

Moon Phases

Cornell Doodle Notes FREE SAMPLER

TEACHER NOTES

These scaffolded Cornell Doodle Notes combine two effective note-taking strategies and can be used to teach about how and why we can see the Moon from the Earth, how much of the Moon is always lit up by the Sun, the terms waxing, waning, crescent, gibbous, and quarter moon and tricks for remembering what these terms mean, and how the Moon phases are related to the Moon's position relative to the Sun as seen from the Earth. Graphic organizers and diagrams help students understand these concepts. These notes were designed to align with NGSS Standards MS-ESS1-1 (Develop and use a model of the Earth-Sun-Moon system to describe the cyclic patterns of lunar phases, eclipses of the Sun and Moon, and seasons.).

Cornell Notes are a note-taking strategy in which topic questions are written in a narrow left-hand column and definitions, explanations, and diagrams are filled in in the right-hand column. At the bottom of Cornell Notes, there is typically a section included for reflection on the lesson's main points. See the example to the right.

Doodle Notes are another note-taking strategy for which pictures and graphics activate the visual pathways of the brain, which helps with retention of information when compared to standard note-taking. Your visual learners will really benefit from seeing and coloring in the pictures aside the main points of the notes!

*Doodle Notes is a registered trademark used with permission.
See DoodleNotes.org for more details.*

The sample shows a Cornell Notes template with a 'CUES' column on the left, a 'NOTES' column in the middle, and a 'USED FOR REVISIT STUDY' column on the right. The 'NOTES' column contains a diagram of the Moon's phases and a table of the phases. The 'USED FOR REVISIT STUDY' column contains a diagram of the Moon's phases and a table of the phases. Below the template is a 'Doodle Notes' page titled 'THE MOON PHASES' with a 'VOCAB' section, 'TOPIC QUESTIONS', and a diagram of the Moon's phases.



SEE THE PRINTING TIPS ON PAGE 3

On the following pages, you will find 2 versions of the Cornell Doodle Notes:

KEY The KEY : All notes and "answers" are included on this version



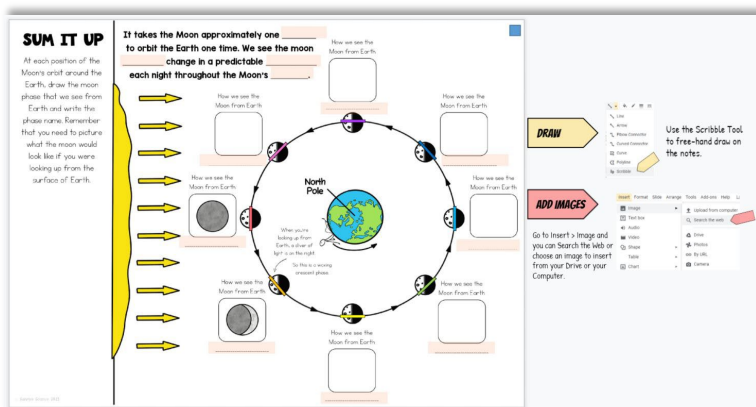
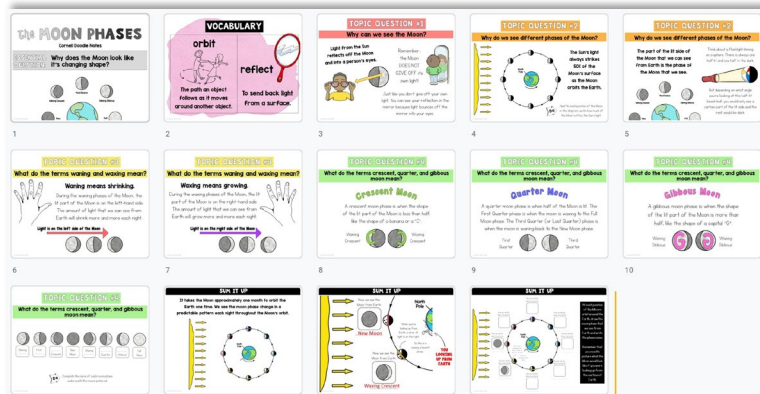
Green Circle : Use this version for your lower-level students who need more support, take more time, or who are learning English as a second language...they will have to fill in missing words

