



Stackable Instructionally- embedded Portable Science (SIPS) Assessments Project

Grade 5 Science Unit 2 Sample Lesson “Matter Matters” Matter and Energy in Organisms and Ecosystems December 2022

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Science Grade 5
Unit 2: Matter and Energy in Organisms and Ecosystems
Sample Lesson: Matter Matters
Suggested Time to Complete: 80 minutes



Purpose & Use Statement: *This sample lesson was developed for state and local administrators and teacher leaders (e.g. curriculum directors, instructional facilitators, professional learning specialists) to (1) illustrate an example of an instructional lesson developed using a principled design approach, and (2) support accompanying process documentation about how to use the SIPS unit as an instructional framework to intentionally design high-quality lessons in an aligned curriculum, instruction, and assessment system. This sample lesson should be evaluated and refined, as necessary, to align appropriately with a standards-based curriculum, instruction, and assessment system prior to its use. Additionally, teachers should refine this lesson to meet the local, cultural, and individual needs of students.*

Desired Results

Overview of the Learning Goals

In this lesson, “Matter Matters,” students engage with Big Idea 2 (Organization for Matter and Energy Flow in Organisms) as they explore resources to find evidence that either supports or refutes their thinking related to their explanatory models.

Students will obtain and evaluate information to support the development of their models and provide evidence for their argument/justification of their model. Students will review multiple resources and document their findings before adding their evidence to their model.

Connections to Prior Learning

2.PS1.A, 2.LS4.D, & 4.ESS2.E

- Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. (2-PS1-1)
- A great variety of objects can be built up from a small set of pieces. (2-PS1-3)
- There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)
- Living things affect the physical characteristics of their regions. (4-ESS2-1)

SEP: Developing and Using Models

- **Prior learning from K-2:** Students develop a basic understanding of a model as a representation of the thing (e.g., an object, event, or process), rather than the thing itself. They also gain experience with comparing and developing different models. [Appendix F]
 - K-ESS3-1 and 2-LS2-2 focus on using or developing models of plants and/or animals.
 - **Prior learning from 3-4:** Students continue developing their modeling skills and abilities by developing and revising different types of models, along with beginning to consider that models can have limitations. [Appendix F]
 - 3-LS1-1 and 4-LS1-2 focus on developing models in the context of organisms, including their life cycles and animals’ sensation and perception.
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SEP: Engaging in Argument from Evidence

- **Prior learning from K-2:** Students develop a beginning understanding that arguments must be supported by evidence, evidence in support (or in contradiction) of an argument can be evaluated, and that evidence can be relevant or irrelevant to the specific claim/question.
- **Prior learning from 3-4:** Students continue developing their argumentation skills and abilities by constructing arguments, supporting those arguments with evidence, and forming an argument to critique an explanation or model.

SEP: Obtaining, Evaluating, and Communicating Information

- **Prior learning from K-2:** Students obtain information from various grade-appropriate texts and media, using text features to answer a scientific question or to support a claim, and communicate information in oral and/or written forms that provide detail about scientific or design ideas and practices.
- **Prior learning from 3-4:** Students continue developing experiences and progress to obtaining and combining information from books and/or other reliable media to explain phenomena or solutions to a design problem, and to evaluate the merit and accuracy of ideas and methods.

CCC: Systems and System Models

- **Prior learning from K-2:** Students develop experience describing organisms (and other systems) in terms of their parts and considering how the parts work together to achieve a desirable goal for the organism (or system). [Appendix G]
 - In K-ESS3-1, students work with modeling a system in which multiple plants and animals live in the same area and are able to satisfy their needs.
- **Prior learning from 3-4:** Students continue developing experience with considering systems in terms of their parts, with an additional emphasis on the idea that some behaviors of the system are enabled by the functioning of multiple parts working together. [Appendix G]
 - In 3-LS4-4, students work with the idea that the plants and animals living in an ecosystem may be affected when the environment changes.
 - In 4-LS1-1, students interrogate the functioning of plants (and/or animals) in terms of the organisms' structures that enable the activity of the larger system (i.e., the organism).

