



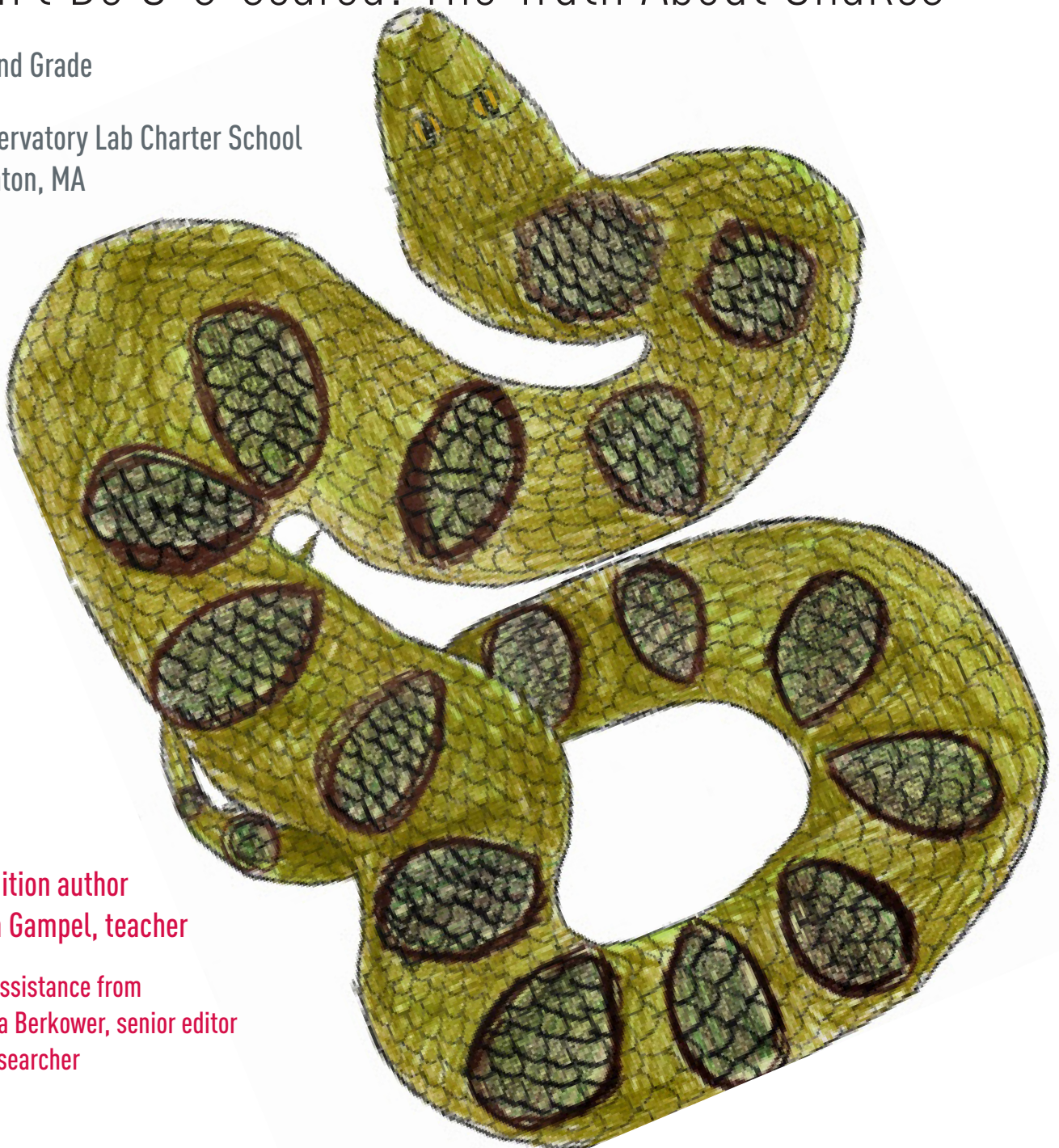
EXPEDITIONARY
LEARNING

Learning Expedition Documentation Project

Don't Be S-s-scared: The Truth About Snakes

Second Grade

Conservatory Lab Charter School
Brighton, MA



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With assistance from
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Summary

Don't be S-s-scared: The Truth About Snakes was a six-month long learning expedition, during which students became scientists, musicians, authors, and artists. They experienced the joys of the natural world and the pride of creating high quality work about a topic that mattered deeply to them. From the start of the expedition, students aspired to be young herpetologists, scientists who study snakes and other reptiles. The focus on snakes was designed to challenge students to think beyond their initial conceptions and misconceptions and to use scientific inquiry to dispel the myths behind people's aversion to this universally feared creature. As students deepened their knowledge, they felt the need to become "snake ambassadors" and to share the truth about these reptiles with the world.



