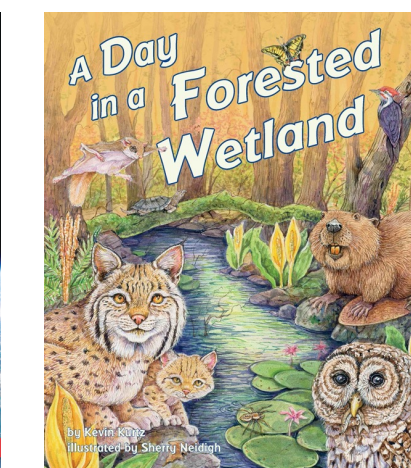
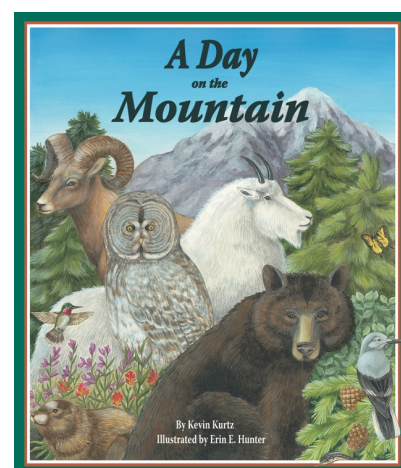
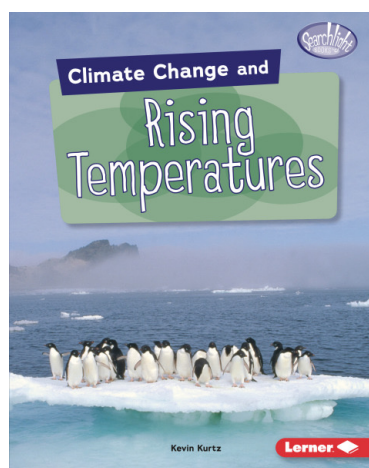
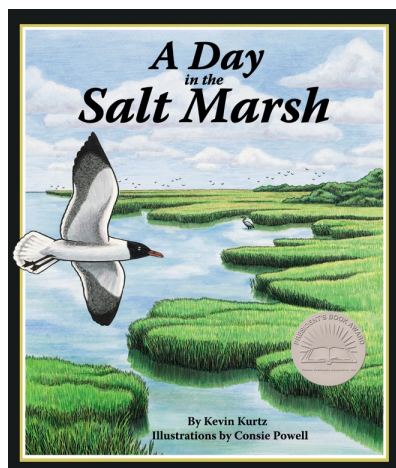
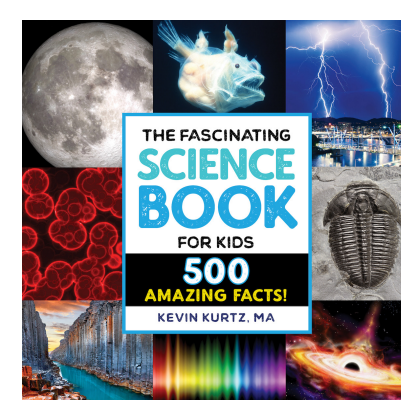
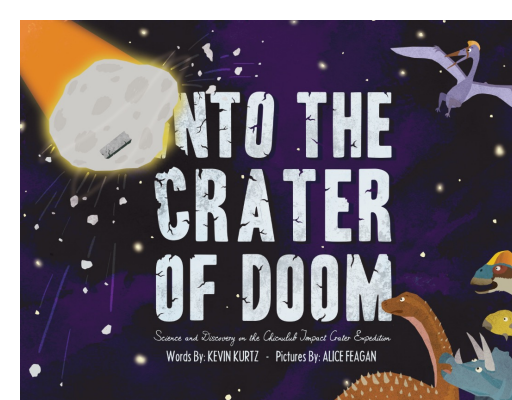
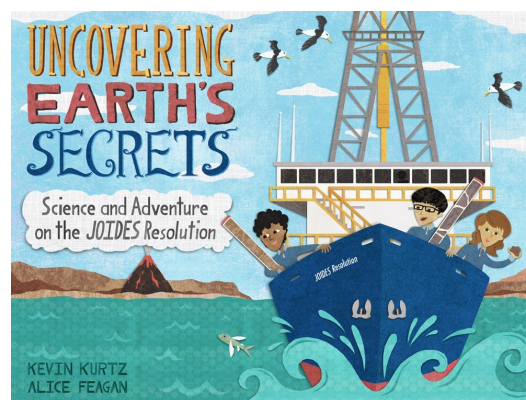
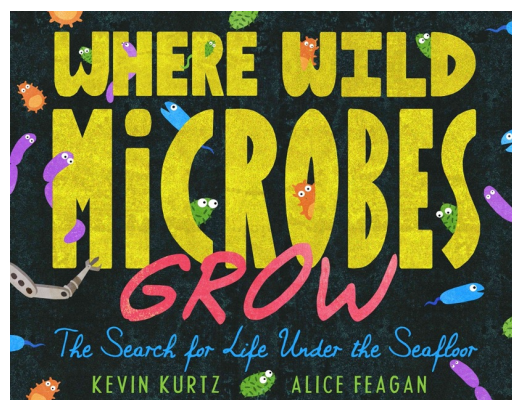
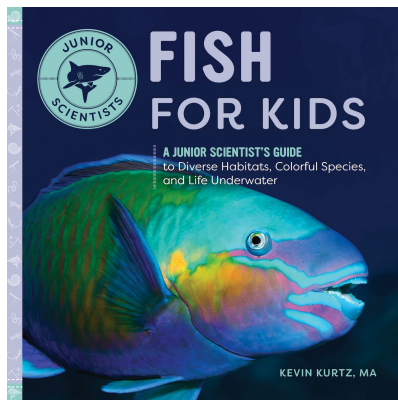
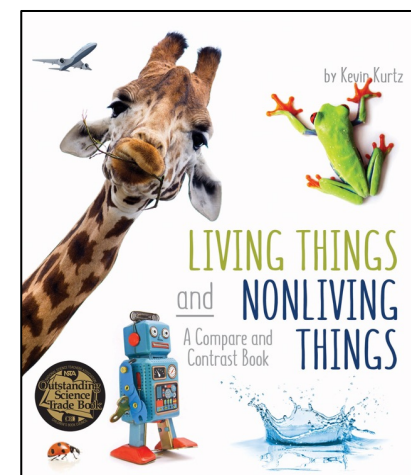
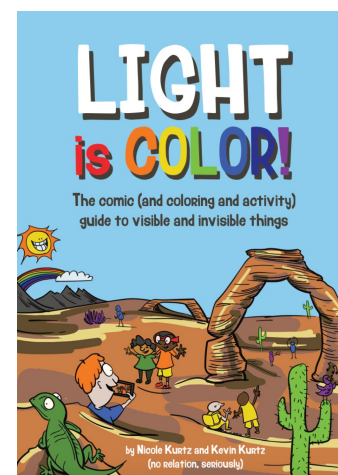
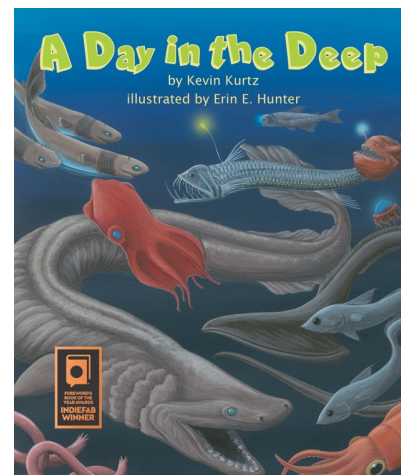
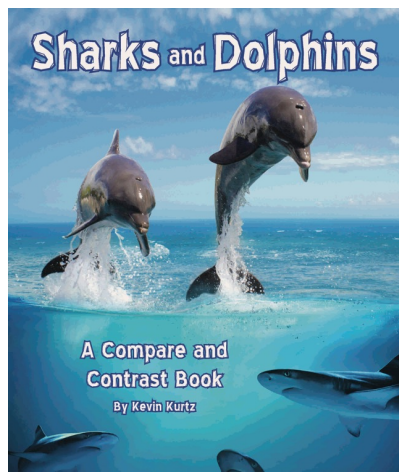




