scientists think Pluto was once part of the Kuiper belt?

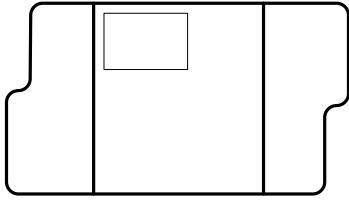
Lesson 13



Cut out the booklet as one piece. Hotdog fold in half and glue into the lapbook. **Read Dwarf Planets, pages 166-167.** What is a Dwarf Planet? Write the answer inside the booklet.

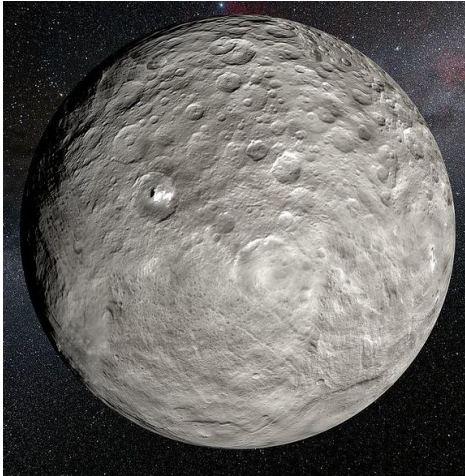


Lesson 13

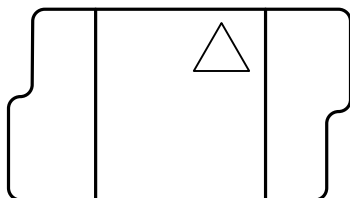


Cut out this piece and hotdog fold on middle line. (There will be a tab sticking out. Do not cut off) Fold tab over to keep booklet closed. (Like a matchbook) Glue into folder. **Read Ceres, pages 168-169.** Inside the booklet, write some facts about Ceres that you have learned.

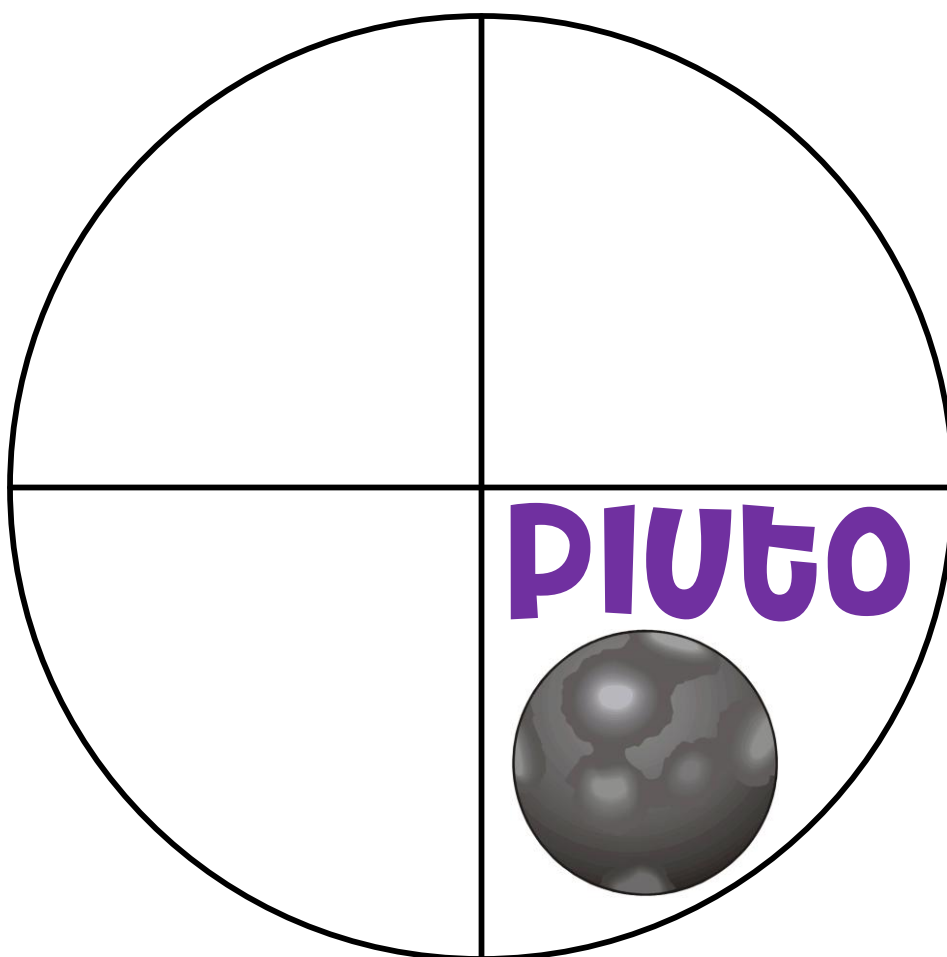
Hotdog fold

		<p data-bbox="1101 968 1279 1025">Ceres</p> 
--	--	--

Lesson 13



Cut out the circle. Fold in half and then fold in half again until you have a triangle shape. Make sure title is on top. Glue into lapbook. **Read Pluto and also Strange Orbit, pages 169-170.** Inside the booklet, write some facts you have learned about Pluto.



Lesson 13



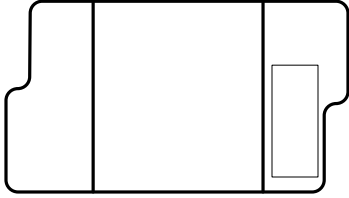
Cut out and fold tabs inward on lines to make a square. Cut out title piece and glue to top of closed booklet. Glue into lapbook. **Read Pluto's Moons, page 170.** Pluto has 5 moons. Open the booklet. You will find 5 sections in the booklet-perfect for writing the names of 5 moons! The largest Pluto moon is to be written in the center.

Largest Pluto
Moon

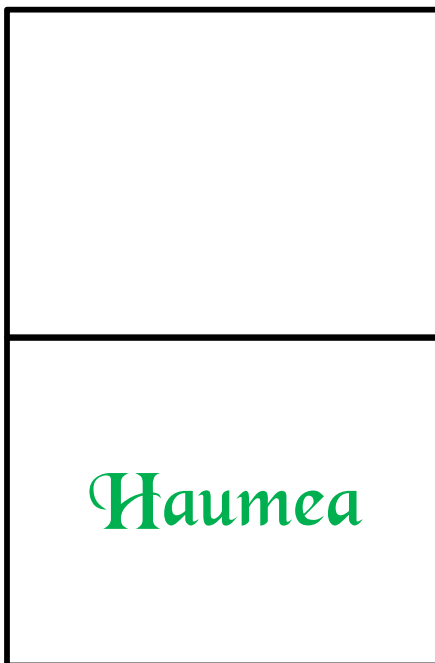
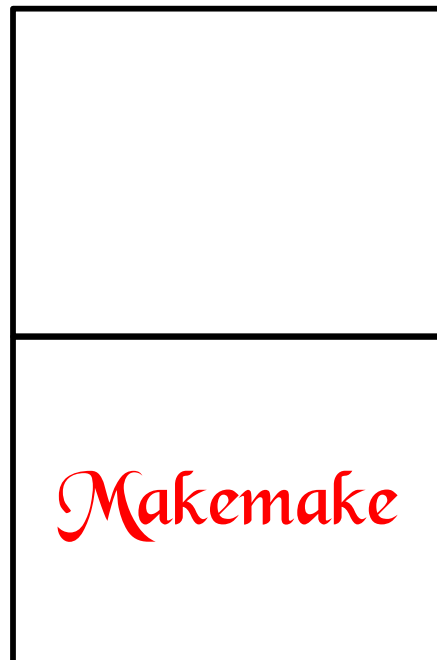
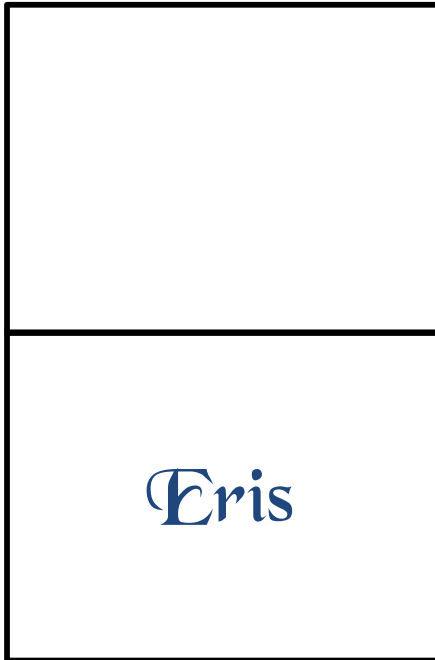
Title Piece

Pluto's
Moons

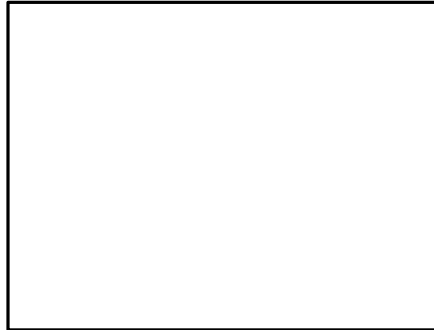
Lesson 13



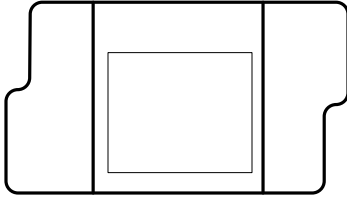
Cut out these three small booklets. Hamburger fold in half on the middle line. Cut out large piece from the next page. Glue the three booklets onto large piece, using boxes as guides. Glue booklet into lapbook. **Read Eris, Makemake, Haumea, Haumea's Moons, and Dwarf Planets in Review, pages 171-173.** Write something you have learned about Eris, Makemake, and Haumea inside the booklets.



