

Instructional Material Critique & Redesign with Infographic

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Introduction

Choosing instructional materials may seem like a simple task, but in reality, it is one of the most important decisions a teacher can make! The books, readings, visuals, and supports placed in front of students can either open the door to meaningful learning, or make the content feel completely out of reach. This is especially true for multilingual learners, who are often expected to master grade-level content while also developing a new language. Too often, content area teachers like myself make the mistake of looking for text that “fits” the curriculum, instead of exploring literature which has the potential to be culturally responsive, linguistically accessible, and meaningful for a diverse student population.

This assignment has given me the opportunity to take a deeper look at that process by selecting, critiquing, and redesigning two instructional materials across different grade levels. Rather than viewing these materials as finished products, I analyzed how they could be adapted to better support multilingual learners through TESOL principles, WIDA Can Do Descriptors, and research-based instructional practices.

Resource #1

Step 1: Standards Alignment & Initial Analysis

The first Instructional material I selected is a chapter book titled, *The Sixth Extinction: An Unnatural History* by Elizabeth Kolbert. The book explores how the Earth is going through a major extinction event, and how human actions are a big part of the cause. Throughout the text, Kolbert uses real examples to show how climate change and environmental damage are impacting different species around the world.

This particular text aligns nicely with the NGSS Earth & Space Science Standards for High School, especially ESS3, as it explores the impact of human activity on biodiversity and natural systems. The text also supports ESS2 by illustrating how changes in one part of Earth's system, such as climate, can create ripple effects across ecosystems. Through real-world examples, the book helps students analyze environmental issues and understand the interconnectedness of Earth's processes. This text caters to the curriculum and grade level I actively teach. However, if used strategically, this instructional material can also align strongly with the Next Generation Learning Standards for ELA, particularly standards RI.11-12.2 and RI.11-12.8 , which require students to analyze central ideas and evaluate how the author develops claims using evidence. Students can exercise their writing skills by using textual evidence to support a scientific claim, and engage in meaningful academic conversation about environmental issues through structured oral debates; thus merging science skills/content with language objectives seamlessly.

Since many science related texts (including this one) fail to include an abundance of cultural references it is critical that we implement prompts in the instructional redesign process that can fuel discussions about lived experiences, and the ways environmental issues impact different countries/ communities across the world. Also important to note during the redesign process, is that the book contains a Lexile measure of 1170L–1200L, making it a complex

informational text appropriate for students at the upper High School level. Without appropriate scaffolds and supports, students are likely to struggle with the complex sentence structure and dense academic vocabulary.

Step 2: Non-Negotiable Criteria Assessment

The Sixth Extinction: An Unnatural History strongly meets several of the non-negotiable criteria, particularly in maintaining grade-level rigor and promoting knowledge-building through complex, content-rich material. This is evident as the vocabulary included throughout the book is closely interconnected with the Earth & Space science curriculum, particularly the geologic history unit. Although this increases rigor, pre-teaching vocabulary in advance is a strategy that can benefit students while reading, in hopes that it can boost student confidence while reading. As students read they will have the ability to recall key terminology and see it used in context. We can further support students by providing a glossary or list of vocabulary words they can reference when they encounter an unfamiliar word, preferably ones we have reviewed in previous lessons. Additionally, this text can serve as a foundation for meaningful learning opportunities, as it incorporates various forms of language, including similes and metaphors, which may not typically appear in students' everyday interactions. For instance, the text will describe displaced animals as "marooned" or constantly provide vivid descriptions of certain species through the use of similes, many of which students can experiment with in their own writing. Additionally, ample opportunities exist for students to extract meaning from words using prefixes, suffixes, and/or root words. Much of the scientific terminology allows us to do this. One of many examples is the word "microorganism". The word "microorganism" can be broken down into meaningful parts, including the prefix "micro," meaning small, the root "organ," and the suffix "-ism," which helps students determine that the word refers to a small living thing. Finally, this text, though not intended to be culturally responsive, has the potential to spark meaningful discussions. Incorporating prompts that encourage students to think about how environmental issues impact different communities around the world would be critical in an ENL setting. In addition, creating

space for students to connect these topics to their own lived experiences and cultural backgrounds can make the content feel more relevant and meaningful, rather than distant or abstract.

Step 3: Selection Rationale

The Sixth Extinction: An Unnatural History by Elizabeth Kolbert was selected for several important reasons. One of the main ideas emphasized throughout the text is the concept of global interconnectedness, and how people from all cultures must work together in order to protect the planet. This is especially important for students, as it allows them to see environmental issues as shared, rather than isolated problems. In addition, the text gives students the opportunity to make personal connections to environmental changes, since topics such as climate change and extinction are occurring across multiple continents, ecosystems, and cultures. The book also aligns closely with key components of the Earth and Space Science curriculum, including pollution, climate variations, urbanization, and extinction events. Another strength of this text is the inclusion of meaningful visuals, such as graphs and photographs, which can support interpretation, spark discussion, and enhance multimodal instruction in the classroom.

