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Sky Patterns [2nd grade]

Analeasa Holmes
Trinity University, analeasa@gmail.com

Rachel Capetillo
Lockhart ISD, rachel.capetillo@lockhart.txed.net

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Understanding by Design

Unit Title: Sky Patterns

Grade Level: 2nd

Subject/Topic Area: Objects in the Sky

Designed by: Rachel Capetillo and Analeasa Holmes

Time Frame: 20 days (1 month)

School District: Lockhart Independent School District

School: Navarro Elementary

School Address & Phone: 715 Medina, Lockhart, TX 78644

Brief Summary of Unit:

This unit will give students the opportunity to observe, describe, illustrate and predict patterns found in nature and specifically the daytime and nighttime sky.

The students will build on their prior knowledge of objects found in daytime and nighttime sky. Students will practice gathering, recording, and discussing data through classroom and home investigations leading to understandings of patterns found in nature.

Using the data and findings, the student will create projects displaying their understanding of patterns found in the daytime and nighttime sky.

Stage 1 – Desired Results

2.1B describe the importance of safe practices
2.2D record and organize data using pictures, numbers, and words
2.2E communicate observations and justify explanations using student-generated data from simple descriptive investigations
2.3B make predictions based on observable patterns
2.3C identify what a scientist is and explore what different scientists do.
2.8 Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:
D.) observe, describe, and record patterns of objects in the sky, including the appearance of the Moon.
Process TEKS
2.a.2, 2.a.3, 2.a.4b

Transfer

Students will independently use their learning to…

….compare similarities and differences in the daytime and nighttime sky.

….observe and describe objects in the sky to discover patterns in nature.

Meaning

Understandings *Students will understand that….*	Essential Questions
….objects found in the daytime/nighttime sky are a result of predictable patterns found in the nature. ….observations of the world around us lead to understanding.	1. What is the relationship between day and night? 2. What other patterns are found in nature? 3. Why do scientist make observations?

Acquisition

Knowledge *Students will know…*	Skills *Students will be able to…*
…what objects in the sky can be found in the daytime, nighttime, and in both times. (sun, moon, stars, rain, rainbows, clouds, etc…) …. the sun plays a role in making day and night. ….day happens when a location on Earth is facing towards the sun, and night happens when a location is facing away from the sun. … patterns found in the daytime/nighttime sky. … the relationship between patterns found in the sky and the sun, moon, and Earth.	….categorize objects in the sky. …observe, identify and describe patterns found in nature. …. use safe practices to observe like a scientist.

	….how to make an observation. ….scientist make careful observations to discover new findings.	

Stage 2 – Evidence

Performance Task(s)

Students will demonstrate meaning-making and transfer by…

Performance Task 1: Daytime & Nighttime in the Natural World

You will work with a partner to create a display of the natural world in the daytime and nighttime sky using poster board, pictures from magazines and drawings. Be sure to include objects found only in the daytime sky and objects found only in the nighttime sky. Also include objects found in both. Students will present their display to the class. *(Student and Teacher Gallery Walk, page 21)*

Performance Task 2: Phases of the Moon

Each day for 15 days, you will observe and illustrate the appearance of the moon. You will describe what you see each night in your journal and discuss in class the following day with a partner. With your partner, you will discuss and make predictions for the next observations. *(Moon Journal and Rubric,page 24)*

Performance Task 3: My Sun Pattern

We will track our shadow twice in one day. You will create a book to record your shadow each time we went outside. In your book, you will illustrate your shadow and the placement of the sun then write a sentence describing what you saw and any changes. We will then discuss your findings and you will predict the sun's pattern. *(My Sun Pattern and Rubric, page 28)*

Other Evidence (e.g., formative)

1. Observations
2. Journal entries
3. Class discussions
4. Class work
5. Partner Talk
6. Exit Tickets

Stage 3 – Learning Plan

Pre-Assessment

How will you check students' prior knowledge, skill levels, and potential misconceptions?

Teacher will place a picture of the sun and the moon on the board. Students will partner talk what they know about these two objects. Teacher will observe and record statements during partner talk about the sun and moon.