# Children's Books and Hands-on Activities: A Symbiotic Relationship

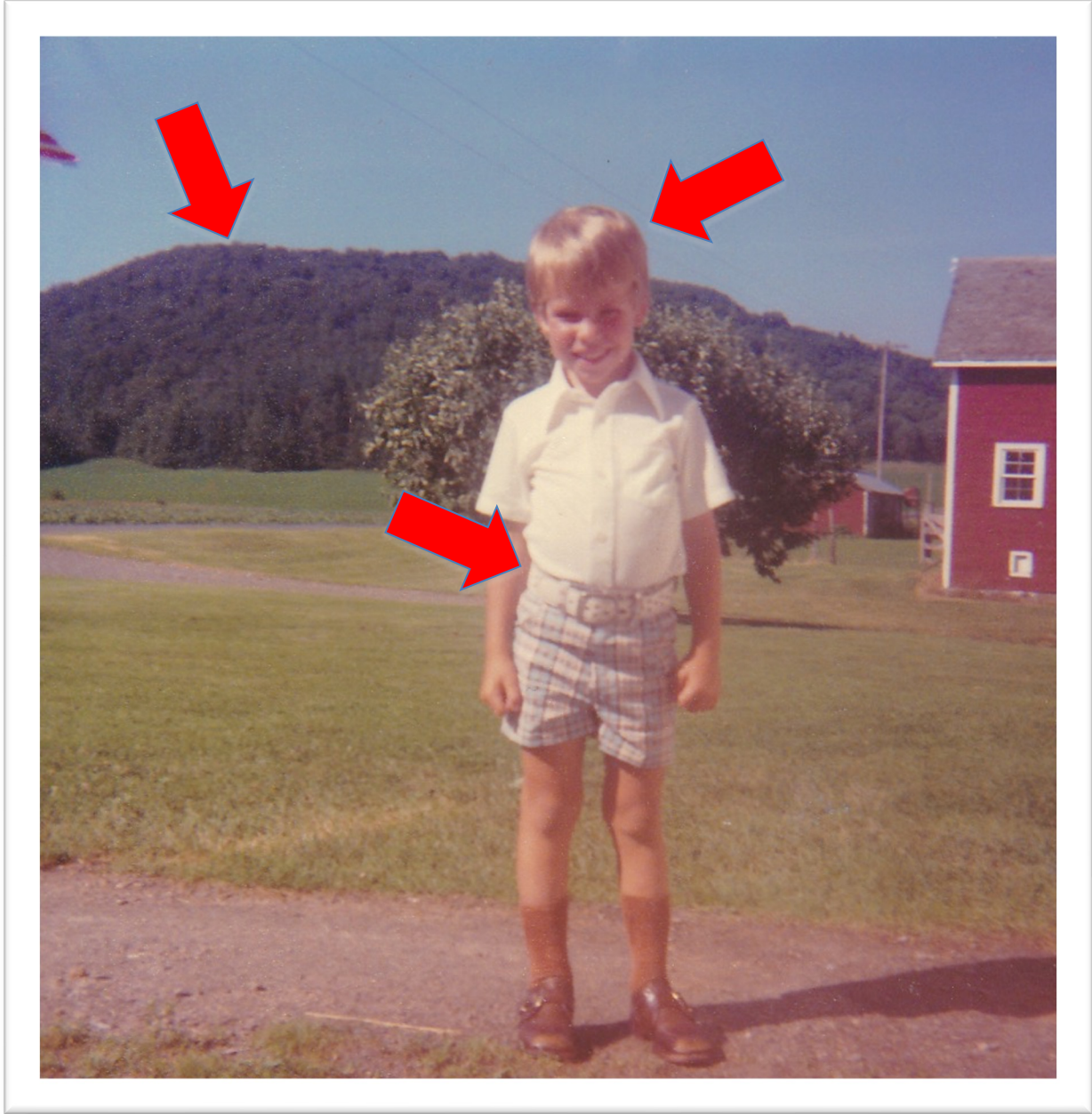
Kevin Kurtz

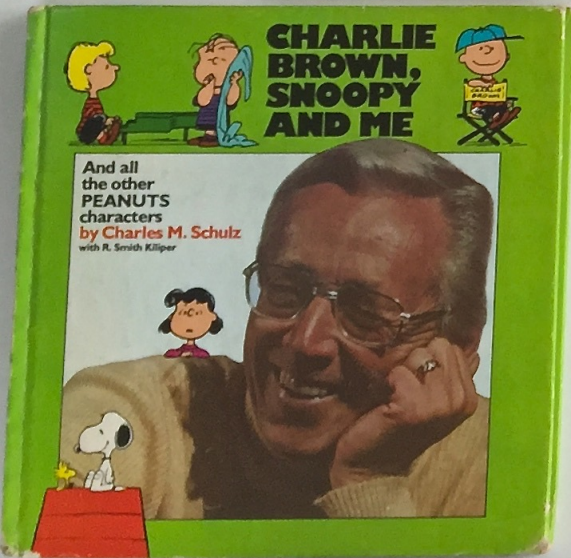
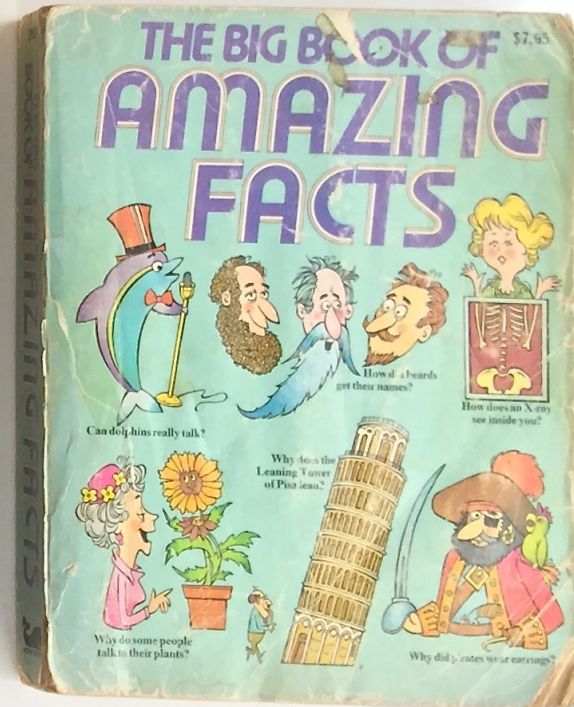
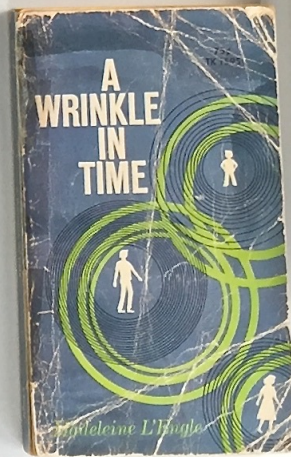
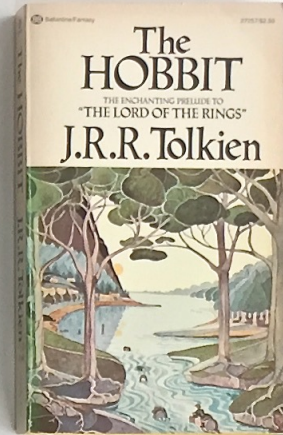
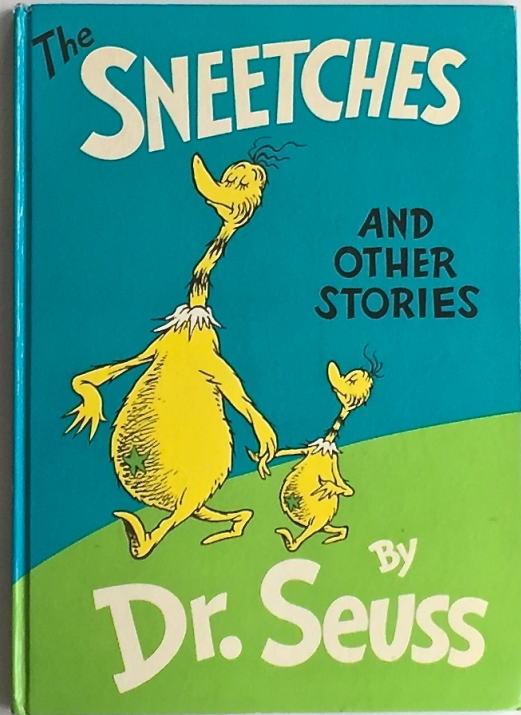
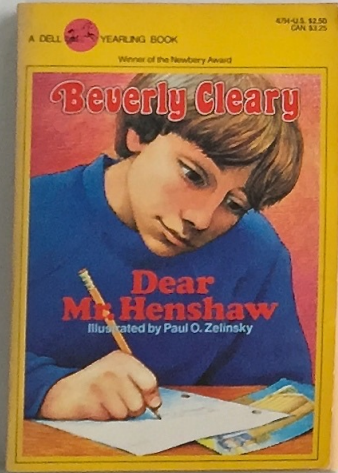
Children's Author and Educator



Chapter 1

# **My Background**





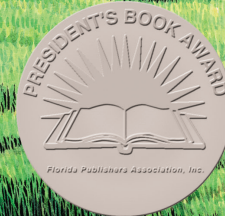








# *A Day in the Salt Marsh*



By Kevin Kurtz  
Illustrations by Consie Powell

Chapter 2

# **Teaching and Learning Science**

articles  
negative charge  
positive charge.

**cur·rent** (i lek' trik kûr' ənt) *noun*  
movement of electric charges in a  
conductor.

**force** (i lek' trik fôrs) *noun*  
attraction or repulsion of two objects  
due to their electric charges.

can.  
**e·lec·tro·mag·ne·t·ic**  
(i lek trō mag' nə tēk)  
of the relationship  
between magnetism  
and electricity.

**e·lec·tron** (i lek' trōn)  
small negatively  
charged particle  
found in atoms  
and cathode ray  
particles etc.

elec

**Science felt like learning a foreign language**

#### INGREDIENTS

24 medium-size quahog clams, usually rated “top neck” or “cherrystone,” rinsed  
1 tablespoon unsalted butter  
¼ pound slab bacon or salt pork, diced  
2 leeks, tops removed, halved and cleaned, then sliced into half moons  
3 large Yukon Gold potatoes, cubed  
½ cup dry white wine  
3 sprigs thyme  
1 bay leaf  
2 cups cream

#### PREPARATION

##### Step 1

Put the clams in a large, heavy Dutch oven, add about 4 cups water, then set over medium-high heat. Cover, and cook until clams have opened, approximately 10 to 15 minutes. (Clams that fail to open after 15 to 20 minutes should be discarded.) Strain clam broth through a sieve lined with cheesecloth or doubled-up paper towels, and set aside. Remove clams from shells, and set aside as well.

##### Step 2

Rinse out the pot, and return it to the stove. Add butter, and turn heat to medium-low. Add bacon or salt pork, and cook, stirring occasionally, until the fat has rendered and the pork has started to brown, approximately 5 to 7 minutes. Use a slotted spoon to remove pork from fat, and set aside.