Step 4: WIDA PRIME Analysis

When analyzed through the WIDA PRIME framework, *The Sixth Extinction: An Unnatural History* demonstrates strong potential for supporting multilingual learners, but it also requires adaptation by the teacher to ensure the individual needs of culturally and linguistically diverse learners are being met. The text aligns with WIDA's emphasis on academic language development, as students are expected to read complex informational text, interpret scientific concepts, and construct explanations supported by evidence. This reflects WIDA's focus on supporting students in using language for "meaning-making across content areas" (WIDA, 2020). However, the text primarily supports the reading domain, and without instructional redesign, it does not naturally provide opportunities for students to engage in speaking, listening, or writing. Additionally, due to its dense vocabulary and complex sentence structures, it may not provide full

access to grade-level content for MLs without scaffolding. To better align with WIDA expectations, the material should be supplemented with supports such as guided discussions, sentence frames, visual aids, and structured writing tasks, allowing students to engage across various language domains. In doing so, the text can maintain its rigor while becoming more accessible and inclusive for multilingual learners. This is critical as WIDA emphasizes the importance of providing opportunities for students to “engage in meaningful discourse” across all language domains (WIDA, 2020).

Step 5: Redesign & Visual Support Creation

THE SIXTH EXTINCTION

Chapter 1: The Vanishing Panamanian Golden Frog

A TIMELINE OF CHANGE IN PANAMA AND THE DECLINE OF A UNIQUE SPECIES



The Panamanian golden frog (*Atelopus zeteki*) is a small, bright yellow frog that lives only in the mountains around El Valle de Antón, Panama. This is the story of its home—and how it almost disappeared.



LONG AGO
(MILLIONS OF YEARS AGO)



A VOLCANIC CRATER IS BORN

- A volcano erupts and collapses, forming a large crater.
- Over time, rain, plants, and streams turn the crater into a lush valley.

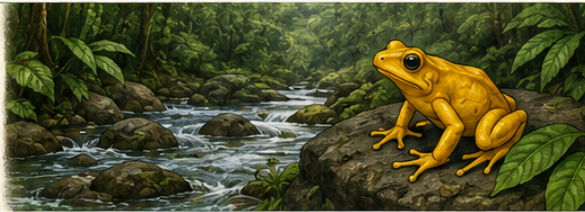


BEFORE 1990s



A SPECIAL PLACE, MANY SPECIES

- The crater valley becomes a cool, wet rainforest.
- Many unique plants and animals live here—species found nowhere else on Earth.
- The golden frog is common in the streams and forests.



EARLY-MID 1990s



FIRST SIGNS OF TROUBLE

- A graduate student studying frogs in western Panama notices something strange.
- Frogs are disappearing from sites where they used to be common.
- At first, no one knows why.

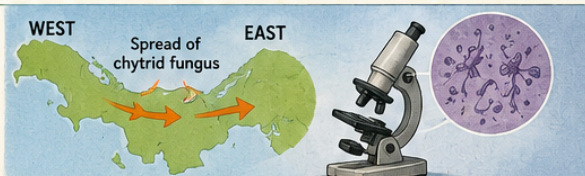


LATE 1990s–EARLY 2000s



THE DECLINE SPREADS

- The disappearances spread eastward, closer to El Valle de Antón.
- Scientists begin to study the frogs and their disease.
- They discover a fungus—chytrid—that infects the frogs' skin.

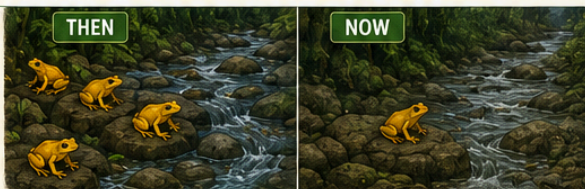


EARLY 2000s



A ONCE-ABUNDANT FROG BECOMES RARE

- In the forests around El Valle, golden frogs rapidly decline.
- Streams that once had hundreds of frogs now have only a few.
- The cause is confirmed: the chytrid fungus is deadly to them.



2004



A RACE TO SAVE WHAT'S LEFT

- By 2004, the golden frog is nearly gone from the wild.
- Scientists, zoos, and local people work together to protect remaining frogs and their habitat.
- It is a race against time.



