

Expert Pack: All Eyes on the Moon

Submitted by: Providence Public School District

Grade: 2

Date: May 2015

Topic/Subject The Moon
<p style="text-align: center;">Texts/Resources</p> <p>Book(s)</p> <ol style="list-style-type: none">1. <i>Astronaut Handbook</i>2. <i>Jump Into Science: Moon</i>3. <i>The Moon Book</i>4. <i>The Moon: Earth's Satellite</i>5. <i>The Moon Seems to Change</i>6. <i>One Giant Leap</i> <p>Article(s)</p> <ol style="list-style-type: none">1. "Our Lunar legacy"2. "Moon Walkers" <p>Other Media</p> <ol style="list-style-type: none">1. "Lunar Cycle, Why The Moon Change Shapes, 8 Phases Of The Moon, Learning Videos For Children"2. "Moon for Kids" (Part 2 and Part 3) <p>Each expert pack contains a variety of selections grouped to create as coherent and gradual a learning process for students as possible, generally beginning with lower levels as measured by quantitative and qualitative measures, and moving to more complex levels in the latter selections. This graded approach helps support students' ability to read the next selection and to become 'experts' on the topic they are reading about.</p> <p><i>Refer to annotated bibliography on the following pages for the suggested sequence of readings.</i></p>
<p style="text-align: center;">Rationale and suggested sequence for reading:</p> <p>In the first article, "Our Lunar Legacy," students are introduced (this is the hook) to lunar landings and the possibility of a national park on the moon. This article is important to the expert pack because it serves to promote interest and engagement by having students ponders the possibility of a national park on the moon. This text set is separated into three sections. The first section is general information. The second section becomes more specific and explores moon phases. The final section includes space exploration.</p> <p>General Information:</p> <ul style="list-style-type: none">● In the first resource, <i>Moon: Earth's Satellite</i>, students will briefly explore the surface of the moon, phases of the moon and astronauts.● In <i>Jump Into Science: Moon</i>, an animated cat and his pal, a firefly, share facts about the moon.● In a short video, <i>The Moon Part 2/3</i>", students can observe the different sides of the moon, mountains and craters as seen from space.● <i>The Moon Book</i>, is an informational text that includes moon phases, eclipses, the surface of the moon and astronauts. <p>Moon Phases:</p>

- In an animated video, “Lunar Cycle, Why the Moon Changes Shape, 8 Phases of the Moon” students can observe specifics about moon phases including: new moon, waxing crescent, first quarter, waxing gibbous, full moon, waning gibbous, third quarter, waning crescent.
- The *Moon Seems to Change* is the next resource that describes how as the moon revolves around Earth, it seems to grow and shrink. Children can read about the phenomena of the moon’s phases.

Moon Exploration

- In *The Astronaut Handbook*, students explore all aspects of becoming an astronaut and answer some specific questions including: Who can become an astronaut? What training is necessary? What do astronauts do?
- *One Giant Leap*, is the historical account of the first moon landing.
- This is followed by the video, “Moon for Kids” part 3.
- Lastly, students complete their investigation of the moon with the article, “Moon Walking” which was written to celebrate the 40th anniversary of the first moon landing.

The Common Core Shifts for ELA/Literacy:

1. Regular practice with complex text and its academic language
2. Reading, writing and speaking grounded in evidence from text, both literary and informational
3. *Building knowledge through content-rich nonfiction*

Though use of these expert packs will enhance student proficiency with most or all of the Common Core Standards, they focus primarily on Shift 3, and the highlighted portions of the standards below.

College and Career Readiness Anchor Standards for Reading Literary and/or Informational Texts (*the darkened sections of the standards are the focus of the Expert Pack learning for students*):

1. ***Read closely to determine what the text says explicitly and to make logical inferences from it;*** cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. ***Determine central ideas or themes of a text and analyze their development;*** summarize the key supporting details and ideas.
10. **Read and comprehend complex literary and informational texts independently and proficiently**

Annotated Bibliography

and suggested sequence for reading

1080L “Our Lunar Legacy”

Author: Than, Ker; Hadhazy, Adam

Genre: Article, informational, lunar landings

Length: 1326

Synopsis: The article focuses on the proposal by U.S. congressmen to create a National Historical Park on the moon.