Learning Activities	Progress Monitoring

Week 1: Day and Night Day 1: Partner Talk, What we know about the Sun and the Moon: Divide class in to partners. Students engage in a discussion about their knowledge of the sun and the moon. To initial discussion and keep students on task, you may provide the following questions to guide discussions: • How are the sun and the moon similar? The sun and the moon are the same by _____. The sun and the moon are different by _____. • When do we see the sun and the moon? I see the sun _____. I see the moon _____. Students will be given a post-it note to record one response their partner shared during partner talk. Students will bring their recording to the carpet. Invite students to the carpet, allow students to share their partner's knowledge as discussed during partner talk. The teacher will guide students in sorting their responses on chart paper. Allow students to label each category appropriately (i.e. daytime, nighttime, both) Day 2: Daytime and Nighttime What we do during the day and night: Students will refer to previous day discussion and responses. Teacher will purposefully guide discussion using the following questions. • When you play outside in the daytime, is it dark or is it light? (light) • Do you need a flashlight to see? (no) • Where does the light come from in the daytime? (sun) • What gives us light at night? (we have man-made light, and moonlight) As a whole class, identify activities students do during the day, when it is light outside. They may indicate things such as eating, playing, doing chores, shopping, school, watching television, etc. Teacher will write answers on the board. Then follow-up with these questions: • Have you ever seen the moon and the stars up in the sky all day? • When you go to sleep and wake up at night, do you see the sun? • Does it get dark every day? • Does it get light every day? As a whole class, identify things students do during the evening, when it is dark outside. If they turn a light on inside, they can eat, read, watch television, take baths, etc. (You must emphasize that they have to turn a light on; the sun doesn't make light in their house at night.) They sleep when the sun and all other lights are off. Again, teacher will write answers on the board. Discussions should lead students to understand that activities occur in the daytime and	Observation

nighttime that are both different and the same.

Discuss definitions for day and night. Students will write it in their journals and illustrate it.(introduce the vocabulary cards that contain each definition and display on a science word wall) *(Definition Cards, page 14)*

Day: The time that is light between sunrise and sunset.
Night: The period of darkness between sunset and sunrise.

Day 3: Daytime and Nighttime Activity
Explore (Small Group Work):
Have students explore daytime and nighttime activities. Each group will have a set of activity cards, picture headings, and chart paper for students to manipulate. Students will divide the chart paper in half. Each half will be labeled by pasting one picture heading on either side. Students will sort and paste each activity according to things they can do during the day and things they do at night. When they finish teacher will tape their paper to the wall for all students to see. Students will take a gallery walk around the room to see everyone's work. *(Activity Cards, page 15-18)*

Kinesthetic Model 1:
Teacher will model the concept of day and night using a flashlight (the sun) and a student (the globe). As the flashlight shines, the student turns. Teacher emphasizes that we get light from the sun and that the EARTH rotates not the sun. Call on several students to model this concept. Students will complete the sentence stem below in their science journal.

Be sure to introduce the following vocabulary and have students write in science journal:
spin: to turn repeatedly
rotation: one complete turn - *(page 19)*

Sentence Stem: I know that day and night occur because the _____ is moving not the _____.

Closure Questionings:
1. Is it always light outside?
2. Is it always dark outside? A day must have a light time and a dark time.

Day 4: Day and Night Song with Pattern Exploration:
Have all the students stand in their spots at the carpet. In front of them will be a posted picture representing the daylight, and behind them will be a posted picture representing nighttime *(Day/Night Cards, page 20)* Students will take one finger and point to the picture representing sunshine or daytime, then rotate behind them and point to the picture representing nighttime. Remind them that it is a pattern. As you sing the following song, they will point to the sun, and then rotate to show the nighttime as you sing about night.

On the "day and night" chorus, they will quickly point to day and then quickly rotate so they are pointing to the night.
NOTE: This links directly to the student's ability to follow directions and learn through movement.

(To the tune of "Are You Sleeping")
The sun is shining, the sun is shining. (Point to the sunshine picture.)
It is day, it is day.
The sun is gone and now it's night (Rotate and point to nighttime picture.)
We can't see things without a light.

CHORUS
Day and night, (Rotate back and forth between pictures.)
Day and night.