To discover the truth about snakes, students learned and practiced diverse scientific methods and skills including observing, questioning, conducting and analyzing surveys, researching, inferring, taking notes, and drawing scientific sketches. The expedition addressed life science standards on animal life cycles, behaviors, habitats, and adaptation. Students learned how a snake grows and reproduces, how it interacts with its environment through its senses, how its habitat provides for its basic needs, and how its physical features and behaviors help it adapt to its environment.

Literacy skills were integral to the learning expedition. Students developed proficiency reading and comprehending challenging informational texts, understanding and using scientific vocabulary, and identifying text features to aid their research goals. The high quality of student writing and drawing was a significant outcome of the learning expedition. For their final product—*What Snake Am I? A Clue Book of Snakes from Around the World*—students persevered through multiple drafts and revisions to create accurate scientific sketches of their snakes and capture their readers' interest with strong leads and a compelling first-person voice.

Math skills were taught and practiced through measurement projects that ranged from comparing and contrasting the lengths of snakes to measuring and graphing the intensity of people's fears about snakes.

Two case studies framed the expedition. The first engaged the whole class in an in-depth investigation of the corn snake. Students built background knowledge about the corn snake and how to care for one before welcoming a pet corn snake to their classroom. The corn snake's arrival transformed the classroom into a living laboratory charged with wonder, teachable moments, and daily discoveries. The case study culminated in an original song and music video about the class corn snake, "Lily, You Are Nice," which quickly became a YouTube sensation!



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In the second case study, students worked in pairs to become experts on a favorite snake from around the world. During fieldwork at the Herpetology Department at Harvard University's Museum of Comparative Zoology, students worked alongside expert herpetologists, heightening their sense of themselves as scientists with a real purpose for learning. For the final product—the snake clue book—each student contributed a text page and scientific illustration of his or her snake.



Student engagement and motivation propelled the learning expedition and continued to grow over the six months of study. Students chose to read informational books on snakes during their free reading time. They never missed an opportunity to introduce their pet snake Lily to classroom visitors and to share their discoveries. Students' moving performance of their musical tribute to their pet snake brought a smile to even the most snake-fearing listeners. At the book launch for the *What Snake Am I?* clue book, observers marveled at the dedication and diligence that brought students from their tentative beginning drafts to the confident, accomplished writing and drawings in the final published product.

Long-term Learning Targets for the Expedition

- I can identify and discuss different ways to learn the truth about snakes.
- I can describe the physical features and behaviors that make a snake a snake.
- I can explain how snakes can live in different habitats almost anywhere in the world.

State and Common Core State Standards

Science

Students used diverse methodologies to investigate snakes and their habitats. They researched information in nonfiction texts, analyzed illustrations and captions, interviewed herpetologists and other snake experts, and conducted fieldwork both inside and outside the classroom.

Life Science (Massachusetts Curriculum Frameworks)

- Recognize that animals (including humans) and plants are living things that grow, reproduce, and need food, air, and water.
- Recognize that plants and animals have life cycles, and that life cycles vary for different living things.
- Recognize that people and other animals interact with the environment through their senses of sight, hearing, touch, smell, and taste.
- Recognize changes in appearance that animals and plants go through as the seasons change.
- Identify the ways in which an organism's habitat provides for its basic needs (plants require air, water, nutrients, and light; animals require food, water, air, and shelter).

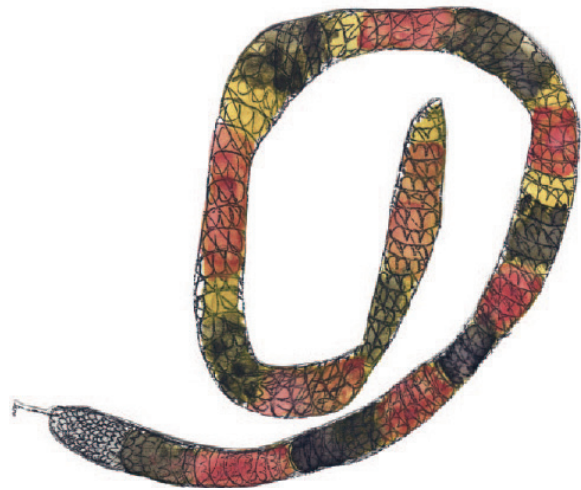


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Supporting Learning Targets for Science—Knowledge (K), Reasoning (R), Skills (S)

