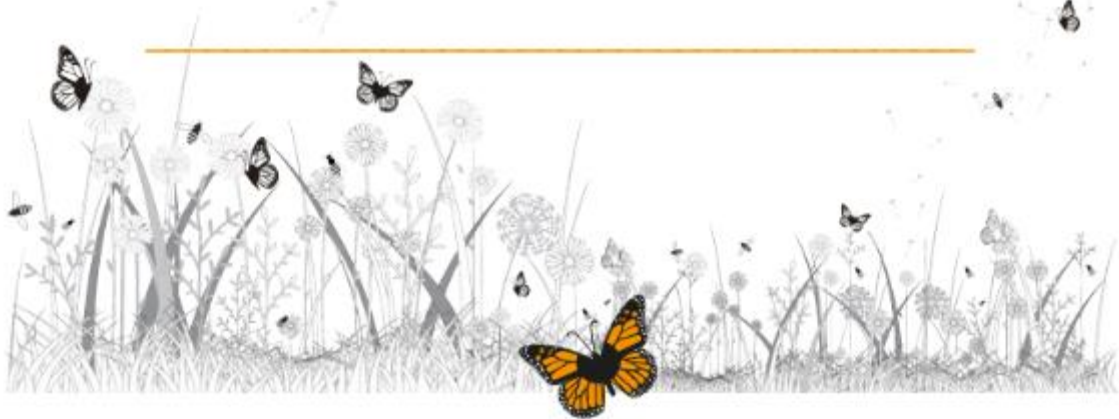




OPERATION CURIOSITY & WONDER

My Observations, Questions, and Data about the Natural World

THIS SCIENCE JOURNAL BELONGS TO:





OPERATION CURIOSITY & WONDER

Third-Fifth Grade

Use your Powers of Observation and the Practices of Science and Engineering

Information for Teachers and Families: THIRD GRADE

Overview:

Using our **powers of observation** is the first step in investigating and learning about the natural world. It is also one of the practices of science and engineering. This approach allows us to learn the content knowledge of science and pair it with the critical thinking of defining problems and creating solutions associated with engineering. The Minnesota Zoo wants to get children outside and help them to build connections to the natural world. The purpose of these activities is to connect learners to the natural world around them and their academic standards, provide opportunities for social-emotional learning, and deepen their understanding of how the world around them works.

How it works at home:

Students start by reading the science mystery “Where are the Acorns” from [Everyday Science Mysteries](#) (NSTA Press 2013). For the remainder of the first lesson, students should pick a location they can return to throughout the week. This could be in their yard, a park nearby, farmland, forest, or even a window in your home. Bring the materials outlined with you. Spend **10-15 minutes** each day doing the activities outlined for the day. The lessons will help provide clues to the story. If possible, send an adult or responsible party with the learner so they can share their thoughts and ideas and build connections to the people around them during this time. If easier for your learners, they can talk through their ideas and/or express themselves through writing or drawing. Encourage them to show their understanding in a way that best fits their learning! Have fun with this. This lesson provides an opportunity for learners to make simple observations about the natural world that connects them to their senses and nurtures their sense of curiosity and wonder!

Using the Student Sheets:

(See Appendix for Minnesota Academic Benchmarks)

3rd grade: These daily lessons are meant to help learners use their scientific skills or **powers of observation** to make sense of the world around them. As winter turns to spring, there will be many chances to observe and take notes! Starting with a simple mystery story and using the same activities each week, clues to the mystery are uncovered as patterns begin to emerge through the data collection. Help learners create a science journal to document and organize their discoveries.

Monday	Tuesday	Wednesday	Thursday	Friday
Plants	Animals	Clouds, Weather	Sun/Moon	Water

Feedback for the Minnesota Zoo:

Thank you for your interest in our Distance Learning Resources! We are interested in learning about your experience with these resources by completing a short survey <https://survey.mn.gov/s.asp?k=158697965283>.



Information for Adults Helping to Facilitate: THIRD GRADE

Overview:

The purpose of these activities is to connect learners to the natural world around them and their academic standards, provide opportunities for social-emotional learning, and deepen their understanding of how the world around them works.