If you are satisfied with this **FREE SAMPLER** product, you may be interested in the **complete version** of this resource, which includes:

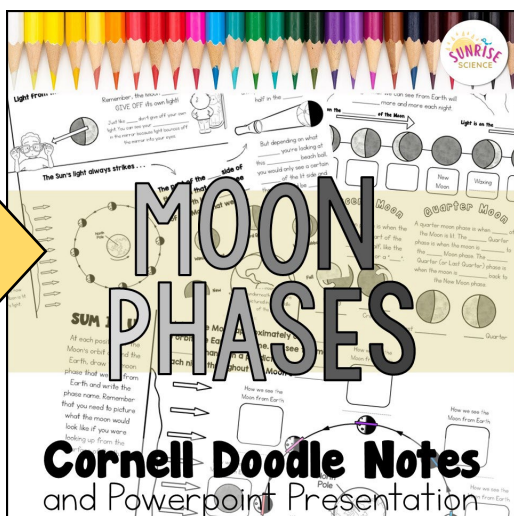
1 Another version (Blue Square) of the notes for which students will write each of the topic questions in the left column and they will have to fill in more words and sentences throughout the notes

2 14-slide editable and animated Powerpoint AND Google Slides presentations; this will make it possible to share the presentation with your students, which opens up opportunity for small group learning, leveled grouping using the scaffolded notes, and flipped-classroom learning!

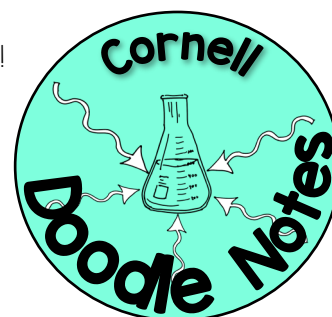
3 A completely digital, Google Slides Version of the notes



CLICK
HERE



You may also be interested in my other Cornell Doodle Notes products!
Click on the picture to the right!



Thank you to these amazing artists!



Thank you for downloading this freebie! Please feel free to email me at karla@SunriseScienceClassroom.com with any questions or concerns! © Sunrise Science 2026



Printing Tips!

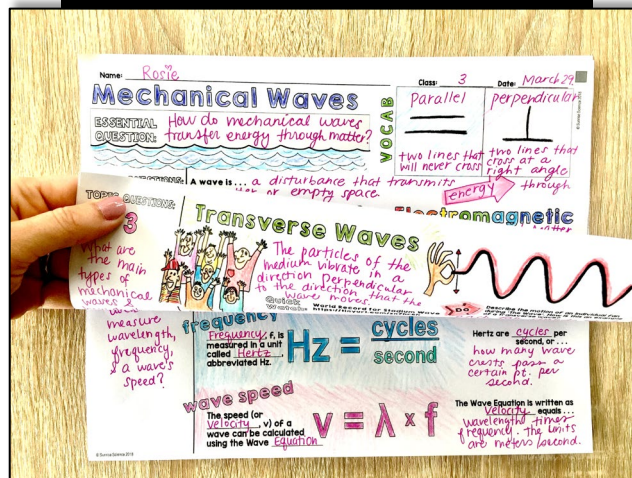
It depends how you'd like your students to use these notes. They can be printed one-sided and folded up into an interactive notebook, or you can print them double-sided and have students keep them in binders/folders.

