<u>Astronomy 3 - Our Moon:</u> <u>Phases, Eclipses, Seasons, & Tides</u>

I. Moon Phases
A. "The Glory Days" and "In the Shadow of the Moon" Video reflection
B. Moon Phases Vodcast - PP
C. "Phases of the Moon" Gizmo - 📅
D. Moon Phase Identification drawings - 💶
E. Lollipop Phases of the Moon activity
F. "Luna and Other Moons" Book Activity
G. "Ordinary Supermen" 9-square note-taking - 🛺
H. "Landing the Eagle" 9-square note-taking - T
II. Eclipses
A. Eclipses Vodcast - P
B. Eclipses online - upcoming solar and lunar eclipses
C. "Eclipse" Gizmo - 🚻
D. Moon Phases and Eclipse Standard Check Percent Score
III. Seasons
A. Seasons Vodcast
B. Seasons Blog Response
C. "Summer and Winter" Gizmo - P
D. What Causes the Seasons? Lab - 🕶
E. A Trip Around the Sun lab - "
F. Seasons Review - 🔼
IV. Tides
A. Tides Vodcast - PV
B. "Ocean Tides" Gizmo - 🕶
C. Tides Review
D. Chapter 14-4 Questions - 🔁
E. Tides and Seasons Standard Check Percent Score
V. Review and Assessment
A. "Earth, Moon, and Sun Effects" Ediscio Flash Cards/Quizlets
B. Seasons and Tides Essay Questions/Blog Response
C. "Moons Review Games"
D. Eclipses, Moons, Seasons, and Tides Standard Check Percent Score
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I-A. "The Glory Days" and "In the Shadow of the Moon" Video reflection

Write a reflection after the video clip about the following prompt:

What would it have been like to be an astronaut on Apollo 11?

Would you have been nervous/scared/excited/etc?

I-B. Moon Phases Vodcast --

Please see your **Astronomy 3 PP** to complete this assignment!

I-C. "Phases of the Moon" Gizmo --

Go to www.explorelearning.com on a computer and log in to the account. Log-in using the username and password information provided below (please note that this will change eventually). Next, search for the "Phases of the Moon" Gizmo. Launch it. Follow the directions in your Astronomy 3 PP to complete this Gizmo. It's fun.

username: mustangsci password: mustangsci

I-D. Moon Phase Identification Drawings -- 🕶

If you can figure this out, you will know the moon phases really well. Turn the paper (this learning opportunity is in the Astronomy 3 PP) so that you can get a good view of what a person would see from Earth. Be sure to check with your teacher when you're done.

I-E. Lollipop Phases of the Moon activity

We'll do this activity as a class.

Take one lick of your lollipop. (It is the moon.) Hold it with an outstretched arm. Your head is the Earth. The overhead light is the sun. What happens as the moon (lollipop) *revolves* around the Earth (your head)? Observe the moon phases changing as you turn around 360°.

I-F. Luna and other Moons Book Activity

Open a red science textbook to Chapter 21, section 4. Use this section to help you find the answers to these questions and gain more knowledge about moons.

1. Why are there craters on the moon?

- 2. What is the most widely believed theory of how our moon, Luna, originated?
- 3. List at least 3 traits of other moons that are found on different planets.

I-G. "Ordinary Supermen" 9-square note-taking

What I already know about the topic	Title of Video:	What I want to know about the topic
	When We Left Earth	
	Part One	
	Ordinary Supermen	
Main Idea: What are the reasons we would want to send a human to outer space? Why was this so important?	Main Idea: What are some of the challenges to becoming (and remaining) an astronaut? What qualities are the most important?	Main Idea: Describe the positives and negatives to being one of the first people in space.
Details:	Details:	Details:
Do you have a favorite Mercury astronaut? (Alan Shepherd, Gus Grissom, John Glenn, or Scott Carpenter) Why?	Picture/Graphic of What I Learned:	New Things I Learned:

I-H. "Landing the Eagle" 9-square note-taking

What I already know about NASA and the Apollo missions	Title of Video:	What I want to know about NASA and the Apollo missions
	When We Left Earth Part Three Landing the Eagle	

Main Idea: The crew of Apollo 1	Main Idea: When Bill Anders of	Main Idea: Why couldn't the
was killed during a training	Apollo 9 first saw images of our	astronauts of Apollo 11 initially land
simulation. How did NASA	planet from the moon he said, "We	the Lunar Module as planned?
respond to the situation?	came to discover the moon, but we	
	were discovering the Earth." What	
	did he mean by this comment?	

Details:	Details:	Details:
What reasons are there for landing on the moon and exploring it more? Should we go back again in the future? Why or why not?	Picture/Graphic of What I Learned:	New Things I Learned:

II-A. Eclipses Vodcast

The notes for this vodcast require some illustration, which is at times is a better way to explain/remember what's happening in science than written words. Hence, you may use your paper packet for these notes.

	Eclipses online - upo	•	ir ana lunar eclipses
http://w	ww.mreclipse.com/Special/SEpr When is the next solar ec		Where will it occur?
http://w	ww.mreclipse.com/Special/LEpi		
			Where will it occur?
II-C.	"Eclipse" Gizmo (not	3D or 2D versions	s)
	•		cause of solar and lunar eclipses as you complete
	this in your paper pack	_	, , , ,
II-D.	Moon Phases and E	clipse <u>Stan</u>	dard Check
III-A.	Will you be retaking this How did/can you master Seasons Vodcast	answer incorre standard chec the concepts	ectly? :k? in this standard check?
	Science Holiday	Date	What happens?
Cumr	mer Solstice		
Julili	ner sotstice		
		<u>'</u>	
Winte	er Solstice		
Verna	al Equinox		
Autu	mnal Equinox		
Autu	milat Equiliox		
		** ** 1 1	
∟xpıaı	n (in your own words) Why	it is colder he	ere than it is at the equator:

Why do we have a change of seasons?