Step 4 on Checklist for Creating an Expert Pack

Citation: Than, K., & Hadhazy, A. (2013). Our Lunar Legacy. *Scholastic Math*. Math, 34(6). 8

<http://askri.org/> (1: click on the hyperlink, 2: enter the words "Our lunar Legacy" into the search bar, 3: scroll down to the article in Scholastic Math)

Cost/Access: \$0.00

Recommended Student Activities: Read Aloud and KWL chart

610L *The Moon Earth's Satellite*

Arthur: Daisy Allyn

Genre: Nonfiction

Length: 24 pages

Synopsis: Children briefly explore the surface of the moon, phases of the moon and astronauts with text features including large print, headings and photographs

Citation: Allyn, D. (2011). *The Moon Earth's Satellite*. New York, NY: Gareth Stevens Publishing

Cost: \$8.15 paperback, \$22.60 library binding

Recommended Student Activities: Quiz Maker

810L *Jump Into Science: Moon*

Author: Steve Tomecek

Genre: Narrative Nonfiction

Length: 32 pages

Synopsis: Moon struck cat and his firefly pal share several facts about the moon from historical false ideas to the facts science tells us today.

Citation: Tomecek, S.(2008). *Jump Into Science: Moon*. Washington D.C.: National Geographic

Cost/Access: \$6.95 paperback

Recommended Student Activities: Wonderings and optional Science Experiment: Making Craters (found on page 30-31)

N/A "Moon for Kids" 2/3

Author: Larry Sanger

Genre: Informational video

Length: 4:16

Synopsis: This short video explores the different sides and features of the moon including, mountains, and craters.

Citation: Moon for Kids Part 2 (Video file). (March 2015) Retrieved from <https://www.youtube.com/watch?v=hm1eL37gDGY>

Cost/Access: \$0.00

Recommended Student Activities: Pop Quiz

740L *The Moon Book*

Author: Gail Gibbons

Genre: Informational, nonfiction

Length: 28 Pages

Synopsis: Children learn about lunar phases, eclipses, lunar exploration, and the moon's effect on the Earth.

Citation: Gibbons, G. (1997). *The Moon Book*. New York: Holiday House.

Cost/Access: \$6.98 paperback, \$14.35 hardcover

Recommended Student Activities: A Picture of Knowledge

N/A "Lunar Cycle, Why the Moon Change Shapes, 8 Phases of The Moon, Learning Videos For Children"

Author: Kids Educational Games

Genre: Informational Video

Length: 6:58

Synopsis: Description of moon phases including: new moon, waxing crescent, first quarter, waxing gibbous, full moon, waning gibbous, third quarter, waning crescent

Citation: Lunar Cycle, Why the Moon Change Shapes, 8 Phases of the Moon, Learning Videos For Children March 2015 (Video file). Retrieved from <https://www.youtube.com/watch?v=NCweccNOago>

Cost/Access: \$0.00

Recommended Student Activities: Moon Journal

470L *The Moon Seems to Change*

Author: Franklyn M. Branley

Genre: Nonfiction

Length: 32 Pages

Synopsis: Because the moon revolves around Earth, it seems to grow and shrink. Children can read about the phenomena of the moon's phases.

Citation: Branley, F. M. (1987). *The Moon Seems to Change*. New York, NY: Harper Collins Publishers

Cost/Access: \$5.99 paperback, \$13.90 hardcover

Recommended Student Activities: Quiz Maker

760L *Astronaut Handbook*

Author: Meghan McCarthy

Genre: Narrative Nonfiction

Length: 40 pages

Synopsis: Explores all aspects of becoming an astronaut. Who can become an astronaut? What training is necessary? What do astronauts do? Includes drawings and diagrams.

Citation: McCarthy, M. (2008). *Astronaut's Handbook*. New York, NY: Knopf Books for Young Readers

Cost: \$12.23 hardcover

Recommended Student Activities: A Picture of Knowledge

470L *One Giant Leap*

Author: Robert Burleigh

Genre: Narrative Nonfiction

Length: 48 Pages

Synopsis: Neil Armstrong and Buzz Aldrin traveled 240,000 miles through space and set foot on the moon.

Citation: Burleigh, R. (2009). *One Giant Leap*. New York, NY: Penguin group

Cost: \$8.99 paperback, \$12.75 hardcover

Recommended Student Activities: A Picture of Knowledge

N/A "Moon for Kids" part 3

Author: Larry Sanger

Genre: Informational Video

Length: 7:49 total (begin viewing at 2:22 for 5:27 of viewing time)

Synopsis: Brief description of gravity and tides. The majority of the video is about the Apollo space mission highlighting the first astronauts.

Citation: Moon for Kids Part 2 (Video file). (March 2015) Retrieved from

<https://www.youtube.com/watch?v=JbxC3hmr3bY>

Cost: \$0.00

Recommended Student Activities: Wonderings

900L “Moon Walking”

Author: [Scholastic News](#)

Genre: Article, informational

Length: 913 words

Synopsis: Detailed information on the 40th anniversary of the July, 1969 Apollo 11 spacecraft's moon landing mission as well as a discussion on the success of the mission.