- I can describe what a herpetologist is and does. (K)
- I can explain why snakes are important. (K)
- I can use my senses to make and record observations, wonderings, and ideas about snakes. (S)
- I can infer how a corn snake's physical features help it survive. (R)
- I can explain how a snake uses its senses to interact with and adapt to its environment. (K/R)
- I can describe the corn snake's behaviors and infer how they help it survive. (K/R)
- I can name three or more significant features of a snake's habitat. (K)
- I can describe and illustrate one of the corn snake's natural habitats. (K/S)
- I can explain how a corn snake's natural habitat helps it to survive and to thrive. (K/R)
- I can describe the ways a corn snake defends itself against its predators. (K)
- I can describe the stages of the corn snake's life cycle. (K)
- I can draw conclusions about why a corn snake can live in more than one habitat. (R)
- I can describe in detail the physical characteristics that help identify a snake species. (K)
- I can discover the physical characteristics of a snake by looking at scientific illustrations and captions. (R)
- I can identify and describe the different habitats of a snake species. (K)
- I can explain how a snake's habitat helps it to survive and to thrive. (K/R)
- I can identify a snake's diet and describe how a snake catches its prey. (K)
- I can identify a snake's predators. I can describe the defenses it uses to protect itself against its predators. (K)
- I can describe the stages of a snake's life cycle. (K)
- I can describe how a snake's physical form helps it to adapt to and to survive in its habitat. (R)
- I can explain how a snake's behaviors help it to adapt to and to survive in its habitat. (R)



English Language Arts (ELA) and Literacy

Reading: through guided reading, independent reading, and read alouds, students became familiar with a variety of nonfiction text structures, including bulleted lists, question and answer, and true or false. They learned and practiced strategies to read and understand nonfiction texts, including skimming and scanning for information, determining importance, and synthesizing information. Students practiced recognizing the main idea of a passage and used nonfiction text features (table of contents, labels, glossary, etc.) as tools to understanding.

Writing: students composed engaging informational text using the first-person voice, a strong lead sentence to hook the reader, and descriptive and action words to form pictures in the reader's mind.

Reading Informational Text (Common Core State Standards)

- Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.



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- Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
- Identify the main purpose of a text, including what the author wants to answer, explain, or describe.
- Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
- Describe how reasons support specific points the author makes in a text.

Writing (Common Core State Standards)

- Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
- With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.
- Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).
- Recall information from experiences or gather information from provided sources to answer a question.

Speaking and Listening (Common Core State Standards)

- Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
- Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.



Language (Common Core State Standards)

- Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies.
- Demonstrate understanding of word relationships and nuances in word meaning.
- Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe.

Supporting Learning Targets for ELA and Literacy–Knowledge (K), Reasoning (R), Skills (S)

- I can research the characteristics of a snake and its habitats. (S)
- I can use scientific words to describe snakes and where they live. (K)
- I can use vivid and descriptive words to describe the corn snake's physical features and behaviors. (S)
- I can find the main idea and supporting details in a nonfiction text about snakes. (S)



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- I can use nonfiction text features (table of contents, index) to locate information in a nonfiction book. (S)
- I can use a glossary to help check the meaning of words in nonfiction books. (S)
- I can listen to a nonfiction text and make inferences based on background knowledge and clues in the text. (R)
- I can write effectively in the first-person voice of a snake. (S/R)
- I can write a lead sentence that hooks the reader. (S)
- I can use descriptive and action words to create a picture in the reader's mind. (S)
- I can use accurate vocabulary and details to describe a snake. (K)
- I can revise and improve my writing based on feedback from my teacher and classmates. (S/R)
- I can proofread my work and use my best handwriting, spelling, punctuation, and grammar. (S)
- I can read my writing aloud with fluency and expression. (S)

Math

Survey and Graphing: students developed, administered, and analyzed the results of a survey about how much people in their community fear snakes.