Other Dwarf Planets



Lesson 13



End of Lesson 13

Cut out as one piece. Glue into lapbook. Write your responses in the box.

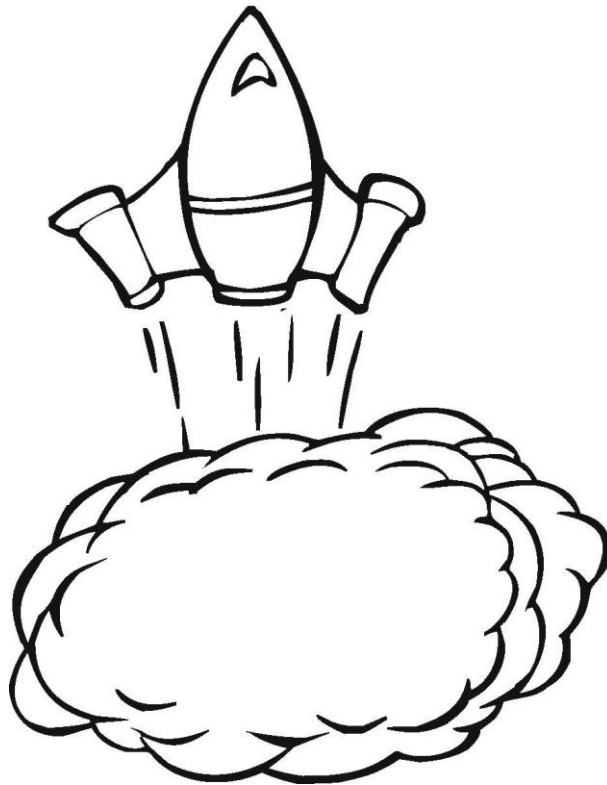
*Similarities Between
Earth and Dwarf Planets*

*Differences Between
Earth and Dwarf Planets*

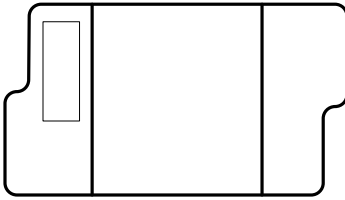
Lesson 14 is long, so there will be two folders dedicated to it.

Cut out along the dotted line. Glue onto front of lesson (chapter) 14 folder. Color the pictures before the start of each lesson (chapter).

Lesson 14- Stars, Galaxies, and Space Travel



Lesson 14
First folder

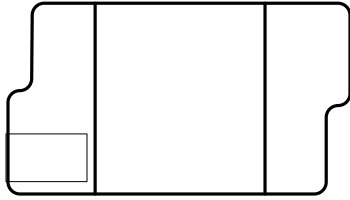


Cut book out as one piece. Cut on dotted lines to form 6 flaps. Fold flaps back so that the word is showing on top of booklet. There will be a space left over to the side for you to glue the box that says "Star Light, Star Bright." Glue booklet into lapbook. **Read Star Light, Star Bright, pages 176-178.** Answer the questions behind the flap.

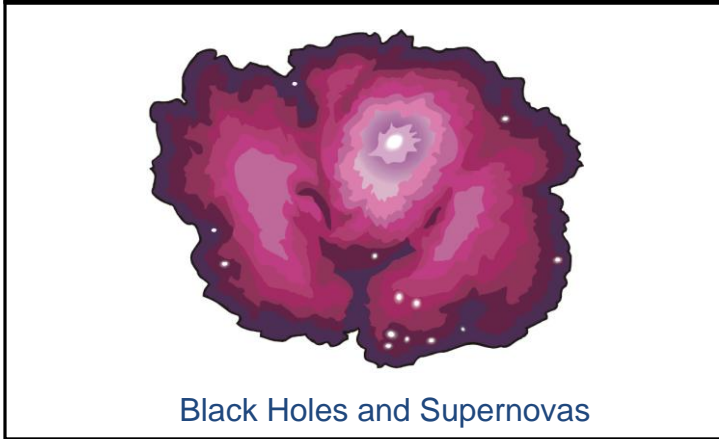
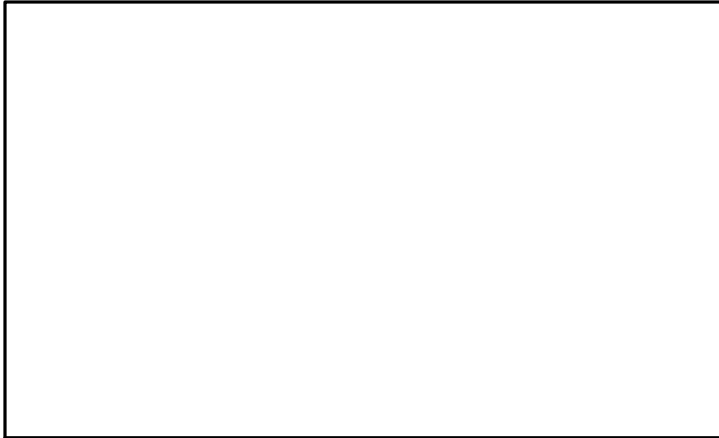
	What is a star
	Number of stars
	What is Polaris
	What is an asterism
	What is Sirius
	What is a white dwarf star

Star Light, Star Bright

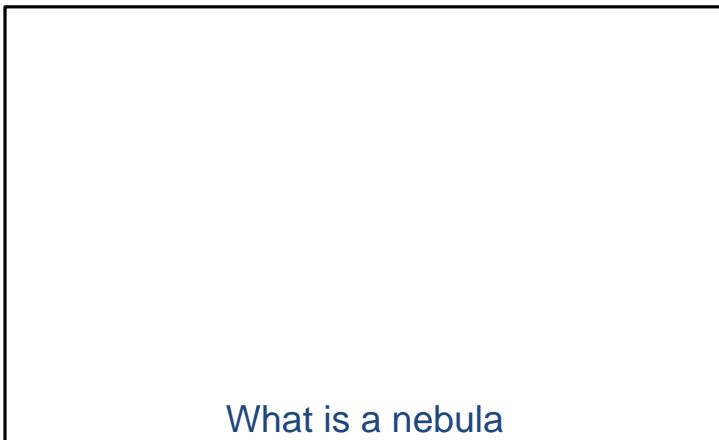
Lesson 14
First folder



Cut out booklet. Hamburger fold on middle line. Cut out the other three pieces, place inside booklet and staple at the top. Glue into lapbook. **Read Black Holes and also read Supernovas, pages 179-180.** Then write in the answers to each question.



Black Holes and Supernovas



What is a nebula

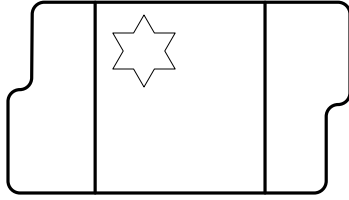


What is a black hole?