What they do:

- Monitor remaining frogs
- Protect streams and forest
- Raise frogs in special facilities ("frog ark")
- Educate and work with local communities

MAIN POINTS FROM CHAPTER 1



Life on Earth is constantly changing. Extinctions have happened before, but the current rate of extinction is very high.



The Panamanian golden frog is a real example of how quickly a species can disappear in just a few years.



A disease (chytrid fungus), introduced through human activity, can have devastating impacts on wildlife.



Protecting biodiversity means protecting habitats, understanding science, and working together.

"We are leaving to future generations a less rich, less vibrant, less magical world." — E. O. Wilson

Good afternoon! Can you help me create an infographic (visual support) to summarize/reinforce chapter 1 of a book titled "The Sixth Extinction" by Elizabeth Kolbert? There are several years mentioned in this part of the book which describe the evolution of the landscape in Panama, in addition to what has happened over the years to the Golden Frog species. Here is a section of text from the first chapter to provide you with a sample of the years and descriptions that could be included on the infographic. The visual should help Ells break down the text and help them visualize main points and sequence of events from this chapter, perhaps in the form of a timeline with meaningful visuals and descriptions. Thanks!



This is great, but please place visual emphasis on the then versus now frog population, as the pictures do not clearly demonstrate the decline in population. Also, please be sure to visualize that this was partly due to spread of disease. The formatting and design is great, I love the timeline idea to demonstrate the clear sequence of events in a quantitative way.

Textbook Evaluation Checklist		Excellent	Good	Adequate	Poor	Totally Lacking	Mandatory	Optional	Not Applicable
The Sixth Extinction : An Unnatural History I. Textbook By: Elizabeth Kolbert									
A. Content									
i. Is the subject matter presented either topically or functionally in a logical, organized manner? (1,2,3) ⁱ		4	3	2	1	0	M	O	N
ii. Does the content serve as a window into learning about the target language culture (American, British, ect.)? (2,18)		4	3	2	1	0	M	O	N
iii. Are the reading selections authentic pieces of language? (5,10)		4	3	2	1	0	M	O	N
iv. Compared to texts for native speakers, does the content contain real-life issues that challenge the reader to think critically about his/her worldview? (1,2,3,7,21)		4	3	2	1	0	M	O	N
v. Are the text selections representative of the variety of literary genres, and do they contain multiple sentence structures? (1,13)		4	3	2	1	0	M	O	N
B. Vocabulary and Grammar									
i. Are the grammar rules presented in a logical manner and in increasing order of difficulty? (1,2,3)		4	3	2	1	0	M	O	N
ii. Are the new vocabulary words presented in a variety of ways (e.g. glosses, multi-glosses, appositives)? (2,3,12)		4	3	2	1	0	M	O	N
iii. Are the new vocabulary words presented at an appropriate rate so that the text is understandable and so that students are able to retain new vocabulary? (1,2,3,5)		4	3	2	1	0	M	O	N
iv. Are the new vocabulary words repeated in subsequent lessons to reinforce their meaning and use? (1,2,3,)		4	3	2	1	0	M	O	N
v. Are students taught top-down techniques for learning new vocabulary words? (7,8,9,11)		4	3	2	1	0	M	O	N
C. Exercises and Activities									
i. Are there interactive and task-based activities that require students to use new vocabulary to communicate? (1,2,3,5)		4	3	2	1	0	M	O	N
ii. Do instructions in the textbook tell students to read for comprehension? (6)		4	3	2	1	0	M	O	N
iii. Are top-down and bottom-up reading strategies used? (17)		4	3	2	1	0	M	O	N
iv. Are students given sufficient examples to learn top-down techniques for reading comprehension? (7,8,9,10)		4	3	2	1	0	M	O	N
v. Do the activities facilitate students' use of grammar rules by creating situations in which these rules are needed? (1,2,3)		4	3	2	1	0	M	O	N
vi. Does the text make comprehension easier by addressing one new concept at a time instead of multiple new concepts? (2,3)		4	3	2	1	0	M	O	N
vii. Do the exercises promote critical thinking of the text? (2)		4	3	2	1	0	M	O	N
D. Attractiveness of the Text and Physical Make-up									
i. Is the cover of the book appealing? (1,2,3)		4	3	2	1	0	M	O	N
ii. Is the visual imagery of high aesthetic quality? (1,2,3,14)		4	3	2	1	0	M	O	N
iii. Are the illustrations simple enough and close enough to the text that they add to its meaning rather than detracting from it? (1)		4	3	2	1	0	M	O	N
iv. Is the text interesting enough that students will enjoy reading it? (15)		4	3	2	1	0	M	O	N