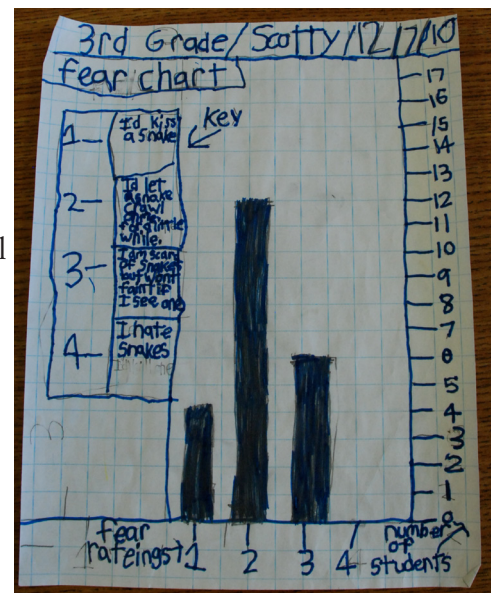
Measurement: students used their bodies and other tools to represent the length of the snake they were researching and compared the length of different snakes.

Measurement and Data (Common Core State Standards)

- Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
- Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.
- Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

Supporting Learning Targets for Math–Knowledge (K), Reasoning (R), Skills (S)

- I can design a survey to measure how much people fear snakes. (S)
- I can represent and analyze data from our snake survey. (R)
- I can measure the length of my snake using a ruler and other tools. (S)
- I can record measurement data and compare and contrast the length of different snakes. (S/R)





Music

Music provided a creative vehicle for students to synthesize important facts about their pet corn snake, to express how they felt about her, and to convince listeners not to fear her. Working with a music teacher, students composed an original song and produced a music video that captured both their joy and expertise.

Singing (Massachusetts Curriculum Frameworks)

- Sing expressively with appropriate dynamics, phrasing, and interpretation.
- Sing in groups, blending vocal timbres, matching dynamic levels, and responding to the cues of a conductor.

Playing Instruments (Massachusetts Curriculum Frameworks)

- Perform independent instrument parts while other students sing or play contrasting parts.

Improvisation and Composition (Massachusetts Curriculum Frameworks)

- Create and arrange short songs and instrumental pieces within teacher-specified guidelines.

Critical Response (Massachusetts Curriculum Frameworks)

- Perceive, describe, and respond to basic elements of music, including beat, tempo, rhythm, meter, pitch, melody, texture, dynamics, harmony, and form.
- Respond through purposeful movement to selected prominent music characteristics or to specific music occurrences while singing or listening to music.
- Describe and demonstrate audience skills of listening attentively and responding appropriately in classroom, rehearsal, and performance settings.

Supporting Learning Targets for Music–Knowledge (K), Reasoning (R), Skills (S), Character (Ch)

- I can collaborate with my classmates to write song lyrics that give accurate information about our pet corn snake and convince people not to fear her. (Ch/S)
- I can collaborate with my classmates to choose a key, meter, and tempo for our class snake song. (Ch/S)
- I can collaborate with my classmates to adapt the rhythm and melody of our class snake song. (Ch/S)
- I can collaborate with my classmates to choose instruments to accompany our class snake song. (Ch/S)
- I can collaborate with my classmates to create movements and gestures that demonstrate the meaning of our song's lyrics. (Ch/S)

“Lily, You Are Nice”

an original song

Lily, you are nice
And like to eat dead mice
Lily, you are friendly
And you like music
Oh Lily, you are beautiful
We love you Lily
Lily, will you live with me?

Her eyes
Red and pink like a rose
She has inner ears and her nose
Is just two nostrils but she can
Smell with her forked tongue
She's got scales instead of skin
They might look slimy but then
Your fingers touch them and
They are really dry and
Smooth, like she moves with her
Scutes on her belly
Slithering by you
She's dancing already

Lily, you are nice
And like to eat dead mice
Lily, you are friendly
And you like music
Oh Lily, you are beautiful
We love you Lily
Lily, will you live with me?

Her rock
Is smaller than a meadow
Where corn snakes like to go
She has no rocky hillside
At her door, but Wait!
Lily still sheds her skin
She's dark and vibrant within
And when the drums play
She comes out wiggling her body
Don't be afraid now
This snake is not poisonous
Curious Lily
She hugs and she kisses us

Lily, you are nice
And like to eat dead mice
Lily, you are friendly
And you like music
Oh Lily, you are beautiful
We love you Lily
Lily, will you live with me?



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- I can reflect on my performance and identify what I did well and what I could do better next time. (R)

Visual Arts

A multi-step revision process guided students as they create detailed, scientifically accurate drawings for the class snake clue book.