The song is in "ABAB" pattern just like the day and night are. Using the lyrics of the song show students that the song is also in an "ABAB" pattern. Project the song on the board or write it on chart paper and then label the lines ABAB. Using the *sun and moon pattern cards*, have students show the "ABAB" pattern by placing the correct card next to the matching line. Show students how it is always in that pattern (sun, moon, sun, moon)

Sing the song a second time, and with a pointer point to the pattern cards so the children can see the representation of the day and night pattern.

Extension question:
Would we ever have a day with an ABBA pattern? (NO- it would never be: sun, sun, moon; moon, sun, sun. It is always sun, moon, sun moon)

Day 5: Performance Task 1: Daytime & Nighttime in the Natural World
You will work with a partner to create a display of the natural world in the daytime and nighttime sky using poster board, pictures from magazines and drawings. Be sure to include objects found only in the daytime sky and objects found only in the nighttime sky. Also include objects found in both. Students will present their display to the class.
(Student and Teacher Gallery Walk, page 21)

Week 2: The moon

Day 1: Observe like a Scientist- Mystery Bag

Advance Preparations: You don't need fancy science materials or a lot of time to prep for this lesson. Paper lunch sacks and all of the random thingamabobs around your classroom will suffice. Remind students that they will use their senses to infer what is in each bag. (all senses will be used except taste)

Materials Needed:
Opaque bags (such as paper lunch bags)

Stapler to seal the bags
Student recording data page:
Small objects to hide in the bags such as:
Paperclips
Modeling clay or dough ball
Raisins
Coins
Paintbrushes
Beads
Birthday candles
Marshmallows
Chewing gum
Dice
Safety scissors

- You will need a total of 10 paper sacks.
- Place one item in each bag. (soap, Playdough, and popcorn work great for sense of smell)
- Divide the class into 5 equal groups.

Lead a class discussion about the five senses and how scientist use them to observe the world around them. Scientist use their senses to discover new things about our world. We will continue to use our sense of sight as well as inferring to continue learning about our world.

Have students glue their data-recording page *(page 22)* into their notebooks. I put two bags on each of the five tables in my classroom, and I allow the students to investigate the bags for two minutes before I flash the lights and have the students move in a clockwise direction to the next table. (I have the students move rather than passing the bags, because movement is healthy, keeps the kids on their toes, and keeps the bags from getting mixed up.) After the last rotation, we discuss our investigations and inferences. I open each bag and reveal the mystery item. Students are given time to ask questions before going on to the next bag.

Day 2- Moon Journal

The goal of this activity is to observe the pattern of change in the Moon's appearance and location in the sky over time.

The Moon is one of the easiest of all objects to locate in the sky. The observer who looks at the Moon on a regular basis can notice that it changes over time in a pattern. Once this pattern has been recognized, it can be used to make predictions of where and when you can see the moon, and what it will look like.

Teacher will ask if anyone knows what an astronomer is. Tell students that they're

already astronomers, and they didn't even know it! Explain definition of an astronomer to students.

Moon: The large round object that circles the Earth and that shines at night
astronomer: a person who studies the day and night sky. *(use vocabulary cards, page 23)*

Students will write definition in science journal.

Performance Task 2: Phases of the Moon
Each day for 15 days, you will observe and illustrate the appearance of the moon. You will describe what you see each night in your journal and discuss in class the following day with a partner. With your partner, you will discuss and make predictions for the next observations. *(Moon Journal and Rubric, page 24)*

Using the website: http://www.timebie.com/moon , guide the students through the previous days moon illustration and writing observations. Students will continue their "Moon Journal" as homework each night with a brief review the following day to check for understanding.

Day 3:
Begin class discussion with any changes they are seeing in their observations of the moon through their "Moon Journal".

Show students the following video: https://www.youtube.com/watch?v=wz01pTvuMa0

Students will work in groups of 4 to demonstrate the patterns of the moon in the sky.
Materials Needed:

- flashlight (sun)
- paper plate (Earth)
- black poster board (moon)- cut the poster board into a circle
- science journals
- pencil

Divide the class into groups of four. At each table place a flashlight, paper plate, and black poster board. Have students take their science journals with them. Each person will need to play a role in making the different phases of the moon. Assign a job to each student (sun, Earth, moon, observer) and have them manipulate the objects to create the patterns they saw in the video. Students will rotate jobs, if time, all each student to perform each job.