CCC: Energy and Matter

- **Prior learning from K-2:**
 - Minimal/not applicable
- **Prior learning from 3-4:** Students work with the idea that energy can be transferred. [Appendix G]
 - In 4-PS3-2 and 4-PS3-3, students focus on the concept that energy can be transferred.

Key Vocabulary

Students build conceptual meaning with and use key tier II and tier III vocabulary terms as they make sense of phenomena and phenomena-based design problems. This is not an exhaustive list of terms and should be reviewed and modified by educators, as appropriate.

- | | | |
|-------------|-------------|--------------|
| ● Predator | ● Consumers | ● Food chain |
| ● Prey | ● Ecosystem | ● Habitat |
| ● Producers | | |

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Targeted Stage 1 Learning Goals

Acquisition Goals (AG)

A3: Construct an explanation about how animals rely on food for body repair and growth.
A16. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. [5-LS2-1]

Common Core State Standards (CCSS):

RI.5.1	RI.5.7
RI.5.9	SL.5.5
W.5.1	

Enduring Understandings (EU)/ Essential Questions (EQ):

EU1/EQ1	EU2/EQ2
EU3/EQ3	

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<input type="checkbox"/> Analyze & Interpret Data <input type="checkbox"/> Ask Questions <input checked="" type="checkbox"/> Construct Explanations <input type="checkbox"/> Define Problems <input type="checkbox"/> Design Solutions <input checked="" type="checkbox"/> Develop & Use Models (5-LS2-1) <input checked="" type="checkbox"/> Engage in Argument from Evidence (5-LS1-1) <input type="checkbox"/> Mathematics & Computational Thinking <input checked="" type="checkbox"/> Obtain, Evaluate, & Communicate Information <input type="checkbox"/> Plan & Carry Out Investigations	<input checked="" type="checkbox"/> LS2.A Interdependent Relationships in Ecosystems (5-LS2-1) <input checked="" type="checkbox"/> LS2.B Cycles of Matter and Energy Transfer in Ecosystems (5-LS2-1)	<input type="checkbox"/> Cause & Effect <input checked="" type="checkbox"/> Energy & Matter (5-LS2-1) <input type="checkbox"/> Patterns <input type="checkbox"/> Scale, Proportion, & Quantity <input type="checkbox"/> Stability & Change <input type="checkbox"/> Structure & Function <input checked="" type="checkbox"/> Systems & System Models (5-LS2-1)

 **Formative Assessment Opportunities**

Monitoring	Success Criteria	Possible Instructional Adjustments
<ul style="list-style-type: none"> • Small group conferences and discussion • Teacher questioning • Photo Observation Organizer (see page 13) 	<p>Students can:</p> <ul style="list-style-type: none"> • Analyze different media to identify relevant information • Connect relevant information with prior learning 	<ul style="list-style-type: none"> • Provide scaffolds and supports to encourage exploration and choice in selecting materials for student exploration • Include guidance and structures to support students in accessing the material such as QR codes, bookmark pages, and instructions that provide

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		<p>guidance and the space for students to be creative</p> <ul style="list-style-type: none"> • Ask in-the-moment questions as students are exploring the text • Provide opportunities for self-reflection, peer feedback, and teacher conferencing as students explore the content resources
<ul style="list-style-type: none"> • Student explanatory models • Presentation of student models • Feedback on others' models • Student conferences • Teacher questioning 	<p>Students can:</p> <ul style="list-style-type: none"> • Evaluate their existing explanatory model and use new information to modify and improve their explanation • Review and evaluate peer models and provide constructive feedback • Incorporate ideas from others' models and peer feedback to improve their own models 	<ul style="list-style-type: none"> • Use questions to encourage students to think deeply about the content and challenge lingering misconceptions • Model to students how to provide constructive feedback while allowing students the space for discovery and learning • Provide peer review opportunities to provide and receive feedback from classmates

Instructional Plan

Lesson Overview

In this lesson, students conduct research through other media (reading passages, text chapters, videos, websites, podcasts, images, diagrams, and others) that will help connect what they learned about matter in Unit 1 (e.g., matter is made of particles too small to be seen) and apply it while considering how animals take what they eat and add that matter to their own bodies.