Visual Arts (Massachusetts Curriculum Frameworks)

- Identify gradations of black, white, and grey in the environment and artwork.
- Identify a wide variety of types of lines in the environment and in artwork.
- Identify simple shapes of different sizes and forms in the environment and in artwork.
- Identify patterns and symmetrical forms and shapes in the environment and in artwork.
- Create 2D and 3D artwork from direct observation.
- Select a work or works created during the year and discuss them with a parent, classmate, or teacher, explaining how the work was made, and why it was chosen for discussion.
- Explain strengths and weaknesses in their own work, and share comments constructively and supportively within the group.

Supporting Learning Targets for Visual Arts—Knowledge (K), Reasoning (R), Skills (S), Character (CH)

- I can draw a snake and label its parts. (S/K)
- I can draw a snake in its habitat. My drawing shows three or more of the snake's physical features and one important feature of the habitat. (S/K)
- I can draw a scientific illustration of a snake with accurate shape, proportion, detail, and color. (S/K)
- I can look carefully at my classmates' artwork and give helpful feedback. (Ch)
- I can listen to feedback and use it to revise and improve my work. (Ch)



Case Studies

Case Study One: The Corn Snake

During the immersion activity, a herpetologist scavenger hunt, students were presented with a mystery image—a photograph of an actual herpetologist in the field with his tools and equipment. A series of scaffolded clues led students to guess what a herpetologist does and the topic of the expedition. This introductory activity was designed to help students imagine themselves as herpetologists as they embarked on their half-year study of snakes.

Before beginning their research, students examined common myths about snakes and designed and administered a survey to measure how much people in the school community fear snakes. The results of the survey inspired the class mission to tell the truth about snakes and to change people's fears and misconceptions.

Guided by the question—What makes a snake a snake?—students built background knowledge about the essential attributes of a snake during a two-week Building Background Knowledge Workshop (BBK) that included research with informational texts and fieldwork at a local wildlife sanctuary where students observed and handled live snakes and investigated snake habitats.

Students then focused their research on an in-depth investigation of one snake species—the corn snake. The corn snake was chosen because it makes a great classroom pet. Corn snakes are not large, they have good temperaments, eat frozen mice, and generally live long lives if their needs are met. To learn what they needed to know about caring for a pet corn snake in their classroom, students interviewed experts, conducted research, and watched educational videos. The excitement was palpable when second graders finally welcomed Lily, their pet albino corn snake, into their classroom. It was love at first sight!



Caring for a live snake in the classroom promoted active learning and enhanced students' observational, research, and note-taking skills by giving them a tangible and real purpose. Students had to learn how to create a captive habitat for a snake and how to keep their pet alive and healthy. They observed and sketched Lily's physical features and behaviors and carefully noted the changes in her body as she ate and digested a mouse. When Lily shed her skin, students stopped what they were working on to observe, learn, write, and draw about the process. Observation and note taking led to critical thinking and inferences about the relationship between a snake's physical features and behaviors and its habitat. Students synthesized their learning in multiple ways including descriptive writing, sketching, and acting out the stages of a corn snake's life cycle through movement. The experience of direct, sustained observation and hands-on research, coupled with students' attachment to and responsibility for their pet, created an optimal learning environment. Students became teachers as well as learners and began to teach everyone in the building about snakes.



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Case Study Two: Snakes Around the World

After becoming experts on the corn snake, students were ready and eager to expand their knowledge to snakes around the world. Students built on the research methodologies developed in Case Study One and worked in pairs to become experts on a snake that interested them. Guided by a series of nonfiction minilessons, including examining informational text structures and features, students used multiple resources and note catchers to research their snake's physical characteristics, habitats, diet, predators, adaptations, and life cycle. Once students had built a solid foundation of knowledge about their snakes, they conducted fieldwork at the Herpetology Department at Harvard's Museum of Comparative Zoology. This was the first time the department had opened its doors to young learners and students took their



task very seriously. Before going to Harvard, one student told the class, "When we go to Harvard, we can't act like regular second graders. We need to act like herpetologists." And they did. The professional herpetologists were impressed by students' observational skills, sense of purpose, and insightful questions that helped them discover answers they were unable to find in their research. During the fieldwork, students observed the department's extensive collection of over 90,000 different kinds of snakes from around the world and were able to view the snakes they were researching up close and personal. They were given time and space to revise and add detail to their scientific sketches. The fieldwork enhanced students' research, writing, and sketching back in the classroom as they drafted the pages for their final product—a clue book on snakes from around the world.