#### Materials

Per group:

3 different colored Starburst candies  
piece(s) of aluminum foil  
small aluminum pie pans  
hot plate  
tongs  
heat protecting gloves  
kitchen scissors (or something to cut the Starburst with)  
For Part 2: rock samples

#### Procedure- Part 1

1. Take 3 different colored Starbursts and cut them into as many small pieces as you can. These small pieces are called **sediment**. Draw/write your observations in the **sediments** box on the rock cycle diagram.
2. Pour one color layer of sediment onto your aluminum foil; spread it out to form a flat layer (but keep the pieces near/next to each other). Pour another color layer of sediment on top of the previous layer, and then repeat with your last color. Gently push the pieces of sediment together so they all form into one large piece. Draw what you observe in the **sedimentary rock** box on the rock cycle diagram.
3. Fold the foil over the top of the layers of sedimentary rock, wrapping it like a birthday gift. Warm the package in your hands for ~3 minutes; press down on it as much as you can. You are

# Labs felt like reading recipes

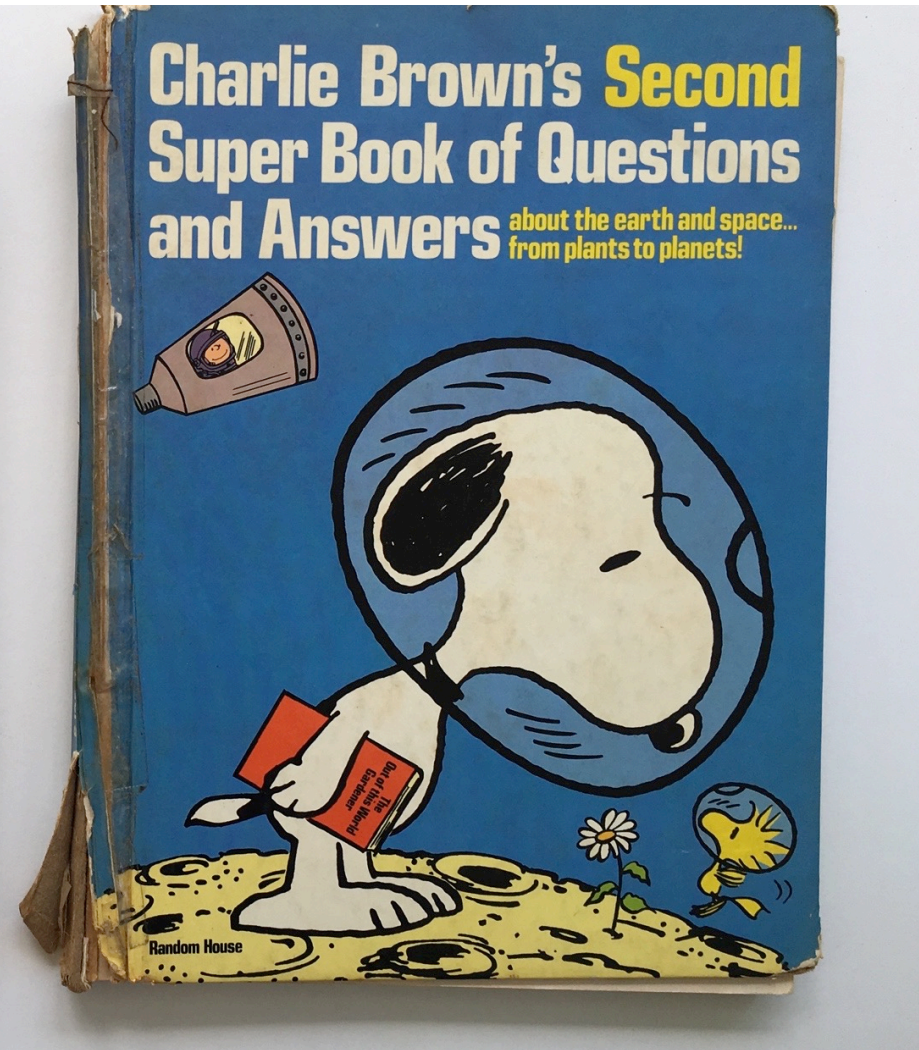
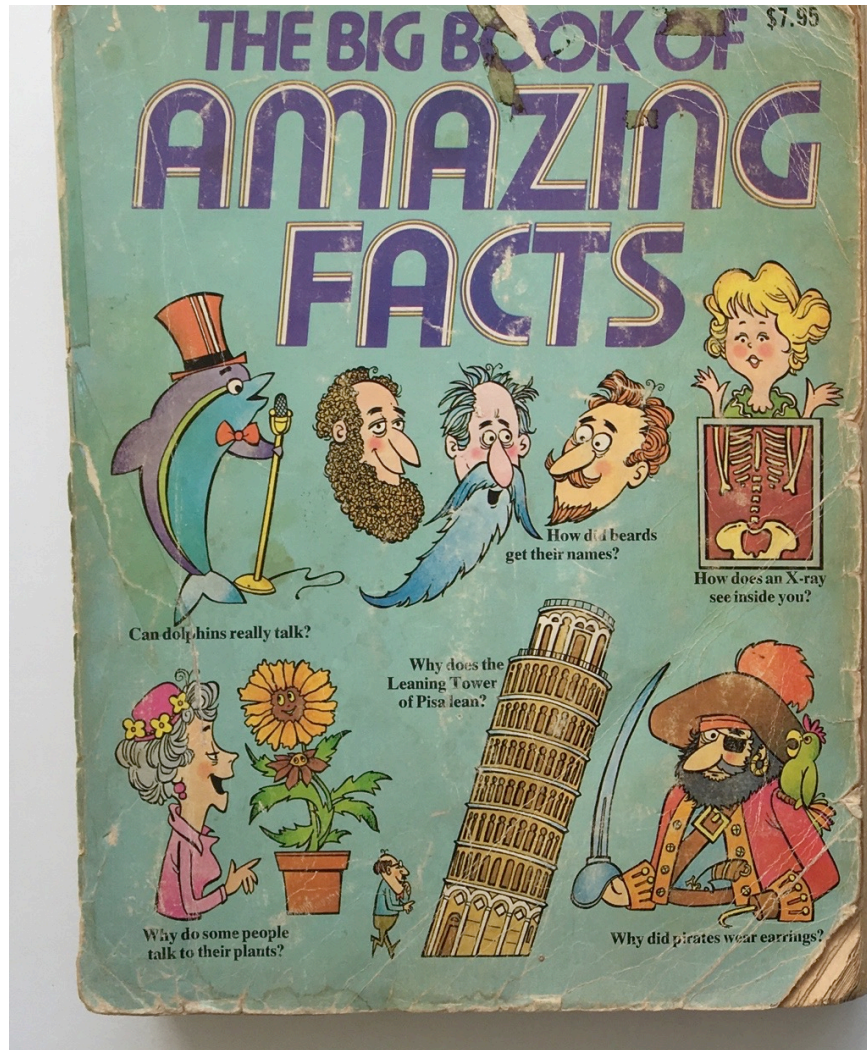