If you print them double-sided, this is what I suggest doing:

- In the print settings on Adobe/Reader, keep the "Auto Orientation" button selected
- Click "FLIP ON LONG EDGE" and FIT to page
- Type in the page numbers that you'd like to print and the number of copies
- You can also print the pages one-sided and run them double-sided through your school's copy machine!
- Either way, I also suggest selecting "Fit to Printable Area" so that the notes take up the maximum amount of paper space!

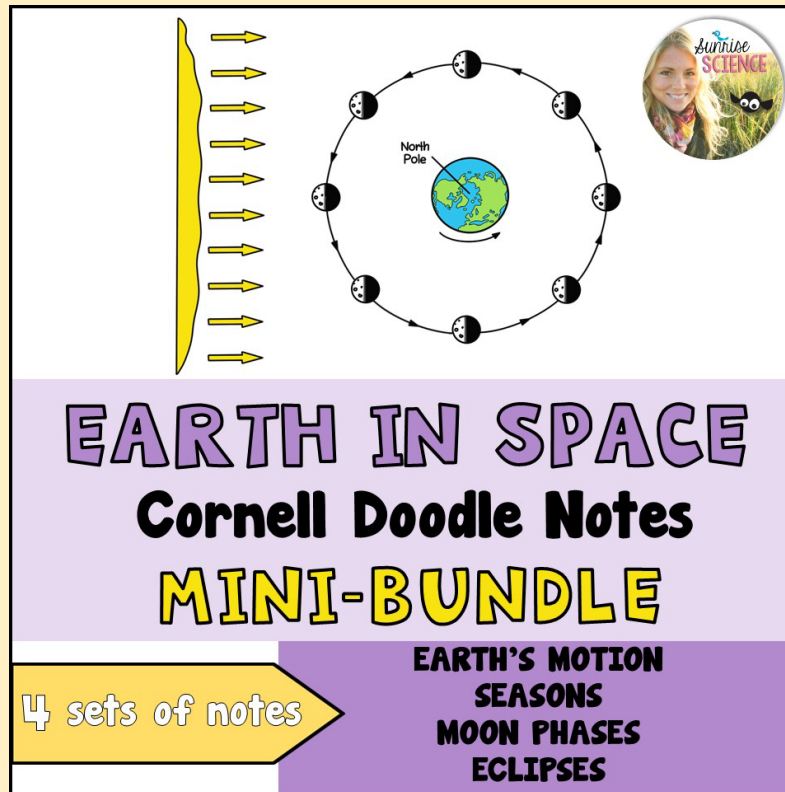
Printing the notes this way will avoid your students having to rotate their paper when they go to the next side. Instead, they will flip and the left and right columns will be in the same place!

Example notes printed back-to-back



(This is a different resource!)

You may also be interested in this mini-bundle of Cornell Doodle Notes, which cover Earth's Motion, Seasons, Moon Phases, and Eclipses!:



The MOON PHASES

ESSENTIAL QUESTION:

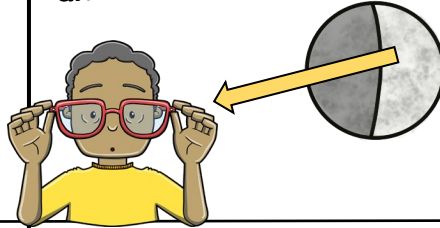
Why does the Moon look like it's changing shape?

TOPIC QUESTIONS:

1

Why can we see the Moon?

Light from the Sun reflects off the Moon and into a person's eyes.



Remember, the Moon DOES NOT GIVE OFF its own light!

Just like you don't give off your own light. You can see your reflection in the mirror because light bounces off the mirror into your eyes.

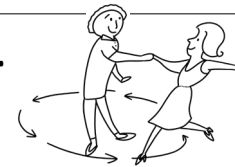


reflect

To send back light from a surface.

orbit

The path an object follows as it moves around another object.



