Nature Journal 1-
Observations and Inferences

Throughout this year, you will be keeping a nature journal. Each week you’ll be provided with specific assignments that build off of what we’re working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you’re seeing and feeling, or keep a log of how much you see change. You can always do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page:

_____ Date

_____ Time (also include AM or PM)

_____ Weather at the time of nature journal (temperature is optional)

_____ Location of where you’re making your nature journal

For this week’s assignment, you make:

_____ = qualitative observations of what you see around you (see, hear smell, etc.)

_____ = inferences, your conclusions based on what you observed

_____ = What you think will happen in the future based on observations and inferences

This rubric gives a sense of expectations:

<table>
<thead>
<tr>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed Nature Journal - Due by Friday, Sept. 10th</td>
<td>Minimal or incorrect understanding shown of observations, inferences, and predictions. MUST REDO</td>
<td>Drawings (or photos) and/or written work explanations of observations, inferences, and predictions observations lack in details and/or can be hard to follow.</td>
<td>Drawings (or photos) and/or written work explanations describe observations, inferences, and prediction clearly.</td>
</tr>
</tbody>
</table>
Ms. Coppens' model:

Observations (qualitative)

See - leaves blowing, a robin, sun shining through leaves

Hear - a lawn mower in the distance, cars in the road, a bird

Smell - it smells fresh and the air is warm as I breathe it in!

Touch - the grass is soft (so green still!), the bark on the tree is rough, the birch leaves are silky

Inferences:

- This may be the last time my neighbor mows this year (grass seems to be growing much slower)
- Maybe there is a nest in the tree that the bird flew to?

Predictions:

- The birch leaves will turn yellow because that's the color they were last year.
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Include on the top right of the page:

___ Date

___ Time (also include AM or PM)

___ Weather at the time of nature journal (temperature is optional)

___ Location of where you’re making your nature journal

For this week's assignment, you will:

___ Do at least two leaf rubbings (different leaves) using a crayon or colored pencils

___ Measure the dimensions of the leaves to the nearest mm (see model) NOT Inches

___ Estimate the height of the trees they came from in meters NOT feet

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Sept. 17th</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing measurements MUST REDO</td>
<td></td>
<td>Minimal or partially incorrect or unrealistic measurements or measurements are done in inches/feet (make sure you use the metric system).</td>
<td>Measurements are accurate and estimates are realistic.</td>
<td>Measurements are accurate and estimates are realistic. You add significant details/insight beyond the assignment’s expectations.</td>
</tr>
</tbody>
</table>
Ms. Coppens' model (2 pages):

- Length: 16 cm
- Widest part: 5.9 cm
- Estimate of tree height: 4 meters

- Length: 18.2 cm
- Widest part: 13.6 cm
- Estimate of tree height: 5.5 meters
Nature Journal 3-
Quantitative Mass Observations (mg, g, kg)

Throughout this year, you will be keeping a nature journal. Each week you’ll be provided with specific assignments that build off of what we’re working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you’re seeing and feeling, or keep a log of how much you see change. You can always do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page:

____ Date

____ Time (also include AM or PM)

____ Weather at the time of nature journal (temperature is optional)

____ Location of where you’re making your nature journal

For this week’s assignment, you will:

____ Estimate at least 5 objects/organisms in grams (g) or milligrams (mg). 1g= 1,000mg

____ Estimate at least 5 objects/organisms in kilograms (kg) a kilogram= 1,000 grams

This rubric gives a sense of expectations:

<table>
<thead>
<tr>
<th></th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Completed Nature</strong></td>
<td>Missing estimates</td>
<td>Minimal or partially incorrect/unrealistic estimates or estimates are done in lbs (should be mg, g, kg). Or you’re missing mg, g, kg labels</td>
<td>Estimates are realistic (you are not expected to be right on...it would be very hard to estimate the mass of a large tree!)</td>
<td>Estimates are realistic and you add significant details/insight beyond the assignment.</td>
</tr>
<tr>
<td><strong>Journal -</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Due by Friday, Sept. 24th</strong></td>
<td>MUST REDO</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ms. Coppens' model:

<table>
<thead>
<tr>
<th>Object/organisms</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>blade of grass</td>
<td>10 mg or 0.01g</td>
</tr>
<tr>
<td>flower leaf</td>
<td>500 mg or 0.5g</td>
</tr>
<tr>
<td>oak leaf</td>
<td>1 g</td>
</tr>
<tr>
<td>twig</td>
<td>14 g</td>
</tr>
<tr>
<td>branch (small)</td>
<td>150g or 0.150kg</td>
</tr>
<tr>
<td>branch (big)</td>
<td>600 g or 0.6 kg</td>
</tr>
<tr>
<td>acorn</td>
<td>20 g</td>
</tr>
<tr>
<td>bird feeder</td>
<td>1 kg</td>
</tr>
<tr>
<td>bird bath with water</td>
<td>20 kg</td>
</tr>
<tr>
<td>bird-chickadee</td>
<td>300g (actually 11-12 grams!)</td>
</tr>
<tr>
<td>5 year old</td>
<td>20 kg</td>
</tr>
<tr>
<td>8 year old</td>
<td>28 kg</td>
</tr>
<tr>
<td>oak tree</td>
<td>5,000 kg</td>
</tr>
<tr>
<td>My dog</td>
<td>16 kg</td>
</tr>
</tbody>
</table>
Throughout this year, you will be keeping a nature journal. Each week you’ll be provided with specific assignments that build off of what we’re working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you’re seeing and feeling, or keep a log of how much you see change. You can always do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page:

___ Date

___ Time (also include AM or PM)

___ Weather at the time of nature journal (temperature is optional)

___ Location of where you’re making your nature journal

For this week’s assignment, the scientific method begins with a question:

___ What are some things you wonder about nature?

___ What are some things you wonder about weather?

___ What are some things you wonder about people?

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Oct. 1st</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only one out of the 3 wonderings are complete.</td>
<td>Does not include wonderings about all 3 sections: nature, weather, people.</td>
<td>Includes well thought out/ explained wonderings about all 3 sections: nature, weather, people.</td>
<td>Includes wonderings about all 3 sections (or more) with significant details/insight beyond the assignment.</td>
<td>MUST REDO</td>
</tr>
</tbody>
</table>
Ms. Coppens’ model:

Things I wonder about:

Nature:
* How do all of these homes change the natural habitat?
* Where do bugs go in the winter?
* What causes some leaves to change color before others?

Weather:
* Why do hurricanes always start closer to the equator and move north?
* 0°C is freezing, does it matter for snowfall if it’s 0°C, -5°C, or -10°C?

People:
* Why do people litter?
* How do I help people feel motivated to make positive changes to protect Earth’s species?
Nature Journal 5-
Things I Wonder About Geology...

Throughout this year, you will be keeping a nature journal. Each week you'll be provided with specific assignments that build off of what we're working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you're seeing and feeling, or keep a log of how much you see change. You can do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page:

____ Date
____ Time (also include AM or PM)
____ Weather at the time of nature journal (temperature is optional)
____ Location of where you’re making your nature journal

For this week’s assignment:

____ What are some things you wonder about minerals and rocks?
____ What are some things you wonder about the past environment of where you’re observing?
____ Sketch any size rock or sediment. What do you wonder about it?

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Oct. 15th</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacks questions and/or curiosities about geology.</td>
<td>There are some questions and curiosities about geology, but it lacks details that show your thinking.</td>
<td>Includes well thought out/explained curiosities and questions about geology.</td>
<td>Includes well thought out/explained curiosities and questions about geology with significant details/insight beyond the assignment’s criteria.</td>
<td>MUST REDO</td>
</tr>
</tbody>
</table>
Ms. Coppens' model:

Things I wonder about geology:

Rocks & Minerals:
- Why do some minerals form in certain places?
- Why are some quartz clear, some smoky, and some pink, or purple?

Earth's past in my back yard:
- How long ago did the stream form?
- Did glaciers shape this form?
- Was this once under the ocean?