Jobs:
Sun- shines the flashlight at the black poster board (moon) and hold it for the Earth
Earth- begins its journey past the around the sun and creates patterns on the moon
Moon- holds the poster board steady so the sun can shine the flashlight on it

Recorder- each student will record in their science journal what they observe and any questions they may still have

After each student has had an opportunity to play each role, lead a whole class discussion on what they observed and answer any questions they may still have.

Day 4:
Students will share their observations with a partner, then as a whole class. Ask the students "Did any of you observe that the moon looked smooth? Or rough?". Guide students into a discussion of their observations- you can also show them a picture of the moon line.

Using play-dough, have students make a flat moon on their desk (with a partner). Have the make their moon as smooth as possible.

Sometimes in space, there are objects that bump into other objects, causing damage, or craters. Modeling how this is done with a marble hitting the flat moon, have the students use objects in their desk (pencils, erasers, etc.) to act as the floating objects in space that cause the moon to look damaged.

Day 5: Predictions
Students will review their "Moon Journal" thus far and work on their observations, illustrations, and predictions for the following week. Teacher will use this opportunity to check student work and provide support.

Week 3: The Sun
Day 1: The Sun is a Star
Give each student an index card and have them draw a picture of the sun on one side and have them list everything they know about the sun on the other side. Students will partner talk and share the information they wrote on their index card. Teacher will give each pair a white sheet of paper. They will draw a large sun in the center and add long rays. On each ray they will write a fact they knew about the sun. Teacher will hang their sun facts drawing around the room. Students will then tape their index card inside their journals.

Remind students that the sun is a star. Discuss the definition of a star. Students will write it in their journals.

star: a distant point of light. *(Show the vocabulary card, page 23)*

Extensions:
Use a constellation map to show that there are **patterns** in the stars for example the big dipper.

Day 2: Sun's Pattern

Talk about the **pattern** of the sun across the sky. On the flipchart, have students move the sun to different times of the day (i.e. sunrise, noon, sunset, night). Have students sort photos. (see attached) Show photos of sunrises, noon, sunsets, and night on the flipchart and have students sort.

Using pictures, show students pictures of sunrise, noon, sunset, and night.
Students will write definitions in science journal.

sunrise: The time when the sun appears above the horizon in the morning: dawn or daybreak.
noon: The middle of the day: 12 o'clock in the daytime.
sunset: The time when the sun goes below the horizon in the evening.
night: The period of darkness between sunset and sunrise.

(page 27)

Students will draw pictures of four different times of the day (sunrise, noon, sunset, night) on white paper. They will cut out the illustrations and glue them in the correct order to a sentence strip. They will staple the sentence strip together to form a "sky patterns" headband to wear. Review the sun's pattern: sunrise, noon, sunset, night.

Day 3:How the Sun shines on our Town

Kinesthetic Model 2:

1. Review the vocabulary (sunrise, day, noon, sunset, night, spin and rotation).
2. Darken room and turn on lamp. Explain that the lamp represents the Sun.
3. Ask a student to be the Earth. Using a map of the United States, have the student wrap the map around themselves so that your town is on his/her chest. Make sure he or she can be seen by all students.
4. Mark your town with a sticker and ask students to focus on it as the Earth rotates.
5. Have student begin with his/her back to the lamp (night). Ask students if they think it is day or night in their town.
6. Have student rotate slowly in a counterclockwise fashion, until his/her left arm is pointed to the Sun. Ask students if they think it is sunrise or still night.
7. Student continues the counterclockwise rotation until he/she faces the Sun directly. Ask students what time it is now in their town. Students can see that it is noon, the middle of the day, when we get the most light from the Sun. You may need to prompt with additional questions.
8. Ask student to rotate a little more. Have him/her stop when his/her right arm is pointed toward the Sun. Ask students what time of day it is. They should be able to tell you that it is sunset.
9. Complete the day/night cycle by having the student return to his/her original position, with his/her back to the Sun. Students should be able to tell you that it is midnight.
10. Ask students to notice what time of day it is on the other side other Earth (student's back is facing the Sun and it is noon). Explain that one half of the Earth

is always light while the other is dark. Emphasize that it is the Earth's own shadow that makes the night side of the Earth dark.