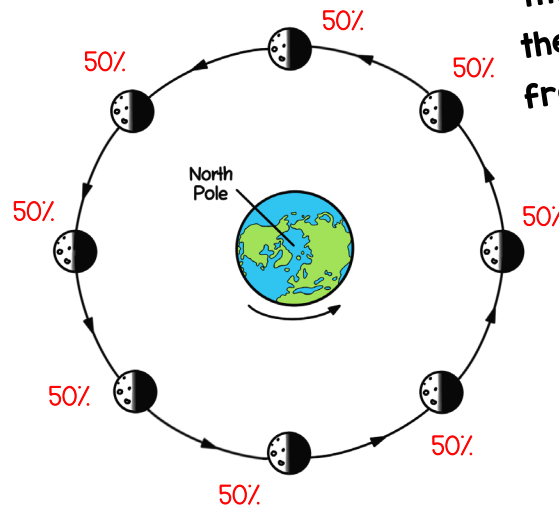
Think about a flashlight shining on a sphere. There is always one half lit and one half in the dark.



2

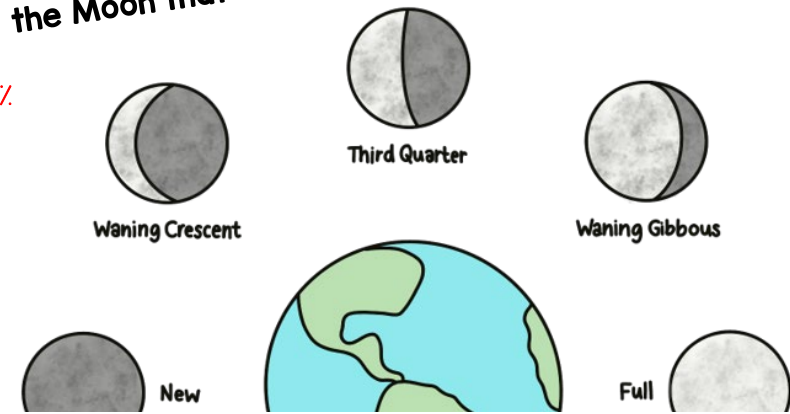
Why do we see different phases of the Moon?

The Sun's light always strikes 50% of the Moon's surface as the Moon orbits the Earth.



The part of the lit side of the Moon that we can see from Earth is the phase of the Moon that we see.

But depending on what angle you're looking at this half-lit beach ball, you would only see a certain part of the lit side and the rest would be dark.



Next to each position of the Moon in this diagram, write how much of the Moon is lit by the Sun's light.

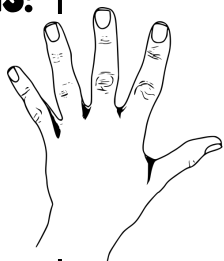
DO

TOPIC QUESTIONS:

3

What do the terms waning and waxing mean?

Waning means shrinking.



During the waning phases of the Moon, the lit part of the Moon is on the left-hand side. The amount of light that we can see from Earth will shrink more and more each night.

Waxing means growing.

KEY



During the waxing phases of the Moon, the lit part of the Moon is on the right-hand side. The amount of light that we can see from Earth will grow more and more each night.

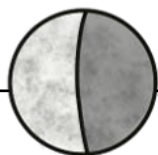
Light is on the left side of the Moon



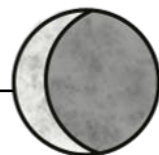
Light is on the right side of the Moon



Waning
Gibbous



Third
Quarter



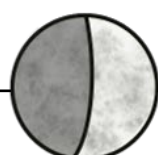
Waning
Crescent



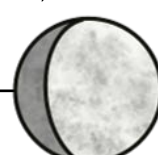
New
Moon



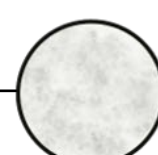
Waxing
Crescent



First
Quarter



Waxing
Gibbous



Full
Moon

4

What do the terms crescent, quarter, and gibbous moon mean?

Crescent Moon

A crescent moon phase is when the shape of the lit part of the Moon is less than half, like the shape of a banana or a "C".