- **Explore:** Through reading and discourse in the class or in groups, students explore the idea that animals need to consume matter to grow and heal and that animals' food sources provide this matter.
- **Explain:** Students then revise their explanatory models by adding information from the activity such as additional information about where the owl's matter comes from and how it is used.

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Materials & Set-Up

Students will need access to resources to learn more about barn owls and their prey. Teachers can print some of these resources and preload resources on computers.

Activity 1:

- [Rat | Openverse \(wordpress.org\)](https://wordpress.org/openverse/image/2327028e-7802-49c6-b96e-27da2e7a3341/)
[https://wordpress.org/openverse/image/2327028e-7802-49c6-b96e-27da2e7a3341/]
- [Bank vole / Skogssork \(Clethrionomys glareolus\) | Openverse \(wordpress.org\)](https://wordpress.org/openverse/image/02f94441-a2a0-4a33-bfed-381cf1a7acdc/)
[https://wordpress.org/openverse/image/02f94441-a2a0-4a33-bfed-381cf1a7acdc/]
- [Barn Owl | Openverse \(wordpress.org\)](https://wordpress.org/openverse/image/3e8f4262-6553-48a7-b259-4e3f10d0290c/)
[https://wordpress.org/openverse/image/3e8f4262-6553-48a7-b259-4e3f10d0290c/]
- [Water Vole | Openverse \(wordpress.org\)](https://wordpress.org/openverse/image/268f13ef-8975-46ac-8cb8-0c266e36add2/)
[https://wordpress.org/openverse/image/268f13ef-8975-46ac-8cb8-0c266e36add2/]
- [Barn owl with tea | Openverse \(wordpress.org\)](https://wordpress.org/openverse/image/9488168c-4ce7-42bf-9e0c-f20c261e69c0/)
[https://wordpress.org/openverse/image/9488168c-4ce7-42bf-9e0c-f20c261e69c0/]
- [Southern Short-tailed Shrew | Openverse \(wordpress.org\)](https://wordpress.org/openverse/image/e9f260fb-9200-4c63-8cff-b6bd35c05d6d/)
[https://wordpress.org/openverse/image/e9f260fb-9200-4c63-8cff-b6bd35c05d6d/]
- [Rabbit | Openverse \(wordpress.org\)](https://wordpress.org/openverse/image/8877c445-b247-4fd0-9206-e757df402c9a/)
[https://wordpress.org/openverse/image/8877c445-b247-4fd0-9206-e757df402c9a/]
- [Smithsonian's National Zoo Short-Eared Elephant Shrew | Openverse \(wordpress.org\)](https://wordpress.org/openverse/image/57345eaa-f752-42f0-8aed-49e43b4a7eee/)
[https://wordpress.org/openverse/image/57345eaa-f752-42f0-8aed-49e43b4a7eee/]
- [Barn Owl with prey - Kerkuil met prooi \(Tyto alba\) ... | Openverse \(wordpress.org\)](https://wordpress.org/openverse/image/2717ec4f-d382-4542-b0ca-3024421984af/)
[https://wordpress.org/openverse/image/2717ec4f-d382-4542-b0ca-3024421984af/]
- [Photo Observation Organizer.pdf | Powered by Box](#) (see page 13)

Activity 2:

- [Here's What Makes Barn Owls Exceptional Hunters – From the Public Domain](https://fromthepublicdomain.com/2020/11/29/heres-what-makes-barn-owls-exceptional-hunters/)
[https://fromthepublicdomain.com/2020/11/29/heres-what-makes-barn-owls-exceptional-hunters/]
- [Barn Owl \(thespruce.com\)](https://www.thespruce.com/barn-owl-387223)
[https://www.thespruce.com/barn-owl-387223]
- [Vole - Description, Habitat, Image, Diet, and Interesting Facts \(animals.net\)](https://animals.net/vole/)
[https://animals.net/vole/]
- [Shrew - Description, Habitat, Image, Diet, and Interesting Facts \(animals.net\)](https://animals.net/shrew/)
[https://animals.net/shrew/]
- [Rabbit - Description, Habitat, Image, Diet, and Interesting Facts \(animals.net\)](https://animals.net/rabbit/)
[https://animals.net/rabbit/]
- [Barn Owl: The Ghostly Bird of Prey With a Heart-Shaped Face - Outforia](https://outforia.com/barn-owl/)
[https://outforia.com/barn-owl/]