11. Repeat this demonstration. Select other students volunteers so that students will get a chance to view the day and night cycle several times. Explain that it takes 24 hours for the Earth to rotate completely.

Whole Class Demonstration:

1. After you have completed the demonstration with a student volunteer, ask all students to stand in a circle around the "Sun" lamp. Ask students to move apart slightly to allow them to rotate easily.
2. Explain that each of them will represent the rotating Earth.
3. Begin the rotation with students facing away from the Sun (night). Explain that it is the Earth's own shadow that makes the night side of the Earth dark.
4. Ask them to slowly rotate counterclockwise and keep looking straight ahead.
5. As they turn, each student will be able to experience night, sunset, day, noon, sunset, and, completing the cycle, return to night.
6. As they turn, ask students what part of the day/night cycle they are experiencing.

Globe Demonstration:

1. Another way to illustrate and reinforce the day/night concept is with a globe. Locate your city, state or country on the globe and place a sticker with your school name on it to mark the spot. Then using the lamp as the Sun, slowly rotate the globe and show students how the Earth rotates, resulting in day and night.
2. Using the globe you can identify which countries are in daylight while your city is in darkness and vise versa.

Days 4: Shadows

Begin discussing the relationship between the sun and shadows by asking students what they know about them. These points can be listed on the "What we Know" section of a "Shadows" KWL chart. Students may bring up the following points:

- It is very dangerous to look at the Sun.
- We NEVER look directly at the Sun!
- The Sun creates shadows.
- We all make shadows.
- If there is sunshine, there will be shadows.
- Without the Sun, we would not have shadows.
- If the Sun is shining behind us, we will see our shadows in front of us.
- A shadow happens when an object (or a person) gets between the Sun and the surface of the Earth.

Ask students if they have any questions about shadows. List 3-4 of them on the "What we Want to Know" section of the KWL chart.

Go over the definition of a shadow. Students will write it in their journals (use vocabulary cards)

shadow: a dark shape made on the ground when you are between the sun the ground.

Explain that students will be going outside to observe their shadows for two days and make drawings of what they see.

Take the students outside and have them work in pairs to trace one person's shadow. First trace their partner's shoes with chalk on the ground and then they will trace their partner's shadow with chalk. Tell students that after the tracing is complete, remember to write their names in the shoe outline. This will be for their first day for the:

Performance Task 3: My Sun Pattern
We will track our shadow twice in one day. You will create a book to record your shadow each time we went outside. In your book, you will illustrate your shadow and the placement of the sun then write a sentence describing what you saw and any changes. We will then discuss your findings and you will predict the sun's pattern. *(My Sun Pattern & Rubric, page 28)*

Remember to go out one additional time and trace their shadows.

The following questions can guide a discussion of what students observed:

- Did anything change in your tracings? What looks different?
- How many of your shadows moved?
- What do you think made the shadows move? How can you explain that?
- Did the Sun move? Did we move? (Of course, we moved! Explain to students that shadows move as a result of the Earth's motion.)

Ask students what else they have learned and want to add to their KWL chart. Place any new questions on the chart and check if any previous questions can now be answered!

Teacher Notes:
Your shadow will be the biggest and the longest when the sun is near the horizon—right in the morning after the sun rises and right in the afternoon before the sun sets. In the middle of the day, around lunchtime, your shadow will become very small. It might even disappear!

Day 5: My Shadow's Booklet
Repeat day 4 but this time switch partners to allow the other to have an opportunity to have themselves traced. This will be recorded in their "Sun Pattern" journal.

Read Moonbear's Shadow by Frank Asch or listen to it on youtube: www.youtube.com/watch?v=DDnCGqwOdv0

Think about the sun as it was shining on the playground. Why was almost everything bright except for your friend's shadow? Well, when we're outside during the daytime, our bodies are actually blocking some of the sun's light. The sun's light can't shine *through* our bodies—that's why shadows are always very dark.

As the sun moves around in the sky, our shadows move around too. When the sun is near the horizon, our bodies block more light. The more light we block, the bigger the shadow. But when the sun is high above us, the light is only shining down on our heads. Our heads don't take up much room, so our shadows are very small at this time of the day. Do you think shadows can only be created by light from the sun? Find out! What would happen if you tried to "lose" your shadow like Moonbear? Do you think you could do it? Guessing and testing is a big part of being a scientist.	