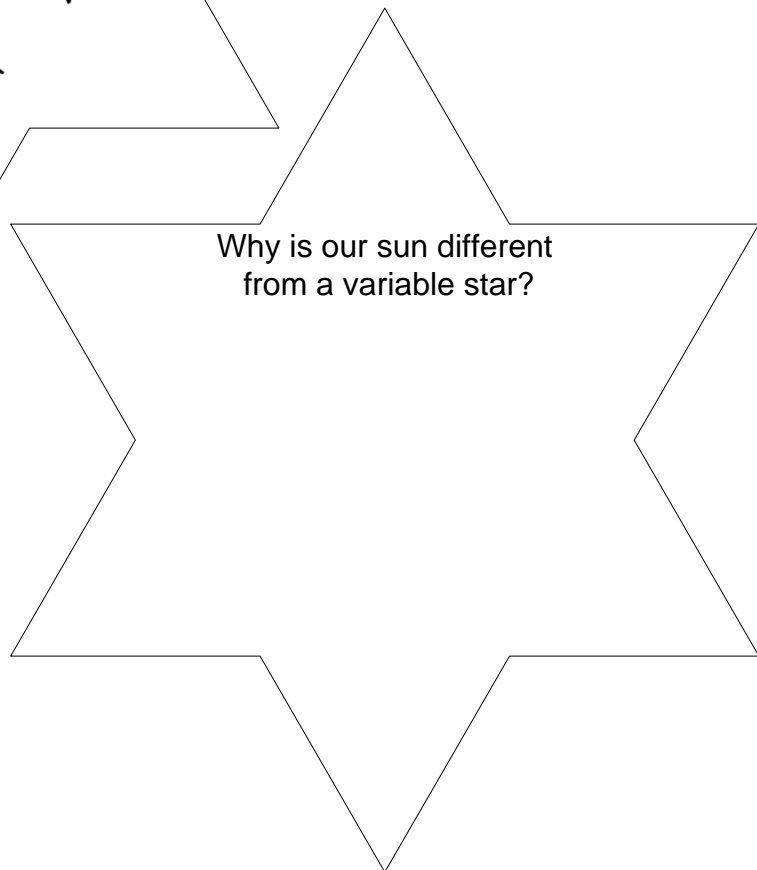
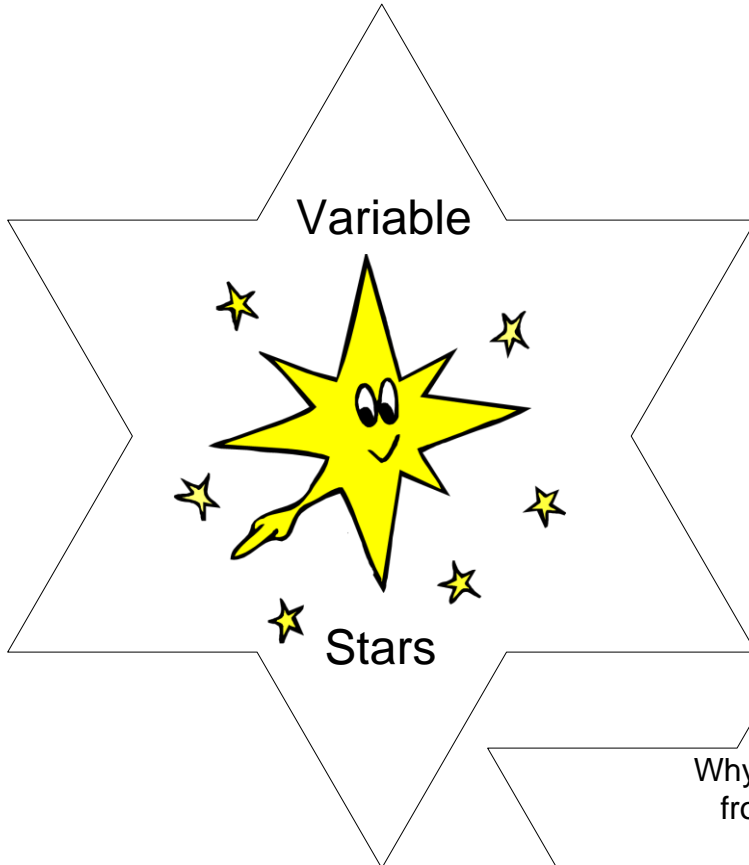


What is a supernova

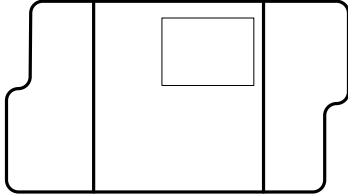
Lesson 14
First folder



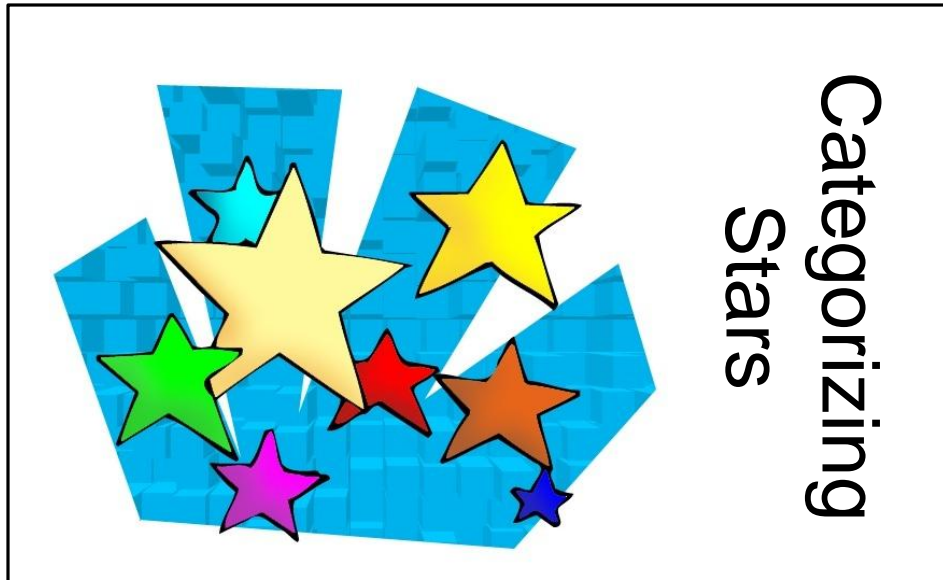
Cut out the pieces on this page and the next. Stack with title piece on top and staple at the top. Glue into lapbook. **Read Variable Stars, page 181.** Answer the questions on each star.



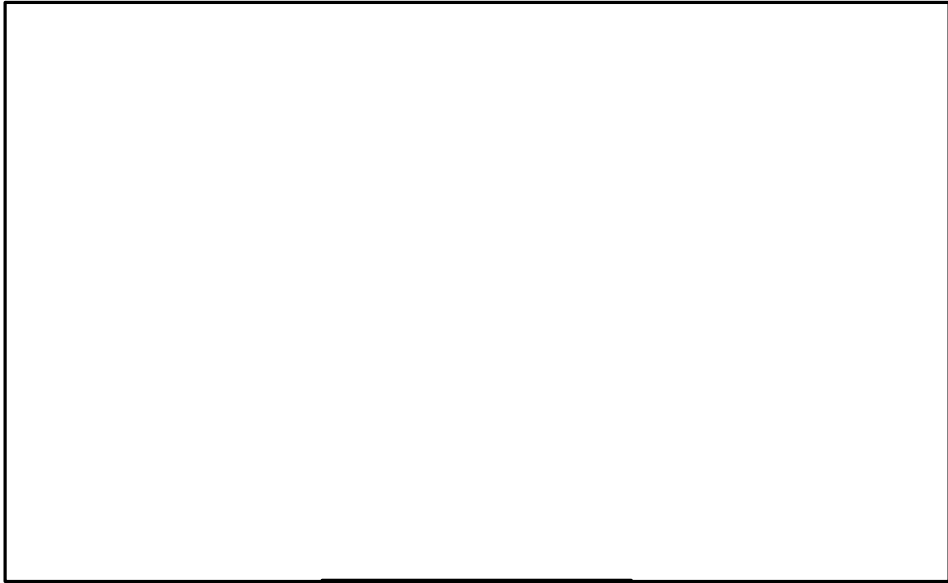
Lesson 14
First folder



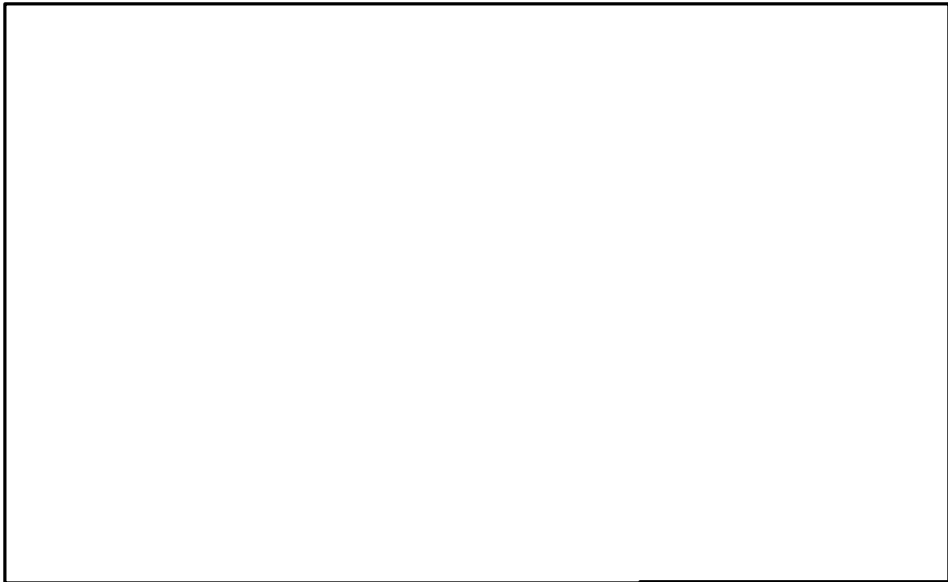
(This section is rather lengthy. Depending on your child, you may need to do this activity over a 2 day period) Cut out the pieces. **DO NOT CUT OFF TABS.** Stack together and staple down the left side. Glue into lapbook. **Read *Categorizing Stars*, pages 182-183.** Tell how stars on categorized.