Key Projects

Case Study One: "Lily, You are Nice"—An Original Song and Music Video

Students took very seriously their mission to educate people about snakes and to convince them not to fear corn snakes. Since they attend a music charter school and receive daily music instruction, it was natural for students to choose to communicate their message through song. And since they adored their pet corn snake, Lily, they chose to address the song to her.

Students began by synthesizing and brainstorming everything they learned about corn snakes and felt was important for people to know. Building on this brainstorm session, students worked with teachers to fashion the lyrics and create a repeating chorus and verses. The music teacher guided students in choosing a rhythm and melody to match the mood and tone of the lyrics, as well as the key, meter, and tempo for the song. After composing the song, students added musical instruments they play every day—the bass, drums, and rhythm sticks—as well as movement. The choices they made gave students ownership of the song. With its catchy tune, "Lily, You are Nice" conveyed scientifically accurate information about corn snakes, as well as students' deep affection for their beloved class pet. Their debut performance at a school assembly was such a huge success, it inspired the students to create a music video to spread the word beyond the school community. With over 1,000 views on YouTube, the song and music video fulfilled students' mission to educate and persuade others not to be afraid of corn snakes.

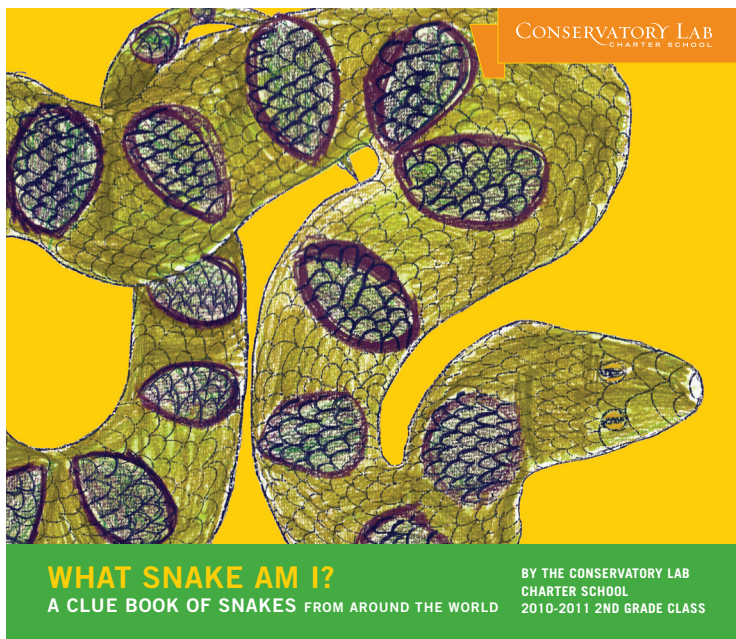


Multiple Drafts of Snake Illustrations:



Case Study Two: What Snake Am I? A Clue Book of Snakes from Around the World

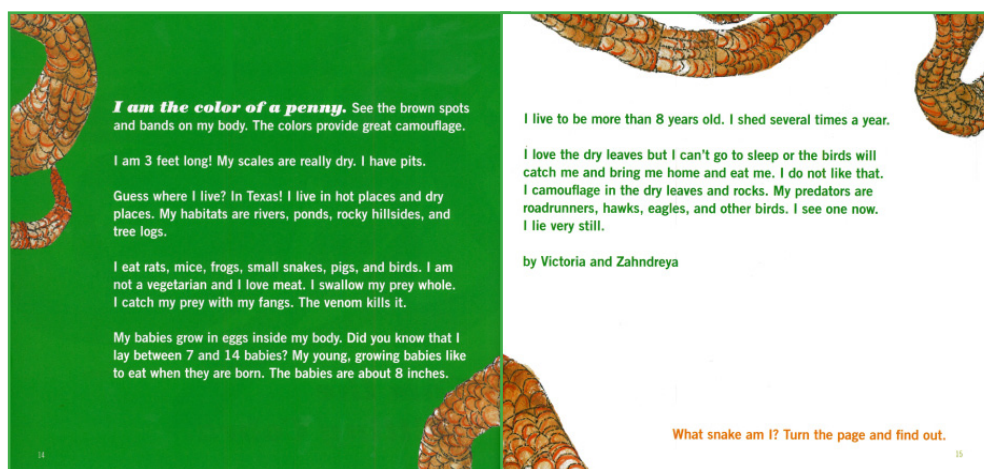
Inspired by the mentor text, *Whose Tracks Are These? A Clue Book of Familiar Forest Animals*, students created a clue book featuring the eleven snakes they researched. Students were challenged to write in the first-person voice of their snakes so as not to give away their snake's identity. Mini-lessons encouraged students to notice the ways good writers grab a reader's attention by directly addressing and posing questions to the reader. Students practiced how to write engaging leads that hook the reader and to use descriptive and action words to create images in the reader's mind. These writing techniques allowed them to step inside their snake's skin, speak in their snake's voice, and write detailed clues to their snake's identity.





