

# Ada Twist, Scientist - Illinois Reads Curriculum Plan

## Introductory Information

<b>Submitted by</b>	Mitchell Mox – Loyola University Chicago		
<b>Title of Book</b>	<i>Ada Twist, Scientist</i>		
<b>External link to all materials</b>	<a href="https://drive.google.com/drive/folders/0BzU_M50TilZIR1E4aDZRTWpqVzQ?usp=sharing">https://drive.google.com/drive/folders/0BzU_M50TilZIR1E4aDZRTWpqVzQ?usp=sharing</a>		
<b>Title of Unit</b>	What does it mean to be a scientist?		
<b>Grade level (interest)</b>	2 <sup>nd</sup>	<b>Reading Grade level</b>	Fry Reading Chart – Early 3 <sup>rd</sup> Grade
<b>Lexile Level</b>	550L	<b>Guided Reading level</b>	1 <sup>st</sup> – 3 <sup>rd</sup>
<b>A. Purpose for Instruction/ Essential Questions</b>	The purposes of these lessons are to engage 2 <sup>nd</sup> grade students with a high-level text that teaches them about the scientific method, introduce them to the many elements and features of a story, and to further their vocabulary skills. Through many interactive PowerPoint activities and printed organizers, students will work to comprehend the text while working through the rich content presented within.		

### **B. Alignment to the depth of the Common Core – Standards addressed and assessed**

<b>CCSS ELA Standards</b>	<p><b>Lesson 1:</b> RL.2.7 – Use information gained from <b>illustrations</b> and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.</p> <p><b>Lesson 2:</b> RL.2.1 – Ask and answer such questions as <i>who, what, where, when, why</i> and <i>how</i> to demonstrate understanding of key details in a text.</p> <p><b>Lesson 3:</b> RL.2.5 – Describe the overall structure of the story, including describing how the beginning introduces the story and the ending concludes the action.</p> <p><b>Lesson 4:</b> L.2.5 – Demonstrate understanding of word relationships and nuances in word meanings.</p> <p><b>Lesson 5:</b> RL.2.4 – Describe how words and phrases supply rhythm and meaning to a story, poem, or song</p> <p><b>Lesson 6:</b> L.2.5 – Demonstrate understanding of word relationships and nuances in word meanings.</p>
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**C. Student Learning Outcomes – Targeted standards in Student Friendly Language**

1. I can tell things about a story’s characters, plot and setting from the pictures in the story.
2. I can answer *who, what, where, when, why* and *how* questions about a story.
3. I can describe the beginning, middle and end of a story.
4. I can understand the differences between two words that mean the similar things.
5. I can identify words that give rhyme and meaning to the story.
6. I can design my own experiment following the scientific method and then share it with others.

**Webb’s Depth of Knowledge:**

Recall, Skill/Concept, Strategic Thinking, Extended Thinking

**Bloom’s Levels Addressed:**

- |  |                                     |
|--|-------------------------------------|
| <input type="checkbox"/> Remembering   | <input type="checkbox"/> Analyzing  |
| <input type="checkbox"/> Understanding | <input type="checkbox"/> Evaluating |
| <input type="checkbox"/> Applying      | <input type="checkbox"/> Creating   |

**D. Academic Language to be supported at word, syntax and discourse levels**

<b>Vocabulary Tier 2 Words</b>	<ul style="list-style-type: none"> <li>• <b>Flop</b></li> <li>• Stench</li> <li>• Quivered</li> <li>• Gawk</li> </ul>	<ul style="list-style-type: none"> <li>• Frazzled</li> <li>• Conked Out</li> <li>• Wreaked Havoc</li> </ul>
<b>Tier 3 Words</b>	<ul style="list-style-type: none"> <li>• Scientific Method</li> <li>• Hypothesis</li> <li>• Research</li> </ul>	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Experiment</li> <li>• Conclusion</li> <li>• Communication</li> </ul>