How it works at home:

Start by reading the science mystery Where are the Acorns? ([see separate student resource document](#)). Then pick a spot to go to each day of the week. This could be in your yard, a park nearby, farmland, forest, or even a window in your home. Bring the materials outlined with you. Spend **10-15 minutes** each day doing the activities outlined for the day at this spot. It provides an opportunity for learners to make simple observations about the natural world that connects them to their senses and nurtures their sense of curiosity and wonder! Additional guides and tools are provided in Appendices to assist.

Proposed Daily and Weekly Schedule:

Monday	Tuesday	Wednesday	Thursday	Friday
Plants	Animals	Clouds, Weather	Sun/Moon	Water
Location: Outdoor area where there are living plants (any available).	Location: Outdoor area where you may be able to see or hear animals (any available).	Location: Outdoor area where you can see the sky.	Location: Outdoor area where you can see the sky.	Location: Outdoor space with water (rivers, lakes, creek, sewer drain).
Materials: • The day's lesson • Everyday Mystery Stories (see which reading from teacher) • Appendix: Leaf Shapes • Paper or notebook (journal) • Pencil/pen	Materials: • The day's lesson • Paper or notebook (journal) • Pencil/pen	Materials: • The day's lesson • Appendix: Cloud Chart • Paper or notebook (journal) • Pencil/pen	Materials: • The day's lesson • Appendix: Moon Phases • Paper or notebook (journal) • Pencil/pen	Materials: • The day's lesson • Appendix: Water Cycle • Paper or notebook (journal) • Pencil/pen

Optional Materials:

- Camera (to document what you are studying),
- Binoculars or hand lens
- Colored pencils or crayons
- Computer or iPad (for further investigations and resources)



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Questions to Help Students Think Critically and Show Understanding (Optional):

1. Did you notice anything new this week?
2. What do you think will happen next week?
3. What was your favorite part of going outside today?
4. What do you wonder about after today?

Introduction for Learners—Day One

Story of the Week

1. **Read** the story provided by your teacher from [Everyday Science Mysteries](#). When finished, answer the following questions.
 - a. What problem are the characters trying to solve?
 - b. What do you already know that helps you solve the mystery?
 - c. What do you need to learn more about this week to help you solve the mystery?
 - d. How is this story connected to nature?

2. Find a spot outside that you would like to explore for the next few weeks or go to a window (if you cannot go outside). This could be a park, a yard, forest or farmland. There are great places to explore nature all around us!
 - a. Where are you choosing to explore? _____
 - b. Take a minute to quietly observe the environment; look high, look low, and use all your senses.
 - c. Now create a list what you sensed, grouping into living and nonliving things. If you do not know the exact name, describe it so you can remember it for next time. *For example: dark blue bird, oak tree, sand, etc.*

Living	Nonliving

Think and Reflect!

3. What makes something living or nonliving? How do you know? Write down your answers.

Monday

Grade: 3

How are All Living Things Related?

PLANTS

Directions: Find one plant in your area. **Draw/photograph** it at least one time per week. Pay careful attention to details and things that make this plant special. Use your powers of observation! Each week, answer these prompts. Use *Appendix B: Leaf Shapes* to help you if you get stuck.

I am exploring this area: _____

Today's weather

Date: _____ / _____ / _____ <i>month day year</i>	Time: <i>(fill in current time. Circle AM or PM)</i> _____ AM PM
Temperature: <i>(put an "x" on the line that best describes the temperature OR if you know the number write it on the line.)</i> Cold Warm Hot	Sky Cover: <i>(circle the best one that describes the sky)</i> Clear/no clouds Few clouds/more sun More clouds/little sun Cloudy/no sun
Precipitation: <i>(circle the best one)</i> None Light rain Sleet/Hail Mist/Drizzle Heavy rain Snow	Wind: <i>(place an "X" next to the best one)</i> _____ Calm/No wind _____ Light wind <i>(feel the wind on your face, small branches moving)</i> _____ Windy <i>(large branches moving/hear whistling)</i> _____ Very Windy <i>(whole trees moving/ feel resistance walking into wind)</i>
Other Observations: 	

1. **Find** a living plant. Introduce yourself to your plant. What did you say?
2. What type of plant is it? (*For example, a tree, shrub, etc.*) How do you know? (*What do your powers of observation tell you?*)
3. Describe the area around your plant. List the living and nonliving parts.