Waning
Crescent



Waxing
Crescent

Quarter Moon

A quarter moon phase is when half of the Moon is lit. The First Quarter phase is when the moon is waxing to the Full Moon phase. The Third Quarter (or Last Quarter) phase is when the moon is waning back to the New Moon phase.



First Quarter



Third Quarter

Gibbous Moon

A gibbous moon phase is when the shape of the lit part of the Moon is more than half, like the shape of a capital "G".



Waning
Gibbous



Waxing
Gibbous



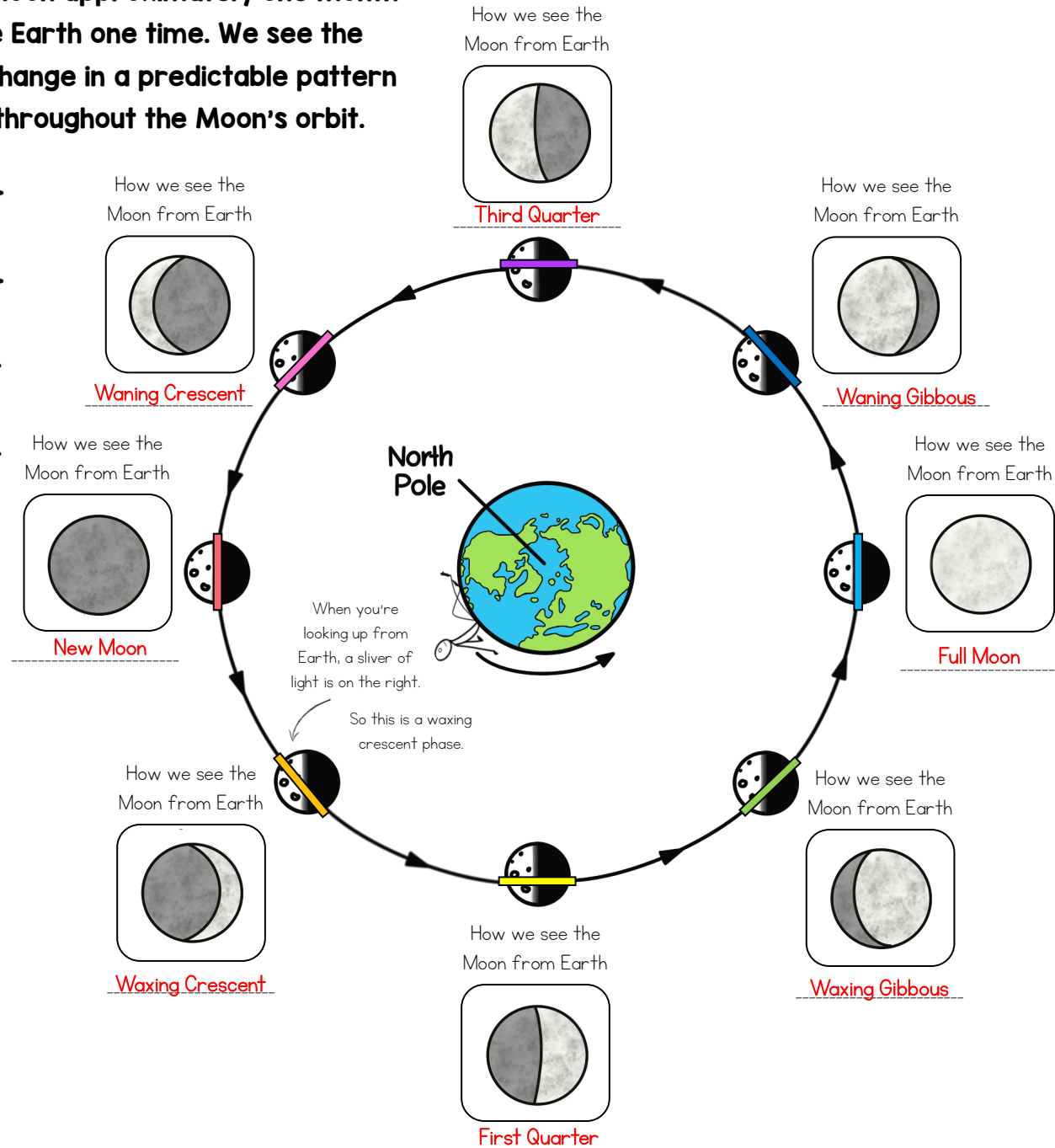
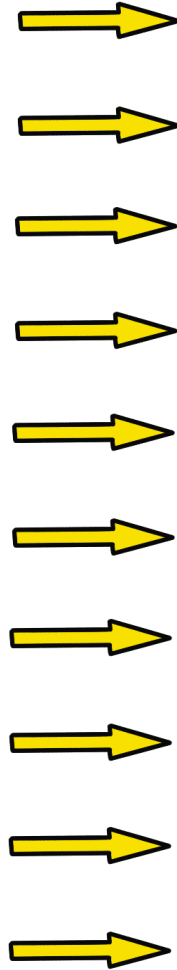
Complete the name of each moon phase underneath the moons pictured in the middle of the page.