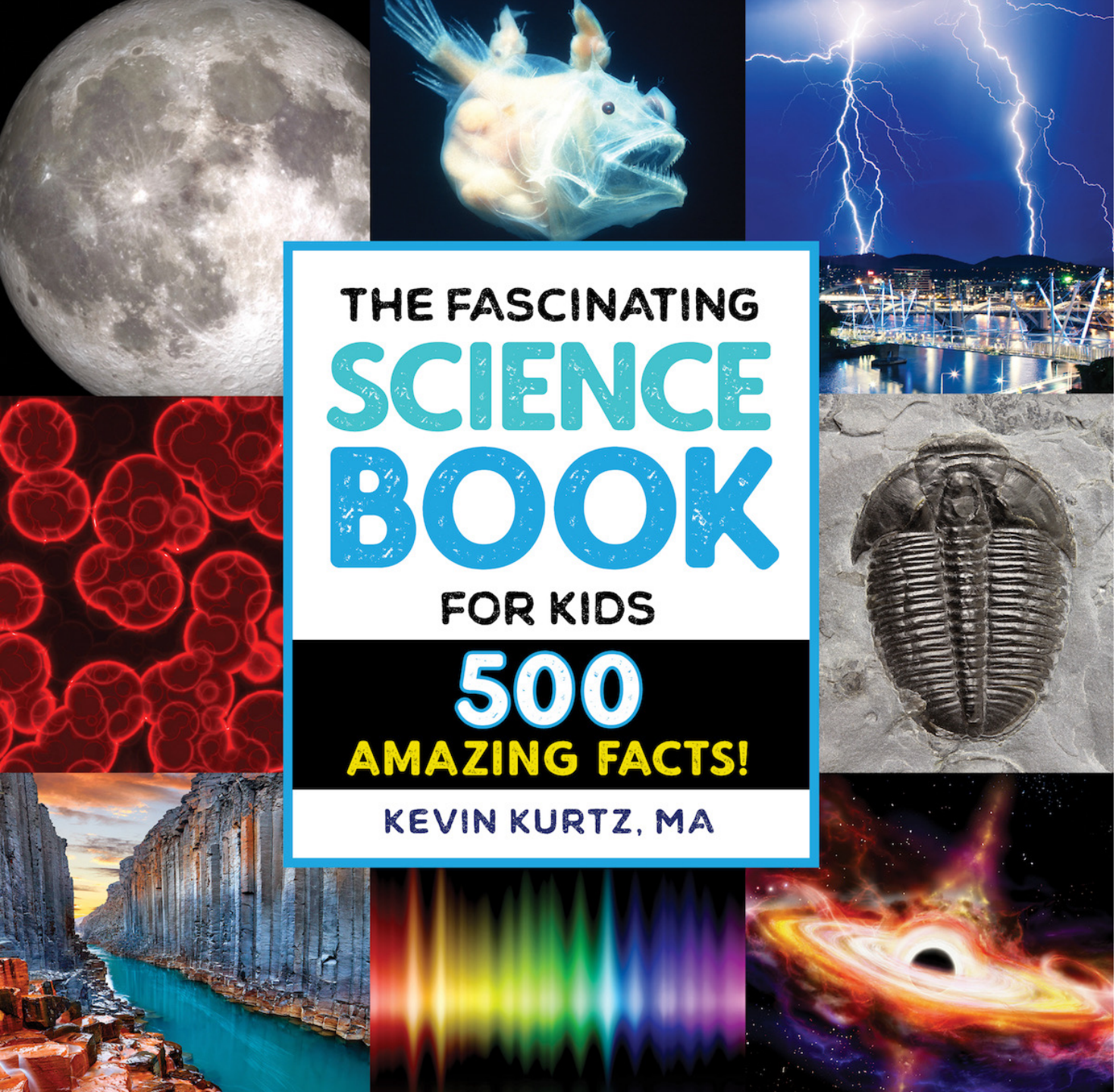
# An inquiry into inquiry

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# Kids like facts





THE FASCINATING  
**SCIENCE  
BOOK**

FOR KIDS

**500**  
**AMAZING FACTS!**

KEVIN KURTZ, MA

**Kids like facts**





**Facts + Experience = Meaning**

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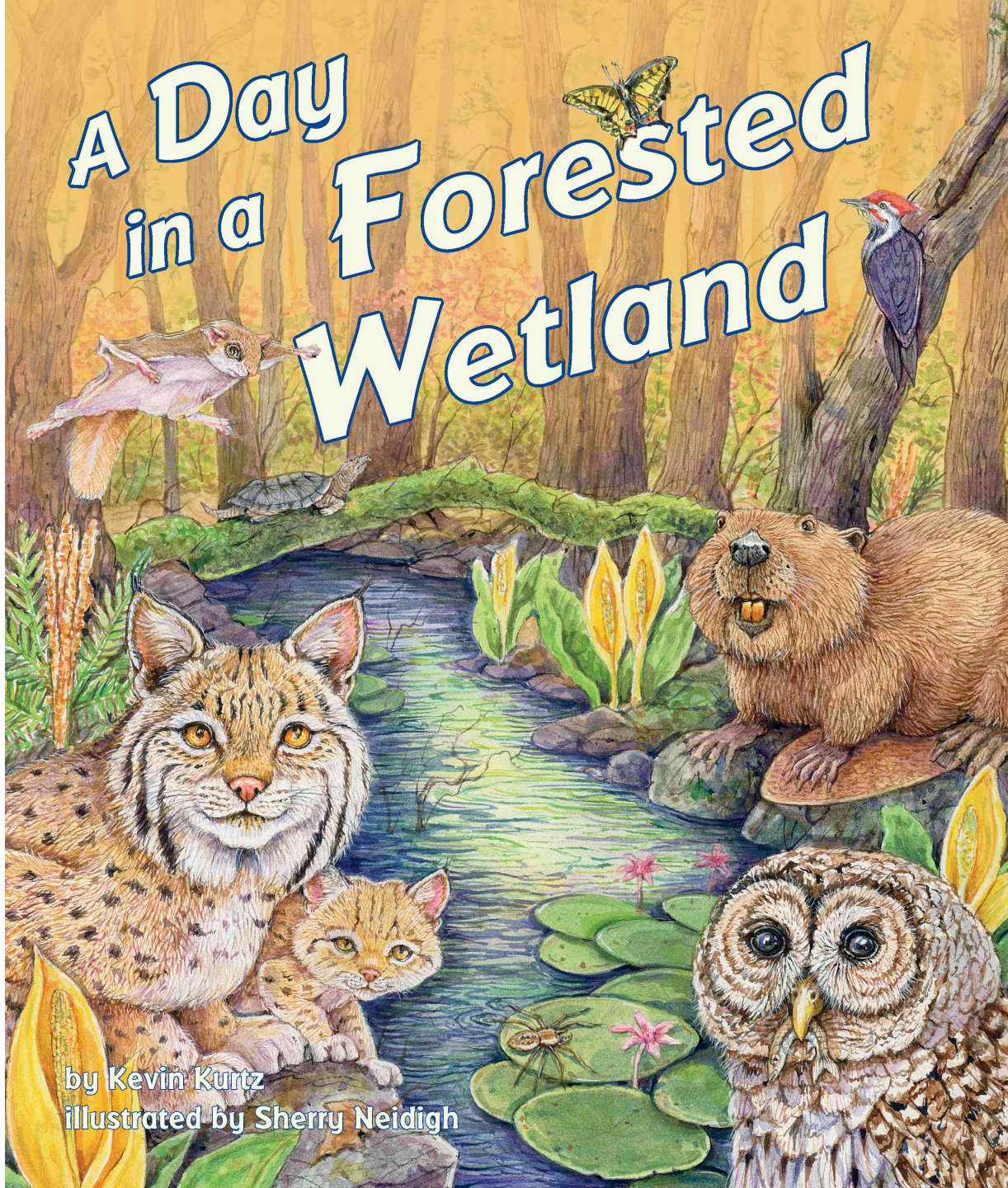
**Facts + Experience  
= Engagement**

**Teachers have a hard job**

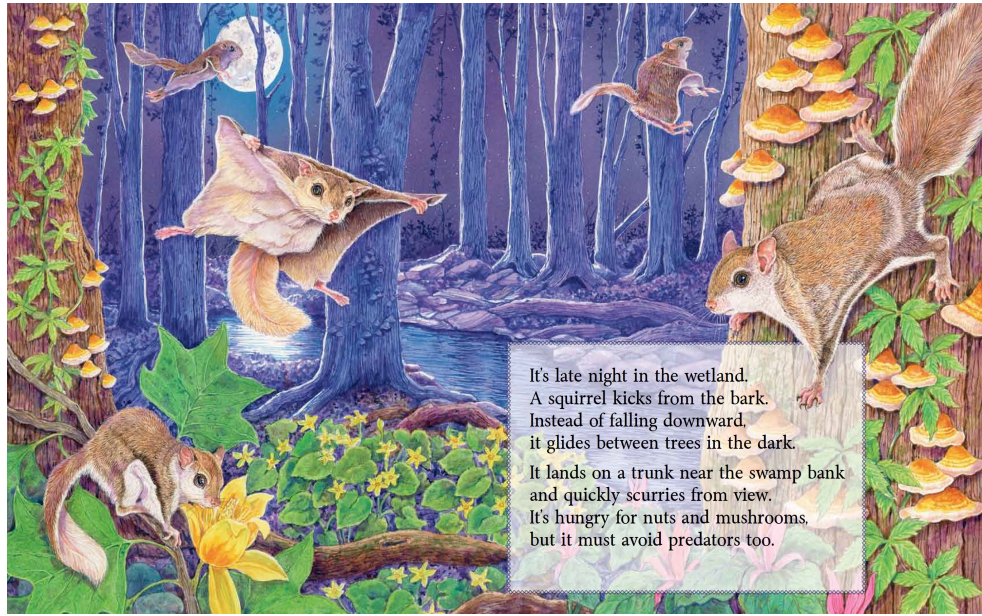
Chapter 3

## **Field Trips**

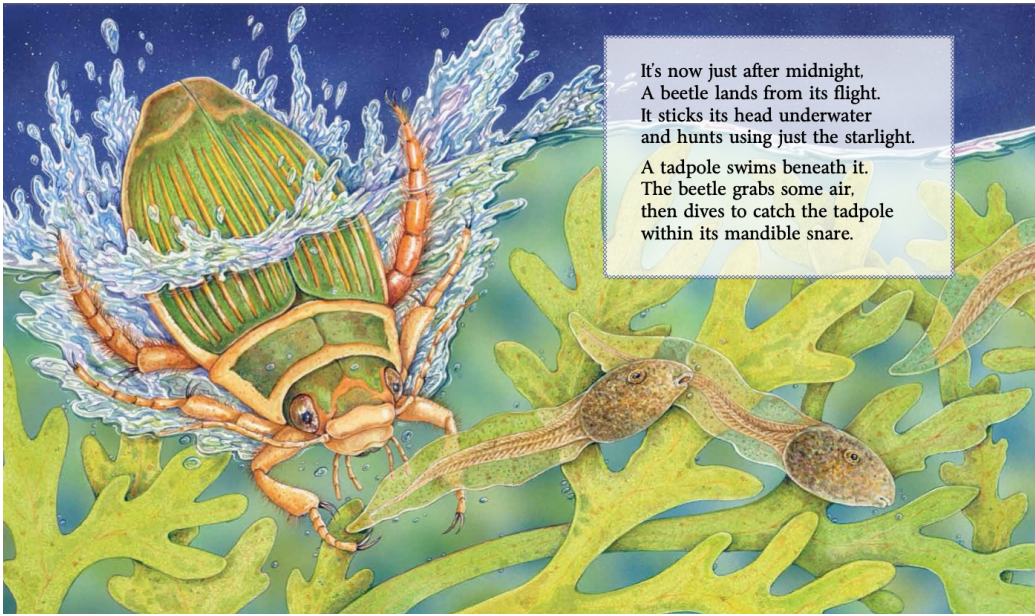
# A Day in a Forested Wetland



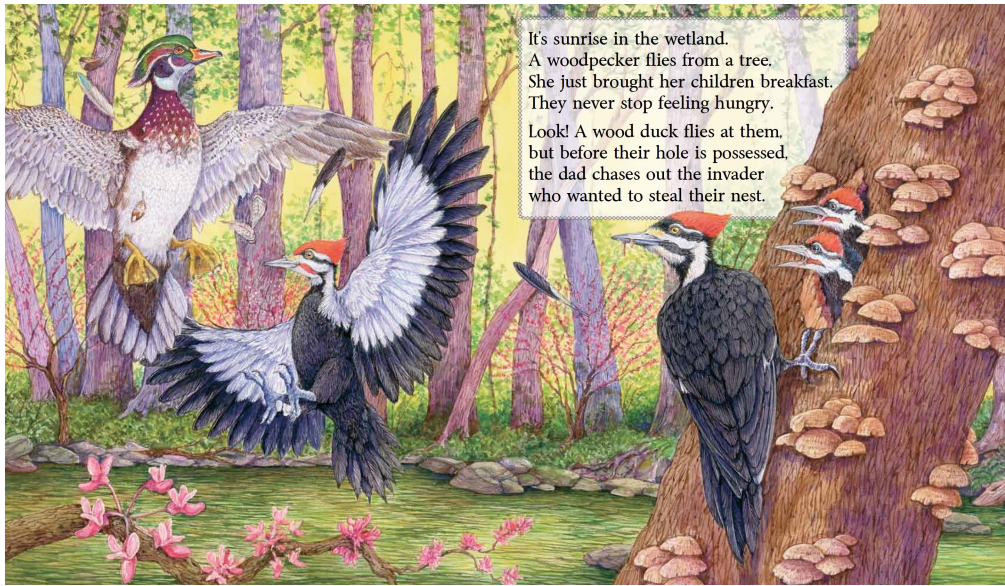
by Kevin Kurtz  
illustrated by Sherry Neidigh