Citation: Moon Walking. (2009). *Scholastic News -- Edition 5/6, 77(23/24)*, 4

<http://support.ebscohost.com/> <http://askri.org/> (1- click the hyperlink, 2-enter the words, "moon walking scholastic news" into the search bar, 3- scroll down to the article)

Cost: \$0.00

Recommended Student Activities: “Sum It Up” and/or “What’s the Big Idea” Questions at the end of text

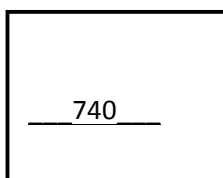
Supports for Struggling Students

By design, the **gradation of complexity** within each Expert Pack is a technique that provides struggling readers the opportunity to read more complex texts. Listed below are other measures of support that can be used when necessary.

- Provide a brief **student-friendly glossary** of some of the academic vocabulary (tier 2) and domain vocabulary (tier 3) essential to understanding the text
- Download the Wordsmyth widget to classroom computers/tablets for students to access student-friendly definitions for unknown words. <http://www.wordsmyth.net/?mode=widget>
- Provide brief **student friendly explanations** of necessary background knowledge
- Include **pictures or videos** related to the topic within and in addition to the set of resources in the pack
- Select a small number of texts to **read aloud** with some discussion about vocabulary work and background knowledge
- Provide **audio recordings** of the texts being read by a strong reader (teacher, parent, etc.)
- **Chunk the text** and provide brief questions for each chunk of text to be answered *before* students go on to the next chunk of text
- Pre-reading activities that focus on the **structure and graphic elements** of the text
- Provide **volunteer helpers** from the school community during independent reading time.

Text Complexity Guide*The Moon Book*, by Gail Gibbons**1. Quantitative Measure**

Go to <http://www.lexile.com/> and enter the title of the text in the Quick Book Search in the upper right of home page. Most texts will have a Lexile measure in this database. You can also copy and paste a selection of text using the Lexile analyzer.



2-3 band	420 -820L
4-5 band	740 -1010L
6-8 band	925 - 1185L
9 -10 band	1050 – 1335L
11 – CCR	1185 - 1385

2. Qualitative Features

Consider the four dimensions of text complexity below. For each dimension*, note specific examples from the text that make it more or less complex.

<p>The purpose of this book is to provide students with a basic understanding of the moon. The book addresses the phases of the moon and how the moon affects the rising and lowering of our oceans tides. The topography of the moon is explored: such as mountains, craters, valleys, and plains. Students are introduced to ancient peoples understanding of the moon and lunar exploration.</p> <p style="text-align: right;">Meaning/Purpose</p>	<p>The structure of this book is very user friendly. The information is organized in clear sections such as Solar Eclipse, Phases of the moon, and Moon Milestones.. The author uses headings, labels, and illustrations that are essential to understanding the text.</p> <p style="text-align: right;">Structure</p>
<p style="text-align: right;">Language</p> <p>The sentences are child friendly and the illustrations are clear, labeled, and directly enhance the text. The language demands are domain specific, with many unfamiliar words teaching young children about the moon. Included are academic and domain specific words.</p>	<p style="text-align: right;">Knowledge Demands</p> <p>The topics of this book with further develop a student's basic understand of the moon. An enhanced understanding of the moon, its purpose in our immediate solar system, and history of why astronomer's and astronauts want to study the moon and what they have learned is explored in a high interest text.</p>

3. Reader and Task Considerations

What will challenge students most in this text? What supports can be provided?

- The concept of the movement of the moon as it relates to earth and the sun. (phases)
- Academic vocabulary such as waxing and waning could prove challenging to students.
- Understanding the difference between a solar and lunar eclipse.
- Supports: Using models/props to demonstrate some of the more challenging concepts such as waning and waxing of the moon.
- Supports: Having students “act out” concepts such as the various phases of the moon so they can actually participate and “see” the concept in action.

*For more information on the qualitative dimensions of text complexity, visit http://www.achievethecore.org/content/upload/Companion_to_Qualitative_Scale_Features_Explained.pdf

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Learning Worth Remembering

Cumulative Activities – The following activities should be completed and updated after reading each resource in the set. The purpose of these activities is to capture knowledge building from one resource to the next, and to provide a holistic snapshot of central ideas of the content covered in the expert pack. *It is recommended that students are **required** to complete one of the Cumulative Activities (Rolling Knowledge Journal or Rolling Vocabulary) for this Expert Pack.*

1. Rolling Knowledge Journal

1. Read each selection in the set, one at a time.
2. After you read *each* resource, stop and think what the big learning was. What did you learn that was new *and important* about the topic from *this* resource? Write, draw, or list what you learned from the text about (topic).
3. Then write, draw, or list how this new resource added to what you learned from the last resource(s).