SUM IT UP

At each position of the Moon's orbit around the Earth, draw the moon phase that we see from Earth and write the phase name. Remember that you need to picture what the moon would look like if you were looking up from the surface of Earth.

It takes the Moon approximately one month to orbit the Earth one time. We see the moon phase change in a predictable pattern each night throughout the Moon's orbit.

KEY



The MOON PHASES

ESSENTIAL QUESTION:

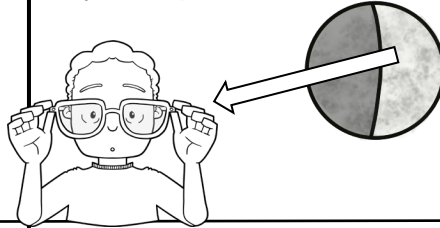
Why does the Moon look like it's changing shape?

TOPIC QUESTIONS:

1

Why can we _____ the Moon?

Light from the _____ reflects off the Moon and into a person's _____.



Remember, the Moon _____ GIVE OFF its own light!

Just like _____ don't give off your own light. You can see your _____ in the mirror because light bounces off the mirror into your eyes.



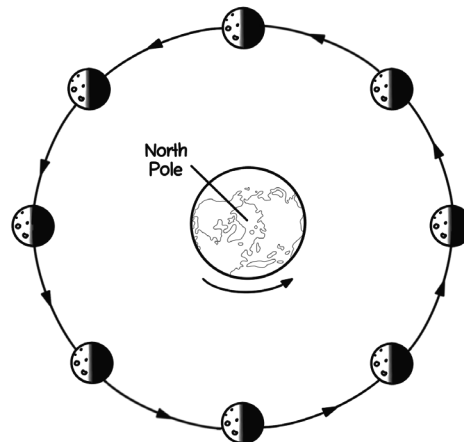
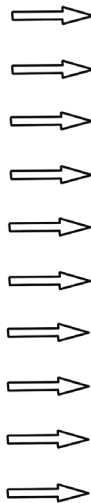
Think about a _____ shining on a sphere. There is always one half _____ and one half in the _____.



2

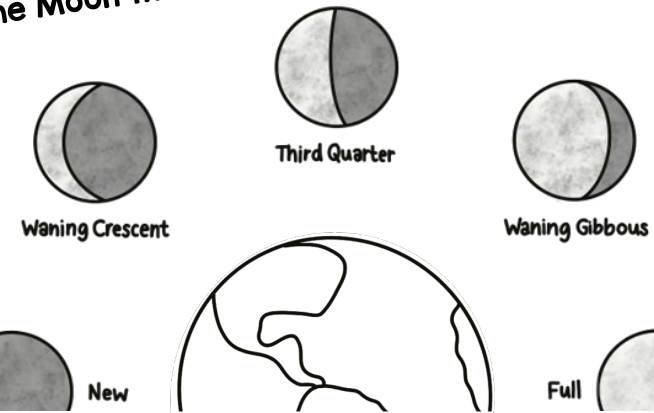
Why do we see _____ phases of the Moon?