Living	Nonliving

4. Think about what you already know about the life cycle of a plant. Which stage is your plant in? What clues tell you?

5. **Look** at all the different parts that make up your plant. **Draw** or **write**:

- Parts you can see, their function (purpose), and something humans use that has a similar function.
- Parts you cannot see, their function (purpose), and something humans use that has a similar function.

Parts You Can See		
Part	Its function	Works like a...
Parts You Cannot See		
Part	Its function	Works like a...

6. Pretend you are super small and you are standing on the leaf or the stem. What does it look like? **Draw** it here.

7. Think about the weather you recorded today. Does this have a **positive** (good) or **negative** (bad) effect on your plant? Which one and why?

8. Pretend you are this plant. Write a short story about your day today.

9. I noticed today...

10. I have these questions...

11. Think about the story *Where are the Acorns*, what clues from today might help you find out what happens to the acorns?

All Done for Monday!

Tuesday

Grade: 3

How are All Living Things Related?

ANIMALS

Directions: Find one living outdoor animal. **Draw/photograph** it at least one time per week. Pay careful attention to details and things that make this animal special. Use your powers of observation! Each week, answer these prompts.

I am exploring this area: _____

Today's weather

Date: _____ / _____ / _____ <i>month day year</i>	Time: (fill in current time. Circle AM or PM) _____ AM PM
Temperature: (put an "x" on the line that best describes the temperature OR if you know the number write it on the line.) _____ <i>Cold Warm Hot</i>	Sky Cover: (circle the best one that describes the sky) Clear/no clouds Few clouds/more sun More clouds/little sun Cloudy/no sun
Precipitation: (circle the best one) None Mist/Drizzle Light rain Heavy rain Sleet/Hail Snow	Wind: (place an "X" next to the best one) _____ Calm/No wind _____ Light wind (feel the wind on your face, small branches moving) _____ Windy (large branches moving/hear whistling) _____ Very Windy (whole trees moving/ feel resistance walking into wind)
Other Observations: 	

1. **Find** an animal outside. Use your powers of observation to listen and look closely! Introduce yourself to the animal. Does it make a noise? What do you hear it saying?
2. What type of animal do you see or hear? How do your observations help you decide what kind of animal it is?
3. Describe the area around your animal. List the living and nonliving things.

Living	Nonliving

4. What part of its life stage is the animal in? Give examples and reasons to explain your reasoning.

5. **Look** at all the different parts that make up your animal. **Draw** or **write**:

- Parts you can see, their function (purpose), and something humans use that has a similar function.
- Parts you cannot see, their function (purpose), and something humans use that has a similar function.

Parts You Can See		
Part	Its function	Works like a...
Parts You Cannot See		
Part	Its function	Works like a...

6. Pretend you are the size of a flea and you are walking on your animal's back. What does it look like?
Draw it here.



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7. Think about the weather you recorded today. Does this have a **positive** (good) or **negative** (bad) effect on your animal? Which one and how?

8. Pretend you are your animal. Write a short story about where your adventure will take you today.

9. I noticed today...

10. I have these questions...

11. Think about the story *Where are the Acorns?* What clues from today might help you find out what happened to the acorns?

All Done for Tuesday!

Wednesday

Grade: 3

How are All Living Things Related?

CLOUDS WEATHER

Directions: Look up outside and **find clouds in the sky**. **Draw/photograph** them at least one time per week. Pay careful attention to details and things that make the sky special. Use your powers of observation! Each week, answer these prompts. Use *Appendix C: Cloud Chart* to help you if you get stuck.