Day

The time that is light between sunrise and sunset.

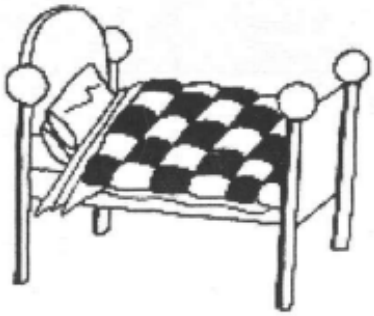
Night

The time that is dark between sunset and sunrise.

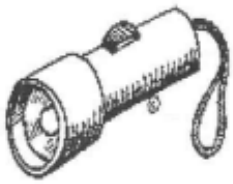
HEADING CARDS FOR SORTING OF DAYTIME AND NIGHTTIME ACTIVITY CARDS

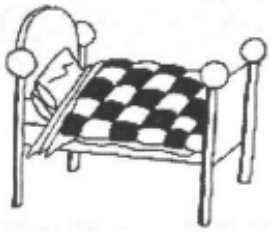
Daytime Activities

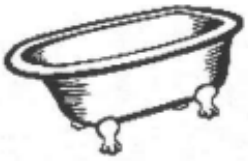
Nighttime Activities



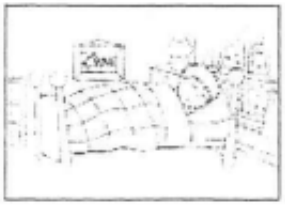
DAYTIME AND NIGHTTIME ACTIVITIES



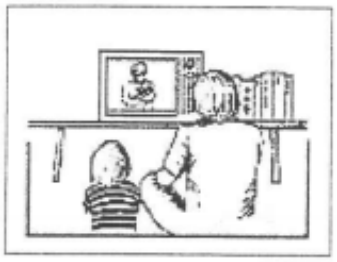




DAYTIME AND NIGHTTIME ACTIVITIES



DAYTIME AND NIGHTTIME ACTIVITIES



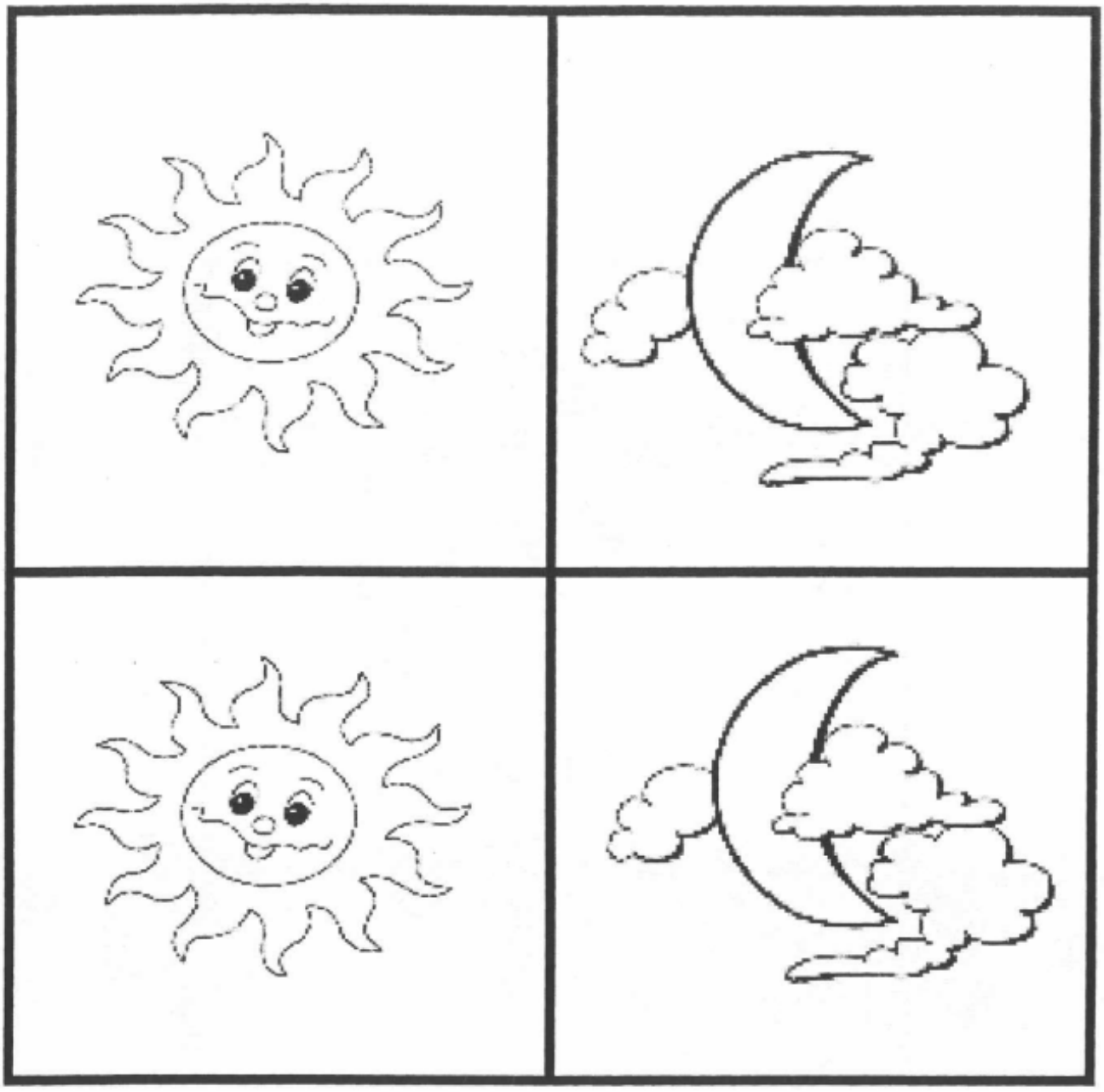
Spin

To turn repeatedly.

Rotation

One complete turn.

SUN AND MOON PATTERNS FOR "ABAB" PATTERN DEMONSTRATION



YOUR Name _____ Date _____

DISPLAY BOARD GALLERY WALK

You will walk around the room looking at another display project from your classroom and give them feedback!

Whose display board are you looking at? _____

Did they have day and night neatly separated? _____

Did they include objects that are only found in the daytime? _____

What were they? _____

