

TABLE 1

**Opportunities to connect with NOS in trade books; Examples from *Secrets of Sound: Studying the Calls of the Whales, Elephants, and Birds* (Sayre 2006)**

NOS Aspect	Description
Diversity	People engage in science from different cultural, racial, and ethnic backgrounds. People of all ages, physical abilities, and different genders solve meaningful scientific problems, including professional scientists from all fields and citizen scientists. <i>Example:</i> Doing science does not always mean working in a lab. These scientists are doing research in kayaks out in the ocean.
Empirical	Scientists gather empirical evidence through observations using any of their senses. Sometimes they will use tools to make observations or record their data. This evidence is necessary to answer a scientific question. Empirical evidence distinguishes science from other ways of knowing. <i>Example:</i> Scientists compared the different types of sounds that whales make. They observed that whale songs were longer and more complicated groups of notes that were repeated in a pattern, making them different than the short, simple sounds of whale calls.
Inferential	Scientists use information from their observations to make inferences and draw conclusions about things that they cannot directly observe. Inferences help connect things that can be observed with things that cannot be directly accessed by the senses. <i>Example:</i> Scientists cannot directly measure the water temperature in an entire ocean. Instead, they measure the speed of sound in water and use that to determine temperature because sound travels faster in warmer water than in cold water.
Creative	Scientists are creative throughout their scientific investigations. This begins when they ask a new question about the world. They may be innovative in ways that they explore the question (i.e., their methods) or how they use existing materials (i.e., their tools). Even the act of interpreting evidence to answer their question is creative. <i>Example:</i> The scientists studying whales had to be creative and build special instruments to record whale sounds under water and ice.

TABLE 2

**Nature of Science discussion starters.**

NOS Aspect	Connecting to the Science Community	Contextualizing in the Story	Connecting to Other Learning Experiences
Diverse Representation of Scientists	What are some of the different ways that we know a person is a scientist?	Did the scientists in the story look like scientists you have seen before?	How are you like a scientist when we do our investigations?
	Where are some places you can see scientists at work?	How does science look the same or different depending on what country you live in?	When else have we learned about the kinds of things scientists do?
Empirical	Why do scientists need evidence to support their claims?	What kind of evidence does the character in the story use to support their claim?	What observations did we make during our last science investigation?
	Why are observations an important method for collecting evidence?	What tools did the scientists in the story use to collect evidence?	When have you used a tool to make observations and collect evidence?
Inferential	How do scientists investigate things that are too small or too far away to observe directly?	When in the story did someone make an observation that helped them figure something out that they could not see?	What is something we cannot see but we know exists? How do we know it exists?
	How are inferences different from observations?	What observations do scientists make that support the inference that gravity exists?	What are some ways you know electricity is working in your daily life?
Creative	How is asking a scientific question being creative?	How is this character creative when they come up with an answer to their question?	What are some ways you have shown that you are creative?
	How does solving a problem require creativity?	Do you think a scientist is creative when they invent a new tool?	How does your imagination help you be creative?