Sample Student Response

Title	Write, Draw, or List	
	New and important learning about the topic	How does this resource add to what I learned already?
1. "Lunar Legacy"	This article is the "hook" to prompt student interest in the expert pack by engaging them in the question "Should the U.S. create a national park on the moon. The article explains how each time the U.S. landed on the moon, they left certain artifacts. Other countries could land on the moon and destroy those artifacts and landing places so that history would not remember that the U.S. was the first to land on the moon.	
2. <i>The Moon: Earth's Satellite</i>	physical features and general characteristics of the moon	The illustrations show the different phases of the moon and how the moon impacts the earth in many ways including the tides.
3. <i>Jump Into Science: Moon</i>	compares the moon to the Earth and provides visuals of what the moon looks like	People had strange beliefs about the moon until Galileo learned the truth that moon was very much like our Earth.
4. The Moon Part 2/3	Observe the far side and near side of the moon as well as observe Maria and rays	The far side of the moon never faces the Earth. We only see the

		near side of the moon. The moon surface has Maria, craters and mountains.
5. <i>The Moon Book</i>	What the moon looks like through its many phases, different eclipse and tides	The shadows on the moon's surface show a man's face. Legend says the man was imprisoned there for stealing.
6. Lunar Cycle, Why the Moon Changes Shape, 8 Phases of the Moon	The position of the moon in orbit is why the moon seems to change shape.	There are 8 phases of the moon including new moon, waxing gibbous, full moon and waning gibbous.
7. <i>The Moon Seems to Change</i>	How the moon effects the Earth	The shape of the moon changes. The moon revolves around the Earth in about 4 weeks. The moon changes the Earth's tides.
8. <i>The Astronaut Handbook</i>	It takes a lot of training to become an astronaut. There are many tools necessary for space travel.	There are some astronauts that train to fly the space shuttle, others conduct experiments, and others fix satellites.
9. <i>One Giant Leap</i>	The first moon exploration; when it happened, what it was like and who was involved.	There were three astronauts that first went to the moon. Buzz Aldrin and Neil Armstrong explored the moon. Michael Collins was in the command module.
10. The Moon Part 3/3	The take-off of Apollo 11 and what the astronauts saw in the moon.	Rocket parts called stages drop off as they use fuel.
11. "Moon Walking"	July 2009 was the 40 th anniversary of the first astronauts landing on the moon.	Neil Armstrong and Buzz Aldrin spent 2 hours and 14 minutes on the moon and gathered 47 pounds of rocks. They left the US flag as an artifact on the moon.

2. Rolling Vocabulary: “Sensational Six”

- Read each resource then determine the 6 words from each text that most exemplify the central idea of the text.
- Next use your 6 words to write about the most important idea of the text. You should have as many sentences as you do words.
- Continue this activity with EACH selection in the Expert Pack.
- After reading all the selections in the Expert Pack, go back and review your words.
- Now select the “Sensational Six” words from ALL the word lists.
- Use the “Sensational Six” words to summarize the most important learning from this Expert Pack.

Title	Six Vocabulary Words & Sentences
Lunar Legacy	<p>Words: national park, lunar landings, rover, artifacts, natural resources, disturb, preserve</p> <p>Sentences:</p> <ol style="list-style-type: none">1. The United States government may be looking to establish a <u>national park</u> on the moon.2. Each time the astronauts made a <u>lunar landing</u>, they left different artifacts such as flags, golf clubs and <u>rovers</u>.3. The government is looking to preserve and protect the <u>artifacts</u> left by our astronauts.4. Some companies want to mine the moon for <u>natural resources</u> while tourists could visit the moon by the year 2020.5. Astronauts from other countries along with the mining companies and tourists could <u>disturb</u> any one of the six Apollo landing sites.6. Our government wants to <u>preserve</u> our country’s place in being the first to send men to the moon.
<i>The Moon: Earth’s Satellite</i>	<p>Words: moon, orbit, surface, craters, phases, astronaut</p> <p>Sentences:</p> <ol style="list-style-type: none">1. The <u>moon</u> is a little planet.2. It <u>orbits</u> or travels around the Earth in a circle.3. The <u>surface</u> of the moon is covered in rocks and dust.4. <u>Craters</u> on the surface of the moon were created when space rocks crashed into the moon long ago.5. The moon changes as sunlight hits it and shines off it. The different shapes are called <u>phases</u>.6. The first American <u>astronauts</u> landed on the moon in 1960.
<i>Jump Into Science: Moon</i>	<p>Words: beliefs, orbit, craters, lunar surface, meteorites, reflect, phases</p> <p>Sentences:</p> <ol style="list-style-type: none">1. Many people had strange <u>beliefs</u> about the moon; but scientific research discovered that the Earth and the moon have some things in common.2. For example, the moon <u>orbits</u> around the Earth just like the earth orbits around the sun.