I am exploring this area: _____

Today's weather

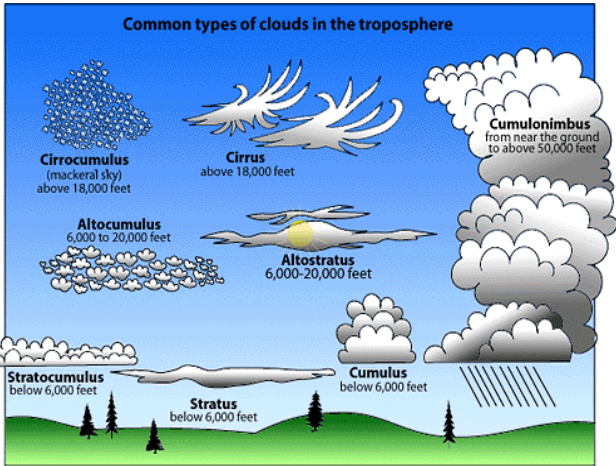
Date: _____ / _____ / _____ <i>month day year</i>	Time: <i>(fill in current time. Circle AM or PM)</i> _____ AM PM
Temperature: <i>(put an "x" on the line that best describes the temperature OR if you know the number write it on the line.)</i> Cold Hot	Sky Cover: <i>(circle the best one that describes the sky)</i> Clear/no clouds Few clouds/more sun More clouds/little sun Cloudy/no sun
Precipitation: <i>(circle the best one)</i> None Mist/Drizzle Light rain Heavy rain Sleet/Hail Snow	Wind: <i>(place an "X" next to the best one)</i> _____ Calm/No wind _____ Light wind <i>(feel the wind on your face, small branches moving)</i> _____ Windy <i>(large branches moving/hear whistling)</i> _____ Very Windy <i>(whole trees moving/ feel resistance walking into wind)</i>
Other Observations: 	

1. Use your powers of observation and look up at the sky! **Find** a cloud and ask the cloud a question. What question did you ask it?
2. List two things you know about clouds.
3. Adjectives help us describe details about nouns (people, places, things). How would you describe your cloud today? We provided a few but add any that are missing

Ways We Can Describe Clouds		
Puffy	Dark	Low (in the sky)
Feathery	White	High (in the sky)
Thin	Light	_____

4. Draw a picture of your cloud. What shape best describes your cloud? (circle word or shape)

Common types of clouds in the troposphere



Source: UCAR Center for Science Education



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-
-
-
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9. No clouds today? Find a shadow. Describe the relationship between the shadow you see on the ground and the Sun.

10. Have someone from home help you measure how long your shadow is. What will you use to measure?

Measuring device (circle the best choice): Ruler Your Shoe Your Thumb

Time of Day: _____

Shadow Length: _____ Units (circle one): Inches, Shoes, Thumbs

11. Why did you choose that measuring device? Why was it the best option for you?

12. What are the advantages/disadvantages of the device you chose?

13. I noticed today...



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14. I have these questions...

15. Think about the story *Where are the Acorns?* What clues from today might help you find out what happened to the acorns?

All Done for Wednesday!



Thursday

Grade: 3

How are All Living Things Related?

SUN/MOON

Directions: Look up outside and **find** the sun and the moon in the sky. Pay careful attention to details and things that make the sky special. Use Appendix D: Moon phases to help you if you get stuck.

I am exploring this area: _____

Today's weather

Date: _____ / _____ / _____ <i>month day year</i>	Time: (fill in current time. Circle AM or PM) _____ AM PM
Temperature: (put an "x" on the line that best describes the temperature OR if you know the number write it on the line.) _____ <i>Cold Warm Hot</i>	Sky Cover: (circle the best one that describes the sky) Clear/no clouds Few clouds/more sun More clouds/little sun Cloudy/no sun
Precipitation: (circle the best one) None Mist/Drizzle Light rain Heavy rain Sleet/Hail Snow	Wind: (place an "X" next to the best one) _____ Calm/No wind _____ Light wind (feel the wind on your face, small branches moving) _____ Windy (large branches moving/hear whistling) _____ Very Windy (whole trees moving/ feel resistance walking into wind)
Other Observations: 	

1. Use your powers of observation and look up at the sky! **Find** the sun (and maybe even the moon!). Introduce yourself. Give it one positive feedback statement.

I like it when...

2. How do you know where to look for the sun (or the moon)? What do you know about them already?

I know _____

because_____.

3. Is the sun out today? If yes, observe it carefully and fill in the chart. If no, fill in the chart based on what you know already.

What time is it?	In relation to you, draw the sun's position in the sky.	
		