### E. Instructional Supports

Research-Based Strategies	Strategies	Interactive Element
<b>&amp;</b> <b>Interactive Element (UDL)</b>	<b>Lesson 1 –</b> Making Connections Prediction	<ul style="list-style-type: none"> <li>• PowerPoint slides 1 – 3</li> <li>• Print out of images for on posters for the wall or sheets of paper for on tables or desks.</li> </ul>
	<b>Lesson 2 –</b> Story Details Remembering	<ul style="list-style-type: none"> <li>• PowerPoint slides 4 – 6</li> <li>• Story Elements Organizer (Appendix A)</li> </ul>
<b>PowerPoint Handout Outline (Appendix F)</b>	<b>Lesson 3 –</b> Story Mapping Sequencing	<ul style="list-style-type: none"> <li>• PowerPoint slides 7 &amp; 8</li> <li>• Book Bits Activity (Appendix B)</li> <li>• Story Map (Appendix B)</li> </ul>
	<b>Lesson 4 –</b> Vocabulary Strategies Understanding	<ul style="list-style-type: none"> <li>• PowerPoint slides 9 - 12</li> <li>• Vocabulary Overview Worksheet (Appendix C)</li> </ul>
	<b>Lesson 5 –</b> Author Style	<ul style="list-style-type: none"> <li>• PowerPoint slides 13 - 17</li> <li>• Copies of end rhyme analysis passages (Appendix D)</li> <li>• Additional websites for further interactive support</li> </ul>
	<b>Lesson 6 –</b> Writing	<ul style="list-style-type: none"> <li>• PowerPoint slides 18 – 20</li> <li>• Scientific method graphic organizer (Appendix E)</li> </ul>

### F. Assessment (Aligned to Section B)

<b>Formative</b>	<ul style="list-style-type: none"> <li>• Student comments during gallery walk.</li> <li>• Interactive PowerPoint activities.</li> <li>• Student answers on worksheet.</li> </ul>
<b>Summative</b>	<ul style="list-style-type: none"> <li>• Student will be asked to create a poem of their own that instructs someone how to carry out an experiment following the scientific method.</li> </ul>

## **Lesson One**

CCSS.RL.2.7 – Use information gained from illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot. **(Making Connections) (Predicting)**

### **Overview**

In the first lesson, begin by asking students if they know any famous scientists\*. Next, let students preview the content of the book through the rich drawings David Roberts and Andrea Beaty created to accompany the text. Students can make predictions about the story based on the information they glean from the images. This is a helpful way to pre-assess students' background knowledge and to provide a starting ground for introducing the unit of "What does a scientist do?"

### **Procedure**

1. Ask students if they know any famous scientists.
2. Model for students how to pull observations and predictions from the images. (Sample image on slide 2 of PowerPoint)
3. Do picture predication gallery of the book, asking students what they **notice** about each picture and how it relates to science and scientists. Ask them to **predict** what they think the story might be about, how it might unfold, who the characters might be, etc. Students could record their answers on a poster paper that is included with the photo or on a separate sheet of paper. **(Text to Self Connections)**
4. Lead a discussion about the photos and what students noticed, focusing on the *who, what, where* aspects of their observations. Tell them to keep all this in mind to see if their predictions were correct.
5. Read the first spread out loud to the class to allow them to hear the rhythm and rhyme of the story.
6. Read the second spread with the class. (Slide 3 of PowerPoint)
7. Pair students up and have them take turns reading the remainder of the story.

**I DO**  
**WE DO**  
**YOU DO**

\* If you would like to focus on science and what it means to be a scientist, you could create an anchor chart that you would use throughout the lesson to compare Ada with other scientists. (Parts could include (1) Famous scientist list, (2) How Ada is a scientist, (3) Traits of a scientist, (4) How to conduct an experiment.)

<b>Lesson Two</b>	CCSS.RL.2.1 –Ask and answer such questions as <i>who, what, where, when, why</i> and <i>how</i> to demonstrate understanding of key details in a text. <b>(Questioning) (Remembering) (Story Details)</b>
<b>Overview</b>	This lesson is a continuation of the content ideas in lesson 1. While lesson 1 focused on students predicting the elements of the story from the images in the story, this lesson anchors itself in the text to develop students’ awareness of story elements.
<b>Procedure</b>	1. Introduce <b>question words</b> (who/what/where/when/how/why). You can compare asking these questions about a book to the same questions that Ada asked.
<b>I DO</b>	2. Discuss the difference between <b>who/what/where/when/how/why</b> and how they <b>relate</b> to the story --- who = characters, what = problem, where = setting(s), when = sequencing, how = solution, why = personal questions. (Slide 4 of PowerPoint) (For even richer discussions, questions can be related to science/inquiry if you are using the book for both subjects.)
<b>WE DO</b>	3. Using the graphic organizer found in Appendix A, students will create questions using these words. (See model questions on Slide 5 of PowerPoint.) Some student questions might not be able to be answered from the text, such as “What is Ada’s favorite food”. Talk with students about how the information we know comes only from the story and therefore we might not be able to answer every question that we have.
<b>YOU DO</b>	4. In pairs or as a class, have students answer these words by sorting the who/what/where/how elements of the story. (Slide 6 of PowerPoint)