Did they include objects that are only found in the nighttime? _____

What were they? _____

Did they include objects found in both daytime and nighttime? _____

What were they? _____

Tell me one thing you really liked about their display. _____

_____

Tell me one thing they could do to make their display even better._____

_____

Mystery Bags

Bag #	Observations	Inference (Informed Guess)	Actual Item

Star

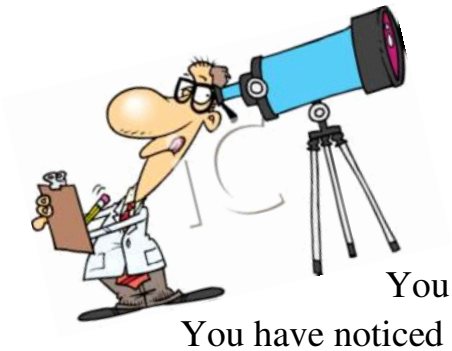
A distant point of light.

Moon

The large round object that circles the Earth and that shines at night.

Astronomer

A person who studies the day and night



"MOON JOURNAL"

You are on a scientific mission to track the moon each night! You have noticed that it doesn't always appear to look the same.

For 15 days, you will observe the moon and illustrate your findings on the given lunar calendar in your journal. Each illustration will include a neat coloring of what the moon looks like that evening.

In your journal you will also include your observations that will have:

1. 2-3 sentences describing the size, shape, color and any changes you see.

