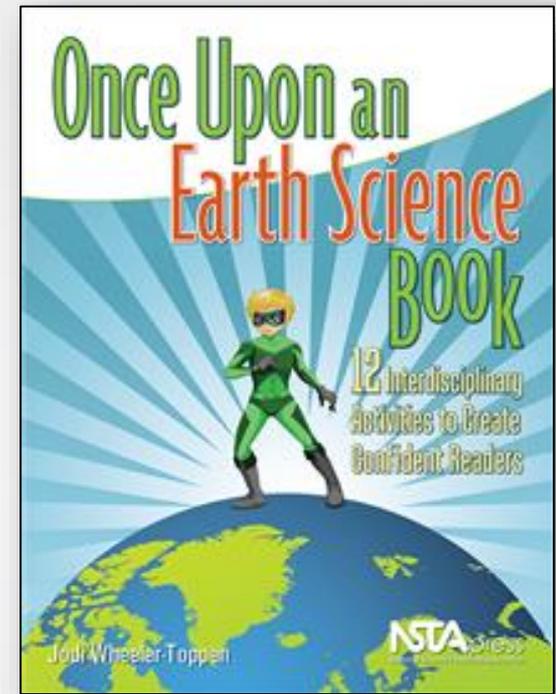
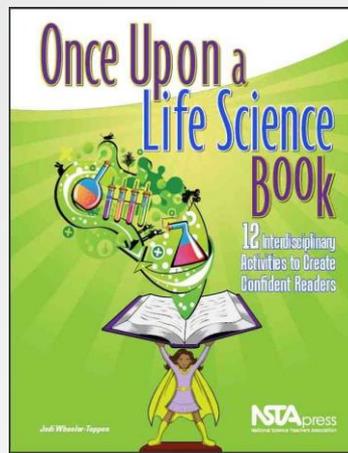
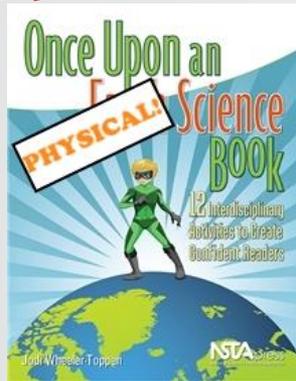


Coming Soon!



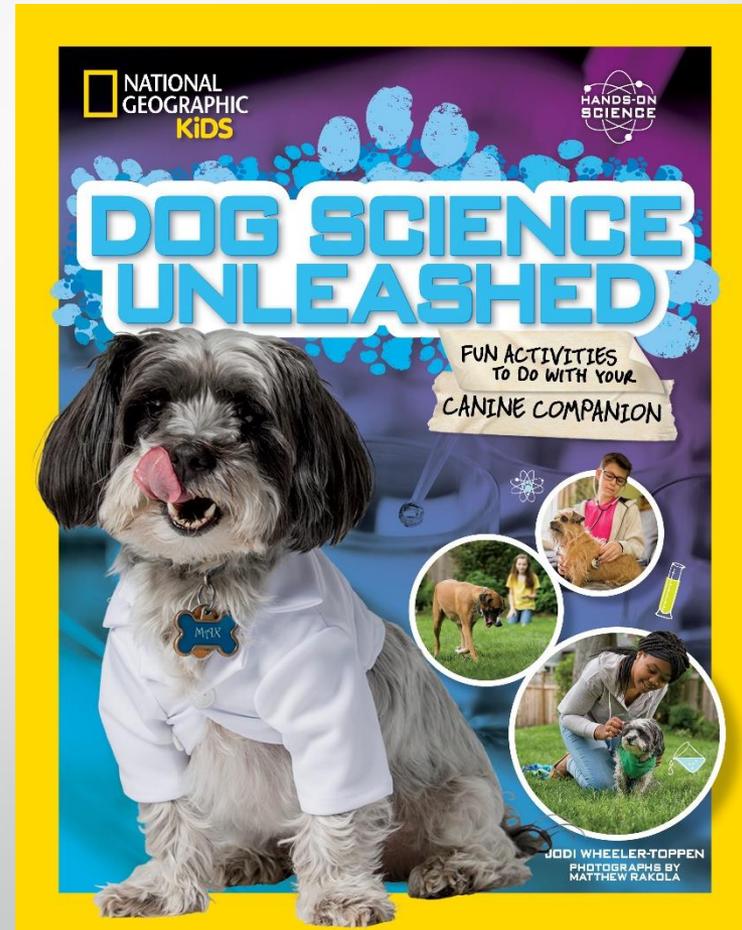
# Once Upon an Earth Science Book

Jodi Wheeler-Toppin, Ph.D.