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Each student created a scientific drawing of his or her snake to illustrate the clue book. A critique protocol and rubric guided students through multiple drafts, focusing on shape, symmetry, proportion, detail, patterns, and color. One of the most challenging aspects of this work was applying color to the drawings without losing the intricate details students had carefully added. After numerous attempts, the class finally came up with a method of using watercolor pencils to lightly color their drawings. Students were rewarded for their patience and perseverance by the pride they felt in the extraordinary quality of their final illustrations. At the book launch party, visitors marveled at student portfolios that graphically showed the incredible progress they had made from their first unrecognizable shapes to their final, stunningly accurate and detailed illustrations.



Key Lessons

Building Background Knowledge Workshop

A two-week sequence of activities hooked students and built the foundation for the rest of the expedition.

Mystery Piece: Herpetologist Scavenger Hunt—An initial mystery image, a photograph of an actual herpetologist in the field with tools and equipment, launched the expedition. Students were challenged to make observations and to draw inferences about the man in the photograph and what he was doing. Additional clues led students to guess that the man in the photograph was a herpetologist and that they, too, would become herpetologists—scientists who study reptiles. A final picture clue helped students guess the specific reptile they would investigate—snakes.

Attitude Survey—Students completed an attitude survey to reveal their own feelings, conceptions, and misconceptions about snakes.

Measuring Fear—How can you measure fear? Students decided to create a rating scale to measure how scared people are of snakes. After creating the descriptors, students designed a survey that they administered to school staff, students, and families. Together, they graphed the results and analyzed the data. Their findings inspired students to set the record straight about snakes.



Common Text—To activate prior knowledge, students drew a snake in its habitat in green colored pencil. They then listened to a series of informational texts about snakes. After each reading, students added new information to their drawings in different colored pencils to show their process of constructing knowledge.

Expert Groups—Small groups researched one of the following snake topics—physical features, behaviors, predators and defenses, diet, and life cycle. Students used both words and illustrations in leveled informational texts to identify main ideas and details and to complete a note catcher about their topic. Expert groups then shared their findings with the class.

Gallery Walk—Based on their research, students made new drawings of a snake in its habitat, which were displayed in a gallery. Students toured the gallery in small groups to learn from each other's work and to develop a sense of the many different varieties of snakes.

Snake Word Wall—While conducting their research, students noticed that there are a lot of tricky snake vocabulary words. To create a snake word wall, students charted a list of important vocabulary words as they listened to an informational book about snakes. They talked about the meaning of words like predators, venomous, and constrictor. Then each student chose a vocabulary word and created a word card with an illustration that portrayed the meaning of the word. Students frequently referred to the snake word wall during the remainder of the expedition as they researched and wrote about snakes.

Extension: Measuring Distances—After an expert group learned that a rattlesnake's rattle can be heard from 160 feet away, students asked the question: How far is 160 feet? Small groups brainstormed what materials they would need to measure 160 feet and then applied cooperation and problem-solving skills to find the answer. Some groups measured one foot at a time. One group measured a 20-foot number line and used it as guide. Two groups measured different lengths of string to help them measure. Everyone was surprised to find out how far 160 feet really is.





