

Backyard Creatures and Their Stories - 3-5 Life Science

Storytelling is an important aspect of indigenous cultures. The stories that are passed down from generation to generation share cultural beliefs, practices, and the history of those people or tribes. Animals too have their own stories. If one is unable to actually study the animal, these stories are best understood by “tracking” these animals or finding clues they have left behind. In this lesson, students will find evidence of an animal’s presence (birds and insects, too) in their backyard, nearby park, or school grounds. They’ll narrow the focus to one animal, and research that animal’s habitat needs to best understand its patterns and behavior. Then, students will write a story from the perspective of the animal they’ve chosen, incorporating both their observations and research.

*This is a two-part lesson, the first focusing on animal habitats and evidence and the second connecting American Indian stories and their importance to students writing a scientifically accurate story about a day in the life of a local animal.

Montana State Science Standards

3-LS4 Biological Evolution: Unity and Diversity

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<p>Students who demonstrate understanding can:</p> <p>Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. [Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.]</p>		
<p>The performance expectations above were developed using the following elements from the NRC document <i>A Framework for K–12 Science Education</i>:</p>		
<p style="text-align: center;">Science and Engineering Practices</p> <p><u>Engaging in Argument from Evidence</u> Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed worlds.</p> <ul style="list-style-type: none"> Construct an argument with evidence. 	<p style="text-align: center;">Disciplinary Core Ideas</p> <p><u>LS4.C: Adaptation</u></p> <ul style="list-style-type: none"> For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. 	<p style="text-align: center;">Crosscutting Concepts</p> <p><u>Cause and Effect</u></p> <ul style="list-style-type: none"> Cause and effect relationships are routinely identified and used to explain change. <p style="text-align: center;">-----</p> <p style="text-align: center;"><i>Connections to Engineering, Technology, and Applications of Science</i></p> <p><u>Interdependence of Science, Engineering, and Technology</u></p> <ul style="list-style-type: none"> Knowledge of relevant scientific concepts and research findings is important in engineering.



[San Diego County Office of Education Science Resource Center Educator tools to support the implementation of NGSS](#)

Connections to other DCIs in second grade: **2.ESS2.D**

Articulation of DCIs across grade-bands: **K.ESS3.A; 2.LS2.A; 2.LS4.D; MS.LS2.A; MS.LS4.B; MS.LS4.C; MS.ESS1.C**

Montana Content Standards Connections:

ELA/Literacy –

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.

RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons.

W.3.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace and include sources by and about American Indians.

IEFA Essential Understandings

Essential Understanding 2: Individual Diversity

Just as there is great diversity among tribal nations, there is great diversity among individual American Indians as identity is developed, defined, and redefined by entities, organizations, and people. There is no generic American Indian.

Key Concepts of Essential Understanding 2

- There exists no universally accepted rule for establishing an individual’s identity as Indian. However, as a general rule, an Indian is a person who has some biological Indian ancestry and is recognized as an Indian by a tribe.
- For millennia, individual tribal groups successfully educated their children using highly effective indigenous pedagogies that imbued Indian children with all the knowledge and skills they needed to thrive in their world.
- Boarding schools and other federal policies of assimilation brought disruptions to the transference of knowledge in tribal communities and have had wide-ranging and lasting impacts on American Indian individuals and communities.
- Students who maintain a strong sense of pride in their language and culture tend not to experience school failure.
- Ideally, school curricula will offer equal recognition of the contributions students’ home cultures bring to the learning situation and will help all students develop the self-esteem and self-confidence that can enhance their learning.

Essential Understanding 3: Oral Histories as Valid as Written Histories

The ideologies of Native traditional beliefs and spirituality persist into modern day life as tribal cultures, traditions, and languages are still practiced by many American Indian people and are incorporated into how tribes govern and manage their affairs.

Additionally, each tribe has its own oral histories, which are as valid as written histories. These histories predate the “discovery” of North America.

