



AN EDUCATOR'S GUIDE FOR CLASSROOM USE

YORK: THE SHADOW CIPHER

It was 1798 when the Morningstarr twins arrived in New York with a vision for a magnificent city: towering skyscrapers, dazzling machines, and winding train lines, all running on technology no one had ever seen before. Fifty-seven years later, the enigmatic architects disappeared, leaving behind for the people of New York the Old York Cipher — a puzzle laid into the shining city they constructed, at the end of which was promised a treasure beyond all imagining. By the

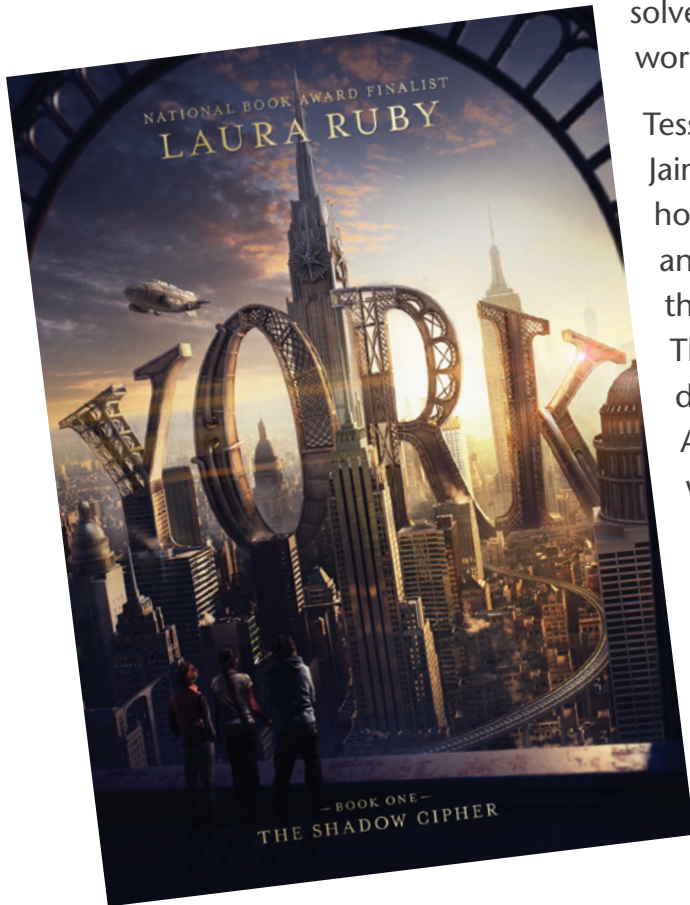
present day however, the puzzle has never been solved, and the greatest mystery of the modern world is little more than a tourist attraction.

Tess and Theo Biedermann and their friend Jaime Cruz live in a Morningstarr apartment house — until a real estate developer announces that the city has agreed to sell him the five remaining Morningstarr buildings. Their likely destruction means the end of a dream long-held by the people of New York. And if Tess, Theo, and Jaime want to save their home, they have to prove that the Old York Cipher is real. Which means they have to solve it.

Laura Ruby is the author of books for adults, teens, and children, including *Bone Gap*, a National Book Award finalist and Michael L. Printz Award winner,

among dozens of other accolades. Her other books

include the Edgar-nominated mystery *Lily's Ghosts*, the Book Sense Pick *Good Girls*, and the acclaimed novels *Play Me* and *Bad Apple*. She is on the faculty of Hamline University's MFA in writing for children and young adults program and lives in the Chicago area. You can visit her online at www.lauraruby.com.



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CHAPTER BY CHAPTER QUESTIONS

New Year's Eve, 1855

- What does it mean that “most storytellers believe theirs is the only true story and that they are the only true heroes”? What dangers or implications lie in this idea?
- Describe the character of Ava Oneal. Who is she and what is her relationship to the story?
- Reread to find descriptions of the many inventions of the Morningstarr twins. How is the setting of the story similar to or different from New York City as we know it today?

Chapter 1

- Explain what you understand about the Old York Cipher.
- What is Tess's major concern? What is her family's response to her worry?
- Why did Grandpa Ben leave the Old York Cipherist Society?

Chapter 2

- Why hadn't Theo built the Morningstarr Tower for the Lego contest?
- What is happening to Morningstarr Tower?
- Describe the ways in which the Biedermann twins (Tess and Theo) are alike and different.

Standards for Chapter by Chapter Questions (PAGES 2-7):
[\[CCSS.ELA-LITERACY.CCRA.R.1, CCSS.ELA-LITERACY.CCRA.R.2, CCSS.ELA-LITERACY.CCRA.R.3, CCSS.ELA-LITERACY.CCRA.R.4, CCSS.ELA-LITERACY.CCRA.R.5, CCSS.ELA-LITERACY.CCRA.R.6, CCSS.ELA-LITERACY.CCRA.R.10\]](#)

Chapter 3

- What is the relationship between Jaime and Mima and the Biedermann twins?
- How do the neighbors of Morningstarr Tower respond to the news from Mr. Stoop and Mr. Pinscher?