Sketch of rock:
- ~1 meter tall
- How long ago did this form compared to my house which is 10 years old.
- What type of minerals are in it?

10/11
3 pm
50°F
back yard
Nature Journal 6- 
The Art of Close Observation!

Throughout this year, you will be keeping a nature journal. Each week you’ll be provided with specific assignments that build off of what we’re working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you’re seeing and feeling, or keep a log of how much you see change. You can do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page:

____ Date

____ Time (also include AM or PM)

____ Weather at the time of nature journal (temperature is optional)

____ Location of where you’re making your nature journal

For this week’s assignment, you will use the close drawing strategy where you pretend your eye is an ant:

____ Draw at least three items using the close observation drawing strategy (your eye is an ant)!

____ Choose: Either add measurements to your drawing (in mm, cm, m) or write about what you see!

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Oct. 29th</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>You do not do all three drawings.</td>
<td>You do not do all three drawings or you don’t include the measurements or writing about the items.</td>
<td>Includes all three drawings and the measurements or writing about the items.</td>
<td>Includes all three drawings and the measurements or writing about the items with details/ insight beyond the assignment.</td>
<td>MUST REDO</td>
</tr>
</tbody>
</table>
My eye is the ant!

Rock

Leaf (maple)

Fern

Actual measurements on rock:
- $\leftarrow = 8.2 \text{ cm}$
- $\uparrow = 3.9 \text{ cm}$

Day: 10/24
Time: 2 pm
Temperature: 52°F
Location: Back yard
Throughout this year, you will be keeping a nature journal. Each week you’ll be provided with specific assignments that build off of what we’re working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you’re seeing and feeling, or keep a log of how much you see change. You can do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page:

___ Date
___ Time (also include AM or PM)
___ Weather at the time of nature journal (temperature is optional)
___ Location of where you’re making your nature journal

For this week’s assignment:

___ What are some questions you have about volcanoes? Follow up: Why do some areas have volcanoes while others (like Maine) do not have as many or any at all?

___ What are some questions you have about earthquakes? Follow up: Why do some areas like California have a lot of earthquakes while Maine has only a few?

___ What are some questions you have about mountains? Follow up: Why do some areas within Maine have mountains, while others (like Falmouth) lack mountains?

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Nov. 5th</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacks questions and curiosities about plate tectonics.</td>
<td>There are some questions and curiosities about plate tectonics, but it lacks details.</td>
<td>Includes well thought out/ explained curiosities about plate tectonics.</td>
<td>Includes well thought out/ explained curiosities about plate tectonics with significant details/insight beyond the assignment.</td>
<td></td>
</tr>
</tbody>
</table>
Ms. Coppens' model:

**Questions about Volcanoes:**
- How is obsidian black and pumice grey, but they are both extrusive rocks?
- How deep can you hike into a volcano? Is it dangerous?
- What happened at Pompeii?
- Is there only one type of volcano?

**Questions about Earthquakes:**
- I know there is the Mohs scale of mineral hardness & the Richter scale for earthquakes, called a fault line.
- Why is it all the way down to Mexico & up to Alaska? Does anywhere on the east coast have earthquakes?
- Are Earthquakes all the way down to Mexico & up to Alaska? Does anywhere on the east coast have earthquakes?

**Questions about Mountains:**
- Acadia has Cadillac mountain near the coast, how did that form?
- Why are mountains in the west taller than mountains in the eastern part of the U.S.?
Nature Journal 8-
Walk and Wonder About Earth’s Changing Land

Throughout this year, you will be keeping a nature journal. Each week you’ll be provided with specific assignments that build off of what we’re working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you’re seeing and feeling, or keep a log of how much you see change. You can do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page:

____ Date
____ Time (also include AM or PM)
____ Weather at the time of nature journal (temperature is optional)
____ Location of where you’re making your nature journal

For this week’s assignment:

____ Take a walk around your yard, neighborhood, outside the school, a trail, the beach, anywhere outside. As you walk, look around and wonder about what you see in connection to how Earth’s land has changed over time.