Do you remember last week? How does it compare? DIFFERENT SAME FIRST TIME MAKING OBSERVATION	How is it different/similar? (Is it higher, lower, brighter, etc.) If it is the first time you are making this observation, how do you think it might have changed?	What do you predict for next week?

4. Now stand with your back to the sun. Record your observations.

What time is it?	Draw the sun and your shadow in relation to you.	
		
Comparison from last week DIFFERENT SAME FIRST TIME MAKING OBSERVATION	How is it different/similiar? If it is the first time you are making this observation, how do you think it might have changed?	What do you predict for next week?

5. Think about the plant and animal you observed this week. Why is the sun important to them?

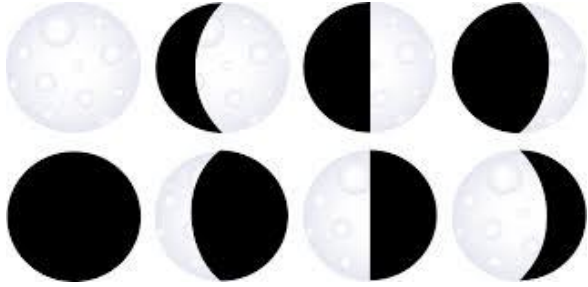
The plant

The animal

6. Write one thing you noticed about the sun...

7. Write one question you still have about the sun...

8. TONIGHT: Look for the moon and fill in the chart.

What time is it?	Which one best matches tonight's phase? (circle one)	
		
Comparison from last week DIFFERENT SAME FIRST TIME MAKING OBSERVATION	How is it different/similar?	What do you predict for next week? Why?

9. Tonight I noticed this about the moon...

10. I still have this question about the moon...

16. Think about the story *Where are the Acorns?* What clues from today might help you find out what happened to the acorns?

All Done for Thursday!

Friday
Grade: 3

WATER

How are All Living Things Related?

Directions: Use your powers of observation and **look** for a source of water! This could be a river, lake, creek, pond or even a storm drain near your house. **Draw** or **photograph** it at least once per week. Pay careful attention to details. Use *Appendix D: Water Cycle* to help you if you get stuck.

I am exploring this area: _____

Today's weather

Date: _____ / _____ / _____ <i>month day year</i>	Time: <i>(fill in current time. Circle AM or PM)</i> _____ AM PM
Temperature: <i>(put an "x" on the line that best describes the temperature OR if you know the number write it on the line.)</i> Cold Warm Hot	Sky Cover: <i>(circle the best one that describes the sky)</i> Clear/no clouds Few clouds/more sun More clouds/little sun Cloudy/no sun
Precipitation: <i>(circle the best one)</i> None Light rain Sleet/Hail Mist/Drizzle Heavy rain Snow	Wind: <i>(place an "X" next to the best one)</i> _____ Calm/No wind _____ Light wind <i>(feel the wind on your face, small branches moving)</i> _____ Windy <i>(large branches moving/hear whistling)</i> _____ Very Windy <i>(whole trees moving/ feel resistance walking into wind)</i>
Other Observations: 	

1. **Think** about what you already know about water. Where does this water come from?

I know _____

because _____.

2. Using your senses to observe, then **write** down the words that best describe the water source.

I hear	I see	I feel

3. **Imagine** you were looking at your waterway from the sky. What shape is it in? **Draw** or **describe** the shape.



-
- A blue magnifying glass icon, consisting of a circular lens and a handle, positioned to the right of the text.

8. Create a story about the journey this water takes. Where does it go? Who uses it?

9. Today I noticed...

10. Questions I have...



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11. Think about the story *Where are the Acorns?* What clues from today might help you find out what happened to the acorns?

12. I am looking forward to _____ next week because...

All Done for Friday!

Engineering Extension: Third Grade

Scientists use magnifying glasses to observe objects with more detail. Use your creativity to design and build your own magnifying device for better observations of the plants, animals and the world around you!

Wondering Questions:

1. What do you know about a magnifying glass?
2. How can it help you in your exploration?
3. Can you think of common items in your house that magnify or enlarge details?
4. What are their parts and function?



Part <i>Example: Handle</i>	Structure <i>Example: Wooden Spoon</i>	Function <i>Example: Something to hold on to</i>

5. What questions do you have about magnifying glasses?

6. Draw a prototype or first example of your magnifying glass. Label the parts.

Build Time!