2. Complete sentences that include: capital letters, finger space, and appropriate ending punctuation.

Name: _____

Moon Calendar

Lesson Title: The Lunar Cycle

February 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29					

"Phases of the Moon" Journal Rubric

My Score	Tracking	Observations	Writing	Overall Presentation
Over the Moon!	I observed and illustrated the moon every night!	My written observations included detail about what the moon looked like including color and shape and what changes I saw occur.	I consistently used capital letters, finger space, and appropriate ending punctuation. I wrote 2-3 sentences each night.	My "Phases of the Moon" journal is neat, my handwriting is clearly read, and I did my very best work.
Blasting Off!	I observed and illustrated the moon most nights.	My written observations included some detail about what the moon looked like and sometimes included changes I saw.	I mostly used capital letters, finger space, and appropriate ending punctuation. I sometimes wrote 1-2 sentences each night.	My "Phases of the Moon" journal is somewhat neat, my handwriting is sometimes hard to read, and I tried to do good work.
On Your Way…	I observed and illustrated the moon some nights.	My written observations were not detailed about what the moon looked like.	I rarely used capital letters, finger space, or punctuation. My observations were not in complete sentences and/or were 1-3 words.	My "Phases of the Moon" journal is not neat, my handwriting is not clearly read, and I didn't try to do my best work.

Sunset

The time when the sun goes below the horizon in the evening.

Noon

The middle of the day: 12 o'clock in the daytime.

Sunrise

The time when the sun appears above the horizon in the morning: dawn or daybreak.

"Sun Pattern" Journal

You are a scientist studying the sun! One day, you are outside and notice your shadow on the ground.

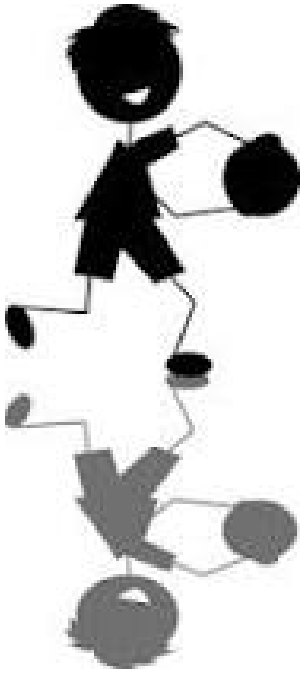
For two days, you will observe your shadow at 8:00, 12:00 and 2:00 and illustrate your findings. Each illustration will include:

1. You
2. The size and placement of your shadow
3. The placement of the sun.

Underneath each illustration, you will also include your observations that will have:

3. 2-3 sentences describing the size and location of your shadow, the placement of the sun, and any changes that occur.

4. Complete sentences that include: capital letters, finger space, and appropriate ending punctuation.



“Sun Pattern” Journal Rubric

My Score	Illustrations	Observations	Writing	Overall Presentation
Brighter Than the Sun!	My illustrations included myself, my shadow, and the placement of the sun.	My written observations included detail about the locations and size of my shadow and the placement of the sun.	I consistently used capital letters, finger space, and appropriate ending punctuation. I wrote 2-3 sentences for each entry.	My “Sun Pattern” journal is neat, my handwriting is clearly read, and I did my very best work.
Shining Bright!	My illustrations sometimes included a combination of myself, my shadow, and the placement of the sun.	My written observations included some detail about the location and size of my shadow and the placement of the sun.	I mostly used capital letters, finger space, and appropriate ending punctuation. I sometimes wrote 1-2 sentences for each entry.	My “Sun Pattern” journal is somewhat neat, my handwriting is sometimes hard to read, and I tried to do good work.
On Your Way!	My illustrations included one or two of myself, my shadow, and the sun.	My written observations were not detailed about my shadow or the placement of the sun.	I rarely used capital letters, finger space, or punctuation. My observations were not in complete sentences and/or were 1-3 words.	My “Sun Pattern” journal is not neat, my handwriting is not clearly read, and I didn’t try to do my best work.

Helpful Links

http://www.almanac.com/moon/calendar/TX/Houston/2016-02

http://www.uen.org/Lessonplan/LPview.cgi?core=1217

http://interactivesites.weebly.com/earth-moon-and-sun.html

https://mail.google.com/mail/u/0/?pli=1#inbox/14ddf4707515554a?projector=1

http://simplysecondgrade.blogspot.com/2012/01/sun-moon.html

https://www.youtube.com/watch?v=2aFGNGEcDOk&feature=related

https://www.youtube.com/watch?v=wz01pTvuMa0

https://www.youtube.com/watch?v=GvkrC4HSLkM

http://www.uen.org/Lessonplan/preview.cgi?LPid=28498