____ Write, draw, or list your wonderings in any way that represents your thoughts from the walk.

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Nov. 19th</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacks thoughts/questions from your walk that connect to how Earth’s land has changed over time. MUST REDO</td>
<td>There are some thoughts/questions from your walk about how Earth’s land has changed over time, but they lack clarity to the reader.</td>
<td>Includes well thought out/explained thoughts or questions from your walk about how Earth’s land has changed over time.</td>
<td>Includes well thought out/explained thoughts or questions from your walk with significant details/insight about how Earth’s land has changed over time.</td>
<td></td>
</tr>
</tbody>
</table>
Ms. Coppens’ model:

**My Walk and Wonder about Earth’s Changing Land:**

**Questions:**

* What were the rocks and shape of the land like before they put in the road?

* Where do they put all the extra rock when they clear land and smooth it down for roads and houses?

* Is the stream near my neighborhood getting wider or more narrow (drying out) over time?

* What did it look like here 500 years ago, 500,000 years ago, 500 million years ago?

* Is weathering what has the biggest impact (not including humans) on the shape of this land?
Nature Journal 9-
Dreams of Exploration

Throughout this year, you will be keeping a nature journal. Each week you'll be provided with specific assignments that build off of what we're working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you're seeing and feeling, or keep a log of how much you see change. You can do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page:

____ Date
____ Time (also include AM or PM)
____ Weather at the time of nature journal (temperature is optional)
____ Location of where you’re making your nature journal

For this week’s assignment, take the inspiration of John Wesley Powell’s journey to daydream about your own hopes to explore the unknown.

____ Sit outside and think about where in nature (or space) you’d want to explore and why. Describe your ideal journey or what questions you have that lead to you wanting to explore here.

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Dec. 3rd</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacks a sense of where you’d want to explore and why.</td>
<td>There isn’t a full sense or understanding of where you’d want to explore and why.</td>
<td>You give a sense of where you’d want to explore and why.</td>
<td>Includes well thought out/ explained thoughts or details about where you’d want to explore and why with significant details/insight beyond the assignment’s expectations.</td>
<td>MUST REDO</td>
</tr>
</tbody>
</table>
Ms. Coppens’ model:

Dreams about Exploration:

* On Earth, I’d like to explore a tropical rainforest and see the endless green canopy of trees, hear the sounds of animals, ranging from monkeys to birds. I’d like to see the river and explore in my kayak. There are pink Amazon river dolphins and I’d like to see one!

* In Space, I’d like to view Earth from the barren landscape of the Moon. I’d like to see the Sun make Earth’s land and ocean illuminate! While in space, I’d like to collect some of the space debris and trash (from satellites) that orbits Earth.
Throughout this year, you will be keeping a nature journal. Each week you’ll be provided with specific assignments that build off of what we’re working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you’re seeing and feeling, or keep a log of how much you see change. You can do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page:

____ Date
____ Time (also include AM or PM)
____ Weather at the time of nature journal (temperature is optional)
____ Location of where you’re making your nature journal

For this week’s assignment, take the inspiration of this week’s Maine geological study to think about your favorite memory of a nature moment in Maine.

____ Draw and/or describe (through prose or poetry) your favorite nature memory in Maine. This could involve mountains, beach, trails, animal sightings, anything at all in nature!

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Dec. 10th</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacks a sense of your favorite nature memory.</td>
<td>There isn’t a full sense or understanding of your favorite nature memory.</td>
<td>You give a clear sense of your favorite nature memory.</td>
<td>Includes well thought out/explained thoughts or details about your favorite nature memory with significant details/insight beyond the assignment’s expectations.</td>
<td>MUST REDO</td>
</tr>
</tbody>
</table>
My favorite Maine nature moment:

August of 2021, I hiked to the summit of Katahdin. It’s the highest point in Maine and I trained a year with running and hiking. We started our ascent at 5:15 am. My husband and I wore headlamps and Abol trail began in the woods. We hiked for about 30 minutes, then came to a sign that said:

**YOU ARE ENTERING MAINE'S LARGEST WILDERNESS**
- Your safety is your responsibility
- Set a turn around time and stick to it.
- Your destination is your safe return.