Learning Target/Assessment Alignment Chart

CASE STUDY 1: THE CORN SNAKE		
Long-Term Learning Targets Learning targets correlate directly with standards.	Supporting Targets A set of scaffolded instructional targets, used on a daily/weekly basis, that describe what is required to get to each long-term learning target.	Assessments Formative and summative (bold) assessments that demonstrate what a student knows or is able to do.
I can identify and discuss different ways to learn the truth about snakes.	I can describe what a herpetologist is and does.	Snake Vocabulary Word Game
	I can research the characteristics of a snake and its habitat.	Research Note Catchers
	I can use my senses to make and record observations, wonderings, and ideas about snakes.	Field Journal; Observe, Wonder, and Infer Worksheet
	I can name three different ways I learn the truth about the corn snake.	Learning Target Reflection
I can describe the physical features and behaviors that make a snake a snake.	I can explain why snakes are important.	Learning from Fieldwork Worksheet
	I can use scientific words to describe snakes and where they live.	Research Note Catchers; Snake Vocabulary Word Game, Field Journal
	I can use vivid and descriptive words to describe the corn snake's physical features and behaviors.	Snake Vocabulary Word Game; Descriptive Essay; Field Journal
	I can describe the ways a corn snake defends itself against its predators.	Exit Ticket
	I can describe the stages of the corn snake's life cycle.	Life Cycle Role Play
	I can describe three facts about the corn snake's physical features or behaviors.	Learning Target Reflection
I can explain how snakes can live in different habitats almost anywhere in the world.	I can name three or more significant features of a snake's habitat.	Learning from Fieldwork Worksheet
	I can infer how a corn snake's physical features help it survive.	Observe, Wonder, Infer Worksheet; Feature/Reason Chart
	I can explain the corn snake's behaviors and infer how they help it survive.	Behavior/Reason Chart
	I can describe and illustrate one of the corn snake's natural habitats.	Habitat Drawing
	I can explain how a corn snake's habitat helps it to survive and thrive.	Habitat/Reason Chart
	I can draw conclusions about why a corn snake can live in more than one habitat.	Learning Target Reflection



Learning Target/Assessment Alignment Chart

CASE STUDY 2: SNAKES AROUND THE WORLD		
Long-term Learning Targets Learning targets correlate directly with standards.	Supporting Targets A set of scaffolded instructional targets, used on a daily/weekly basis, that describe what is required to get to each long-term learning target.	Assessments Formative and summative (bold) assessments that demonstrate what a student knows or is able to do.
I can identify three different ways to learn the truth about snakes. I can explain why all three methods are important and how each method helped me learn.	I can generate and categorize questions to help me research a snake species.	What I Want to Know Note Catcher
	I can discover the physical characteristics of a snake by looking at scientific illustrations and captions.	Physical Description Note Catcher; Snake Illustration (Snake Clue Book)
		Learning Target Reflection
I can describe the physical features and behaviors that make a snake a snake	I can describe in detail the physical features that help identify a snake species.	Physical Description Note Catcher; True/False Questions Clue Book Page
	I can identify a snake's diet and describe how a snake catches its prey.	Diet Note Catcher; True/False Questions; Clue Book Page
	I can identify a snake's predators. I can describe the defenses it uses to protect itself against its predators.	Predators and Defenses Note Catcher; True/False Questions; Clue Book Page
	I can describe the stages of a snake's life cycle.	Life Cycle Note Catcher; True/False Questions; Exit Ticket; Clue Book Page
		Learning Target Reflection
I can explain how snakes can live in different habitats almost anywhere in the world.	I can identify and describe the different habitats of a snake species.	Habitat Note Catcher; True/False Questions; Exit Ticket; Clue Book Page
	I can explain how a snake's habitat helps it to survive and thrive.	Habitat Note Catcher; Clue Book Page
	I can describe how a snake's physical form helps it to adapt and survive in its habitat.	Adaptations Worksheet; Exit Ticket
	I can explain how a snake's behaviors help it to adapt and survive in its habitat.	Adaptations Worksheet; Exit Ticket
		Learning Target Reflection



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Connections to the Community and Larger World

Fieldwork

- Broadmoor Wildlife Sanctuary, Natick, MA
- Harvard Museum of Comparative Zoology, Cambridge, MA

Experts

- Joy Marzolf, education coordinator at Broadmoor Wildlife Sanctuary
- John Regosin, conservation biologist
- Becca Iskric, Conservatory Lab teacher and artist
- Kristyn Novotny, Museum of Fine Arts art instructor
- Rebecca Levi, music teacher
- Brian Kaufman, video producer



Service Learning

Copies of students' final product, *What Snake Am I? A Clue Book of Snakes from Around the World*, were donated to the Harvard Museum of Natural History and Broadmoor Wildlife Sanctuary for use in their educational programs. Copies of the book were also donated to the children's department of local libraries.

Expedition Culmination

The expedition culminated in a book launch and music video premiere, featuring student presentations. The 100% family turn-out reflected students' enthusiasm and pride in their work which spilled over from the classroom to the home. Students read aloud their book, *What Snake Am I? A Clue Book of Snakes from Around the World*, to an audience of children and adults. The audience participation and response to this interactive book, and the music video, were outstanding.