II Teacher's Manual									
A. General Features									
i. Does the manual help teachers understand the objectives and methodology of the text? (1,2,3)	4	3	2	1	0	M	O	N	
ii. Are correct or suggested answers given for the exercises in the textbook? (1,2,3,4)	4	3	2	1	0	M	O	N	
B. Background Information									
i. Are teachers shown how to teach students to use cues from morphology, cognates, rhetorical relationships, and context to assist them in lexical inferencing? (7)	4	3	2	1	0	M	O	N	
ii. Is there a list of true and false cognates for vocabulary words? (1,2,3)	4	3	2	1	0	M	O	N	
C. Methodological Guidance									
i. Are teachers given techniques for activating students' background knowledge before reading the text? (8,9,22)	4	3	2	1	0	M	O	N	
ii. Are teachers given adequate examples for teaching students to preview, skim, scan, summarize, and to find the main idea? (8,11,6)	4	3	2	1	0	M	O	N	
iii. Does the manual suggest a clear, concise method for teaching each lesson? (1,2,3)	4	3	2	1	0	M	O	N	
D. Supplementary Exercises and Materials									
i. Does the manual give instructions on how to incorporate audio-visual material produced for the textbook? (2)	4	3	2	1	0	M	O	N	
ii. Does the manual provide teachers with exercises to practice, test, and review vocabulary words? (1,2,3)	4	3	2	1	0	M	O	N	
iii. Does the manual provide additional exercises for reinforcing grammar points in the text? (1,2,3)	4	3	2	1	0	M	O	N	
III. Context									
A. Is the textbook appropriate for the curriculum? (1,2,19,20)	4	3	2	1	0	M	O	N	
i. Does the text coincide with the course goals? (1,2,3,19,20)	4	3	2	1	0	M	O	N	
B. Is the textbook appropriate for the students who will be using it? (1,2)	4	3	2	1	0	M	O	N	
i. Is the text free of material that might be offensive? (1,6,16)	4	3	2	1	0	M	O	N	
ii. Are the examples and explanations understandable? (1)	4	3	2	1	0	M	O	N	
iii. Will students enjoy reading the text selections? (1,2,3,15)	4	3	2	1	0	M	O	N	
iv. Will the content meet students' felt needs for learning English or can it be adapted for this purpose? (2,3)	4	3	2	1	0	M	O	N	
C. Are the textbook and teacher's manual appropriate for the teacher who will be teaching from them? (1,2,4)	4	3	2	1	0	M	O	N	
i. Is the teacher proficient enough in English to use the teacher's manual? (1)	4	3	2	1	0	M	O	N	

When redesigning instruction around Chapter 1 of *The Sixth Extinction*, I would focus on scaffolding both the scientific content and literacy demands of the text, particularly for English Language Learners. Because the chapter contains dense informational language, scientific terminology, and references to geologic history, I think it is important to build students' background knowledge before reading the text itself. Prior to reading, I would introduce content-area vocabulary through Earth Science instruction connected to our Geologic History unit. For example, students would examine major geologic time periods from the Earth Science Reference Tables, such as the Ordovician and Cretaceous periods, while also exploring the organisms and environmental conditions associated with those eras. Building this foundation beforehand would help students make stronger connections once those terms and concepts appear in the reading.

Throughout the unit, students would also develop an ongoing visual glossary that includes scientific terms, student-friendly definitions, visuals, and examples connected to the text. This glossary would serve as a reference tool students can revisit while reading and discussing the chapter. Since many students benefit from connecting vocabulary to visuals and scientific phenomena, I think this approach would make the text feel more accessible and less overwhelming.

After reading Chapter 1, students would work in heterogeneous groups to construct their own timeline of events before comparing it to a teacher-created infographic. Students would include years, short (pre-typed) descriptions, and printed or cut-out visuals representing major moments from the chapter, such as the frogs' original environment, the spread of disease, and the gradual decline in the Golden Frog population over time. I think this collaborative activity would be especially beneficial for multilingual learners because it encourages structured discussion, peer support, and opportunities to process information together before independently analyzing the text.

To further support students during discussions and writing tasks, I would incorporate sentence frames and guided response starters throughout the lesson. These supports would help students participate more confidently in class discussions, while organizing their scientific thinking. Lastly, I would provide students with an annotation checklist to reinforce active reading strategies while working through the chapter. The checklist would include strategies such as highlighting unfamiliar vocabulary, circling dates or sequence words, underlining important details, writing questions in the margins, and summarizing longer sections of text in their own words. Overall, I believe these instructional supports would make the text more accessible while strengthening students' scientific literacy, vocabulary development, and confidence when engaging with challenging academic reading.