The Sun's light always strikes _____ of the Moon's surface as the Moon _____ the Earth.



The part of the _____ side of the Moon that we can see from Earth is the _____ of the Moon that we see.

But depending on what _____ you're looking at this _____ beach ball, you would only see a certain _____ of the lit side and the rest would be _____.



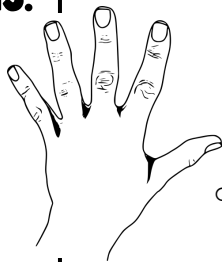
Next to each position of the Moon in this diagram, write how much of the Moon is lit by the Sun's light.

DO

TOPIC QUESTIONS:

3

Waning means _____.



During the waning phases of the Moon, the lit part of the Moon is on the _____ side. The _____ of light that we can see from Earth will _____ more and more each night.

Waxing means _____.

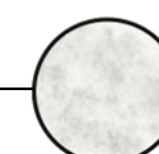
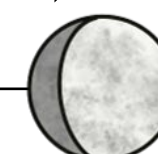
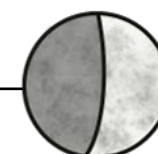
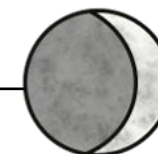
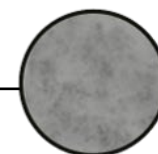
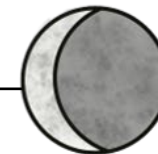
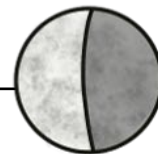


During the waxing phases of the Moon, the lit part of the Moon is on the _____ side. The _____ of light that we can see from Earth will grow _____ and _____ each night.

What do the terms _____ and _____ mean?

Light is on the _____ of the Moon

Light is on the _____ of the Moon



Waning

Third

Crescent

New Moon

Waxing

Quarter

Gibbous

Full Moon

4

What do the terms _____, _____, and _____

moon mean?

Crescent Moon

A crescent moon phase is when the _____ of the lit part of the Moon is _____ than half, like the shape of a _____ or a “_____”.

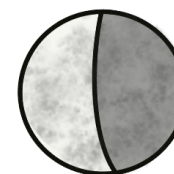
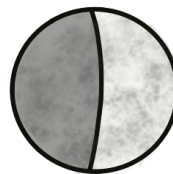


Waning

Crescent

Quarter Moon

A quarter moon phase is when _____ of the Moon is lit. The _____ Quarter phase is when the moon is _____ to the _____ Moon phase. The _____ Quarter (or Last Quarter) phase is when the moon is _____ back to the New Moon phase.



First _____

_____ Quarter

Gibbous Moon

A gibbous moon phase is when the shape of the _____ part of the Moon is _____ than half, like the shape of a capital “_____”.



Gibbous

Waxing

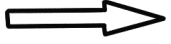
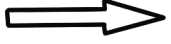
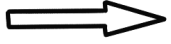
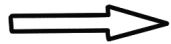
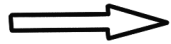
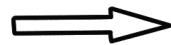
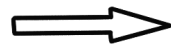
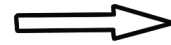


Complete the name of each moon phase underneath the moons pictured in the middle of the page.

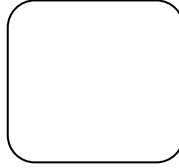
SUM IT UP

At each position of the Moon's orbit around the Earth, draw the moon phase that we see from Earth and write the phase name. Remember that you need to picture what the moon would look like if you were looking up from the surface of Earth.