Key Concepts of Essential Understanding 3

- The term spirituality within a cultural context can be limiting and misconstrued. Spirituality to Indigenous peoples generally refers to one aspect of their worldview in which all things are connected. Spirituality in this context does not necessarily equate to nor denote religion.
- A complex history of pre-Columbian tribal migrations and intertribal interactions, European colonization and Christianization efforts, and federal assimilation policies have contributed to the broad range of spiritual beliefs held by American Indians today.
- Despite this history, Native people have retained their spiritual beliefs and traditions – tribal languages are still spoken, sacred songs are still sung, and rituals and ceremonies are still performed.
- It is not important for educators to understand all the complexities of modern day American Indian cultures; however, they should be aware of their existence and the fact they can influence much of the thinking and practice of American Indians today.
- Humor plays an important role in American Indian cultures, there was no “stoic” Indian.
- Tribal oral traditions, ideologies, worldviews, and the principles and values associated with them, are as valid as other such traditions from around the world and should be accorded the same respect and standing.
- Educators should be aware that portions of these principles and values are private and are to be used and understood by certain individuals, groups, or the entire tribe. Tribal culture bearers, experts, and others can assist educators in navigating these situations.

Learning Objectives

Students will . . .

- define the word habitat.
- use observation skills in nature and translate those into nature journaling.
- research a local animal (includes insects and birds) using different types of literature.
- understand why storytelling is important to Indigenous cultures.
- write a scientifically accurate story from the perspective of a local animal, while connecting previously learned knowledge about habitat and storytelling.

Background Information

For this lesson please review the following topics and links:

Importance of storytelling in Indigenous culture (specifically Plains Indians)

[Montana Historical Society storytelling Lesson from The Art of Storytelling Curriculum](#)

What composes animal habitats: Definition of a habitat (natural home or environment for a particular organism) and what is included in habitat necessary for survival (food, water, shelter, and space).

Some basic knowledge of local animals commonly found in your school yard or nearby parks (i.e. desert cottontail, squirrels, whitetail/mule deer, robin, black-capped chickadee, garter snake, praying mantis etc.) [Montana Natural Heritage Program Field Guide](#)

Materials

- Whiteboard and markers

- Access to library books or computers for research
- Science notebooks or paper and pencils
- American Indian stories about animals, ideally from a tribe(s) specific to your geographic area (online or from library; titles of recommended stories are listed in the procedure)
- Access to school grounds, backyard, or nearby park

Procedure

Lesson 1: Animals and Their Habitats (45 min. - 1.25 hrs.)

Class Discussion

Start the lesson by having an open discussion with students about local animals and their habitats. Include a Think-Pair-Share with a partner or in groups. Afterwards have students write and define the word *habitat* in their science journal. Habitat is an organism's natural home or environment. Brainstorm as a class a list of items animals need in their habitat. Be sure to include space and resources like food, water, and shelter.

Lead a discussion with students about what makes a successful vs. unsuccessful habitat. Use examples from your area to give students a sense of their place. Examples: Developed land vs. undeveloped land, roads vs. open land, competition for resources like food and water, availability of appropriate food, etc.

Teacher Tip (optional) There is an option here to tie in animal adaptations (NGSS Standard 3-LS) and discuss how adaptations are dependent on habitat.

Ask students to think again about animals (including birds and insects) they have seen around home or school. After writing a few on the board, ask them to choose one and imagine that animal's habitat. Give students a few minutes to sketch the imagined habitat and write a few notes about what they think that animal does during the day/night. Take a few examples after they are done or have them pair and share.

Transition the discussion into animal evidence. "Even if we can't see the actual animal how do we know it's still living there? From what it leaves behind!" Take examples from students (scat, animal homes like burrows and nests, broken branches, tracks, carcasses, and fur/feathers) and tell them these are what scientists call animal evidence. This is one way animal scientists study in the field. They learn an animal's story by the evidence they leave behind.

Activity

With their science journal and pencil, have students head outside to their school grounds, backyard, or nearby park to look for evidence of animals. Using their science journal, they should take notes and sketch observations. This is called nature journaling! They should try to be as detailed as possible, since they will use this information in the next part of the lesson to write a story about one of the animals they have found evidence of. If they know who the evidence belongs to, or they actually see the animal, they can include this information.

For example, if students find a bird nest in a tree, they may write down: nest, bird scat, bird tracks, small bird feather.

Lesson 2: Storytelling and Animal Stories (1+ hrs.)

Class Discussion

As a class or using a Think-Pair-Share, review the definition of habitat, what makes a good habitat, and some examples of animal evidence. Students will be eager to share what they found at home, so allow time for that as well.