Finally, being that the text itself does not include culturally responsive content, I would ensure this lesson sparks meaningful discussions surrounding environmental issues and their impact on communities around the world. Incorporating prompts that encourage students to think about how environmental changes affect different populations would be especially important in an ENL setting, as it allows students to engage with the content through multiple perspectives. In addition, creating opportunities for students to connect these topics to their own lived experiences, home countries, and cultural backgrounds can make the content feel more relevant and meaningful.

Resource #2

Step 1: Standards Alignment & Initial Analysis

The second Instructional material I selected is a picture book titled, *Ada Twist, Scientist* by Andrea Beaty. The book follows a young girl named Ada who is full of curiosity and constantly asks questions about how the world works. Throughout the story, she learns the importance of thinking like a scientist by experimenting, making mistakes, and never giving up on finding answers.

The protagonist in this book, Ada, does demonstrate early forms of Claim, Evidence, and Reasoning (CER) skills, just at a simplified level. She asks questions (Why does something smell?), investigates (by conducting experiments), then tries to explain outcomes. As a result, this text can be used to introduce foundational thinking skills applicable across all areas of science. Though the book does not align with Next Generation Science Standards at the high school level, it connects strongly to NGSS at the 3-5 grade levels. 3-5-ETS1-1 is a standard which would fit nicely into a lesson designed around this book, as it requires students to “Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost” (NGSS, 2013). Much of these skills are modeled, described, and illustrated throughout the picture book, which could allow students the opportunity to put these skills into practice in a follow-up activity or experiment. *Ada Twist, Scientist* by Andrea Beaty could also align strongly with the Next Generation Learning Standards for ELA, particularly standard RL.3.3 which is to “Describe characters in a story and explain how their actions contribute to the sequence of events” (New York State Education Department, 2017). This provides students with the opportunity to look at how Ada’s behavior, curiosity, and constant questioning drive the events of the story; those events being successful scientific discoveries through implementation of CER skills. This would make for the perfect balance and fusion of ELA standards with science standards.

Although *Ada Twist, Scientist* is written at a lower Lexile level (550L), it can still be adapted to be more culturally responsive by incorporating discussion prompts that encourage students to connect Ada's curiosity to their own lived experiences and cultural backgrounds. Since the text may not fully reflect the identities of all learners, we can create opportunities for students to share how questioning, problem-solving, and learning look within their own communities, or perhaps how these skills resulted in a revolutionary discovery, invention, or idea in their country of origin . Additionally, to support ELLs transition to higher Lexile texts in the primary grades, scaffolds such as pre-teaching vocabulary, using visuals, and chunking the text can help make more complex material more accessible. By combining culturally responsive practices with intentional language support, students are better able to engage with rigorous content while continuing to develop both academic and language skills.

Step 2: Non-Negotiable Criteria Assessment

Ada Twist, Scientist meets several of the non-negotiable criteria, particularly in its ability to promote knowledge-building while developing academic language and ensuring cultural relevance. One of the most effective and valuable parts of this text include its ability to provide visuals which students can match with texts to obtain meaning and context. For example, during one part of the book, it was described that Ada “wreaked havoc” on her surroundings. Students at the elementary level may have never heard of this phrase before. However, the page contained powerful visuals which clearly illustrated the protagonists’ destructive behavior. This not only trains students to use context clues to obtain meaning, but allows students the opportunity to learn and retain the meaning of the phrase. Celce-Murcia (2014) discusses how new knowledge can effectively be obtained through studying visuals, which ultimately activate learners’ schemata and promote long-term memory. *Ada Twist, Scientist* also offers opportunities for meaningful class discussions, and chances for students to share opinions, make predictions, or answer science related questions. For example, questions are posed like, “What is the source of that terrible stinking?” which prompts students to use their observations to construct their own prediction.

This is not just a literacy skill, but a form of scientific thinking which students can exercise throughout the text, whether that is orally or through writing. Finally, *Ada Twist, Scientist* can be considered culturally responsive because it highlights the role of a young African American female in STEM, which helps challenge traditional stereotypes and allows students to see themselves reflected in the learning process. In addition, the text reinforces the idea that curiosity and problem-solving are for everyone, creating a more inclusive environment students of all cultural backgrounds feel capable of engaging in science.

Step 3: Selection Rationale

Ada Twist, Scientist by Andrea Beaty was selected because of its strong focus on representation, curiosity, and student engagement. The text highlights the role of minority groups, particularly women of color in STEM, and promotes an “I can” mindset that encourages confidence in young learners. This is important because students benefit from seeing themselves reflected in the content they are learning. Additionally, the book encourages students to take an active role in their learning by asking questions, whether that is in science or while learning a new language. This directly supports the development of both academic and language skills. The story also introduces students to foundational scientific thinking processes, such as making claims, using evidence, and reasoning through ideas. Finally, it allows students to explore their own identities and reflect on what sparks their interests and curiosity, helping to create a more meaningful and engaging learning experience.