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- [BARN-OWL-INFOGRAPHIC-683x1024.jpg \(683x1024\) \(outforia.com\)](https://outforia.com/wp-content/uploads/2022/08/BARN-OWL-INFOGRAPHIC-683x1024.jpg)
 [https://outforia.com/wp-content/uploads/2022/08/BARN-OWL-INFOGRAPHIC-683x1024.jpg]
- [Seed Discussion Organizer | Read Write Think](https://www.readwritethink.org/classroom-resources/printouts/seed-discussion-organizer)
 [https://www.readwritethink.org/classroom-resources/printouts/seed-discussion-organizer]

Activity 3:

- [Barn Owls: The Secret Saviors of Napa Valley’s Vineyards](https://youtu.be/6uTZcdeXd8w)
 [https://youtu.be/6uTZcdeXd8w]
- [An Introduction to the Barn Owl](https://youtu.be/ohqEquNnzfU)
 [https://youtu.be/ohqEquNnzfU]
- [Graceful Barn Owl Hunting in the Daytime](https://youtu.be/M-a6QjHrI_c)
 [https://youtu.be/M-a6QjHrI_c]
- [Wild Kratts: Vole! Secret Facts](https://youtu.be/u0PhWohE4po)
 [https://youtu.be/u0PhWohE4po]
- [Field Vole – 60 Second Species](https://youtu.be/l8v4OIJzNS0)
 [https://youtu.be/l8v4OIJzNS0]
- [Shrew Knew? Fascinating facts about shrews!](https://youtu.be/6lrl50spaQU)
 [https://youtu.be/6lrl50spaQU]
- [Amazing Facts About Shrews](https://youtu.be/OomnhkoWAwc)
 [https://youtu.be/OomnhkoWAwc]
- [Double-Entry Journal | Read Write Think](https://www.readwritethink.org/classroom-resources/printouts/double-entry-journal)
 [https://www.readwritethink.org/classroom-resources/printouts/double-entry-journal]

Anchor or Investigative Phenomenon: Observations from a photo of a barn owl

Driving Question: Where does the matter and energy a barn owl needs come from?

	Teacher Does	Students Do
Engage		
	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Introduce object, event, phenomenon, problem, or question <input checked="" type="checkbox"/> Build background knowledge <input checked="" type="checkbox"/> Facilitate connections 	
Explore		
	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Explore object, event, phenomenon, problem, or question <input checked="" type="checkbox"/> Guided exploration with hands-on activities 	<p>To start the lesson, the teacher displays one of the photos of the barn owl/predator for the class and asks the students to write down all the observations they can make from the photo. The class talks about their observations of the</p> <p>For each activity, students work in small groups to explore the provided resources. Students choose which of the resources they are interested in exploring and then record notes with key takeaways from each resource. Students use the note organizers</p>

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characteristics of the owl and then considers what those characteristics hint about the kinds of predators and prey the owl may have.


These activities could be done in order or out of order as part of stations/centers. To keep group sizes smaller, the teacher could have two sets of stations/centers and students move through one set of three. The teacher cycles around the room monitoring student work, observing student notes, and asking probing questions to encourage students to think deeply and add to their note organizers.

provided or create their own organizer to document their notes from their research.

Activity 1

The teacher provides a collection of pictures. The photos are of barn owls and their prey. Students are tasked with making observations about the animals, what they think they eat, what might eat them, and how their characteristics help them eat and avoid being eaten. Students can either use the Photo Observation Organizer (see page 13) or create their own.

