Unit Opening

A mountain lion was hit by a car on a highway in Connecticut, right outside NYC. How can we figure out where the mountain lion came from and why it was there?

Performance Expectations

Anchor Phenomenon
A mountain lion was hit by a car on a highway outside NYC. How did it get there, and what can this tell us about saving mountain lions?

Time
2 days

What is the story behind a mountain lion that was found dead on a highway in Connecticut? Students learn about the story of a mountain lion that was killed on a highway in Connecticut and wonder why it was so far from its home. This leads to questions about variation and whether there is something humans can and should do to help preserve diversity of mountain lions in their habitats.

Anchor Phenomenon	A mountain lion was hit by a car on a highway in Connecticut. Why was it there?	This is a topic that should incite student curiosity and wonder! By eliciting what students think about the mountain lion found dead in Connecticut, it is possible to gauge students' interest and prior knowledge in this topic.
Driving Question Board	Students ask questions about the Connecticut cat.	Based on ideas that have surfaced through student discussion, students create a driving question board.
Performance Task	The performance Task in not introduced during the Unit Opening	Unlike in earlier units, the sensemaking that leads to student understanding of the need for the Performance Task is designed to take place after the completion of all 5Es. After students have reached an understanding of what has happened to the Mountain Lion, students will be introduced to a transfer task that asks them to apply what they've learned about that species to evaluate a solution designed to rehabilitate genetic diversity in those populations.

Science & Engineering Practices | Disciplinary Core Ideas | Crosscutting Concepts

Anchor Phenomenon

A mountain lion was hit by a car on a highway in Connecticut. Why was it there?

This is a topic that should incite student curiosity and wonder! By eliciting what students think about the mountain lion found dead in Connecticut, it is possible to gauge students' interest and prior knowledge in this topic.

Preparation

Student Grouping	Routines	Literacy Strategies
❑ Table groups	None	❑ Text Annotation

Materials

Handouts	Lab Supplies	Other Resources
❑ The Connecticut Cat	None	❑ Mountain Lions in California

Surfacing Student Ideas

1. Ask students to make a list of any large mammals they have seen in the city where they live. Students may name raccoons, foxes, coyotes, or even deer.
2. Elicit student ideas about whether there are any mammals they would be shocked to see in their city.

Telling the Story

1. Provide students with the handout about the Connecticut Cat, *The Connecticut Cat*. Have students read the text individually and engage using **text annotation** to indicate three important points in the story.

2. Students share their ideas in their group, with every individual identifying the details that they thought were important.

3. As a group, students decide which ideas they think are important, and use those ideas to write out what happened, or the story of the phenomenon.

Conferring Prompts

Confer with students as they work in groups to tell the story.

- Why do you think this detail is important?
- Did your group members and you circle the same details?
- How did you agree, as a group, to the overall story?

4. Show the video Mountain Lions in California to the class to introduce them to some background on mountain lions in California. Be sure only to show the portion from 0:55 to 6:00. Let students know that although this video is shot in California, the same issues apply to all populations of mountain lions throughout their range. After the video, have students revisit and add to their answers to the questions in *The Connecticut Cat*.

Implementation Tip

The launch is designed to generate student curiosity and provide background so they can develop a list of questions that will drive investigation throughout the unit. In this lesson it is important that the teacher does not tell the students that male mountain lions leave their birthplace and travel, sometimes long distances, in order to find unrelated females to mate with. The opening of the video gives background information on mountain lions and introduces some of the issues that wild mountain lion populations face. It does not give away the reason for dispersal in the first six minutes so do not watch past the six minute mark during this lesson.

Access for All Learners

Text annotation supports students who may struggle with the text to focus on the important details and questions they want to bring to their group.

Driving Question Board

Students ask questions about the Connecticut cat.

Based on ideas that have surfaced through student discussion, students create a driving question board.

Preparation

Student Grouping	Routines	Literacy Strategies
❑ Table groups	None	None

Materials

Handouts	Lab Supplies	Other Resources
None	None	❑ Post-it notes ❑ chart paper or digital access

Developing Questions

1. At this point, students should have a lot of questions! Let them know that they will be investigating why this mountain lion was on a highway and got hit by a car.
2. Individually, students come up with questions they would need to answer in order to figure out the phenomenon. Each question goes on a separate sticky note.
3. As a whole class or in small groups, students share and categorize their questions, as they organize the questions on chart paper.

Integrating Three Dimensions

In generating a Driving Question Board, students have the opportunity to use **SEP#1 Asking Questions and Defining Problems,** as they are asking questions to clarify and seek additional information about

Conferring Prompts

Confer with students as they create and categorize questions.

- Why do these questions belong together?
- What is the category that connects these?
- Are there other questions within this category?
- Now that you see all of your questions grouped together, do other questions come up?
- For each category, is it possible to develop an umbrella question that encompasses all of the other sub-questions in that category?

the anchor phenomenon introduced in the unit opening.

Performance Task

The performance Task in not introduced during the Unit Opening

Unlike in earlier units, the sensemaking that leads to student understanding of the need for the Performance Task is designed to take place after the completion of all 5Es. After students have reached an understanding of what has happened to the Mountain Lion, students will be introduced to a transfer task that asks them to apply what they've learned about that species to evaluate a solution designed to rehabilitate genetic diversity in those populations.

Preparation

Student Grouping	Routines	Literacy Strategies
None	None	None

Materials

Handouts	Lab Supplies	Other Resources
None	None	

Standards in Unit Opening

Performance Expectations

Aspects of Three-Dimensional Learning

Science and Engineering Practices | **Disciplinary Core Ideas** | **Crosscutting Concepts**

Assessment Matrix

	Anchor Phenomenon	Driving Question Board	Performance Task

Common Core State Standards Connections

	Anchor Phenomenon	Driving Question Board	Performance Task
Mathematics			
ELA/Literacy	RST.9-10.1 WHST.9-10.2		