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

# [www.OnceUponAScienceBook.com](http://www.OnceUponAScienceBook.com)

- This presentation, available for download
- Sign up for my newsletter (or Physical Science field test)
- Videos on integrating science and literacy—especially one for administrators!
- More information on my books, including my newest one for kids:



# Trash Soup

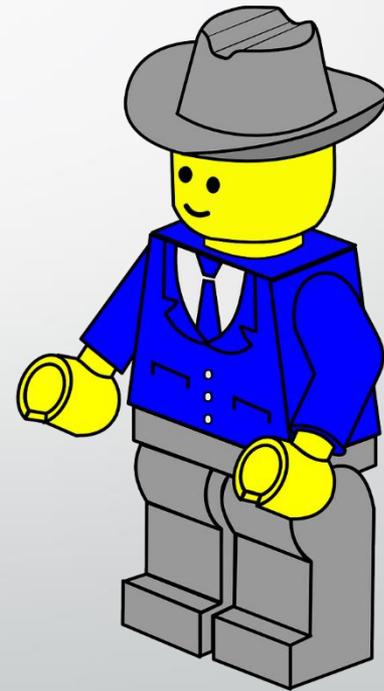


- Please get into groups of 3.
- Pick a reading coordinator, a writing coordinator, and a materials coordinator.

Suppose a little boy was on a ship off the coast of Georgia and accidentally dropped his toy man into the ocean.

Where would the toy man go?

What would determine his movement?



Let's do some investigations to find out!

# Reading Charge:

**For students:** As you read, think about the toy man. What would affect his movement around the ocean?

**For you:** As you read, think about whether or not you are understanding what you read. How do you know if you understand? What do you do if you hit a spot you don't get?



What did you notice?

How do you know if you understand  
what you are reading?



# 3 Impediments to learning from Text

The belief that reading is essentially a process of saying the words rather than actively constructing meaning from texts is widespread among many students. For instance, one of the students we interviewed looked surprised when he was asked to describe the topic discussed in a section of text he had just read.

***"I don't know what it was about,"*** he answered, with no sense of irony, ***"I was busy reading. I wasn't paying attention."***

(Schoenbach, et al.; Reading for Understanding)

# 3 Impediments to Learning from Text

Impediment 1: Students do not expect what they are reading to make sense.

# 3 Impediments to Learning from Text

Impediment 1: Students do not expect what they are reading to make sense.

## Response: start a conversation

- Talk about needing to “figure out” as a normal part of reading science.
- Encourage students to pay attention to what they are thinking as they read.
- Model the kind of thinking that successful readers use through Thinking Aloud

# Thinking Aloud

The large surface currents in the ocean are caused by wind. In the polar regions at the top and bottom of the Earth, the air is cold.

Molecules of cold air pack together and are dense. Near the equator, the Sun's heat warms the air. The molecules spread out and form a low-pressure zone. The polar air rushes toward the equator, where it warms and completes the loop.

# 3 Impediments to Learning from Text

Impediment 1: Students do not expect what they are reading to make sense.

## Responses:

- Start a classroom conversation about making sense of what you read.
- Model what successful readers do.

# Impediment 2

## **Somerset Draw with Durham Hands Notts the Title**

After bowling the home side out for 320, Somerset were left needing 181 from 17 overs to guarantee the title. But, at 48-3, the chase was abandoned at Chester-le-Street and a draw agreed.

Fired-up Notts then took the three Lancashire wickets they required at Old Trafford to pick up a sixth bonus point and break Somerset hearts.

Eventually, Trego had Scott Rushworth caught behind and Benkenstein was caught at slip by skipper Marcus Trescothick off Charl Willoughby to set up the Somerset chase.

They went to the crease not knowing if a draw would be good enough to hold off Notts and immediately lost Kieswetter, promoted up the order, when he was bowled by Somerset old boy Blackwell.

# 3 Impediments to Learning from Text

Impediment 2: They lack background knowledge assumed by the text.

# Lack of Background Knowledge

“Some people were afraid the condor would soon be gone.”



# Background knowledge: non-science vocabulary

Adequate      Contradict

Tentative      Characteristic

Substance      Offspring

Deposit      Gradual

(All words used in academic writing, but not  
very often in speech)

# Learning Cycles



You can think of it in three or five steps:

- (Engage)
- Explore } **Phenomenon!**
  - Experience the concept
  - Build a basic schema
  - Develop mental images of the concept
- Explain
- Extend/ Apply } **Revisit Phenomenon!**
- (Evaluate)

# 3 Impediments to Learning from Text

Impediment 2: They lack background knowledge assumed by the text.

## Responses:

- Have students explore before reading!
- Read the text, looking for background they'll need.
- Listen, listen to what they say about the text.
- Consider reading groups or having students think aloud to each other.

## Impediment 3

Ferdie and Niddle gabbled on the plag, plag wert. “Pling,” Ferdie twaddled, “pling apie plee.” Niddle peedled and vang rue sot.

Comprehension Questions:

1. Where did Ferdie and Niddle gabble?
2. What did Ferdie twaddle?
3. What did Niddle do after he peedled?

\*Critical Thinking:

4. Where else might Ferdie and Niddle gabble?

# 3 Impediments to Learning from Text

Impediment 3: They don't have to read to do their school tasks.

Response:

- Give them better tasks!