Activity 2

 Students are provided with a selection of articles and reading passages (see “Materials & Set-Up, Activity 2”) related to the owl/predator and their prey. As students read, they record their thinking in the Seed Discussion Organizer and add information to their initial photo organizer about the specific animals.


Activity 3

Students select from a collection of videos (see “Materials & Set-Up, Activity 3”) on the owl/predator and their prey and record notes in the Double-Entry Journal, making connections between what they learn from the videos to the owl/predator and their prey’s energy and matter sources.

Explain

- Explain understanding of concepts and processes
- Introduce new concepts and skills to seek conceptual clarity

The teacher cycles around the room while students are working on their explanations asking probing questions that encourage students to consider how their new evidence either supports or refutes their initial model and that encourages them to make modifications to their model based on this new evidence.

 After engaging with materials in each of the three activities, students use their notes/graphic organizers in small groups to add information to their explanatory models. Students may find that some ideas have been refuted (for example,

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The teacher should avoid directly connecting or telling students what to put into their explanatory model. During model sharing, the teacher encourages students to ask probing questions, encourages students to justify their decisions in their model, and asks students to use evidence to support their claims.

they may have said that a shrew eats seeds, not insects). Students should present their updated models to the class and receive feedback from other students. Students should defend their decisions to add to, remove, or otherwise change their explanatory model. After all students share their revised models, students should take time to re-evaluate their explanatory model and make revisions based on what other students shared about their own models.

Elaborate

- Build on or extend understanding and skill
- Apply concepts in new or related contexts

Evaluate

- Self-assess knowledge, skills, and abilities
- Evaluate student development and lesson effectiveness

Closing

Students revisit the driving question board to see which questions they have ideas and answers about and to consider what new questions they may have or want to add to the board.

Finally, to introduce concepts such as invasive species and competition later, the teacher asks students to consider some of the animals that eat the prey, such as foxes who eat voles. How might those animals impact the owl's ability to get the energy and matter that it needs? Students write their initial thinking on an exit ticket to provide information that will inform later instruction.

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Differentiation Strategies and Resources

“Universal Design for Learning (UDL) is a framework to improve and optimize teaching and learning for all people based on scientific insights into how humans learn” (CAST, 2022). Taking time to reflect on prior instruction when planning for accessible, differentiated, and culturally responsive instruction for diverse learners and culturally diverse classrooms serves to identify ways to improve future instructional practices. The UDL Guidelines provide a framework for this reflection. The guidelines include three principles as ways to focus on variety and flexibility in instructional practices:



Multiple Means of Engagement






Multiple Means of Representation



Multiple Means of Action & Expression

By examining instruction and instructional materials through the lens of each of these principles, teachers can identify and thus reduce or remove barriers to diverse learners.





Learning Opportunities	UDL Principle	Example Differentiation Strategies & Resources
Explore		
<i>Students examine photos of the barn owl/predator.</i> <i>Students examine and record observations from a variety of media about members of the owl's ecosystem.</i>		Make the work authentic and relevant <ul style="list-style-type: none"> Support students in making connections to their own local ecosystem by using a local predator Remind students of the anchoring phenomenon and the goal of the unit, to understand where the matter and energy of an organism come from and goes
		Provide choices <ul style="list-style-type: none"> Encourage students to divide up the resources and select those that they are most interested in Have students work together and collaborate on the data collection as they read, watch, and examine the resources
		Use a flexible way to present information <ul style="list-style-type: none"> Use computers to allow students to scroll through and zoom into photos, pause and rewatch sections of videos, and explore additional links embedded in the texts Provide information in a variety of ways <ul style="list-style-type: none"> Use multiple resources which convey the same information as part of the activities (e.g., images, passages, and videos about shrews)