### **Lesson Three**

RL.2.5 – Describe the overall structure of the story, including describing how the beginning introduces the story and the ending concludes the action. **(Remembering) (Sequencing)**

#### **Overview**

Lesson 3 is intended to continue the conversations that are had in lesson 2. While lesson 2 focuses on the specific elements of the story, lesson 3 is meant to be broader, asking students to sequence the story and describe what happens at the beginning, in the middle and at the end of the story.

#### **Procedure**

1. Begin introducing the three pieces of a **story map** and what is meant by **sequencing**. (Slide 7 of PowerPoint)
2. Have students either re-read or skim the story again.
3. Student will then work in pairs or table groups to complete the **Book Bits** activity (Appendix B). Once students sort their bits in what they believe to be the correct order, they can 'check' their work by flipping them over in place and seeing the image that is created!
4. As a class, discuss which part (beginning, middle, end) each image or sentence should go in. Start from the bottom left and move to top right. Each mouse click activates each movement. (Slide 8 of PowerPoint).

## **Lesson Four**

L.2.5 – Demonstrate understanding of word relationships and nuances in word meanings.  
**(Vocabulary Strategies) (Understanding)**

### **Overview**

In this lesson, the intent is to focus on the strong language Andrea Beaty uses throughout the story. Because many of the words wouldn't be in student friendly dictionaries and therefore not within the student's reach, rich discussion about context, matching definitions, and connotation can be had with students.

### **Procedure**

1. Begin with a discussion about other ways to say things. Ask students if they know other words that might mean the same thing as common words like "eat, talk or think". (e.g. eat = chew, chomp, munch; talk = profess, gab, whine; think = ponder, believe, brainstorm, plan)
2. Talk about how Andrea Beaty uses bigger, fancier words in her story to **evoke certain meanings and feelings**. Some words are meant to send good meanings (positive), others are meant to provide a bad meaning (negative). Some words are just words and do not have much meaning (neutral).
3. Ask students if they can identify/recall any of these words. (Hint: They might be words you (the students) don't understand yet.)
4. Provide an example for students, like *flop*. (Slide 9 of PowerPoint)
5. Have students identify if they know it (K), have a hunch about what it means (H), have seen it other places but don't know the meaning (S), or never seen it before today (N). (Slide 10 of PowerPoint)
6. Use a **vocabulary diagram** to construct the definitions with students the words. Use context clues, substitution with familiar words or possibly dictionaries to come up with a definition and connotation for the word. (Appendix C or Slide 11 on PowerPoint)

## **Lesson Five**

RL.2.4 – Describe how words and phrases supply rhythm and meaning to a story, poem, or song  
**(Analyzing)**

### **Overview**

The goal of this lesson is to introduce students to poetic styles and how rhythm is created in writing. Almost all of the story is written in rhyming couplets with matching syllable counts which creates a very sing-songy flow to the story. It's easy to read and mimics the very familiar style of Dr. Seuss ([Seussian](#)).

\*\*The PowerPoint section for this chapter is meant to be presented and advanced while discussion about the end rhymes and rhyme pattern is discussed. Handouts of the poem samples are found in Appendix D.

### **Procedure**

1. Introduce the concept of **rhyme** and how it provides **rhythm** to a story.
2. Re-read the first couple pages of the story, telling students to listen to the end rhyme of each line and how it makes the story flow. Ask students to touch their nose every time they notice an end rhyme as you read.
3. After you read, ask students if the story structure reminds them of any other authors (**Text to Text Connection**)
4. Use the first page as an example to show students that words can rhyme even if they are spelled the same. (Slide 12 of PowerPoint) Show students how to circle and label rhyming lines with the same letters. (Slide 12 of PowerPoint)
5. Give students pages from the text, have them find which lines rhyme and to label each rhyme pair with letters. They can circle corresponding end rhymes in the same color and label in front of each like, like the model did. (Slides 13 – 16 of PowerPoint – Slides get progressively more advanced.)