Our turn around we had plenty of emergency phone, determination. The steep and we got the mountain peak, which looked so far and so high! The next big moment was when we broke the tree line! We still had a long way to go, but the terrain shifted from low bushes to eventually lots of rocks. The most intimidating part of the hike was the rock slide. For an hour...
we used our hands (and knees) to climb boulder-after-boulder. I was grateful it hadn’t rained because this would be too slippery and dangerous if it was wet. Some boulders were so big that I needed to trust my husband as he pulled me up! Then over the final boulder, we reached the final mile of a trail to the top. To protect the plants, stakes and string marked our path as we continued to climb. My legs were sore and we’d been hiking for 5 hours, but there was no way we were going to stop! At 10:15 am, I saw the sign in the distance. There were only a few people on top and I hugged the sign.

And at that moment, I was the tallest thing in Maine!
Nature Journal 11-
Geology Entry of Choice

Throughout this year, you will be keeping a nature journal. Each week you’ll be provided with specific assignments that build off of what we’re working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you’re seeing and feeling, or keep a log of how much you see change. You can do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page:

____ Date
____ Time (also include AM or PM)
____ Weather at the time of nature journal (temperature is optional)
____ Location of where you’re making your nature journal

For this week’s assignment, you can do an entry of choice that connects to geology through any method (writing, drawing, poetry, list observations, story from rock’s POV, research, compare and contrast, walk and wonder, design your own experiment and write about it). Here is some art inspiration:
https://www.youtube.com/watch?v=l00vzxfg8sI:

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Dec. 22nd</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacks a clear approach to geology.</td>
<td>Partially thought out/ explained approach to how you want to explore geology.</td>
<td>Includes a well thought out/ explained approach to how you want to explore geology.</td>
<td>Demonstrates your approach with well thought out/ explained ideas that have significant details/insight beyond the assignment.</td>
<td></td>
</tr>
</tbody>
</table>
Ms. Coppens’ model with drawing and a student models with poetry, experiment, and digital:

**Geology of Choice / Drawing:**

My eye is ant ant:

1. [Hand-drawn sketch of a rock with markings]

2. [Detailed sketch of a rock with annotations]

**Photo:**

- [Image of a rock with texture and color]

**Notes:**

- 12/11
- Cloudy 38°F
- 10 am
- Backyard
Throughout this year, you will be keeping a nature journal. Each week you'll be provided with specific assignments that build off of what we're working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you're seeing and feeling, or keep a log of how much you see change. You can do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

Include on the top right of the page (OPTIONAL TO INCLUDE THIS WEEK):

___ Date

___ Time (also include AM or PM)

___ Weather at the time of nature journal (temperature is optional)

___ Location of where you're making your nature journal

For this week's assignment, You will write one portion of a group poem about Earth’s history based on the time period you are given. Our class will all come together on Friday to read this together as one large poem about Earth’s History.

Which poem everyone is doing

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Jan. 7th</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poem lacks correct information and shows you don't understand major events of the time period or has consistent misconception</td>
<td>Poem includes accurate information but doesn't focus on the major events of the time period, or the poem has minor misconceptions</td>
<td>Poem includes accurate information that shows an overall understanding of the time period’s major events.</td>
<td>Poem includes detailed, accurate information showing an understanding of the time period that is distinguished (very strong).</td>
<td>MUST REDO</td>
</tr>
</tbody>
</table>
Precambrian Time Haikus
by Ms. Coppens

Whirling, hot gases
Lava cools, then water flows
Bacteria Lives

Single-cells evolve
slowly photosynthesis
Changes everything

Plants bring oxygen
Algae changes atmosphere
Food source, life evolves
Nature Journal 13-
Night Sky Observations

Throughout this year, you will be keeping a nature journal. Each week you’ll be provided with specific assignments that build off of what we’re working on in class. Please know, this is your nature journal. You can go beyond the assignment to draw plants, animals, write a poem, write about what you’re seeing and feeling, or keep a log of how much you see change. You can do your nature journal in the same spot all year or you can change locations. Observations should be for at least 10 minutes outside.