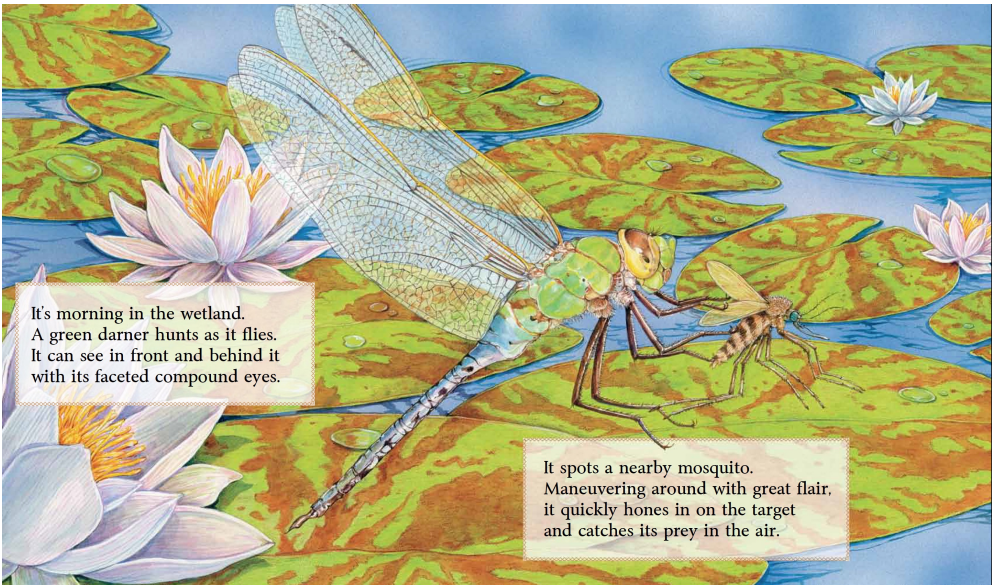
It's late night in the wetland.  
A squirrel kicks from the bark.  
Instead of falling downward,  
it glides between trees in the dark.  
It lands on a trunk near the swamp bank  
and quickly scurries from view.  
It's hungry for nuts and mushrooms,  
but it must avoid predators too.



It's now just after midnight.  
A beetle lands from its flight.  
It sticks its head underwater  
and hunts using just the starlight.  
A tadpole swims beneath it.  
The beetle grabs some air,  
then dives to catch the tadpole  
within its mandible snare.



It's sunrise in the wetland.  
A woodpecker flies from a tree.  
She just brought her children breakfast.  
They never stop feeling hungry.  
Look! A wood duck flies at them,  
but before their hole is possessed,  
the dad chases out the invader  
who wanted to steal their nest.



It's morning in the wetland.  
A green darner hunts as it flies.  
It can see in front and behind it  
with its faceted compound eyes.

It spots a nearby mosquito.  
Maneuvering around with great flair,  
it quickly hones in on the target  
and catches its prey in the air.

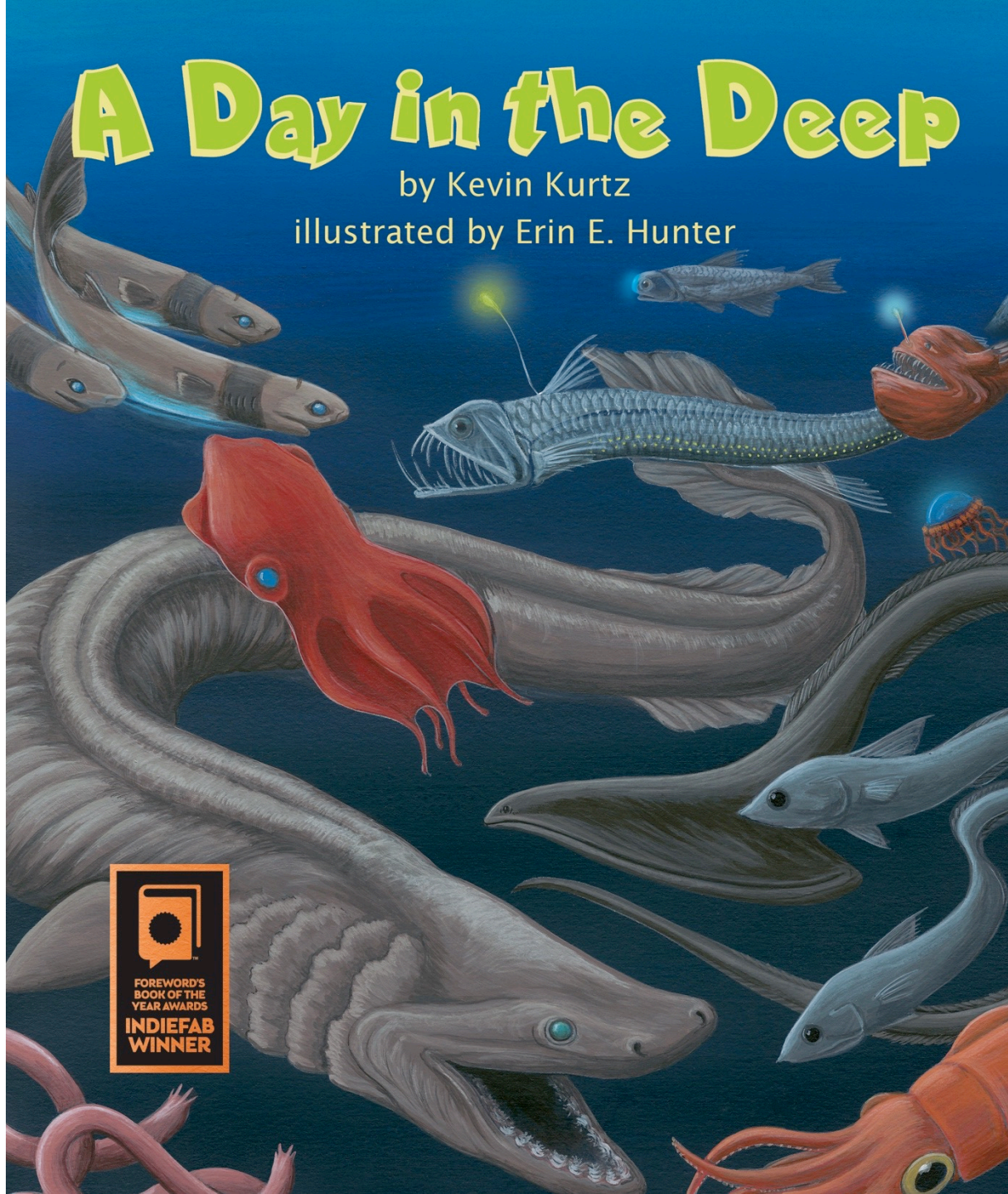
Chapter 5

## **Providing Examples of Science Concepts**

# A Day in the Deep

by Kevin Kurtz

illustrated by Erin E. Hunter





Descending five hundred feet deeper,  
a jelly may soon become prey,  
but before the *Atolla* is eaten,  
it lights up like a fireworks display.



The lights attract a large predator,  
who responds to the jelly's alarm  
by eating the smaller predator,  
saving the *Atolla* from harm.