### **I DO/WE DO**

### **YOU DO**

More rhyme resources:

<http://teacher.scholastic.com/activities/bll/reggie/>

<http://www.readwritethink.org/files/resources/interactives/construct/>



## Lesson Six

L.2.5 – Demonstrate understanding of word relationships and nuances in word meanings.  
**(Understanding) (Academic Vocabulary)**

### Overview

Now that students know what question words and understand the craft of the story, they can now tackle the domain specific words that are addressed in the book. Ada is a scientist, and scientists need to know certain words and processes to be successful. Through her trials and curiosity, Ada discovers the scientific method. This lesson aims to teach students a general definition of the scientific method and its aspects while also sorting Ada's adventures into the different aspects.

### Procedure

1. Using the latter half of the book, walk through the processes that Ada follows to work through her experiments.
2. Within the context of the book, allow students to brainstorm what they think each word step is, based on what they read and see Ada doing. Some words are used explicitly in the text, while others are left out for implication. Allow students to share their ideas and enter them on Slide 18 of PowerPoint.
3. Clear up any misconceptions with them about the definitions of each word (Slide 19 of PowerPoint)
4. You will want to highlight how Ada first **asks a question**, then she **does research about it**, she **makes a guess, experiments, draws a conclusion**, and finally **communicates her results with her peers**.
5. Now, have students sort Ada's actions into the appropriate stage. (Slide 20 of PowerPoint)
6. Students can also design their own experiments following the scientific method.

\*\*If you are planning to have a more science focused lesson, consider having the students align their experiments to the NGSS. (2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow.)

**Plans for  
Summative  
Assessment**

Review the PowerPoint material with students while you work to clear up any final misconceptions or questions that students might have about the text, about certain vocabulary words, or about the scientific method.

**Option 1:** Present students with the idea that they are going to take on the role of an author, like that of Andrea Beaty, and they are to create a rhyming poem/story about the 6 stages of the scientific method.

**Option 2:** Present students with the idea that they are going to take on the role of an author, like that of Andrea Beaty, and that they need to come up with a list of characters and story elements that can build a story. While they won't have to write the entire story, they should be able to elaborate it enough that they can fill out a story map about what they would write about.

## Story Elements Organizer

<b>Story:</b>	
<b>Setting:</b>	<b>Characters:</b>
<b>Problem:</b>	<b>Solution</b>

## Book Bits Activity

Teacher: Print this page and the following page back-to-back. Then, cut along all dotted lines and scramble the book bits for the students to sort. Once they have sorted the bits in sequential order, they can flip over their strips and see if the image comes out. If so, they sequenced correctly; if not, they should flip them back over and try again.

Ada shares her experiments with her class.	Ada's family helps her experiment.	Ada is sent to the thinking chair.	Ada smells something pungent.	Ada tries to wash the cat.	Ada test the cabbage stew.	Ada says her first word, "Why?"	Ada climbs a grandfather clock.
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# Book Bits Activity



## Story Map Organizer

<b>Beginning</b>	<b>Middle</b>	<b>End</b>

Appendix C

**Suggested words from story to use on vocabulary overview worksheet.**

Nuanced Word	Sentence within the context of the story	Other sample sentences
Example: Flop	"The test was a flop."	The boys' attempt to frighten the teacher with a spider was a flop, because she likes spiders.
Conked Out	"She ran through the day chasten each sight and sound, and didn't slow down until she <b>conked out</b> at night."	After working all day in the hot sun, my dad conked out on the couch once he got home.
Frazzled	"Her parents were <b>frazzled</b> – but tried not to freak – as Ada grew bigger and <i>still</i> did not speak."  "Her parents were frustrated, <b>frazzled</b> and mad."	The students were frazzled by the math lesson that they didn't understand.
Quivered	"Ada's chin <b>quivered</b> , but she didn't not cry."	
Wreaked Havoc	"Even Miss Greer found her hands were quite full when young Ada's chaos <b>wreaked havoc</b> at school."	If you leave the window open when you go through a car wash, the water will wreak havoc inside the car.
Stench	Ada was busy that first day of spring, testing the sounds that make mockingbirds sing, when a horrible <b>stench</b> whacked her right in the nose – a pungent aroma that curled up her toes.	I do not like the strong stench of rotting fruit.
Gawk	"They (Ada's parents) looked at the hallway and just had to <b>gawk</b> ."	It was hard not to gawk at the large, pink dog!