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		<p>Provide options for accessing instructional activities and materials</p> <ul style="list-style-type: none"> • Embed the resources or provide pages with links all in one place so that students do not have to type in resources • Use QR codes on handouts to provide students with direct links when using mobile devices <p>Provide supports to help with managing information and resources</p> <ul style="list-style-type: none"> • Include graphic organizers to assist with structuring the research notes and encourage students to make connections to prior learning
Explain		
<p><i>Students review their explanatory models and make revisions that incorporate new learning, then present their models and receive feedback from peers.</i></p>		<p>Support self-reflection and evaluation</p> <ul style="list-style-type: none"> • Encourage students to self-reflect on their model and make revisions after learning about other models
		<p>Support transfer and generalization of skills and knowledge</p> <ul style="list-style-type: none"> • Modeling is a common practice; remind students of prior modeling experience in earlier units and make connections between the two <p>Explain structure of graphs, charts, diagrams, models, etc.</p> <ul style="list-style-type: none"> • Check for understanding as students add to and refine their models indicating the movement of matter/energy in the food chain by asking the meaning of symbols • Ask questions and provide feedback to support students in understanding the meanings of symbols and ensure their correct usage <p>Emphasize key information</p> <ul style="list-style-type: none"> • Support students in adding relevant and essential information to their model through feedback and questioning • Encourage students to use notes/graphic organizers and group discussion to decide on priorities for their model revisions
		<p>Vary the ways for students to respond to questions or a task</p> <ul style="list-style-type: none"> • Encourage students to represent their understanding of their models in a variety of ways such as pictures, arrows, text captions, and an explanatory key

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Resources

- [Developing Evidence-Based Arguments from Texts | Read Write Think](https://www.readwritethink.org/professional-development/strategy-guides/developing-evidence-based-arguments)
[https://www.readwritethink.org/professional-development/strategy-guides/developing-evidence-based-arguments]
- [Compare Contrast \(readwritethink.org\)](https://www.readwritethink.org/sites/default/files/resources/printouts/CompareContrast.pdf)
[https://www.readwritethink.org/sites/default/files/resources/printouts/CompareContrast.pdf]