IEFA Connection: Transition from students' examples of their animal stories (journaling observations) into animals playing a large role in indigenous storytelling. Take a moment to bring up a few tribes in your area or across the state. Remind students that each tribe is different from the others. Tribes use stories and storytelling to pass down information. Animals are often central to these stories and often play key roles.

Read a story or two to show examples. Some stories can be accessed online; use your library or IEFA website for further resources. Story ideas include:

The First Flute from Keepers of the Animals
Brave Wolf and the Thunderbird by Joe Medicine Crow
Rainbow Crow by Nancy Van Laan

As a class, discuss why stories are important to specific tribes or individual American Indians (can use the IEFA resource provided in the background section if needed). Stories are used to share tribal and cultural history, life lessons, creation stories, etc.

Activity

Remind students they will be writing a story about one of the animals whose evidence they observed. They will incorporate both science and what they have learned about storytelling. The story will be from the perspective of that animal and be focused on the animal's habitat and its day to day activities. Students will use their journaling notes and additional research in writing their stories.

Allow students time and use of either library books or computers to research the animal they have chosen, including habitat, diet, etc. The Montana Field Guide from Montana Fish, Wildlife and Parks may be helpful.

Afterwards, give further direction for their stories. The story must be from the perspective of the animal chosen and therefore in first person. Stories will be graded on scientific accuracy (including their observations and research), spelling, and grammar. Remind students of the difference between fiction and nonfiction. They are writing a nonfiction story, or a story based on facts. It would not be appropriate to include something like: *Hi, my name is Fred the Robin. I love tea parties with my other friend, Ashley the rabbit.* Afterwards, allow students time to share/read their stories to the class.

Here is an example story: *Hello, I am a rabbit. I live in a burrow under a shed in Mike's backyard. The burrow keeps me safe from predators like dogs and fox. The grass and bushes in the yard give me plenty of food. My favorite thing to eat are the dandelions. I like to hop around and explore, and I go to my burrow if I get scared. My burrow keeps me cool when the sun gets too hot. Today I woke up and ate some grass. Then, I hopped around the yard and said hello to another rabbit. I took a nap. I came out again to eat dinner then went to my burrow to be safe and sleep during the night.*

Teacher Tip You can make this a larger, integrated project by expanding it into the subjects of reading/writing, or simply request a paragraph or two and wrap up the lesson.

Assessment

Informal Assessment Option for Student Stories:

Scientific Accuracy	Spelling	Grammar/Punctuation	Comments
Story showed knowledge of the animal's habitat.	Story had correct spelling with 1 or no errors.	Story had correct grammar/punctuation with 1 or no errors.	
Story said only a few things about the animal's habitat.	Story had 1-3 spelling errors.	Story had 1-3 grammar/punctuation errors.	
Story said only where animal lived and wasn't completely accurate.	Story had more than 3 spelling errors.	Story had more than 3 grammar/punctuation errors.	

Formal Assessment Option for Student Stories:

Points Earned	Scientific Accuracy 10 pts Total	Spelling 10 pts Total	Grammar/Punctuation 10 pts Total	Comments
	Story showed knowledge of the animal's habitat. (10pts)	Story had correct spelling with 1 or no errors. (10pts)	Story had correct grammar/punctuation with 1 or no errors. (10pts)	
	Story said only a few things about the animal's habitat. (6-9pts)	Story had 1-3 spelling errors. (6-9pts)	Story had 1-3 grammar/punctuation errors. (6-9pts)	
	Story said only where the animal lived and wasn't completely accurate/ (2-6pts)	Story had more than 3 spelling errors. (2-6pts)	Story had more than 3 grammar/punctuation errors. (2-6pts)	

Total: ____/30 pts

Resources

[Montana Natural Heritage Program Montana Field Guide](#)

[Confederated Salish and Kootenai Tribes Animal Field Guide App](#) This app includes animal names in Salish and Kootenai, sound bytes of animal calls and sounds, important cultural information and connections, and environmental information.

[Crow Creation Story from the American Classical League 2018](#)

[The Art of Storytelling Lesson Plans, Montana Historical Society](#)

[Indian Reading Series: Stories and Legends of the Northwest](#)

[Buffalo and Porcupine - Northern Cheyenne Trickster Story](#)

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