# Vocabulary Overview Guide

Name: \_\_\_\_\_

K	H	S	N

Clue:

<b>+</b>	<b>~</b>	<b>-</b>
positive	neutral	negative

Connotation:

Use:

--	--	--

K	H	S	N

Clue:

<b>+</b>	<b>~</b>	<b>-</b>
positive	neutral	negative

Connotation:

Use:

--	--	--

K	H	S	N

Clue:

<b>+</b>	<b>~</b>	<b>-</b>
positive	neutral	negative

Connotation:

Use:

--	--	--

K	H	S	N

Clue:

<b>+</b>	<b>~</b>	<b>-</b>
positive	neutral	negative

Connotation:

Use:

--	--	--

K	H	S	N

Clue:

<b>+</b>	<b>~</b>	<b>-</b>
positive	neutral	negative

Connotation:

Use:

--	--	--

K	H	S	N

Clue:

<b>+</b>	<b>~</b>	<b>-</b>
positive	neutral	negative

Connotation:

Use:

--	--	--



Appendix C cont.



Note: Adapted from "Classroom Strategies for Interactive Learning (4<sup>th</sup> ed.) by Doug Buehl. Copyright ©2014 by the International Reading Association. May be copied for classroom use.







# Vocabulary Overview Guide



Name: \_\_\_\_\_



K	H	S	N
Clue:			
Connotation:			
positive		neutral	
Use:			

K	H	S	N
Clue:			
Connotation:			
positive		neutral	
Use:			

K	H	S	N
Clue:			
Connotation:			
positive		neutral	
Use:			

K	H	S	N
Clue:			
Connotation:			
positive		neutral	
Use:			

K	H	S	N
Clue:			
Connotation:			
positive		neutral	
Use:			

K	H	S	N
Clue:			
Connotation:			
positive		neutral	
Use:			

Appendix C cont.

Note: Adapted from "Classroom Strategies for Interactive Learning (4<sup>th</sup> ed.) by Doug Buehl. Copyright ©2014 by the International Reading Association. May be copied for classroom use.

**ADA MARIE! ADA MARIE!**

**Said not a word till the day she turned three.**

**She bounced in her crib and looked all around,  
observing the world but not making a sound.**

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Text: Beatty, Andrea, and David Roberts. *Ada Twist, Scientist*. New York: Abrams Books for Young Readers, 2016. Print.

**Her parents were frazzled—but tried not to freak—  
as Ada grew bigger and *still* did not speak.  
Clearly, young Ada, with lots in her head,  
would have something to say when it ought to be said.**

And that's what they did—because that's what you do when your kid has a passion and heart that is true.

They remade their world—now they're all in the act of helping young Ada sort fiction from fact.

She asks lots of questions. How could she resist?

It's all in the heart of a young scientist.

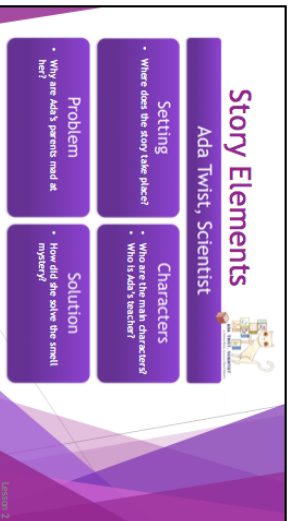
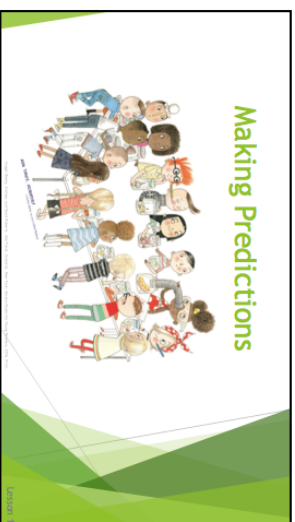
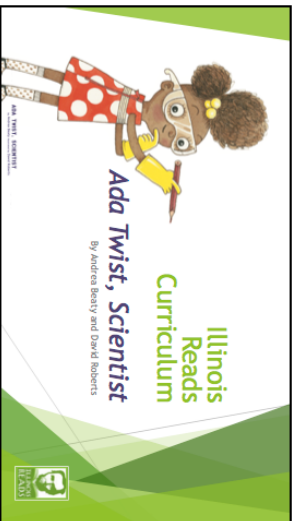
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Text: Beaty, Andreea, and David Roberts. *Ada Twist, Scientist*. New York: Abrams Books for Young Readers, 2016. Print.

**Ada did research to learn all she could  
of smelling and smells—both the stinky and good.  
One hypothesis Ada thought could be true:  
The terrible stink came from Dad's cabbage stew!  
She tested and tested, but soon Ada knew . . .  
it was time to come up with Hypothesis Two.**

## Scientific Method Organizer

Steps	Description/Examples
1.	
2.	
3.	
4.	
5.	
6.	