	<ol style="list-style-type: none"> Research also discovered that the craters on the lunar surface are much larger than those on the earth. They are both caused by meteorites. Another discovery is that people on earth always see the light side of the moon because light from the sun reflects off only one side of the moon. When it looks like it changes shape, scientists call these phases.
<i>Moon for Kids part 2/3</i>	<p>Words: near side, far side, plains, Maria, craters, meteors, rays</p> <p>Sentences:</p> <ol style="list-style-type: none"> The moon has two sides, the near side that always faces the earth and the far side that always faces away from the earth. The near side has areas of large flat plains. One large flat plain is called a mare; more than one is called Maria. The moon also has moon mountains and craters of different sizes. Craters are formed when meteors hit the moon. The crater Copernicus has many rays coming out of it.
<i>The Moon Book</i>	<p>Words: moon, star, planet, satellite, orbit, eclipse</p> <p>Sentences:</p> <ol style="list-style-type: none"> The moon is a rock-satellite that is about $\frac{1}{4}$ of the size of Earth and orbits around the Earth A star is made up of gases and when they burn, the star gives off light and heat. A planet revolves around a sun and reflects light. A satellite is a smaller object that travels in a pattern around a larger object. An object that circles around another object, in a predictable pattern, is said to be in an orbit around it. There are two types of eclipse. A Solar Eclipse is when the moon is directly between earth and the sun. A Lunar Eclipse is when the earth is directly in between the sun and the moon.
Lunar Cycle, Why the Moon Changes Shape, 8 Phases of the Moon	<p>Words: observe, spherical shape, revolves, new moon, full moon, illuminate</p> <p>Sentences:</p> <ol style="list-style-type: none"> Observe the moon in the night sky and notice it doesn't always look the same. The moon always has a spherical shape like a basketball. As revolves around the Earth, it seems to change shape. The new moon is the first phase when it is not visible from the Earth The full moon is the last phase, and looks like a full round circle. The sun illuminates the half of the moon that faces the Earth.
<i>The Moon Seems to Change</i>	<p>Words: phases, crescent moon, quarter moon, full moon, waning moon, waxing moon,</p> <p>Sentences:</p> <ol style="list-style-type: none"> The moon goes through phases, as it travels around the earth. When you can only see a slice of the moon it is called a crescent moon. When you can only see $\frac{1}{2}$ of the moon it is called a quarter moon. A full moon is when you can see the entire moon. As a moon gets gradually smaller, over time, it is called a waning moon.

	<p>6. As a moon gets gradually bigger, over time, it is called a waxing moon.</p>
<i>The Astronaut Handbook</i>	<p>Words: astronauts, boarding, quarters, engineers, balanced, flight suit</p> <p>Sentences:</p> <ol style="list-style-type: none"> 1. Astronauts are men and women that study and travel into space. 2. Before boarding a space shuttle, astronauts need special training. 3. Astronauts work, sleep and eat in tight quarters. 4. Astronauts who decide to become engineers practice working with machines. 5. A balanced diet is important for an astronaut to stay strong during the trip. 6. An astronaut's flight suit is worn for take-offs and landings.
<i>One Giant Leap</i>	<p>Words: descend, landscape, conserve, gaze, sextant, navigate</p> <p>Sentences:</p> <ol style="list-style-type: none"> 1. The lunar module descended toward the moon. 2. The landscape of the moon is covered in craters. 3. Astronauts conserved fuel so they would have enough to land safely. 4. Buzz Aldrin gazed at the pitted, cratered landscape of the moon. 5. Michael Collins uses a sextant to guide him as he navigates the moon.
Moon for Kids part 3/3	<p>Words: Apollo, Apollo11, Mission Control, Lunar module, Command Module, atmosphere</p> <p>Sentences:</p> <ol style="list-style-type: none"> 1. The Apollo program was a United States space program which accomplished landing humans on the moon. 2. The Apollo 11 was the first American spacecraft to reach the moon. 3. The astronauts took their directions from Mission Control. 4. Buzz Aldrin and Neil Armstrong explored the moon in the Lunar Module. 5. Michael Collins remained in the Command Module while the other astronauts explored the moon. 6. The space shuttle took off into the atmosphere.
"Moon Walking"	<p>Words: anticipation, hover, tremendous, accomplishment, meteor, surrender</p> <p>Sentences:</p> <ol style="list-style-type: none"> 1. U.S. citizens watched with much anticipation as the space shuttle prepared to launch. 2. The astronauts hovered in the air weightless. 3. The astronauts took tremendous pride in become the first humans to explore the moon. 4. Landing on the moon was quite an accomplishment. 5. A meteor crashed into the moon causing an enormous crater. 6. The astronauts never surrendered the idea of exploring the moon; they knew they could do it.