Chapter 4

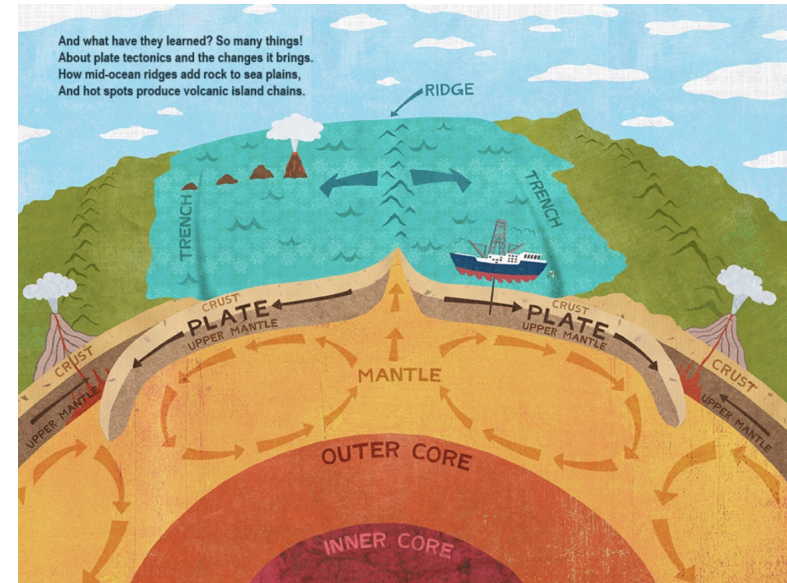
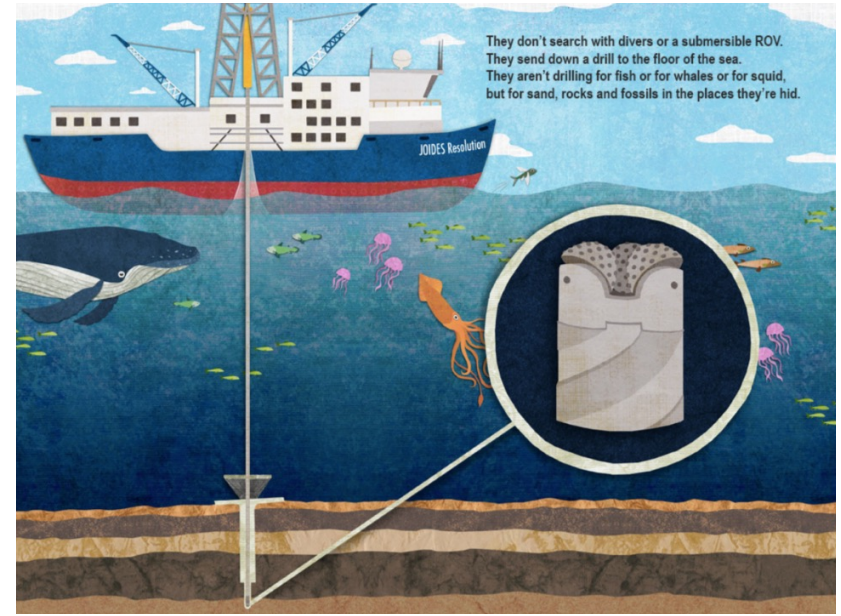
## **Introductions to Units of Study**

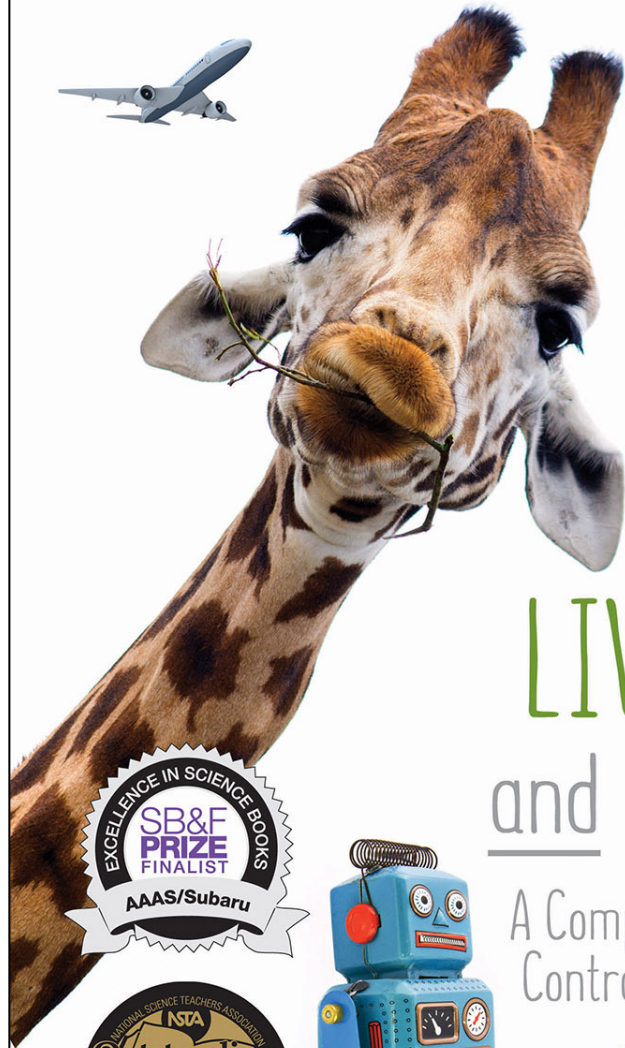
# UNCOVERING EARTH'S SECRETS

Science and Adventure  
on the *JOIDES Resolution*

KEVIN KURTZ  
ALICE FEAGAN





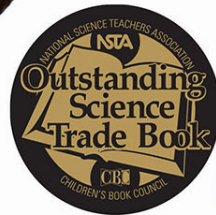


by Kevin Kurtz



# LIVING THINGS and NONLIVING THINGS

A Compare and Contrast Book





Are living things  
the only things  
that move?



Not necessarily.  
Some nonliving things move ...



... while some living things cannot.

But if something does ALL these things, then it is probably a living thing.

Breathe.



Drink Water.



Take energy and nutrients from its environment.



Reproduce.

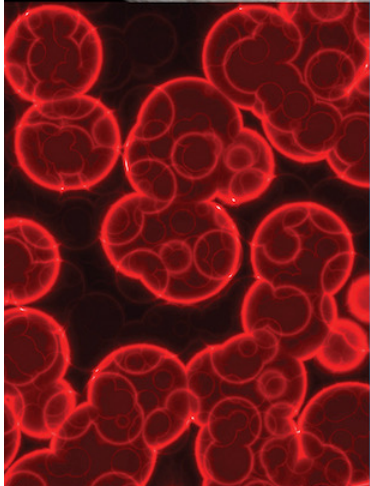
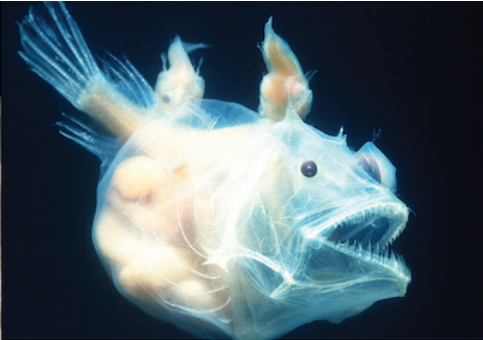


Grow and change.



Chapter 6

## **Fun Facts to Spark Curiosity**



THE FASCINATING  
**SCIENCE**  
**BOOK**

FOR KIDS

**500**  
**AMAZING FACTS!**

KEVIN KURTZ, MA



H<sub>2</sub>-Oh!

# H<sub>2</sub>-OH!

**WATER** is a colorless liquid made of hydrogen and oxygen.

**EARTH'S OCEAN  
HOLDS 97 PERCENT  
OF ALL THE WATER  
ON THE PLANET.**

All the water on Earth has been recycling for billions of years. That means water you have drunk may have once been drunk by a *Tyrannosaurus rex* or Marie Curie.



Water is attracted to static electricity. If you hold a staticky balloon near a trickle of water, the water will bend toward the balloon.



Water molecules are attracted to each other and to surfaces. This is what creates water drops and surface tension, or the "skin" on the water's surface.

If the 0.001 percent of Earth's water in the atmosphere all came down as rain at once, it would cover the entire planet in 1 inch (2.5 cm) of water.



Chapter 7

# **Making Connections**

A mountain biker wearing a white and green helmet, goggles, an orange and white long-sleeved jersey, black pants, and white knee pads is riding a green mountain bike on a dirt trail. The background is a blurred forest. The image is framed by a dark blue banner at the top and bottom with diagonal stripes and gear icons.

**ENGINEERING** KEEPS US SAFE

# WHAT MAKES SPORTS GEAR SAFER?

KEVIN KURTZ

Lerner 

# SMART PADS

Athletes in some sports wear pads to protect their knees and shins. Some new pads in soccer, mountain biking, and other sports use "smart" padding. This padding stays soft when the athlete is moving. When something hits the pad, the padding immediately hardens. When the smart pad turns solid, the hard pad spreads the impact energy over a larger area of the body. Once the impact is over, the padding softens again.

Smart pads work like oobleck. If you have ever mixed cornstarch and water together, then you have made oobleck. When oobleck is in a bowl, it acts like a liquid. When oobleck is squeezed, it immediately feels hard like a solid.

Smart pads and oobleck are non-Newtonian fluids. A non-Newtonian fluid stays soft like a liquid until it feels pressure from an impact or squeezing. Then the fluid immediately turns into a hard solid.

Scientists are still trying to figure out why this happens. One theory is the rapid change in pressure makes all the fluid particles suddenly move very quickly. This basically causes a traffic jam. Then the particles cannot move at all. This makes them act like a solid. They stay a solid until the pressure stops.



Kids play with oobleck, which hardens and softens as smart pads do.

Soccer players rely on pads to protect their shins.