Step 4: WIDA PRIME Analysis

When analyzed through the WIDA PRIME framework, *Ada Twist, Scientist* demonstrates strong alignment in supporting multilingual learners, particularly through its accessibility and its opportunities for engagement across all language domains. The text naturally supports the reading domain through manageable sentence structures and visual supports, while also encouraging speaking and listening through discussion of Ada’s questions and problem-solving process. This

aligns with WIDA's emphasis on supporting students as they "process and produce language" in meaningful contexts (WIDA, 2020). Additionally, the story lends itself well to writing, as students can respond to prompts, make connections, and explain their thinking. The use of illustrations, repetition, and familiar language structures helps make the content more accessible for MLs, while still introducing academic vocabulary related to science. However, while the text is supportive and engaging, it may not fully challenge all students on its own, and would benefit from being supplemented with additional activities or guided tasks that promote deeper thinking and language development. For example, students can respond to prompts where they make simple claims about a problem Ada encounters and support their ideas with evidence from the text, helping to strengthen their writing and reasoning skills. This reflects WIDA's belief that multilingual learners build language through "engagement in grade-level content with appropriate supports" (WIDA, 2020). Overall, *Ada Twist, Scientist* provides a strong foundation for language development across all four domains, while promoting curiosity, engagement, and confidence in multilingual learners.

Step 5: Redesign & Visual Support Creation

? HOW ADA TWIST SOLVES A BIG QUESTION

A look at how Ada uses the scientific process!



ADA'S BIG QUESTION:
WHAT IS CAUSING THE BAD SMELL?

Ada notices a terrible smell in her house. She asks questions, thinks hard, scientists do—
SHE INVESTIGATES!

ADA KNOWS:

- ✓ Questions lead to discovery!
- ✓ Anyone can be a scientist!
- ✓ It's all about curiosity!

1 ASK A QUESTION

Something smells really bad! Ada wonders...
"What is causing the bad smell?"



It smells bad, but where is it coming from?

2 RESEARCH & GATHER INFORMATION

Ada looks and listens carefully. She sniffs, observes, and asks questions to gather clues.

- Where is the smell strongest?
- What has changed?
- Who or what could it be?

ADA GATHERS CLUES:

- ✓ Checked the trash.
- ✓ Smelled the fridge.
- ✓ Looked under the sink.
- ✓ Checked shoes and socks.
- ✓ Asked her family.



3 MAKE A HYPOTHESIS

Ada thinks of possible answers (hypotheses). She makes an educated guess about what might be causing the smell.

ADA'S HYPOTHESES:



Maybe it's the trash.



Maybe something in the fridge.



Maybe it's the cat.



Maybe it's shoes or socks.



Maybe it's something else!

4 TEST THE HYPOTHESES

Ada tests each idea by investigating and collecting evidence.

TEST 1: TRASH



Checked the trash.
NOT IT.

TEST 2: FRIDGE



Smelled everything.
NOT IT.

TEST 3: CAT



Checked the cat.
NOT IT.

TEST 4: SHOES



Checked shoes and socks.
NOT IT.

TEST 5: WHAT ELSE?



Still not sure... keep looking!

5 ANALYZE THE RESULTS

Ada looks at all her clues and thinks about what worked, what didn't, and what the evidence shows.

WHAT ADA KNOWS SO FAR:

- ✓ The trash is not the source.
- ✓ The fridge is not the source.
- ✓ The cat is not the source.
- ✓ Shoes and socks are not the source.
- ✓ The smell is still a mystery!

NEW QUESTIONS:

- What else could it be?
- What will I try next?

6 DRAW A CONCLUSION (OR NEXT STEPS!)

Ada doesn't stop when she doesn't have a final answer. She decides what to do next and keeps investigating!

SCIENTISTS DON'T ALWAYS FIND THE ANSWER RIGHT AWAY.

They keep asking questions, trying new ideas, and looking for more clues.
That's exactly what Ada does!

THE SCIENTIFIC PROCESS KEEPS GOING!

Science is a cycle. When we don't have all the answers, we start again with new questions, new ideas, and new tests!



Every time I learn something new, I find even more things to discover!

BACK TO THE BEGINNING!

Ada will keep investigating until she understands more about the mystery smell.

THE QUESTION STARTS... AND THE SCIENCE NEVER STOPS!