### Sequencing

Beginning   Middle   End

Ada tries to put the cat in the washing machine.

Ada meets the cat.

Ada smells something pungent!

Ada starts to sneeze.

Ada climbs a clock.

### Vocabulary Strategies

Then ZOWIE! The stink struck again, just like that!

Hypothesis: "Fue: 'It's caused by the cat."

The cat couldn't make such a stink on its own. It needed perfume and some fancy cologne. So Young Ada tested. The test was a flop.

### Vocabulary Strategies

	K	H	S	N
<b>Flop</b>	K	H	S	N

Claim: "The test was a flop."

Consideration: The boy's attempt to repair the broken clock was a flop because he used perfume and fancy cologne.

	positive	neutral	negative
Consideration:	positive	neutral	negative

Claim: I tried to climb a tree, but it was a flop because I ran out of climbing shoes.

### Vocabulary Strategies

<p><b>Cracked Out</b></p> <p>Frazzled</p> <p>Overwired</p> <p>Worried Hone</p> <p>Scratch</p> <p>Crave</p>	<p>to be very confused or anxious</p> <p>to shake or rattle, especially when sad or nervous</p> <p>a very bad smell</p> <p>to go to sleep</p> <p>to look or stare at in shock</p> <p>to cause a bit of damage or make a mess</p>
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### Vocabulary Strategies

<p>Claim:</p> <p>K H S N</p>	<p>Claim:</p> <p>K H S N</p>	<p>Claim:</p> <p>K H S N</p>
<p>Consideration: positive + neutral - negative</p>	<p>Consideration: positive + neutral - negative</p>	<p>Consideration: positive + neutral - negative</p>

## Rhyme and Rhythm

Identify the rhyme pattern.

- A ADA MARIE, ADA MARIE
- A Said not a word till the day she turned three.
- B She bounced in her crib and looked all around.
- B observing the world but not making a sound.

## Rhyme and Rhythm

Identify the rhyme pattern.

- A Her parents were frazzled—but tried not to freak—
- A as Ada grew bigger and still did not speak.
- B Clearly, young Ada, with lots in her head,
- B would have something to say when it ought to be said.

## Rhyme and Rhythm

Identify the rhyme pattern.

- A And that's what they did—because that's what you do
- A when your kid has a passion and heart that is true.
- B They remade their world—now they're all in the act.
- B of helping young Ada sort fiction from fact.
- C She asks lots of questions. How could she resist?
- C It's all in the heart of a young scientist.

## Rhyme and Rhythm

Identify the rhyme pattern.

- A Ada did research to learn all she could
- A of smelling and smells—both the stinky and good.
- B One hypothesis Ada thought could be true:
- B The terrible stink came from Dad's cabbage stew!
- B She tested and tested, but soon Ada knew . . .
- B It was time to come up with Hypothesis Two.

## Rhyme and Rhythm

Identify the rhyme pattern.

- A Then ZOWIE! The stink struck again, just like that!
- A Hypothesis Two: "It's caused by the cat."
- B The cat couldn't make such a stink on its own.
- B It needed perfume and some fancy cologne.
- C So Young Ada tested. The test was a flop.

## Scientific Vocabulary

Scientific Method - Brainstorm

Steps:

- 1 - Type next to each...
- 2 -
- 3 -
- 4 -
- 5 -
- 6 -

### Scientific Vocabulary

Scientific Method

Steps:

- 1 - Ask a question
- 2 - Do background research
- 3 - Make a hypothesis
- 4 - Test hypothesis with an experiment
- 5 - Draw a conclusion
- 6 - Share your results.

Slide 1: Scientific Vocabulary. Scientific Method. Steps: 1 - Ask a question, 2 - Do background research, 3 - Make a hypothesis, 4 - Test hypothesis with an experiment, 5 - Draw a conclusion, 6 - Share your results.

### Scientific Vocabulary

Adi's Use of the Scientific Method

Ask a Question	Type here...
Research	Type here..
Make a Hypothesis	Type here...
Experiment	Type here...
Conclusion	Type here...
Share Results	Type here...

Slide 2: Scientific Vocabulary. Adi's Use of the Scientific Method. A table with 6 rows: Ask a Question, Research, Make a Hypothesis, Experiment, Conclusion, Share Results. Each row has a 'Type here...' input field.