Brainstorm and think about the parts that make up a magnifying glass. What function does each part have? Why does it work? Think about common things around the house with the same function. Gather, construct and test your prototype.

Document your invention!

7. What materials did you use?

8. A drawing of what it looks like (or take a picture!)

9. What changes did you need to make along the way? How is it different from your first idea?

Try it Out!

Once you created a magnifier, find something in nature that interests you and test it out!

10. How much detail can you see? Draw or write what you see.

11. Explain what happens after moving your magnifying device closer to the object? Farther away?

Evaluate!

12. How well did your magnifier work?

13. What about your device that makes it work?



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14. Can you improve your magnifier to observe more detail?

Extend Learning!

15. What happens if you make a bigger device?

16. Explain what happens in a variety of lighting.

Show off your work! Take pictures of your device and send them to the Minnesota Zoo so we can cheer you on!



Post pictures to Instagram: @mnzoo, @mnzooedu



Post Pictures to Facebook: Minnesota Zoo Educators Facebook Page

Formative and Summative Assessment of Learning Wrap Up for Students

Checks for Understanding

I hope you had fun exploring your area this week. Next week should bring more change and excitement. Answer these questions and keep in a safe place so you can show your teacher all the neat things you learned.

1. Write two to three sentences explaining the area you choose and why?
2. Highlight what you discovered here. List three living and three nonliving parts of this area. If any of them have a relationship, draw a line to connect them and if you know, what that relationship is.
3. What was the weather like this week? For each day draw the cloud type, the sun, and the moon phase.

	Monday	Tuesday	Wednesday	Thursday	Friday
Cloud Type					
Sun Shape					
Moon Shape					

4. Did you solve the mystery of the reading this week? If so, apply your learning this week and write a letter to the main character.

Rubric for Daily Work (Prompts 1-4 from Checks for Understanding)

	4	3	2	1
Reason for selecting area	Writes 2-3 sentences. Gave clear reason and expanded on why.	Writes 1-2 sentences. Gave a clear reason but didn't expand on why	Writes 1 sentence. Gave reason. Did not expand on why	Wrote nothing. Left blank.
Listing living and nonliving parts and connection	Lists 3 living parts List 3 nonliving parts Drew line connecting 2 parts and listed the relationship.	Lists 3 living parts List 3 nonliving parts No line connecting 2 parts and listed the relationship.	Lists 2 living parts List 2 nonliving parts Either drew or no line connecting 2 parts and listed the relationship.	Lists 1 living parts List 1 nonliving parts Either drew or no line connecting at least 2 things and listed the relationship.
Week's weather	Drew cloud, sun, and moon for all 5 days.	Drew cloud, sun, and moon for 4 days	Drew cloud, sun, and moon for 3 days	Drew cloud, sun, and moon for only 1-2 days
Where Are the Acorns? Advice for Cheeks	Wrote a letter with a clear mention of the clues and expanded on it that helped solve the mystery.	Wrote a letter with a mention of a clue but didn't expand on it that helped solve the mystery.	NA	Wrote a letter but didn't talk about clues that helped solve the mystery

1. Finish the story! Write a story that tells the end of the weekly mystery. Be sure to use evidence from your observations to explain what happened and apply your learning. Requirements to help you write your story:
 - 3 paragraphs
 - 2-5 sentences in each paragraph
 - 10 or more adjectives in your story
 - 5 observations you used to write your story
 - 2 patterns you noticed
 - Includes information about plants, animals, clouds/weather, sun and moon, and water
 - Extra Extension: write and illustrate your story. Read it to someone in your home!