Hot or
Cold

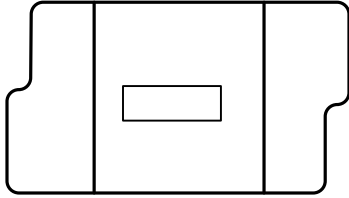


Bright
Or Dim



Big or
Small

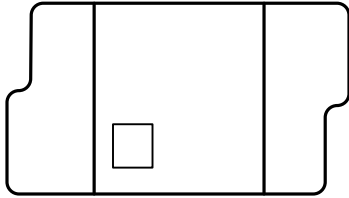
Lesson 14
First folder



Cut out as one piece. Hamburger fold in the middle. Glue into lapbook. **Read Light Years, pages 184-185.** Inside the booklet, write how far light travels in one second. Also, write what a light year is.

Light Years

Lesson 14
First folder



Cut out each piece. Stack together with title on top and staple at the top. **Read Galaxies, pages 185-186.** On the pieces that say A Galaxy Shape, write one type of galaxy shape. If there is room, draw the galaxy shape, using the pictures on page 150 as a guide. Then answer the questions on the rest of the pieces.



Galaxies

A Galaxy Shape

A Galaxy Shape

A Galaxy Shape

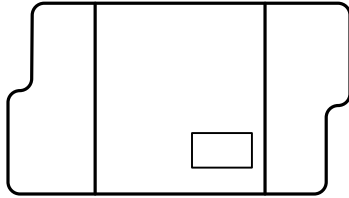
A Galaxy Shape

What is a galaxy?

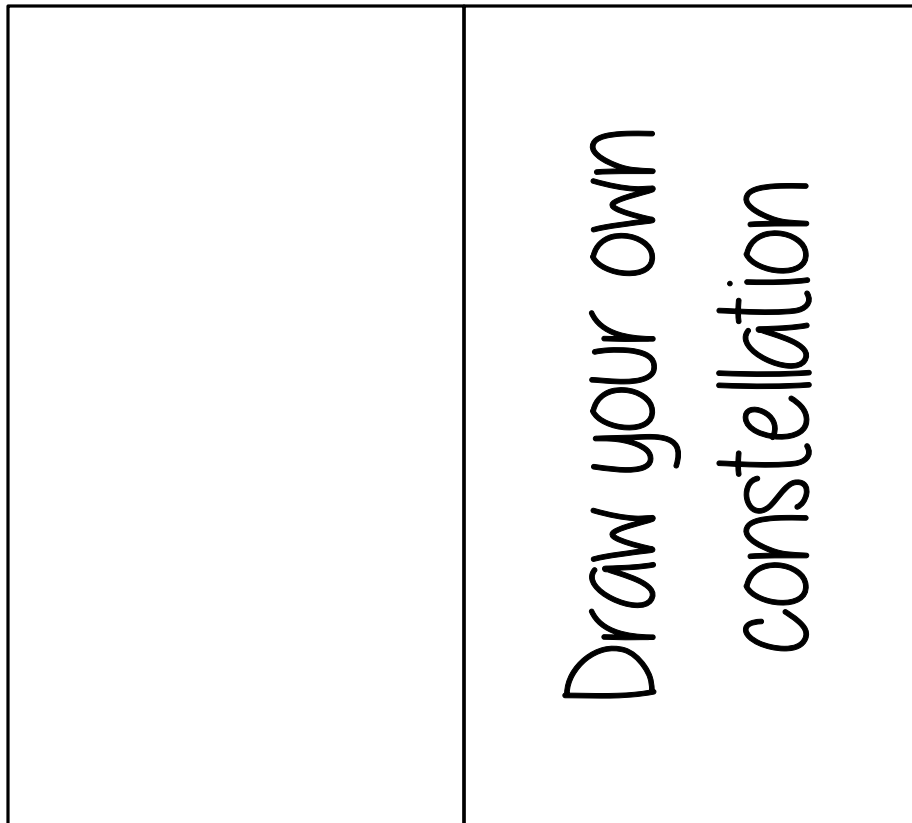
Name of our galaxy?

Shape of our galaxy?

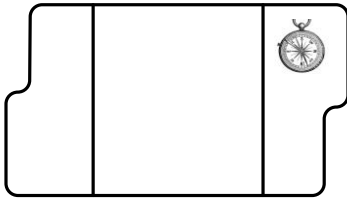
Lesson 14
First folder



Cut out as one piece. Hotdog fold in the middle. Glue into lapbook. **Read Constellations, pages 186-187.** Inside the booklet draw your own constellation or draw one from your book. (see page 187)



Lesson 14
First folder



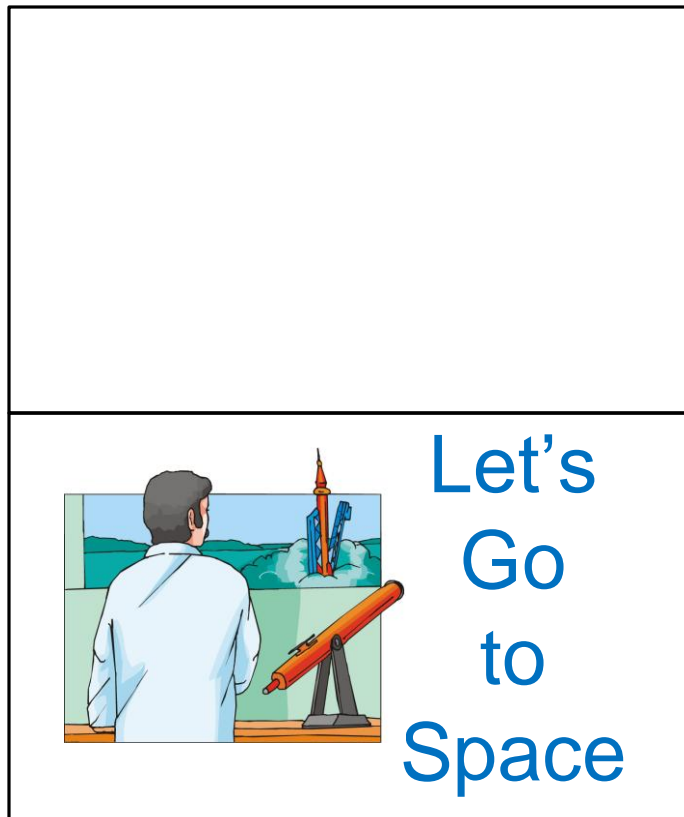
Hamburger fold on the middle line. Cut around the shape of the compass. Glue inside lapbook. **Read Constellations and Astronomy, pages 188.** Inside, tell how people knew what direction to travel before compasses.



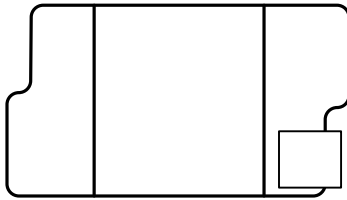
Lesson 14
First folder



Hamburger fold on the middle line. Cut around the shape. Glue inside lapbook. **Read Let's Go to Space, page 189.** Inside, tell who is considered the "father of astronautics."



Lesson 14
First folder



Cut out as one booklet. Fold down flap and then fold over the other. Cut out the labels and glue onto blank sides of booklet. Glue into lapbook. **Read *Sputnik Sensation and Space Race*, page 190.** Write about each topic.

JUNO L

LAIKA

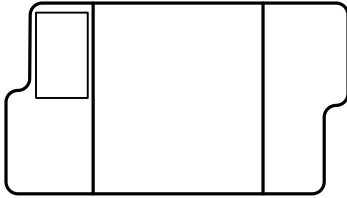
SPACE RACE

SPUTNIK

**Sputnik
Sensation**



Lesson 14
Second folder



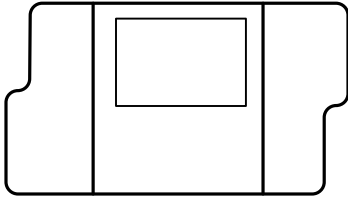
Cut out the booklet as one piece. Glue into lapbook.
Read The 1960's, pages 191-192. Color the space shoe. Copy the quote from Neil Armstrong on the lines using your very best handwriting.