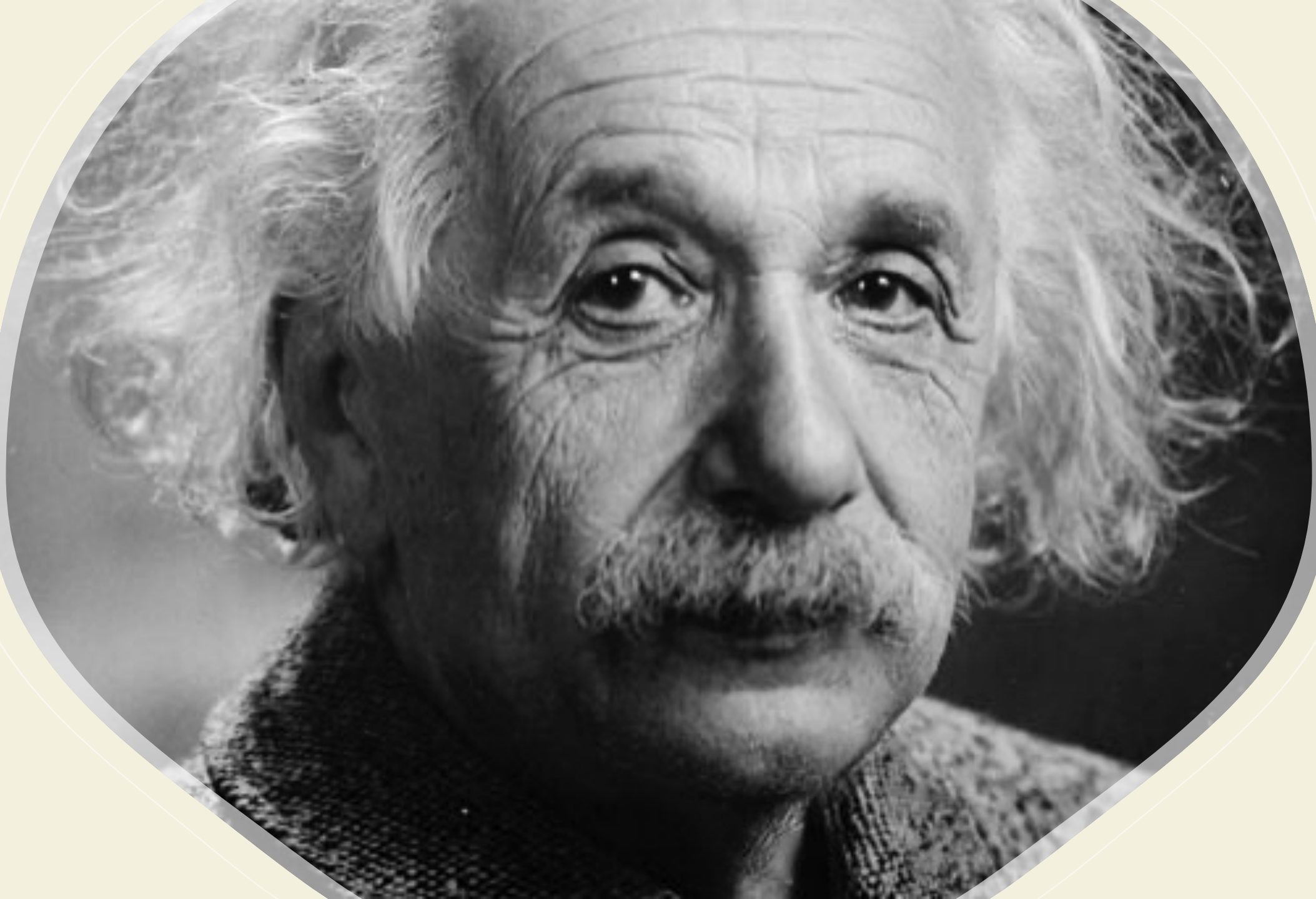
## KEEPING A BOTTLE FROM BREAKING

Smart padding is used in soccer shin guards. To show how they work, a shin guard manufacturer wrapped a smart shin guard around a glass bottle. He then dropped a bowling ball on the bottle. When the bowling ball hit the shin guard, the padding immediately hardened and the bottle didn't break.



Chapter 8

## **What is Science Really?**









# DOWN INTO THE CRATER OF DOOM

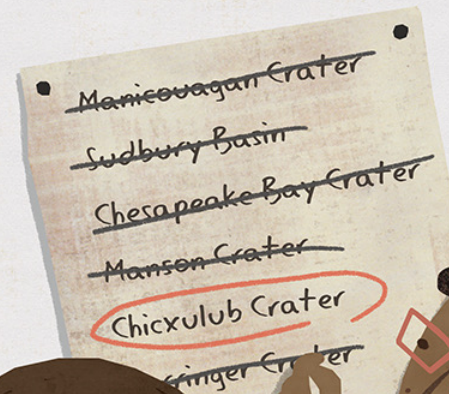
*Science and Discovery on the Chicxulub Impact Crater Expedition*

Words By: KEVIN KURTZ - Pictures By: ALICE FEAGAN

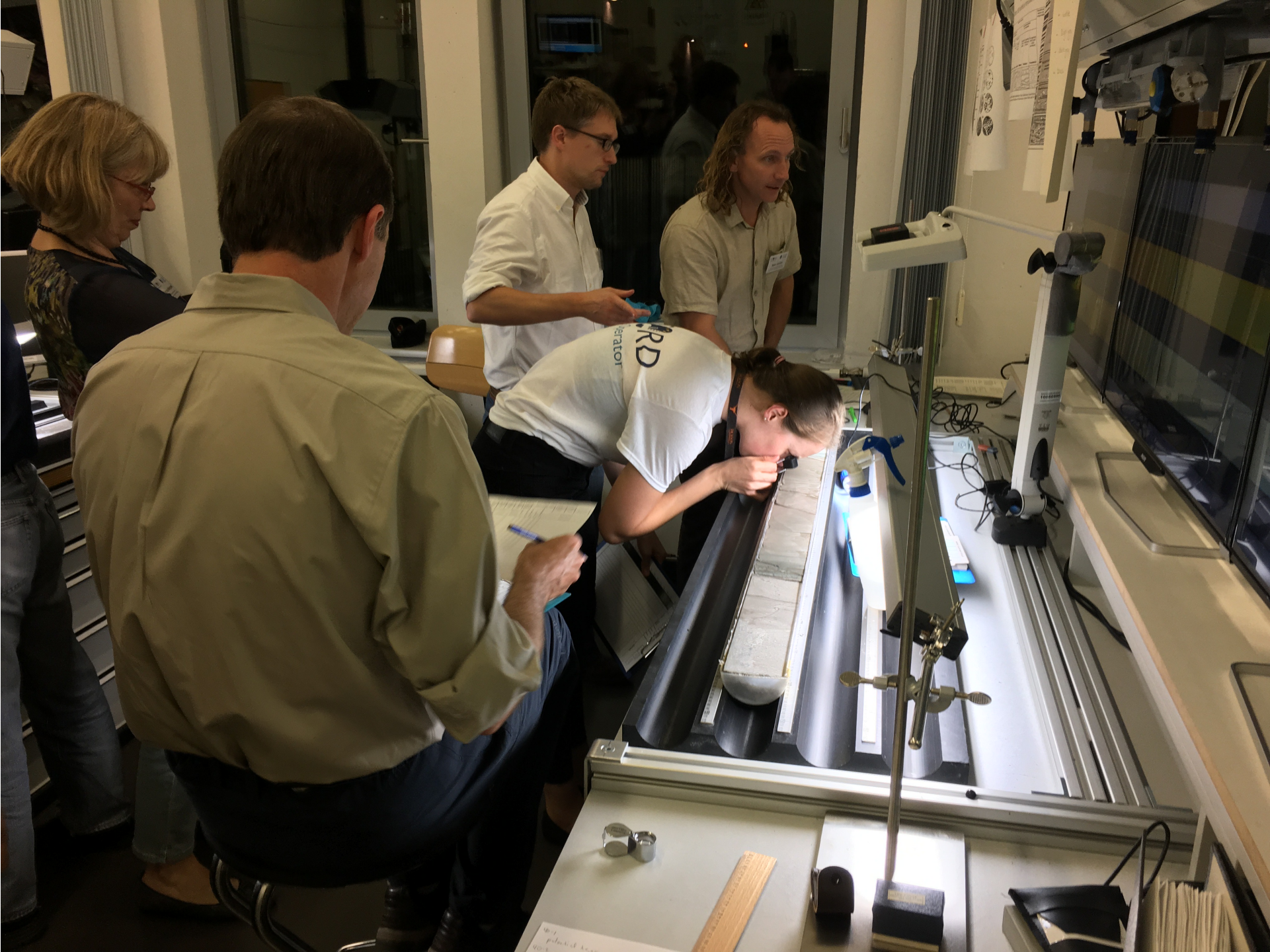


These scientists guessed the culprit was a comet or an asteroid. But to prove their hypothesis, they had to find the crater.

Scientists scoured the Earth for over a decade. Then, in 1990, they found it, buried, half under the Yucatan Peninsula and half under the Gulf of Mexico. They named it the Chicxulub Crater.