III-B. Seasons Blog Response (complete this on your science blog site)

- 1. Describe what would be different if the following were changed:
 - -if Earth's axis was not tilted (straight up and down)?
 - -if Earth was a different distance from the Sun?
 - -if Earth rotated faster or slower?

2. Would you like any of these changes?

III-C. "Summer and Winter" Gizmo

Get together with a partner and collaboratively work through this gizmo on the paper packet. The angle of sunlight is a key to our seasons.

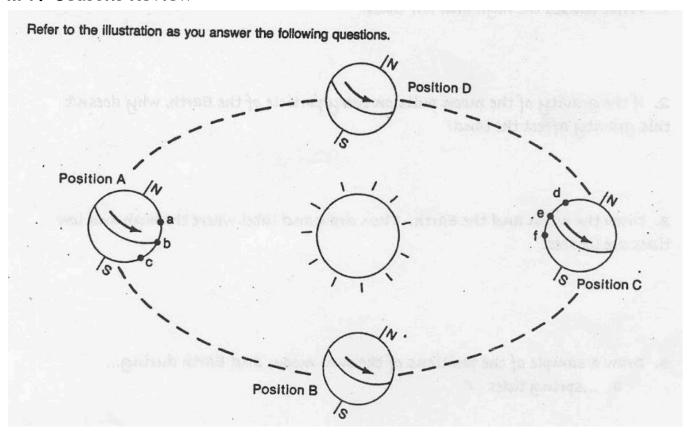
III-D. What Causes the Seasons? Lab

Find a partner. Find an instruction sheet. Read the instructions. Record the data (on your paper packet). Answer the questions. Learn science. Understand seasons. Easy as A, B, C!

III-E. A Trip Around the Sun lab

The resources will be distributed to you on the day that the class does this lab. The write-up for it will be on the paper packet.

III-F. Seasons Review



Position A

1	On about what	date would the	Earth be at this	s nosition?
	. On about what	. uate would the	ב במונוו טכ מנ נווו:	DOSILIOII:

- 2. What season is it in the Northern Hemisphere? _____
- 3. What season is it in the Southern Hemisphere? _____
- 4. Would city a, b, or c have the longest day? _____ Shortest day? _____

Position B

1	On a	hout	what	date	would the	Farth h	e at this	position?
Ι.	Ulla	เบบนเ	wnat	uate	would life	Laitii L	בוווז אל מני	DOSILIOIIS

- 2. What season is it in the Northern Hemisphere? _____
- 3. What season is it in the Southern Hemisphere? _____

Position C

- 1. On about what date would the Earth be at this position? ____
- 2. What season is it in the Northern Hemisphere? _____
- 3. What season is it in the Southern Hemisphere? _____
- 4. Would city d, e, or f have the longest day? _____ Shortest day? _____

Position D

- 1. On about what date would the Earth be at this position? ____
- 2. What season is it in the Northern Hemisphere? _____
- 3. What season is it in the Southern Hemisphere? _____

That's it. You're done with this activity, except for the part where you check your answers to make sure they're right. Check out the key and then bring it back.

IV-A. Tides Vodcast

The notes for this vodcast require some illustration, which is at times is a better way to explain/remember what's happening in science than written words. Hence, you will use your paper packet for these notes.

IV-B. "Ocean Tides" Gizmo

This is an optional Gizmo that you can view with a computer and your paper packet. Maybe skip it for now, but if you find that you "don't get" tides you could check it out later. Then you'll totally get it.

IV-C. Tides Review



Using these pictures and the following info, attempt to answer the numbered questions.

- Both pictures were taken from the same exact spot by Mr. Hoegh (The zoom for both snapshots was the same, too). The picture on the left was taken at about 2 o'clock in the afternoon. The picture on the right was taken 5 1/2 hours later, at 7:30 pm.
- The high temperature on this day in Puerto Vallarta, Mexico was about 85 degrees F. I tell you this not because daytime temperature influences tides. I tell you this so that might be jealous, and that you might be reminded that this snowy, frigid winter will not last forever.
- The moon phase on this particular day was a "New Moon".
- 1. What causes high tides and low tides?

2.	Approximately how many high tides would there be on this day? How many low tides would there be?
3.	On the day when the picture was taken, was there a Spring or Neap tide? If so, which one? <i>How do you know this?</i>
IV-D.	Chapter 14-4 Questions This learning opportunity is on the paper packet.
	Grab an answer key and make sure your answers are correct.
IV-E.	Tides and Seasons <u>Standard Check</u>
	What was your score on this standard check? Which questions did you answer incorrectly? Will you be retaking this standard check? How did/can you master the concepts in this standard check?
V-A.	"Earth, Moon, and Sun Effects" Ediscio Flash Cards/Quizlets
	Statistics: # of flashcards known: # of flashcards unknown:
V-B.	Seasons and Tides Essay Questions/Blog Response
course	Go to your team's science blog. There might be a couple of questions to answer. Show the how much you know about the causes of seasons and tides. The world needs to know. Of your comment doesn't have to be published. Just say "PDP" at the end of the comment. But the world needs to know.
V-C.	"Moons Review Games"
and its	Go to S:\Students\8th Grade Science\4 Astronomy. You will find some games about the moon seffects on Earth. Play them. <i>Learn</i> more about this stuff. Keep track of your high scores.
V-D.	Eclipses, Moons, Seasons, and Tides Standard Check
	What was your score on this standard check?

Which questions did you answer incorrectly?	
Will you be retaking this standard check?	
How did/can you master the concepts in this standard check?	