“That’s one small step for man,
one giant leap for mankind.”

Neil Armstrong



Lesson 14
Second folder

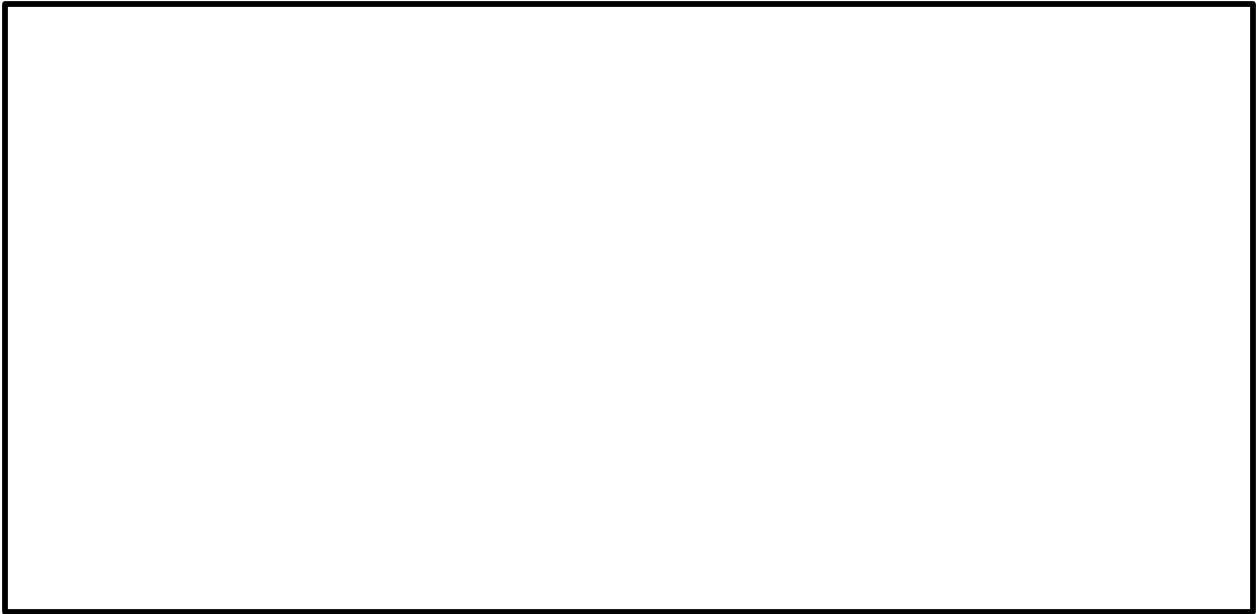


Cut out the pieces. **DO NOT CUT OFF TABS.** Stack together with title on top and tabs in order. Staple at the top. Glue into lapbook. **Read *The International Space Station*, pages 192-195.** Write about the topic you see on the tabs. You may choose to draw pictures, too!

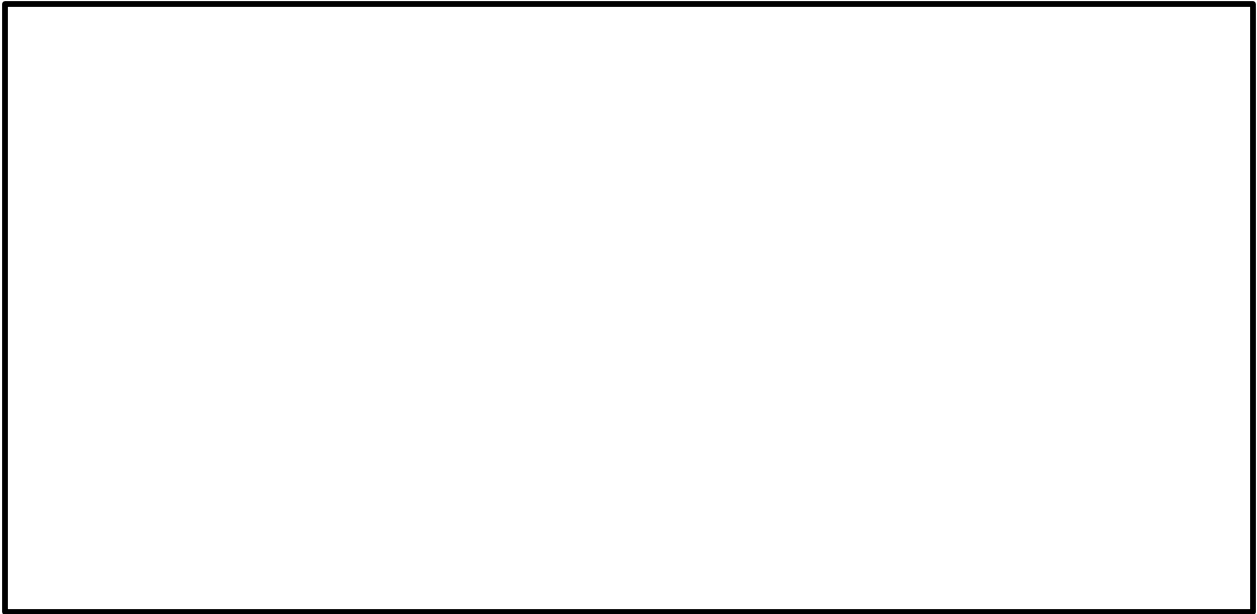


The International Space Station

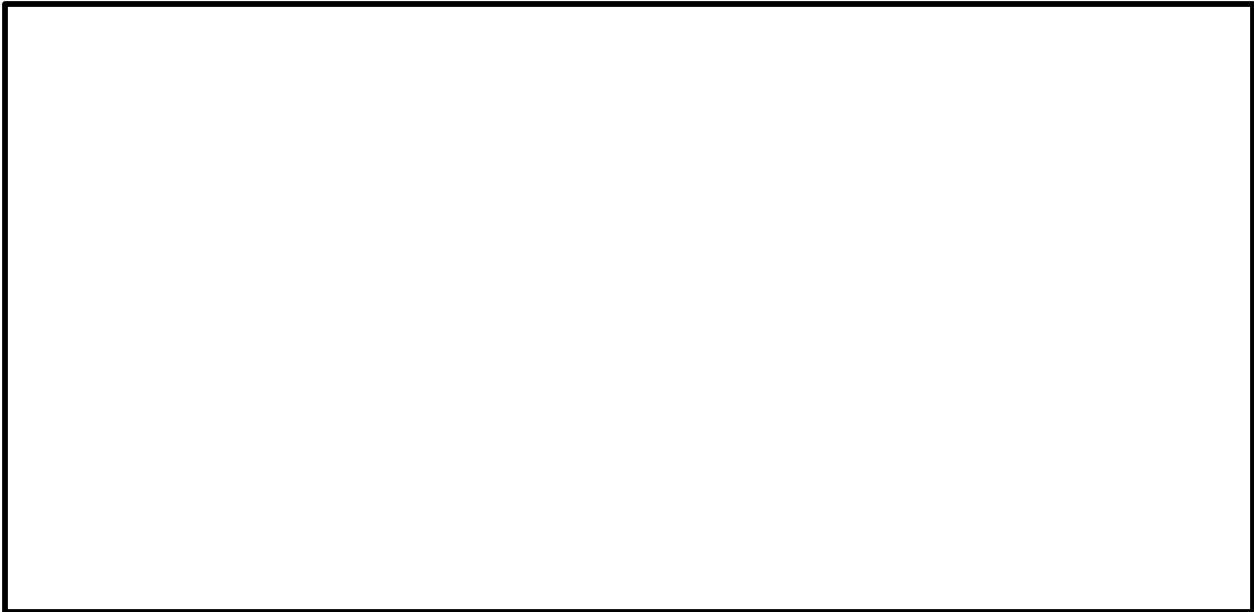
Purpose



Zero
Gravity

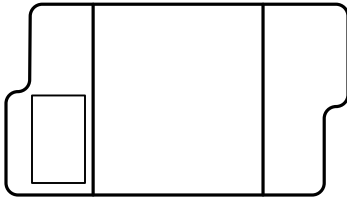


Eating



Hygiene

Lesson 14
Second folder

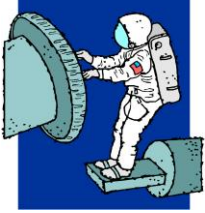


Cut out both pieces. Hamburger fold smaller booklet in the middle and glue into white space at top of bigger piece. Now glue big piece into lapbook. **Read *Building the International Space Station*, page 195.** Inside the flap, write what EVA stands for and its meaning. On the lines, list some of the dangers astronauts face when they are on space walks.