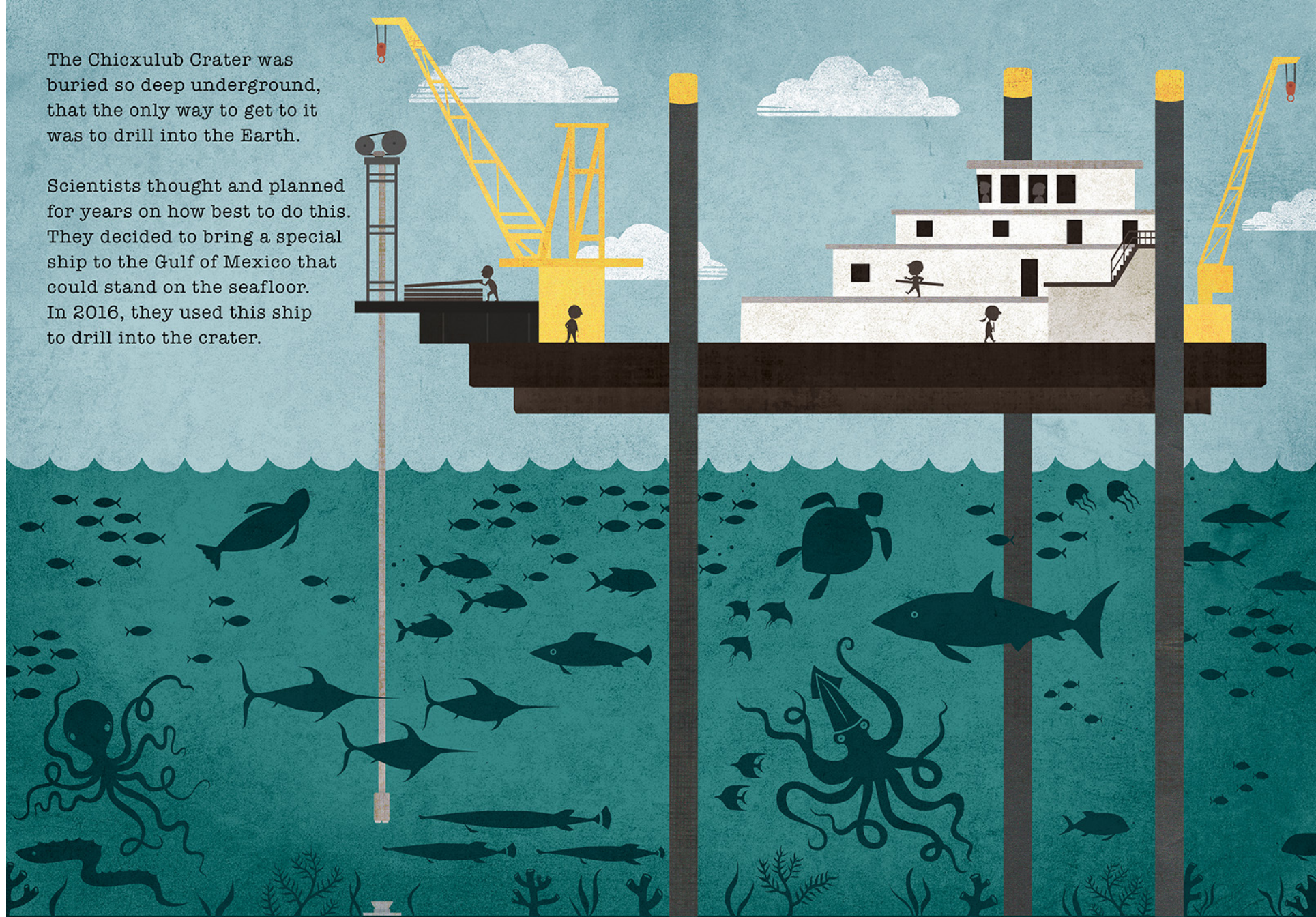






The Chicxulub Crater was buried so deep underground, that the only way to get to it was to drill into the Earth.

Scientists thought and planned for years on how best to do this. They decided to bring a special ship to the Gulf of Mexico that could stand on the seafloor. In 2016, they used this ship to drill into the crater.



One day, long ago, the world was changed forever.  
An asteroid bigger than our biggest mountain crashed into the Earth.  
It triggered disasters, destruction, and mass extinction.



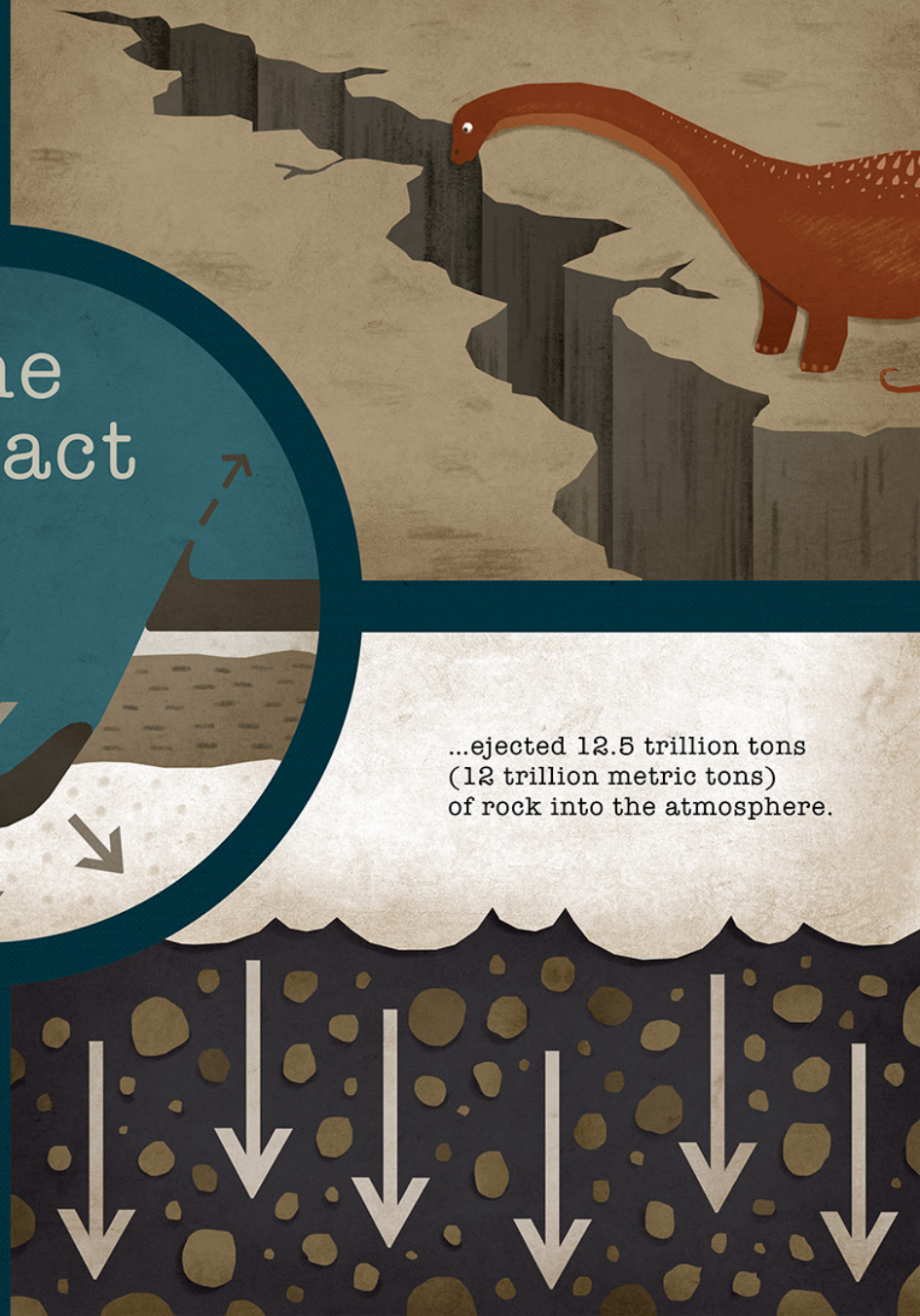
...hit with such force that rock miles deep in the ground splashed like water.

...shook the Earth, setting off massive earthquakes.

## The Impact

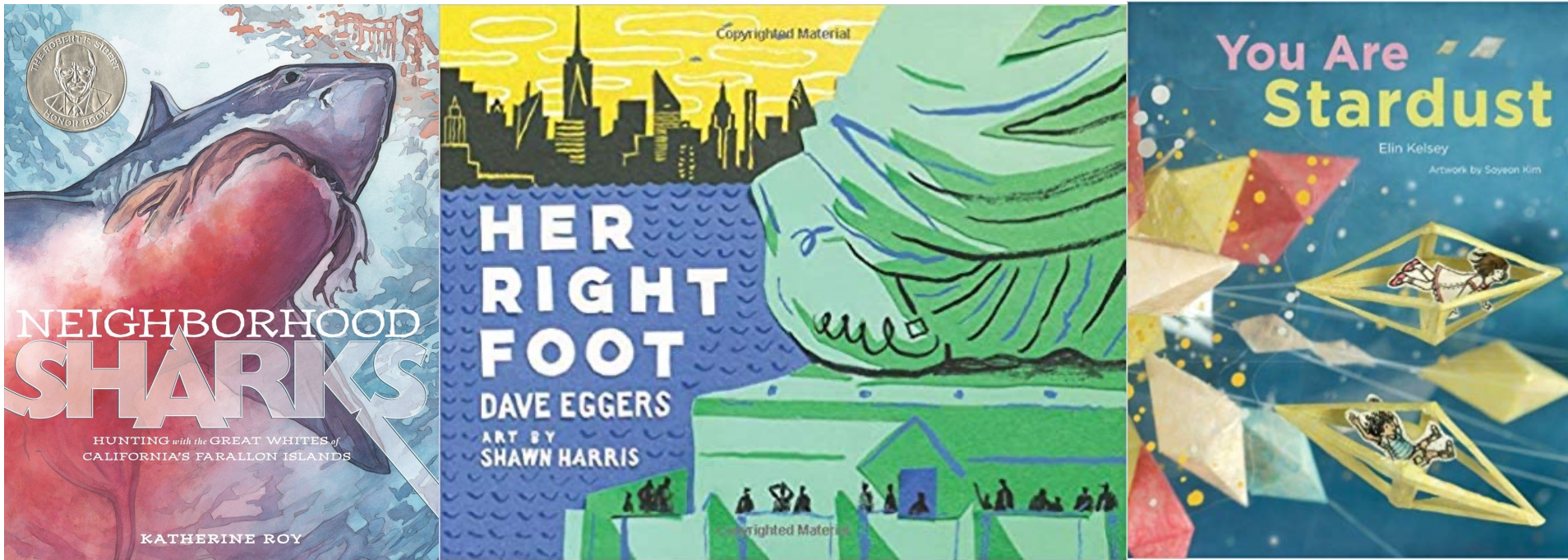
...likely caused volcanic eruptions around the world.

...ejected 12.5 trillion tons (12 trillion metric tons) of rock into the atmosphere.





# Where do you find good nonfiction books?



NSTA Recommends: <https://www.nsta.org/recommends/>  
AAAS/Subaru SB&F Prize for Excellence in Science Books: <https://www.sbfprize.org>

**KEVIN KURTZ**  
C h i l d r e n ' s   A u t h o r   &   E d u c a t o r

[www.kevkurtz.com](http://www.kevkurtz.com)