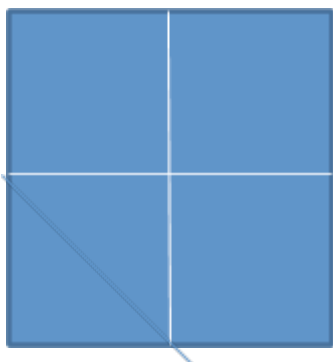
Sensational Six	Moon, orbit, phases, surface, crater, astronaut
Summary:	The moon is a like a small planet that orbits , or travels, around the Earth in a circle. The surface of the moon is covered with dust, rocks, and craters . Craters were made from space rocks or meteors hitting the moon long ago. As the moon orbits the Earth, it appears to change shape. This is called the moon phases . There are 8 phases of the moon. People that study and travel to the moon are called astronauts .

Learning Worth Remembering

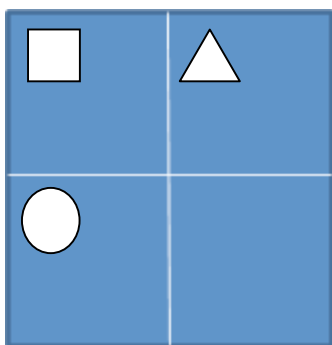
Singular Activities – the following activities can be assigned for each resource in the set. The purpose of these activities is to check for understanding, capture knowledge gained, and provide variety of ways for students to interact with each individual resource. Students may complete some or none of the suggested singular activities for each text. Singular activities should be assigned at the discretion of the teacher.

1. A Picture of Knowledge (Recommended for *The Moon Book*; *Astronaut Handbook*; *One Giant Leap*)

- Take a piece of paper and fold it two times: once across and once top to bottom so that it is divided into 4 quadrants.



- Draw these shapes in the corner of each quadrant.



- Square
- Triangle
- Circle
- Question Mark

- Write!

Square:

What one thing did you read that was interesting to you?

Triangle:

What one thing did you read that taught you something new?

Circle:

What did you read that made you want to learn more?

Question Mark: What is still confusing to you? What do you still wonder about?

- Find at least one classmate who has read [selection] and talk to each other about what you put in each quadrant.

2. Quiz Maker (Recommended for *The Moon: Earth's Satellite*; *The Moon Seems to Change*)

- Make a list of # questions that would make sure another student understood the information.
- Your classmates should be able to find the answer to the question from the resource.
- Include answers for each question.
- Include the where you can find the answer in the resource.

Question	Answer
1.	
2.	
3.	

3. Wonderings (Recommended for *Jump Into Science: Moon* and *Moon for Kids Part 3*)

On the left, track things you don't understand from the article as you read.

On the right side, list some things you still wonder (or wonder now) about this *topic*.

I'm a little confused about:	This made me wonder:

4. Pop Quiz (Recommended for *Moon for Kids part 2*)

Answer the following questions.

Question	Possible Answer
1. How many sides of the moon are there?	2
2. Which side of the moon is visible from the Earth?	Near side

3. What does the surface of the moon look like?	Maria, craters, mountains
4. How are craters formed on the moon?	Meteorites hit the moon surface

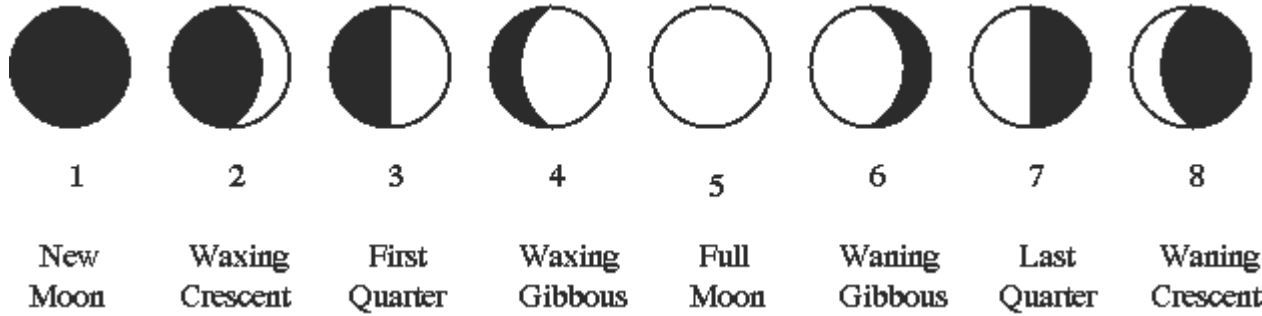
Additional Resource:

1. Teachers can choose to use the moon journal in its entirety for 24 days or;
2. Teachers can only use the moon journal for additional 12 days with the understanding that students will not view all the phases of the moon or
3. Teachers can complete 12 days and students can complete for their own learning after the completion of the text set.

My Moon Journal

Name: _____

Record the date and time that you observe the moon. Then draw a picture of what the moon looks like. Use the chart below to determine what kind of moon it is.



Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____
Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____
Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____
Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____	Date: _____ Time: _____

5. **K-W-L Chart** (Recommended for *Our Lunar Legacy*)

After reading ***Our Lunar Legacy***, complete the columns labeled “What I Know” and “What I Want to Know.”
Complete the last column labeled “What I Learned” after completing all your research.

The Moon		
What I Know	What I Want to Know	What I Learned

Expert Pack: All Eyes on the Moon

Submitted by: Providence Public School District

Grade: 2

Date: May 2015

Expert Pack Glossary

Our Lunar Legacy

<i>Word</i>	<i>Student-Friendly Definition</i>
National Park	An area of land that is owned and protected by a national government because of its natural beauty or its importance to history or science.
artifacts	The objects left by astronauts on the moon to show that they had been there.
landing sites	Lunar landing sites are places on the moon where the spaceships landed.
lunar missions	A task or job someone is given to do on the moon is a lunar mission.
tourists	Tourists are people who travel to a place for pleasure.
surface	The upper layer of an area of land or water is called the surface.
NASA	National Aeronautics and Space Administration – a US governmental organization responsible for space travel and research.
rovers	A vehicle used for exploring the surface of a moon or planet. A rover was used to explore the moon.
disturb	To interrupt or interfere with something means to disturb. A spacecraft landing on the moon could disturb historical objects.
decade	A decade is a period of ten years.
natural resources	Natural resources are found in nature and are valuable to humans; for example, water, iron, and gems.
locations	Locations are places people choose for a particular purpose.

The Moon: Earth's Satellite

<i>Word</i>	<i>Student-Friendly Definition</i>
astronaut	An astronaut is someone who works or lives in space.
crater	A crater is a bowl-shaped hole on the surface of a planet or moon. Scientists believe the crater was created by a meteorite thousands of years ago.
gravity	Gravity is the force that pulls objects toward the center of a planet or moon.
Solar System	The sun and all the space objects that orbit it, including the planets and their moons make up the Solar System.
moon	The moon is the large round object that circles the Earth and that shines at night by reflecting light from the sun.
orbit	To orbit means to go around something such as the sun. The moon will orbit or travel in a circle or oval around the Earth.

phases	The phases of the moon are the shape of the part of the moon that is visible at different times during a month. There are 8 phases of the moon.
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Jump Into Science: Moon

<i>Word</i>	<i>Student-Friendly Definition</i>
beliefs	A belief is something believed to be true or right.
telescope	A telescope is a device shaped like a long tube that you look through in order to see things that are far away. The scientists could clearly see the moon using the telescope.
meteorites	Meteorites are pieces of rock or metal that has fallen to the ground from outer space.
lunar surface	The top layer of the moon is called the lunar surface. The lunar surface is covered with dust.
distance	The amount of space is the distance between two places or things. The distance between the Earth and the moon is 239 thousand miles.
far side	The side of the moon that is always facing away from the Earth is the far side of the moon. We never see the far side of the moon.
reflect	To reflect means to move in one direction, hit a surface, and then quickly move in a different and usually opposite direction. The moon is bright because it reflects the sun light.
crescent moon	The crescent moon is the shape of the moon when it is less than half full. Here is an example of a crescent moon.

The Moon part 2/3

<i>Word</i>	<i>Student-Friendly Definition</i>
near side	The side of the moon that is closest to the earth is called the near side of the moon. We can see the near side of the moon from Earth.
plain	A large area of flat land without trees is a plain. The smooth dark plains on the moon are covered in rocks.
mare	A large plain on the moon is a mare.
rays	A ray is a line or group of lines from the same center starting point.
spacecraft	A spacecraft is a vehicle used for travel in outer space.