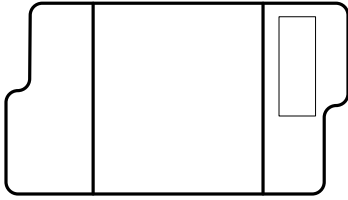
Glue smaller booklet here

What are the dangers that an astronaut faces when leaving the space station?

Building the International Space Station



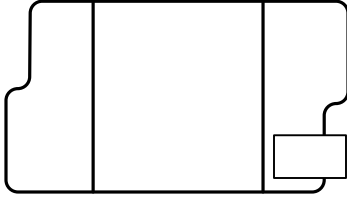
Lesson 14
Second folder



Cut out as one piece and glue into folder. **Read**
Becoming a NASA Astronaut, page 196. List in the
boxes **SOME** of the things you need to study and learn
to become an astronaut.

Becoming a NASA Astronaut

Lesson 14
Second folder

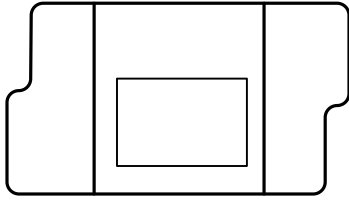


Cut out as one piece. Hamburger fold in the middle.
Glue into folder. **Read Seeing the International Space Station, page 197.** How do you know you are seeing the International Space Station? Write it in the box.

<p>Seeing the International Space Station</p>

Lesson 14

Second folder



Cut out as one piece and glue into folder. **Read Activity 14.6 Let's Visit the Planets, page 197.** Answer the questions. Write your answers in the boxes to the right.



Let's Visit the Planets!



The day you leave Earth is your next birthday.	How old are you when you leave?	
You arrive on Mercury in 8 months.	How old are you when you get to Mercury? (your age + 8 months)	
You arrive on Venus 4 months later.	How old are you when you reach Venus? (your last age + 8 months)	
You arrive back on Earth 4 months later and say hello to your family before you immediately set off for Mars.	How old are you when you reach Earth? (your last age + 4 months)	
You arrive on Mars in 7 months.	How old are you when you reach Mars?	
You arrive on Jupiter in 3 years and 11 months later.	How old are you when you reach Jupiter?	
You are on Saturn 4 years and 7 months later.	How old are you when you reach Saturn?	
You arrive on Uranus 10 years and 2 months later.	How old are you when you reach Uranus?	
You arrive on Neptune 11 years and 7 months later.	How old are you when you reach Neptune?	
You arrive at Pluto 10 years later.	How old are you when you reach Pluto?	
It will take 40 years and 10 months to make it back home.	How old will you be when you reach Earth?	

Digging Deeper

Additional Reading Suggestion- Most found at Amazon.com or check your local library

Eye Wonder: Space (Eye Wonder) by Carole Stott

Space Exploration (DK Eyewitness Books) by Carole Stott

The Magic School Bus Lost In The Solar System by Joanna Cole and Bruce Degen

Midnight on the Moon (Magic Tree House, No. 8) by Mary Pope Osborne

Comets, Stars, the Moon, and Mars: Space Poems and Paintings by Douglas Florian

If You Decide To Go To The Moon (Booklist Editor's Choice. Books for Youth (Awards)) by Faith McNulty and Steven Kellogg

The International Space Station (Let's-Read-and-Find... Science 2) by Franklyn M. Branley and True Kelley

Virtual Field Trips

<http://www.spacewander.com/USA/english.html>

http://hubblesite.org/explore_astronomy/black_holes/

<http://virtualfieldtrip.jpl.nasa.gov/smmk/top>

We have tried hard to choose resources with either a Christian point of view or books without an evolution point of view. Please let us know if a problem is found with anything that we have recommended. It was not intentional.

Enrichment Pages

Book Log- A fun place to keep up with extra reading!

Your child can do extra reading about the subjects and topics covered in the lapbook. As your child reads, write down the date, title, author and type of book it is on the Book Log.

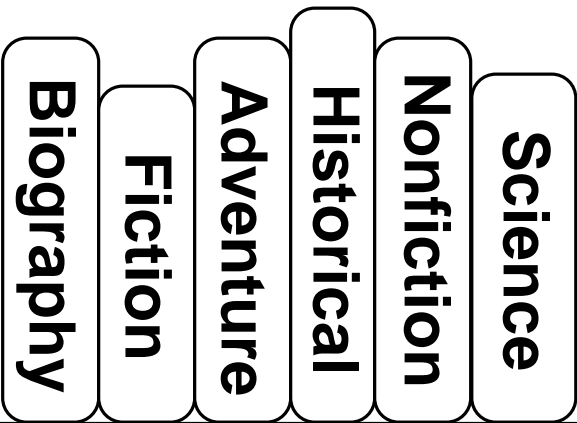
Planet Book Report - Learn more about the animals you are studying!

Let your child choose a planet. Find an exciting book about the chosen planet. After reading, have your child fill out the information about the book and planet on the Planet Book Report page.

What I Have Learned- Pages for narration

Your child will do one of these for every study guide, or depending on the level of the child, you may select only a few for your child to do. After reading the study guide, your child will narrate (tell orally) what he/she has learned. You will write it down or let the child write it down. There are two versions to choose from: Younger-includes a place to draw a picture. Older-for children who are capable of more writing and narration.

Book Log



Books I have read
about Astronomy

DATE	Title & Author	Type of Book

Planet Book Report Form

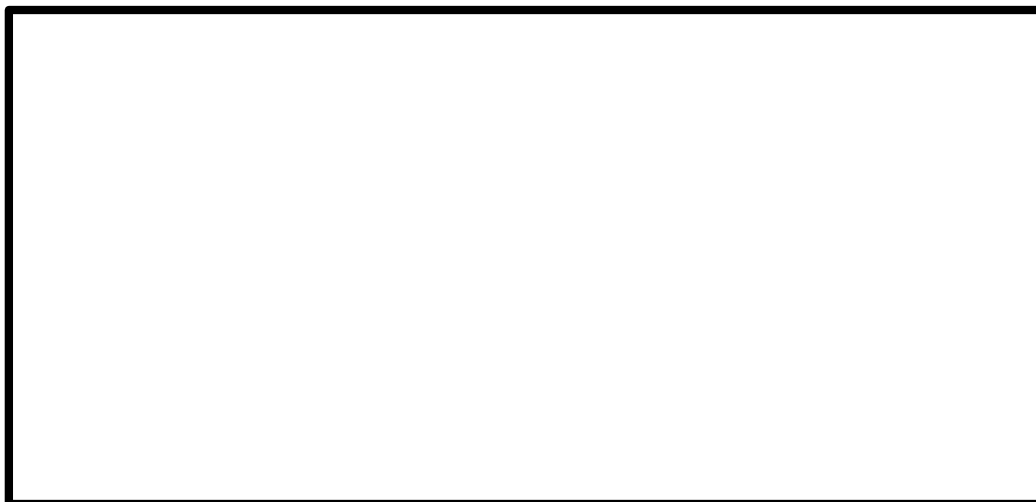
Title: _____

Author: _____

This book was about: _____

Why I like this planet- _____

Here is a drawing of my chosen planet



Narration form for younger children

Today I learned about:

Draw picture of what you learned today



Lesson 1

What is Astronomy?- The study of outer space. Page 14

Why Did God Create the Universe- light at night, as a calendar and signs, keep life on earth going. Page 3

Stars and Planets- We can tell if we are looking at a star or planet because a star appears to twinkle and a planet does not. Page 15

Clocks, Calendar, and Seasons- Ways that people have used the plants, moons, and stars as a calendar are: determining the time of day by the positions of shadows that were cast on the earth, knowing when a month had passed by the shape of the moon, judging when spring arrived by the position of the sun in relation to the large stones of Stonehenge, using constellations to determine when seasons arrived, to mark what year it was, how many years had passed since an event, to show direction to sailors, and to help birds know when it is time to migrate. Page 16-17

Navigation- Sailors used the sun, planets, and stars to know which direction to sail. This is called celestial navigation. A compass always points north and lets us know which direction we are going. A GPS uses satellites in space to track where we are going. Pages 17-18.

Gravity- An invisible force that pulls objects toward each other. Page 18.

Our Solar System- Order of planets according to size: Jupiter Saturn Uranus Neptune Earth Venus Mars Mercury Pluto

Order of planets from the sun: Mercury Venus Earth Mars Jupiter Saturn Uranus Neptune Pluto. Page 19.

