# PhD SCIENCE®



## Knowledge Building + High-Quality Curriculum

#### At the Heart of PhD Science®

• It's a K-5 curriculum with rich, authentic phenomena that weaves together a coherent storyline.

- Students practice the skills and processes that scientists and engineers use and apply their content learning through hands-on investigations.
- The learning is student led with students asking questions and engaging in scientific discourse.
- Teachers are fully supported in this joyfully rigorous curriculum.

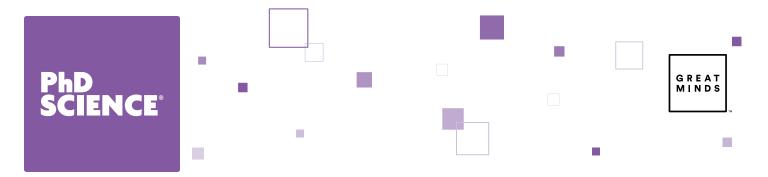


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### PHENOMENON-BASED STORYLINES

NOTES

*PhD Science* lays the foundation for student engagement and success in science. With a coherent storyline across all lessons, lesson sets, modules, and grade levels, the curriculum empowers students to build deep knowledge and understanding of scientific concepts as they make sense of rich, authentic real-world phenomena. Students build their science knowledge through award-winning books, art, and other cross-content connections.



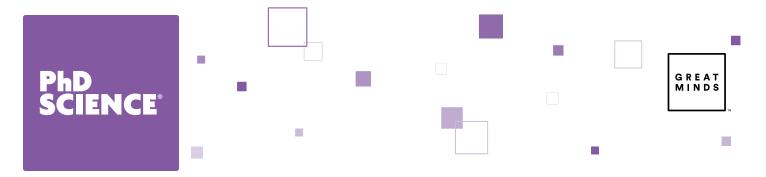
Authentic Phenomena



Module Map

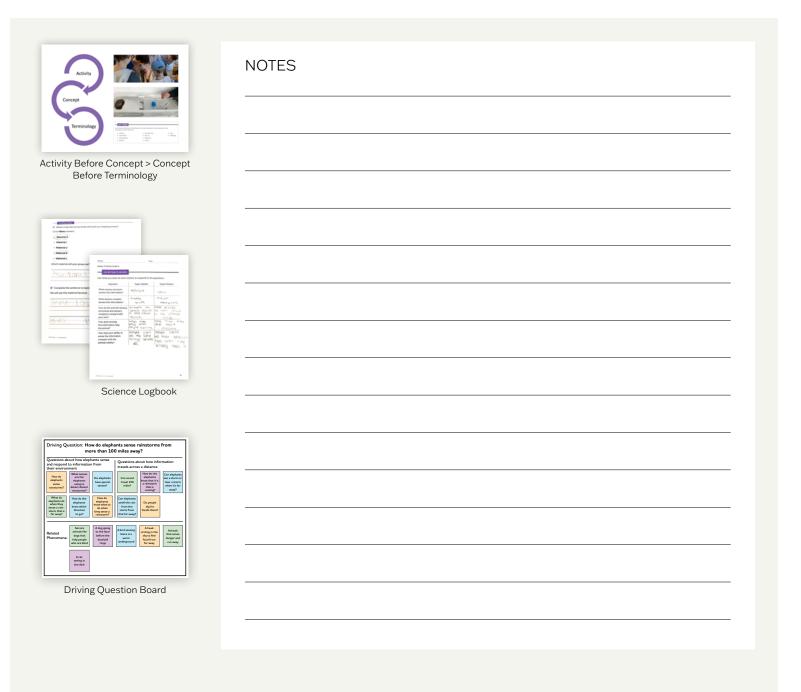
PPENDIX B MODULE STORYLINE	
ANCHOR PHENOMENON INTRODUCTION	
LESSON1	
Where we are Asilar Phenomenon The electratic addity to sense distant renotorms	
Audror Phenomenon   The elephant's addity to sense distant nanotomia Driving Question   How do elephantosense rainstorms/from more than 200 miles away?	
Lesson Objective: Use patterns (CC.1) to develop initial models (SEP.2) showing how anim their exclosionent (L3L.0).	als sense and interpret information from
What we do	What we figure out
Wender and Organize We observe a video of elephants at a wateringhole and discuss. The importance of sensing information from the environment. Using our experiences of	In this lesson, we figure out that
sensing information from our environment, we wonder how an elephantic senses compare	<ul> <li>animals can sense information from their environment and</li> </ul>
So dear dawn.	<ul> <li>elephants can sense rainstorms from</li> </ul>
Reveal: We read an article to gather information about how elephants can use their senses to detect and travel toward distant sainstorms.	more than 120 miles away
Croamize. We use what we foured out to create initial models of how we think elephants.	
sense distant rainstame. Then we compare our initial models to create a class	
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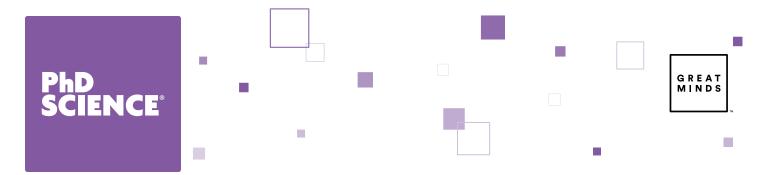
Module Storyline



#### STUDENT-LED AND HANDS-ON CURRICULUM

Students conduct hands-on investigations as they make sense of complex concepts and apply scientific terminology. They engage in scientific discourse and create anchor visuals to support their knowledge building as they strive to answer the Driving Question of each module.





#### SUPPORTING TEACHERS

*PhD Science* goes beyond embedded teacher support and includes several other teacher resources like an Implementation Guide, Family Tip Sheets, and Materials Lists. Great Minds<sup>®</sup> also offers professional learning opportunities including foundational and sustaining professional development sessions as well as personalized coaching.

Agenda   45 to 60 minutes	NOTES
LAUNCH   5 to 10 minutes	NOTES
LEARN   35 to 45 minutes	
Conduct Investigation     (20 to 25 minutes)	
Debrief Investigation     (5 minutes or less)	
Analyze Class Data     (10 to 15 minutes)	
LAND 5 minutes or less	
Launch-Learn-Land	
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