Rubric for Finishing the Mystery (Prompt 7 from Checks for Understanding)

	4	3	2	1
Structure: Paragraphs and Sentences	Writes 3 sentences with 2-5 sentences. Syntax and grammar are consistent with progress so far this academic year.	Writes 3 paragraphs with 2-5 sentences. Syntax and grammar are inconsistent with progress so far this academic year.	Writes less than 3 paragraphs or 2-5 sentences per paragraph. Syntax and grammar are inconsistent with progress so far this academic year.	Writes less than 3 paragraphs and less than 2-5 sentences per paragraph. Syntax and grammar not grade-level appropriate.
Includes Data and Observations of Plants, Animals, Clouds/Weather, Sun/Moon, and Water	Uses data to form conclusions and provides detailed observations from all 5 themes and includes an additional theme not outlined by days.	Uses data to form conclusions and provides detailed observations from 5 themes.	Uses data to form conclusions and provides detailed observations from 4 or fewer themes.	Uses data but may not provide conclusions and provides observations without details from 4 or fewer themes.
Observations and Descriptive Details	Uses more than 10 adjectives in the story that accurately match 5 or more observations.	Uses 10 adjectives in the story that accurately match 5 observations.	Uses less than 10 adjectives in the story that accurately match 5 observations.	Uses less than 10 adjectives in the story that do not accurately match 5 or less observations.
Patterns	Use their observations and the practices of science and engineering to explain 2 or more patterns that emerged from their data. The explanation uses evidence to draw conclusions.	Use their observations and the practices of science and engineering to explain 2 patterns that emerged from their data. The explanation uses evidence to draw conclusions.	Use their observations and the practices of science and engineering to explain 2 patterns that emerged from their data. The explanation does not use evidence to draw conclusions.	Use their observations and the practices of science and engineering to explain 1 or fewer patterns that emerged from their data. The explanation does not use evidence to draw conclusions.

Appendix: 3rd Grade Benchmarks

Nature of Science	Life Science	Earth Science	Physical Science
3.1.1.1.1 Provide evidence to support claims, other than saying “Everyone knows that,” or “I just know,” and question such reasons when given by others. 3.1.1.2.1 Generate questions that can be answered when scientific knowledge is combined with knowledge gained from one's own observations or investigations. <i>For example:</i> Investigate the sounds produced by striking various objects. 3.1.1.2.3 Maintain a record of observations, procedures and explanations, being careful to distinguish between actual observations and ideas about what was observed. <i>For example:</i> Make a chart comparing observations about the structures of plants and animals. 3.1.1.2.4 Construct reasonable explanations based on evidence collected from observations or experiments. 3.1.3.2.1 Understand that everybody can use	3.4.1.1.1 Compare how the different structures of plants and animals serve various functions of growth, survival and reproduction. <i>For example:</i> Skeletons in animals and stems in plants provide strength and stability. 3.4.1.1.2 Identify common groups of plants and animals using observable physical characteristics, structures and behaviors. <i>For example:</i> Sort animals into groups such as mammals and amphibians based on physical characteristics. <i>Another example:</i> Sort and identify common Minnesota trees based on leaf/needle characteristics. 3.4.3.2.1 Give examples of likenesses between adults and offspring in plants and animals that can be inherited or acquired. <i>For example:</i> Collect samples or pictures that show similarities between adults and their young offspring. 3.4.3.2.2	3.3.3.1.1 Observe and describe the daily and seasonal changes in the position of the sun and compare observations. 3.3.3.1.2 Recognize the pattern of apparent changes in the moon's shape and position. 3.3.3.2.2 Recognize that the Earth is one of several planets that orbit the sun, and that the moon orbits the Earth	3.2.3.1.2 Explain how shadows form and can change in various ways. 3.2.3.1.3 Describe how light travels in a straight line until it is absorbed, redirected, reflected or allowed to pass through an object. <i>For example:</i> Use a flashlight, mirrors and water to demonstrate reflection and bending of light.

evidence to learn about the natural world, identify patterns in nature, and develop tools. <i>For example:</i> Ojibwe and Dakota knowledge and use of patterns in the stars to predict and plan. 3.1.3.4.1 Use tools, including rulers, thermometers, magnifiers and simple balance, to improve observations and keep a record of the observations made.	Give examples of differences among individuals that can sometimes give an individual an advantage in survival and reproduction.		
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Resources:

UCAR Center for Science Education

<https://scied.ucar.edu/learning-zone/clouds/cloud-types>

NASA Visualization Studio

<https://svs.gsfc.nasa.gov/4236>

Konicek-Moran, R. (2013). *Where Are All the Acorns?*. Everyday Earth Science Mysteries. NSTA Press: Arlington, Virginia. Pgs 137-138.