Core Text Connections

- [Winter Bees & Other Poems of the Cold](https://www.amazon.com/Winter-Other-Junior-Library-Selection/dp/0547906501)
[https://www.amazon.com/Winter-Other-Junior-Library-Selection/dp/0547906501]
- [Who Lives in the Snow?](https://www.amazon.com/Lives-Snow-Jennifer-Berry-Jones/dp/1570984441)
[https://www.amazon.com/Lives-Snow-Jennifer-Berry-Jones/dp/1570984441]
- [What's in the Meadow?](https://www.amazon.com/Whats-Meadow-Anne-Hunter/dp/0618015124/ref=sr_1_1?crd=BXOQYNA8MHPN&keywords=What%27s+in+the+meadow%3F&qid=1666006971&s=books&sprefix=what%27s+in+the+meadow+%2Cstripbooks%2C69&sr=1-1)
[https://www.amazon.com/Whats-Meadow-Anne-Hunter/dp/0618015124/ref=sr_1_1?crd=BXOQYNA8MHPN&keywords=What%27s+in+the+meadow%3F&qid=1666006971&s=books&sprefix=what%27s+in+the+meadow+%2Cstripbooks%2C69&sr=1-1]
- [Meerkats, Moles, and Voles: Animals of the Underground](https://www.amazon.com/Meerkats-Moles-Voles-Animals-Underground/dp/1491450606/ref=sr_1_1?crd=3GFCOKFBSCS8T&keywords=Meerkats%2C+mole+s%2C+and+voles+animals+of+the+underground%3A+animals+of+the+underground&qid=1666007056&s=books&sprefix=meerkats%2C+moles%2C+and+voles+animals+of+the+underground+animals+of+the+underground+%2Cstripbooks%2C126&sr=1-1)
[https://www.amazon.com/Meerkats-Moles-Voles-Animals-Underground/dp/1491450606/ref=sr_1_1?crd=3GFCOKFBSCS8T&keywords=Meerkats%2C+mole+s%2C+and+voles+animals+of+the+underground%3A+animals+of+the+underground&qid=1666007056&s=books&sprefix=meerkats%2C+moles%2C+and+voles+animals+of+the+underground+animals+of+the+underground+%2Cstripbooks%2C126&sr=1-1]
- [Over and Under the Snow](https://www.amazon.com/Over-Under-Snow-Kate-Messner/dp/1452136467/ref=sr_1_1?crd=3HKAIDMYO5RXK&keywords=Over+and+under+the+snow&qid=1666007140&qu=eyJxc2MiOiJlLjU2IiwicXNhIjojMS4zMCIslInFzcCI6IjEuMTgifQ%3D%3D&s=books&sprefix=over+and+under+the+snow%2Cstripbooks%2C73&sr=1-1)
[https://www.amazon.com/Over-Under-Snow-Kate-Messner/dp/1452136467/ref=sr_1_1?crd=3HKAIDMYO5RXK&keywords=Over+and+under+the+snow&qid=1666007140&qu=eyJxc2MiOiJlLjU2IiwicXNhIjojMS4zMCIslInFzcCI6IjEuMTgifQ%3D%3D&s=books&sprefix=over+and+under+the+snow%2Cstripbooks%2C73&sr=1-1]
- [Arctic Shrews](https://www.amazon.com/Arctic-Shrews-Ice-Age-Animals/dp/1491420995/ref=sr_1_1?crd=MM76QMPMTGUN&keywords=Arctic+shrews&qid=1666007268&s=books&sprefix=arctic+shrews%2Cstripbooks%2C137&sr=1-1)
[https://www.amazon.com/Arctic-Shrews-Ice-Age-Animals/dp/1491420995/ref=sr_1_1?crd=MM76QMPMTGUN&keywords=Arctic+shrews&qid=1666007268&s=books&sprefix=arctic+shrews%2Cstripbooks%2C137&sr=1-1]
- [Moles and Hedgehogs: What They Have In Common](https://www.amazon.com/Moles-Hedgehogs-Common-Animals-Order/dp/0531116336/ref=sr_1_1?crd=CBIL6NRMS048&keywords=Moles+and+hedgehogs%3A+what+they+have+in+common&qid=1666007521&s=books&sprefix=moles+and+hedgehogs+what+they+have+in+common%2Cstripbooks%2C123&sr=1-1)
[https://www.amazon.com/Moles-Hedgehogs-Common-Animals-Order/dp/0531116336/ref=sr_1_1?crd=CBIL6NRMS048&keywords=Moles+and+hedgehogs%3A+what+they+have+in+common&qid=1666007521&s=books&sprefix=moles+and+hedgehogs+what+they+have+in+common%2Cstripbooks%2C123&sr=1-1]
- [Barn Owls](https://www.amazon.com/Barn-Owls-Melissa-Hill/dp/1491460512/ref=tmm_pap_swatch_0?_encoding=UTF8&qid=1666007650&sr=1-2)
[https://www.amazon.com/Barn-Owls-Melissa-Hill/dp/1491460512/ref=tmm_pap_swatch_0?_encoding=UTF8&qid=1666007650&sr=1-2]

Science Grade 5

Unit 2: Matter and Energy in Organisms and Ecosystems

Sample Lesson: Matter Matters

Suggested Time to Complete: 80 minutes

- [White Owl, Barn Owl](#)

[https://www.amazon.com/White-Owl-Barn-Read-Wonder/dp/076364143X/ref=sr_1_3?crid=2OCXNU67MGXAN&keywords=barn+owl&qid=1666007650&qu=eyJxc2MiOiI2LjQ5IiwicXNhIjojoiNS43NyIsInFzcCI6IjQuODQifQ%3D%3D&s=books&sprefix=barn+owl%2Cstripbooks%2C78&sr=1-3]

- [Birds of Prey](#)

[https://www.amazon.com/Birds-Prey-Predators-Andrew-Solway/dp/1403457654/ref=sr_1_1?crid=20VYN08MMW1YW&keywords=Birds+of+prey+solway&qid=1666015093&s=books&sprefix=birds+of+prey+solway%2Cstripbooks%2C68&sr=1-1]



**Photo Observation Organizer
Observing Owls and Their Prey**

Name _____

Date: _____

Animal	Observations	What might it eat?	What might eat it?	What characteristics help it eat?	What characteristics help it avoid being eaten?