Astronomers and Astronauts

Two well-known astronomers- Nicolas Copernicus and Galileo Galilei. Page 20

What does NASA stand for- National Aeronautics and Space Administration. Page 20

What does NASA do- sends people and spaceships to space, builds spaceships, telescopes, robots and other useful things for space exploration. Page 20

What is the Hubble Space Telescope- an enormous telescope floating in space that sends pictures back down to earth. Page 21

Satellites- What is a satellite- an object up in space that travels in circles around another object. Page 21-22

Lesson 2

The Star of Stars- 1 million earths can fit inside the sun. Page 26

92,935,700- This number is important because it tells how many miles we are away from the sun. Page 27

Don't Stare- Should you stare at the sun? NO Page 28

Revolve and Rotate BOOKLET #1

What does revolve mean-When one object travels in a circle around another. Page 30.

What is the earth's only natural satellite- The moon-Page 30.

Revolve and Rotate BOOKLET #2

Draw a planet orbiting around the sun- See image at top of page 30.

When the earth completes one revolution around the sun, how much time has passed- 1 year. Page 31

When is it day- When the earth is facing toward the sun. page 31

When is it night- When the earth is facing away from the sun. page 31

When the earth spins one time around, how much time has passed- 1 Day. Page 31

Solar Flares, Auroras, and Sun Spots- Answers will vary. Pages 32-33

Think about This

What is thermonuclear fusion- Little explosion that happen over and over deep inside the sun. Page 33

Thermonuclear fusion proves the earth is not billions of years old because it causes the sun to get hotter and brighter from year to year. If we go back in time billions of years, with the sun getting cooler and cooler, the sun would have been too cool to sustain life on earth. Page 33

The Color of God's Love

How do we know that light travels in a straight line-Because it does not bend when something is blocking it, like your hand. Page 34

How do we get color- The color waves that bounce off of an object bounce up to your eye. Your eye sees the bounced light waves. Page 35

How do we get the color black? When all the colors of light get absorbed into the same object. Page 36

Think about This- God's and his love is bright than the sun. Page 36

Solar Eclipse

What is a solar eclipse?- The sun gets hidden by the moon and light does not shine down for a few moments. Page 37.

What is a total eclipse? The sun is completely hidden by the moon. Page 37

What is an annular eclipse- When the sun is directly behind the moon, but a ring of sunlight can be seen around the blackened moon. Page 37

What is a partial eclipse-When the moon is not directly between the sun and the earth during an eclipse. Page 38

What is Bailey's Beads- Little points of light that reflect off the gigantic holes on the surface of the moon during an eclipse. Page 38

Lesson 3

The Planet Closest to the Sun- Answers will vary. Page 44

Rotation and Revolution

A year on mercury is how many earth days- 88. Page 45

A day on Mercury is how many earth days- 59. Page 45

Features of the Planet Mercury

Describe the size of Mercury- It is very small. If the earth were the size of a baseball, Mercury would be the size of a golf ball. It is about the size of our moon. Page 46

What is Mercury like- Empty, lonely, dusty, dry and with many craters. Page 46

What is a terrestrial planet- It is solid. You can stand on it. Page 46

A Trip to Across the Sun- Should be similar to the drawing on page 48.

Who Named Mercury- The Romans. Page 48

How to Find Mercury in the Sky- Look either just before the sun comes up or just after the sun goes down. Look toward the rising or setting sun on the horizon. Page 49

Spacecraft to Mercury- The spacecrafts are Mariner 10 and Messenger. Page 49

Lesson 4

Venus- Venus is so hot because it is covered in thousands of erupting volcanoes. Page 54-55

Too Much Atmosphere- Heat doesn't escape from Venus because it's heavy, thick clouds trap the heat and won't allow it to escape. Page 56

Rotation and Revolution

A day of Venus is how many earth days-243. Page 57

A year on Venus is how many earth days-225. Page 57

What do we know about a planet's distance from the sun and it's orbit around it- The closer the planet is to the sun, the faster its orbit around the sun. The further it is, the slower the orbit is. Page 57

Finding Venus in the Sky- Venus can be seen as a brightly lit object in the sky right after sunset or right before sunrise. Page 60

Lesson 5

Perfect Distance

Too close to the sun-oceans would dry up, the atmosphere would be destroyed, and the harsh rays from the sun would burn us until we died. Page 66

Too far from the sun-the water would all freeze, and we would have frigid, icy weather every day. Spring would never bring new plants, and the animals would die of starvation. Page 66

Perfect Mass

What is mass-a measure of how much matter is in something. Page 67

Less mass- We would be much lighter, we could jump with no effort, if we fell, it would not hurt as much. Page 67

More mass- It would be hard to walk around, we would tire easily, dangerous chemicals would linger around us. Page 68

Perfect Rotation

Faster rotation-winds would be so too strong causing huge hurricanes all over. Page 69

Slower rotation-longer days causing the earth to get too hot and longer night causing the earth to get to cold. Page 69

Perfect Atmosphere- The earth's atmosphere is perfect because it contains the oxygen we need to breathe, it protects us from very high and very low temperatures, and it keeps space rocks from hitting the earth. Pages 69-70

Perfect Tilt Pages 71-75

Towards sun- When the earth is tilted towards the sun, it is hotter and we have summer. Also, it makes the daytime longer.

Away from sun- When the earth is tilted away from the sun it is colder and we have winter. Also, it makes the daytime shorter.

Northern Hemisphere- top half of earth.

Southern Hemisphere- bottom half of earth.

Perfect Land- Answers found on page 76

Perfect Magnetosphere- Answers will vary. Page 77

Lesson 6

The Moon- Answers will vary

Lunar Atmosphere

Earth- possible answers could include has atmosphere for protection, has oxygen, blue sky. Page 90

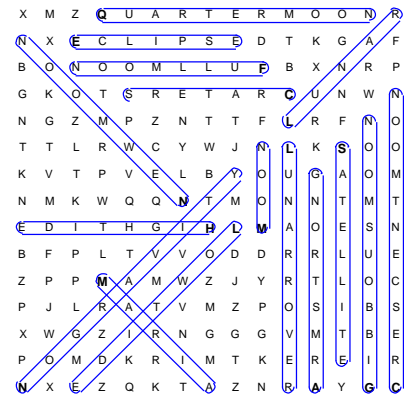
Moon- possible answers could be has no atmosphere, has no oxygen, black sky, craters from falling rocks, pages

Similarities- possible answers could be both made by God, both are solid, both are round, both are in space, both have had humans on them, etc. Page 90.

Roman Name for Moon- Lunar, Page 94

Spacecraft to the Moon- Answers will vary. First man of the moon was Neil Armstrong. Pages 94-96

Word Search solutions



Lesson 7

Mars- Olympus Mons is special because it's the largest volcano in our solar system. Page 98

Martian Atmosphere- Answers will vary. Pages 100-101

God's Gift of Magnetism- The magnetic field is strong enough to allow a thicker atmosphere, which may keep the planet warmer and allow water to be on the surface of the planet. Scientists have discovered that the magnetic field may have disappeared leaving the atmosphere susceptible to a thinning.

Moons- The two moons are Phobos and Deimos. Pages 102-103

Martian Orbit and Martian Rotation- Mars orbit- Takes 2 years to travel around the sun. One year on Mars is 687 Earth day. Page 103. Mars rotation hours is 24 hours and 39 minutes, page 104, Mars average temperature is 81 degrees below zero, page 104, Mars weather four seasons and is cold in the summer and super cold in the winter, page 104.

Moving to Mars- An artificial ecosystem is a special enclosed habitat. You would need to live in one on Mars because Mars does not have everything you need to keep you alive, like oxygen, sunlight, and water. You would HAVE to take water, air, heat, food, shelter, and clothing, pages 105-106.

Liquid Water on Mars- Scientists think there once was water on Mars because Mars has rock formations that are usually made in the presence of water. Also, Mars has certain chemicals that tend to form in liquid water. Page 107.

Finding Mars in the Sky, Who Named Mars, and Spacecraft to Mars- We send spacecraft to Mars to find out about its climate, weather, rocks, soil, whether it has water, and if anything has ever lived on Mars. Pages 108-109.

Lesson 8

Comets- Comets are made of frozen water, dry ice, rock, dirt. Page 112-113

The Coma- A coma is a big ball of steam surrounding the ice of a comet. It is made when the comet gets close to the sun. The heat from the sun causes the ice to turn to steam and forms a steamy cloud around the comet. Page 114

A Comet's Orbit Page 114-116

Describe the orbit of a comet- Can be long and elliptical. Always follows same orbit.

When is the Perseid meteor shower- A good meteor shower between August 9th and August 13th of every single year.

What is a short-period comet- A comet that takes less than 200 years to orbit the sun.

What is a long-period comet- A comet that can take thousands of years to orbit the sun.

Famous Comets- Halley, Hale-Bopp, Shoemaker-Levy, pages 116-117

How Comets Get Their Official Names- Comets are usually named for their discoverer-either a person or a spacecraft. Page 117

Meteoroids, Meteors, and Meteoroids Pages 117-118

Meteoroids- Dirt and rocks left by comets and planets that is floating in space.