.pen

Include on the top right of the page:

_____ Date

_____ Time (also include AM or PM)

_____ Weather at the time of nature journal (temperature is optional)

_____ Location of where you’re making your nature journal

.pen

For this week’s assignment, you’ll prepare for learning about the last mass extinction, which was caused by an asteroid by observing the sky at night. A clearer night with less clouds and precipitation will lead to better observations of the stars/Moon. You can also think about how the Moon formed when the planet Theia collided with Earth.

_____ Include I Notice…

_____ Include I Wonder…

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Jan. 14th</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacks thoughts about what you wonder/notice about the night sky. MUST REDO</td>
<td>There are some thoughts about what you wonder/notice about the night sky.</td>
<td>Includes well explained thoughts about what you wonder/notice, about the night sky.</td>
<td>Includes well detailed and explained thoughts about what you wonder/notice about the night sky.</td>
<td></td>
</tr>
</tbody>
</table>
Night Sky Observations: 1/9/22
8 pm
30°F
Front yard

I Notice:
* Some stars look brighter than others
* The longer I look, the more stars I see
* The moon looks almost full (I looked it up, it's a Waning Gibbous)

I wonder:
* How far away are these stars?
* Are the brighter stars closer or does that have to do with their size or age?
* Are the moon phases the same everywhere in the world?
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___ Time (also include AM or PM)

___ Weather at the time of nature journal (temperature is optional)

___ Location of where you’re making your nature journal

For this week’s assignment, connect vocabulary from our KT asteroid learning.

___ In any way you want, show your understanding of potential energy.

___ In any way you want, show your understanding of kinetic energy.

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Jan. 28th</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacks understanding of potential and kinetic energy. MUST REDO</td>
<td>Includes some thoughts through words or drawings about potential and kinetic energy.</td>
<td>Includes clearly explained thoughts through words or drawings about potential and kinetic energy.</td>
<td>Includes well detailed and explained thoughts or drawings about kinetic and potential energy and could include concepts to other physics concepts (friction, acceleration, air resistance, etc.)</td>
<td></td>
</tr>
</tbody>
</table>
Ms. Coppens’ model:

Potential Energy:
- Stored energy
- Impacted by things like position

Kinetic Energy:
- Energy in motion
- (more potential energy = more kinetic energy)
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Write an idea for an experiment (you don’t have to do it), but include:

_____ What is the experiment question?
_____ What is the variable?
_____ What is your hypothesis (if, then, because)?
_____ What is the procedure (number 1., 2., 3.) for the experiment?

This rubric gives you the expectations:

<table>
<thead>
<tr>
<th>Completed Nature Journal - Due by Friday, Feb. 4th</th>
<th>Does Not Meet</th>
<th>Partially Meets</th>
<th>Meets</th>
<th>Extends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacks understanding of the scientific method MUST REDO</td>
<td>Includes correct thinking about the scientific thinking, but at least one section is incorrectly done.</td>
<td>Includes clearly shown understanding of the scientific method.</td>
<td>Includes understanding of the scientific method, which in addition to the criteria above also includes constants, data collected/observations, and a conclusion written correctly.</td>
<td></td>
</tr>
</tbody>
</table>
Ms. Coppens’ model:

My sledding experiment:

Question: Will a sled go farther in fresh snow or in a sled’s tracks?

Variable: No tracks or tracks in the snow

Hypothesis: If a sled goes down a hill with no tracks and again in the tracks, then it will go farther in the tracks because there is less friction.

Procedure:
1. Put a sled on the top of a hill with no tracks.
2. Sit in the front of the sled and push off with a certain amount of force.
3. Measure the distance you travel.
4. Bring the sled to the same starting point (now in tracks).
5. Sit in the front of sled and push off with the same amount of force.
6. Measure the distance travelled and compare data.