(That is, ask questions and give assignments that they cannot complete by just copying sentences.)



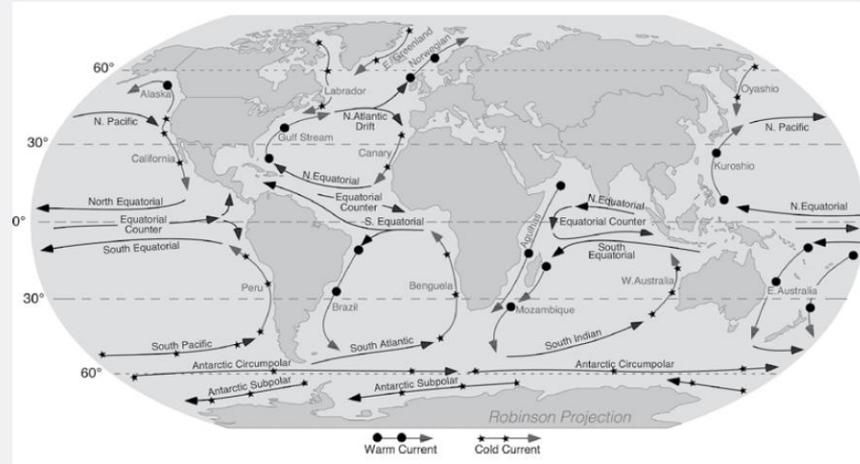
Questions? Comments?

Remember that toy man,  
dropped off the coast of  
Georgia?

Make a claim: What are two  
locations—other than the  
coast of Georgia—where you  
expect him to turn up?

Support your claim with  
evidence from your ocean  
currents map, your reading,  
and your lab. Explain how and  
why he might float to those  
places.

Major Ocean Surface Currents





# Prewriting/ Experimenting with Reading Groups

# Coding

*! This is important*

*✓ I knew that*

*x This is different from what I thought*

*? I don't understand*

You are probably familiar with some of the movements of the water cycle, such as rain, snow, or other precipitation falling from the atmosphere. ✓  
When that precipitation reaches the ground, some of it runs into rivers, lakes, and oceans. Some of it ends up frozen in ice caps or glaciers. And some of it soaks into the soil. Water that soaks into the ground is called groundwater. ! And groundwater is more powerful than you might imagine. x,?

# Prewriting

- Science ideas: What evidence will you want to use from your lab? What reasons will you want to use from the article?
- Science words: What science vocabulary will you want to use?
- Should you use everyday language or formal language?
- What writing words might you use? (*similar, different, however, and therefore might be good choices for this assignment*)



Questions? Comments?

# What's in the book?

Each Chapter:

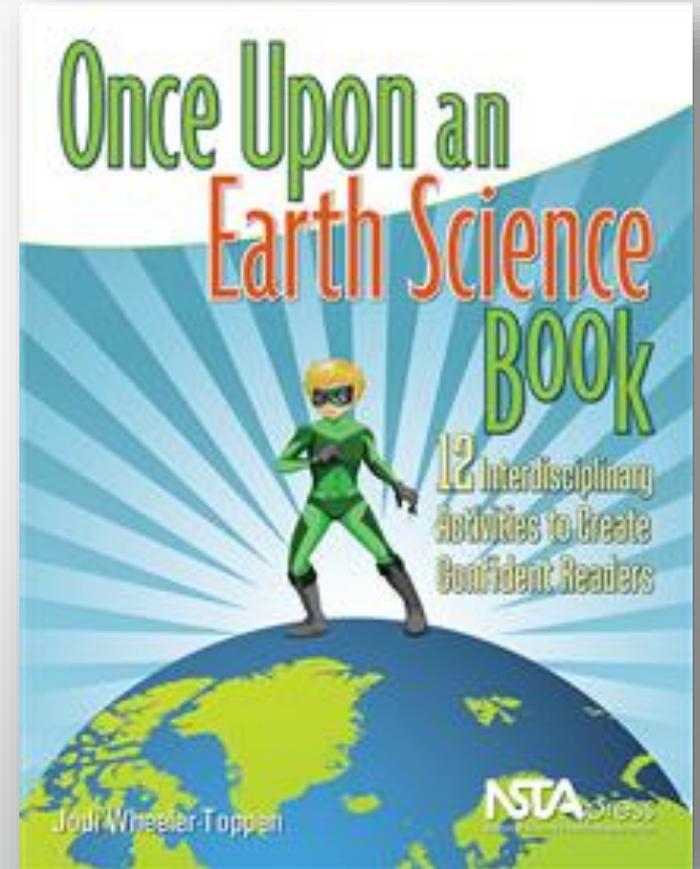
Exploration Activity

Article that relates to the activity

- Reading strategy
  - Short journal question to help students internalize the strategy

Writing Prompt that draws from activity and reading

Thinking Visually: Short assignment to reinforce a topic from the chapter and improve visual literacy



*I will be in the NSTA bookstore from 9:30-10:00 with a preview of another lesson. Please drop by!*

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