Meteors- A meteoroid that hits the earth's atmosphere and burns up.

Meteorites- A large object that does not burn up in the atmosphere and hits the earth.

Asteroids- Answers will vary. Pages 118-119

Asteroid Belt, Who Names Asteroids, and Spacecraft- Answers will vary, pages 120-123

Lesson 9

Protective Mother- Jupiter protects earth because Jupiter's gravitational pull pulls so strongly that asteroids and comets that do hit a planet end up hitting Jupiter and not earth. Page 126

Going to Jupiter- It is hard to get to Jupiter because spacecraft has to pass through the asteroid belt. It is called a gas giant because it is made up of mostly gas. Page 126-127

Little Sun- Jupiter is like the sun because it puts out its own heat and because it mostly made of the same two gases that the sun is made of-helium and hydrogen. Page 127

Stormy Skies Page 127

What is the Giant Red Spot- A giant storm that travels around Jupiter.

Describe the red stripes you see across Jupiter- They are violent storms.

Jupiter's Rings- Jupiter's rings are so thin we can not see them through a telescope. Page 128

Rotation and Revolution- A year on Jupiter is 12 earth years. A day on Jupiter is half an earth day. Page 129

Many Moons Pages 129

Io- Answers can include but are not limited to: second smallest, hot, active volcanoes, smells like rotten eggs, most colorful moon.

Europa- Answers can include but are not limited to: smallest of the moons, no craters, smooth, covered by large, frozen ocean.

Ganymede- Answers can include but are not limited to: biggest moon in solar system, made of rock and ice, has craters, hot core.

Callisto- Answers can include but are not limited to: no core, ball of ice, similar to Pluto, has one of the largest craters.

Finding Jupiter in the Night Sky- Use of pair of binoculars or a telescope. You can maybe even see Jupiter's moons by steadying the binoculars against something solid. Page 131

Spacecraft Galileo- It was sent on a journey to take pictures of Jupiter. Pages 131-132

Lesson 10

Saturn- Saturn is well remembered because of its rings. Pages 136-137

Twins-Pages 137-138

Differences: Jupiter is cold, Saturn is colder; Saturn has violent storm, Jupiter has even more violent storms; Saturn is less dense than water, Jupiter is more dense than water.

Similarities: Both gaseous, cold, make own heat, have violent storms.

Ring System and Think about This- The rings are made up of dust, ice, rocks and moons. Pages 138-139

Fast Rotation- There are 10 earth hours in one day on Saturn. Page 140

Who Named Saturn and Finding Saturn in the Sky- Saturn is named after the Roman god Saturnus. You can tell Saturn from a star because its light is steady and not twinkling. You can see its rings through a telescope. Page 140

Cassini Mission- The purpose of the Cassini mission is to explore Saturn and its moons. The spacecraft is very big. It is taller than a two-story building, and it weighs more than 6 tons. Page 140

Saturn's Moons- Saturn has more than 30 moons. The seven largest are Rhea, Enceladus, Dione, Titan, Iapetus, Mimas, and Tethys. Page 141-142.

Lesson 11

Uranus

Color- Blue-green, Page 146

Atmosphere- Helium, hydrogen, and methane. Page 146

Temperature- 350 degrees F below 0, page 146

Eureka

Year Uranus Discovered- 1781, page 147

Who discovered Uranus- William and Caroline Herschel. Page 147

How was Uranus discovered- William and Caroline found it accidentally. They were looking through one of their homemade telescopes. They noticed a light that looked like a disk, not a star. After watching it for several months, they noticed that its orbit was circular like a planet. Page 147

Orbit and Rotation- It takes 84 earth years for Uranus to go around the sun. Uranus has 17 hours in a day. Page 150

Moons- The moons of Uranus are named after characters in the writings of William Shakespeare or Alexander Pope. They are Titania, Oberon, Cordelia, Ophelia, Miranda, Ariel, and Umbriel. Pages 150-152

Who Named Uranus?- Johann Elert Bode, page 152

Lesson 12

Neptune and Eureka- Neptune is bright blue and very beautiful. It was discovered after a long search by scientists who realized that there must have been a planet nearby pulling on Uranus. Page 156-158

Rotation and Revolution- It takes 168 Earth years for Neptune to get around the sun. A day on Neptune is 16 hours. Neptune was named by Urbain Le Verrier. Pages 158-159

Atmosphere- Page 159

Great Dark Spot- A storm on Neptune.

Stripes- The stripes are clouds because of storms raging on Neptune.

Gases- The gases found on Neptune are hydrogen, helium, and methane.

Moons- Possible answers could be but are not limited to: it's Neptune's biggest moon, it is 400 degrees below zero, it revolves in the opposite direction, it is close to Neptune, it has geysers. The 3 biggest moons are Triton, Proteus, and Nereid. Pages 160-161

Lesson 13

Kuiper Belt

Who is the Kuiper book named after- Gerard Kuiper. Page 165

What is the Kuiper belt- A belt of comets orbiting the sun near Neptune. Page 165

Why do scientists think that Pluto was once part of the Kuiper belt- The objects in the Kuiper belt look a lot like Pluto. Page 165

What is a Dwarf Planet?-Orbits the sun, has enough mass to assume a nearly round shape, is not a moon, and has not cleared the neighborhood around its orbit. Page 166.

Ceres- Answers will vary.

Pluto- Answers will vary.

Pluto's Moons- Charon (the largest), Hydra, Styx, Nix, Kerberos. Page 170

Eris, Makemake, Haumea, Haumea's Moons, and Dwarf Planets in Review- Answers will vary.

Similarities Between Earth and Dwarf Planets-Orbit the sun, has moons, large enough to form a round shape.

Differences Between Earth and Dwarf Planets-Dwarf planets are not large enough to clear the neighborhood around its orbit whereas Earth can, Dwarf planets can not sustain human life whereas Earth can, Dwarf planets are very cold and Earth is not.

Your child may be able to come up with more answers.

Lesson 14

Star Light, Star Bright Pages 176-178

What is a star- A large body that produces a lot of energy.

Number of stars- Billions.

What is Polaris- The North Star. It always points toward the North Pole.

What is an asterism- A set of stars that form a shape that is easy to recognize.

What is Sirius- The brightest star in the sky.

What is a white dwarf star- Stars that are in the process of dying.

Black Holes and Supernovas Pages 179-180

What is a supernova- A star that explodes.

What is a black hole- The core of a star that pulls in everything around it.

What is a nebula- The cloud and dust left behind by an exploding star.

Variable Stars- Our sun is different from a variable star in that it does not drastically change in its brightness or dimness like variable stars do. Page 181

Categorizing Stars- Pages 182-183

Hot or Cold- Categorized by the letters O, B, A, F, G, K, and M. That is from coldest to hottest.

Bright or Dim- Categorized by numbers starting with 1. That is from brightest to dimmest.

Big or Small- Categorized by Roman numerals I-VII. That is from supergiant to dwarf.

Light Year- Light travels 186,000 miles per second. A light year is the distance light travels in a year. Page 184-185

Galaxies

Galaxy Shapes- The galaxy shapes are spiral, elliptical, lenticular, and irregular. A galaxy is a big group of stars. Our galaxy is the Milky Way. The shape of it is spiral. Pages 185-186

Constellations and Astronomy- Before compasses, people used the constellations to find their way. Pages 188

Let's Go to Space- The "father of astronautics" is Konstantin Tsiolkovsky

Sputnik Sensation- Page 190

Sputnik- The first rocket sent into space by the Russians.

Laika- A dog the Russians sent up into space.

Space Race- The United States' effort to get ahead of the Russians in the space program.

Juno I- The first rocket the US put into space.

The International Space Station Pages 192-195

Purpose- The ISS provides a place in space for astronauts to do experiments.

Zero Gravity- Means no gravity. The astronauts on the ISS experience no gravity because the ISS is constantly falling downward as it travels around Earth. The astronauts are falling with it. This makes them experience "zero gravity." They must go through special training to prepare for this.

Eating- Food will float away. It is kept in special pouches.

Hygiene- The toilet is attached to the astronaut and gently sucks away all the waste.

Building the International Space Station

EVA stands for extravehicular activity. It means that an astronaut leaves the space station to work on the outside. Page 195

Dangers facing astronauts when they leave the space station include extreme heat, extreme cold, solar winds beaming harmful radiation, and being hit with dust and rocks. Page 195

Becoming a NASA Astronaut- Your list can include any of these. You will not have room on your booklet to write them all. Things you need to study and learn to become an astronaut are math, earth, rocks, plants, energy, science, living things, animals, how bodies work, motion, and electricity. Page 196

Seeing the International Space Station- You know you are seeing it when it appears like a big star moving quickly across the sky. Page 197.

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