Can you help me create an infographic (visual aid) to summarize the picture book by Andrea Beaty, titled "Ada Twist, Scientist"? Perhaps with an emphasis on the steps Ada would take to solve/ answer the questions she had throughout the book? She implements the scientific method throughout the book, but perhaps a visual representation of the steps she took could help my students understand how they can implement this scientific process into their own life when trying to investigate the answer to a scientific question/ problem. The more you can reference and implement Ada, the better. This should not just be an infographic on the scientific method, but should summarize the steps she took to arrive at an answer to a particular question she had in the book.

Show less ^

ADA'S ANSWERS
Through asking questions, trying things out, and not giving up, you can find the answer to almost anything. Science is for everyone!

ADA'S SCIENTIFIC PROCESS IN ACTION
Be curious. Be brave. Think like a scientist! Ask questions, explore, test ideas, and keep learning about the world!

This is phenomenal! but does Ada actually investigate the smell of flowers in the book?

No — and you caught an important detail. In *Ada Twist, Scientist*, Ada's main investigation is actually about a **bad smell in the house**, not why flowers smell good.

The infographic *does* accurately model the scientific method and Ada's curiosity, but the flower-smell example was invented as a child-friendly scientific question rather than pulled directly from the text.

It would become less of a generic "scientific method poster" and more of a *story investigation map*, which sounds exactly like what you're aiming for pedagogically.

Copy Like Comment Share More

yes, I am looking for more of a story investigation map which makes the scientific method process more connected to the book. Using the original question she had, "What is causing the bad smell?" would be what I prefer. but the format and structure of the infographic is perfect.



I'm not sure Ada arrived at a concrete conclusion in the book, did she? if not, perhaps we can demonstrate on the infographic that the process must start again or be repeated until there is an answer to the original question.

You are absolutely right — and this is actually a *much stronger* instructional direction.

In *Ada Twist, Scientist*, Ada does **not** really arrive at a polished, final scientific conclusion in the traditional "problem solved" sense. The book emphasizes:

- curiosity,
- persistence,
- repeated questioning,
- investigation,
- and the idea that science is an ongoing process.

That means the infographic should avoid presenting the scientific method as:

"Ask one question → get one perfect answer."

Instead, it should model:

"Scientists investigate, gather evidence, rethink ideas, and continue exploring."

Textbook Evaluation Checklist		Excellent	Good	Adequate	Poor	Totally Lacking	Mandatory	Optional	Not Applicable
Ada Twist, Scientist									
I. Textbook By: Andrea Beaty									
A. Content									
i. Is the subject matter presented either topically or functionally in a logical, organized manner? (1,2,3) ^a		4	3	2	1	0	M	O	N
ii. Does the content serve as a window into learning about the target language culture (American, British, ect.)? (2,18)		4	3	2	1	0	M	O	N
iii. Are the reading selections authentic pieces of language? (5,10)		4	3	2	1	0	M	O	N
iv. Compared to texts for native speakers, does the content contain real-life issues that challenge the reader to think critically about his/her worldview? (1,2,3,7,21)		4	3	2	1	0	M	O	N
v. Are the text selections representative of the variety of literary genres, and do they contain multiple sentence structures? (1,13)		4	3	2	1	0	M	O	N
B. Vocabulary and Grammar									
i. Are the grammar rules presented in a logical manner and in increasing order of difficulty? (1,2,3)		4	3	2	1	0	M	O	N
ii. Are the new vocabulary words presented in a variety of ways (e.g. glosses, multi-glosses, appositives)? (2,3,12)		4	3	2	1	0	M	O	N
iii. Are the new vocabulary words presented at an appropriate rate so that the text is understandable and so that students are able to retain new vocabulary? (1,2,3,5)		4	3	2	1	0	M	O	N
iv. Are the new vocabulary words repeated in subsequent lessons to reinforce their meaning and use? (1,2,3,)		4	3	2	1	0	M	O	N
v. Are students taught top-down techniques for learning new vocabulary words? (7,8,9,11)		4	3	2	1	0	M	O	N
C. Exercises and Activities									
i. Are there interactive and task-based activities that require students to use new vocabulary to communicate? (1,2,3,5)		4	3	2	1	0	M	O	N
ii. Do instructions in the textbook tell students to read for comprehension? (6)		4	3	2	1	0	M	O	N
iii. Are top-down and bottom-up reading strategies used? (17)		4	3	2	1	0	M	O	N
iv. Are students given sufficient examples to learn top-down techniques for reading comprehension? (7,8,9,10)		4	3	2	1	0	M	O	N
v. Do the activities facilitate students' use of grammar rules by creating situations in which these rules are needed? (1,2,3)		4	3	2	1	0	M	O	N
vi. Does the text make comprehension easier by addressing one new concept at a time instead of multiple new concepts? (2,3)		4	3	2	1	0	M	O	N
vii. Do the exercises promote critical thinking of the text? (2)		4	3	2	1	0	M	O	N
D. Attractiveness of the Text and Physical Make-up									
i. Is the cover of the book appealing? (1,2,3)		4	3	2	1	0	M	O	N
ii. Is the visual imagery of high aesthetic quality? (1,2,3,14)		4	3	2	1	0	M	O	N
iii. Are the illustrations simple enough and close enough to the text that they add to its meaning rather than detracting from it? (1)		4	3	2	1	0	M	O	N
iv. Is the text interesting enough that students will enjoy reading it? (15)		4	3	2	1	0	M	O	N