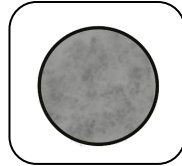
It takes the Moon approximately one _____
to orbit the Earth one time. We see the moon
_____ change in a predictable _____
each night throughout the Moon's _____.



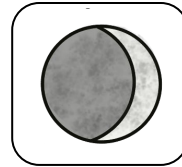
How we see the
Moon from Earth



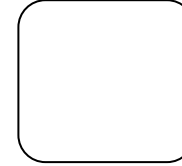
How we see the
Moon from Earth



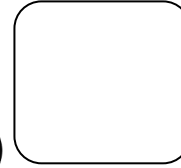
How we see the
Moon from Earth



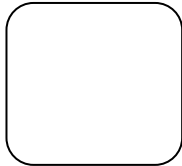
How we see the
Moon from Earth



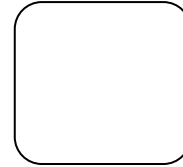
How we see the
Moon from Earth



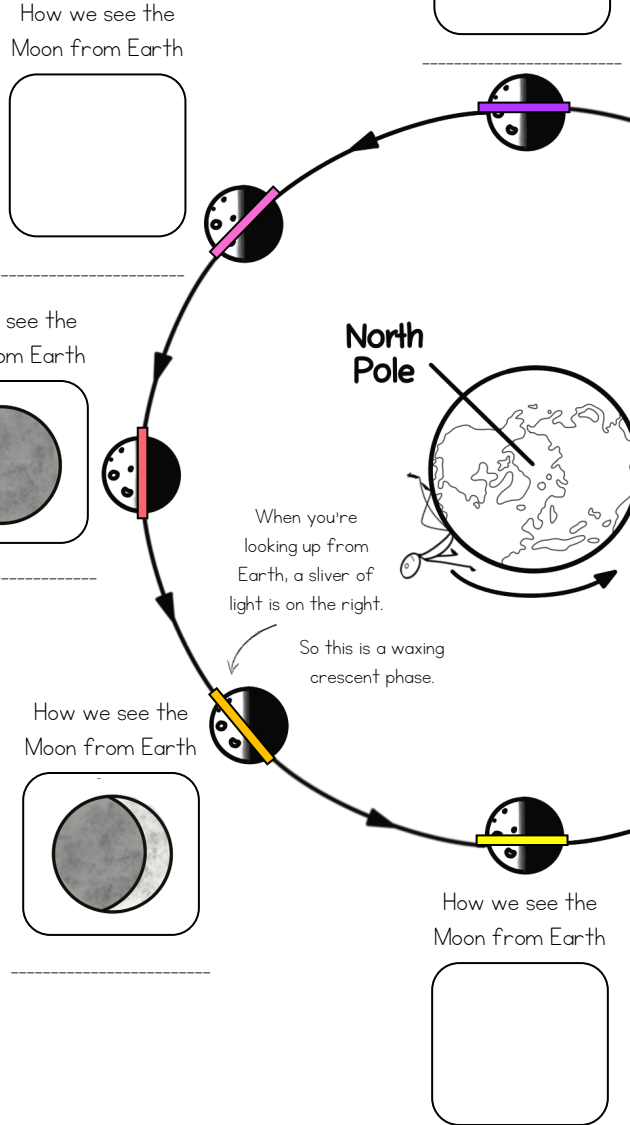
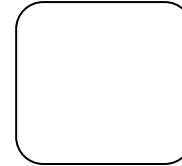
How we see the
Moon from Earth



How we see the
Moon from Earth



How we see the
Moon from Earth



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Thank you 😊 Karla @ Sunrise Science



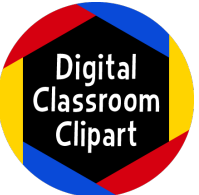
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Thank you to these amazing artists!



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