The Moon Book

<i>Word</i>	<i>Student-Friendly Definition</i>
moon	The moon is the large round object that circles the Earth and that shines at night by reflecting light from the sun.
star	A star is any one of the objects in space that are made of burning gas and that look like points of light in the night sky.

planet	A planet is a large, round object in space (such as the Earth) that travels around a star (such as the sun).
satellite	A satellite is an object (such as a moon) that moves around a much larger planet, moon, or sun.
eclipse	An eclipse occurs when the sun looks like it is completely or partially covered with a dark circle because the moon is between the sun and the Earth.
tide	The tide is the upward and downward movement of the ocean that is caused by the pull of the Sun and the Moon on the Earth.
astronomer	An astronomer is a person that studies stars, planets, and other objects in outer space.

Lunar Cycle, Why the Moon Changes Shape, 8 Phases of the Moon

<i>Word</i>	<i>Student-Friendly Definition</i>
observe	To see, watch or notice something means to observe. We can observe the moon by watching carefully.
sun	The sun is the star that the Earth moves around and gives the Earth heat and light.
Earth	The third planet from the sun. We live on the planet Earth.
spherical	The moon has a round or spherical shape.
revolves	Revolve means to turn around a center point.
full moon	The full moon appears as a bright circle.
Gibbous moon	A gibbous moon is more than half full.
waxing	The moon is waxing when it appears to become larger or more full. The moon is waxing when the lit surface we see is getting bigger.
waning	The moon is waning when it appears to become thinner or less full. The moon is waning when the lit surface we see is getting smaller.
new moon	When there is a new moon it is completely dark.
illuminates	Illuminate means to shine light on something.

The Moon Seems to Change

<i>Word</i>	<i>Student-Friendly Definition</i>
Quarter Moon	The quarter moon is the shape of the moon when the sun lights up only half.

Astronaut Handbook

<i>Word</i>	<i>Student-Friendly Definition</i>
boarding	The astronauts are boarding or getting into/onto the space shuttle.
conduct	Astronauts conduct or plan to do research on the moon.
quarters	Astronauts live in tight quarters on the space shuttle.
portable	Portable is something that is easy to carry or move around.
flight suit	An astronaut's flight suit is one piece garment worn by a pilot or crew member.
engineers	Engineers are people trained to repair electrical or mechanical equipment.

One Giant Leap

<i>Word</i>	<i>Student-Friendly Definition</i>
descend	The space shuttle will descend or come down from the moon.
landscape	The landscape is an area of land that has a particular quality or appearance.
gaze	to look at someone or something in a steady way and usually for a long time
ridges	Ridges are raised parts on the surface of the moon. The ridges on the moon can be miles long.
boulder	Boulders are very large rocks. It was impossible to move the large boulder.
altitude	The height of something above the level of the sea is its altitude. We are flying at an altitude of 10,000 feet above sea level.
conserve	Conserve is to use something carefully in order to prevent loss or waste.
precious	Something that is very valuable or too important to be wasted is precious.
eternity	Eternity is time without an end.
exploration	During a space exploration, scientist study and explore space.
navigate	Astronauts navigate through space to get to the moon.
ascend	Ascend means to rise or move toward the sky.
sextant	A sextant is an instrument used to determine the position of a ship or airplane by measuring the positions of the stars and sun.

Moon for Kids Part 3/3

<i>Word</i>	<i>Student-Friendly Definition</i>
Apollo	Apollo is an American Space Program.
Apollo 11	The first American spacecraft to reach the moon. Apollo 11 put the first men on the moon.
Neil Armstrong	One of the first American astronauts to explore the moon was Neil Armstrong.
Buzz Aldrin	Another of the first American astronauts to explore the moon was Buzz Aldrin.
Michael Collins	The astronaut that flew the first American spacecraft to the moon. He flew the

Step 6 on Checklist for Creating an Expert Pack

	Command Module around the moon while Neil Armstrong and Buzz Aldrin explored the moon.
atmosphere	The atmosphere is a mass of gases that surround a planet or star.
Command Module	The main part of a spacecraft is called the command module.
Lunar Module	A lunar module is a space vehicle used to land on the moon.
Mission Control	The building that controls all space travel from Earth. It is located in Houston, Texas

Moon Walking

<i>Word</i>	<i>Student-Friendly Definition</i>
hover	Hover means to remain in one place in the air.
accomplishment	An accomplishment is something done, achieved, or accomplished successfully.
tremendous	Tremendous is very large.
anticipate	Anticipate means to expect something to happen and be prepared for it.
surrender	To surrender is to give control to someone else.
meteor	A meteor is a space rock.
Shock wave	A shock wave is a movement of extremely high air pressure that is caused by an explosion.