II Teacher's Manual									
A. General Features									
i. Does the manual help teachers understand the objectives and methodology of the text? (1,2,3)	4	3	2	1	0	M	O	N	
ii. Are correct or suggested answers given for the exercises in the textbook? (1,2,3,4)	4	3	2	1	0	M	O	N	
B. Background Information									
i. Are teachers shown how to teach students to use cues from morphology, cognates, rhetorical relationships, and context to assist them in lexical inferencing? (7)	4	3	2	1	0	M	O	N	
ii. Is there a list of true and false cognates for vocabulary words? (1,2,3)	4	3	2	1	0	M	O	N	
C. Methodological Guidance									
i. Are teachers given techniques for activating students' background knowledge before reading the text? (8,9,22)	4	3	2	1	0	M	O	N	
ii. Are teachers given adequate examples for teaching students to preview, skim, scan, summarize, and to find the main idea? (8,11,6)	4	3	2	1	0	M	O	N	
iii. Does the manual suggest a clear, concise method for teaching each lesson? (1,2,3)	4	3	2	1	0	M	O	N	
D. Supplementary Exercises and Materials									
i. Does the manual give instructions on how to incorporate audio-visual material produced for the textbook? (2)	4	3	2	1	0	M	O	N	
ii. Does the manual provide teachers with exercises to practice, test, and review vocabulary words? (1,2,3)	4	3	2	1	0	M	O	N	
iii. Does the manual provide additional exercises for reinforcing grammar points in the text? (1,2,3)	4	3	2	1	0	M	O	N	
III. Context									
A. Is the textbook appropriate for the curriculum? (1,2,19,20)	4	3	2	1	0	M	O	N	
i. Does the text coincide with the course goals? (1,2,3,19,20)	4	3	2	1	0	M	O	N	
B. Is the textbook appropriate for the students who will be using it? (1,2)	4	3	2	1	0	M	O	N	
i. Is the text free of material that might be offensive? (1,6,16)	4	3	2	1	0	M	O	N	
ii. Are the examples and explanations understandable? (1)	4	3	2	1	0	M	O	N	
iii. Will students enjoy reading the text selections? (1,2,3,15)	4	3	2	1	0	M	O	N	
iv. Will the content meet students' felt needs for learning English or can it be adapted for this purpose? (2,3)	4	3	2	1	0	M	O	N	
C. Are the textbook and teacher's manual appropriate for the teacher who will be teaching from them? (1,2,4)	4	3	2	1	0	M	O	N	
i. Is the teacher proficient enough in English to use the teacher's manual? (1)	4	3	2	1	0	M	O	N	

When redesigning instruction around Ada Twist, Scientist, I would focus on creating an inquiry-based lesson that connects the scientific method to students' own curiosities and lived experiences. To open the lesson, I would ask students to think about a scientific question they have always wondered about, such as "What creates wind?" or "Why do burps smell bad?" This would help students see that science begins with curiosity and questioning, just like it does for Ada throughout the story. We would then discuss how scientists use the scientific method and an experimental design process to investigate questions and solve problems.

Before reading the text, I would incorporate a short and engaging video clip demonstrating the scientific method through a simple experiment. Providing students with a visual example of observation, hypothesis formation, testing, and conclusion would help build background knowledge and make the scientific process feel more concrete and accessible before students encounter it in the story.

During the read-aloud, I would use sentence frames at key moments where Ada asks questions or investigates a problem. These sentence starters would allow students to make their own predictions before turning the page and continuing the story. Structured discussions like these would help promote deeper thinking, student engagement, and language development, particularly for English Language Learners who may benefit from additional academic language supports during discussion activities.

I would also make the lesson culturally responsive by highlighting Ada's identity as a female scientist and discussing how people from all backgrounds and genders can succeed in science. This would create opportunities for students to see themselves represented in STEM fields while reinforcing the idea that anyone can use the scientific method to solve environmental problems, answer meaningful questions, and make positive contributions to their communities and society.

Citations

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