Chapter 4

- Does the design of a machine influence how well it is accepted?
- Why do people sometimes have trouble accepting scientific advances? Advances in engineering?
- What does it mean to “value process over product”? How or why would solving the puzzle be its own reward?
- Why is Jaime skeptical about trying to solve the Old York Cipher?
- What do you think about the trio's decision to try to solve the Cipher? Make a list of potential outcomes and consequences.

Chapter 5

- Why does Theo say Grandpa Ben “would never know how truly rotten humans were”?
- Why does the pasty man at the Statue of Liberty laugh off the kids' attempt to solve the Cipher?
- How might the mysterious letter affect Theo, Tess, and Jaime's outlook towards solving the Cipher?





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CHAPTER BY CHAPTER QUESTIONS

Chapter 6

- Why does this chapter begin with Jaime's memory from third grade?
- What is important about Jaime's love for superheroes?
- How might the story change if there were two trails of clues?

Chapter 7

- Describe Cricket.
- Why do you think the author inserted a chapter from a new point of view here?
- What is happening at Tess and Theo's apartment building at 354 W. 73rd Street while the kids are out trying to solve the Cipher?

Chapter 8

- Explain the multiple meanings of the word "enlighten."
- The Morningstarrs had already harnessed solar power in the 19th century. But the use of gas as a source of power was relatively unheard of. What does this detail illustrate about the setting of the book?
- What does Tess mean at the end of this chapter when she says the ghost told her, "Everyone else is wrong"?

Chapter 9

- How do you think the kids end up with Theresa Morningstarr's letter?
- What is Theo's reservation about seeking information from the Old York Puzzler and Cipherist Society? What is Tess's argument for going?
- Why is Theo trying to convince himself that he doesn't miss the archives?
- How are Theo and Tess handling their grandfather's dementia differently? Cite evidence from the text to support your ideas.

Chapter 10

- What do you think is making Delancey DeBrule grumpy and closed off?
- Why do Tess, Theo, and Jaime withhold the whole truth of their visit to the archives from the cipherists?
- Jaime ends the chapter with this thought: "It was as if everyone was a Cipher." How are people and ciphers alike?

Chapter 11

- How would Mr. and Mrs. Biedermann react if they knew what the twins were up to? What makes you think this?





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CHAPTER BY CHAPTER QUESTIONS

Chapter 12

- Why do you think Theo has a nightmare about the Five Points neighborhood?
- What does Theo's mom mean when she suggests, "You might need to manage your expectations"?
- Does Mrs. Biedermann's reaction about the twins' visit to the archives surprise you? Why or why not?
- What do you think will happen now that the kids have been caught?

Chapter 13

- How do Tess, Theo, and Jaime find the third clue?
- Why would Lora Yoshida be performing to protest greedy corporations?

Chapter 14

- Explain why Tess says their effort to solve the Cipher seems "adorable," as though it were more than a coincidence.
- Jaime's mom died and his dad works overseas. Tess wonders if it's harder to miss someone who was forced to leave you or someone who chose to. What do you think?
- Why does Tess want to solve the Cipher?

Chapter 15

- Where is Grandpa Ben? Why does the word "asylum" bother Tess?
- Why do the Guildmen pay so much attention to Tess and Theo when they ride the Underway?
- Why is Tess upset when she returns home to find the Society members at her apartment?

Chapter 16

- Why would there be no photos or drawings of Ava Oneal?
- What is the concern about 354 W. 73rd Street holding the next clue?
- Why is Mima sitting on the roof?
- Why do you think Mr. Stoop and Mr. Pinscher are removing artifacts from the building?

Chapter 17

- Is it possible for Lancelot to miss Grandpa Ben? To be comforted or soothed?
- What is causing Tess to doubt their success with the Cipher?
- What does it mean for a building to be condemned? Why would 354 W. 73rd Street be condemned?
- What do you think Tess plans to do next? Why does she need Mima's key ring?



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CHAPTER BY CHAPTER QUESTIONS

Chapter 18

- Why does Jaime declare that he likes the bus, even though he doesn't?
- How could the seals be important to finding the next clue?
- Why do Jaime and Tess decide to save Mr. Perlmutter's place for last?

Chapter 19

- Why does Mima call the Cipher "kooky"?
- What is an anagram?
- Mima twice mentions men and their "clubs." What does Mima think about men's organizations through history, and why do you think she feels this way?
- How might the train routes and tokens help Tess, Theo, and Jaime solve the Cipher?

Chapter 20

- Who are the Guildmen?
- Why do Tess, Theo, and Jaime believe the Guildmen and the Underway might help them solve the Cipher?
- Describe the characters' feelings as they head to the Underway hoping for answers.
- Why are the trains operating so unusually? Why are they going faster than normal and skipping stops?
- What do you think is the importance of the story of the caterpillar turning into a moth?

Chapter 21

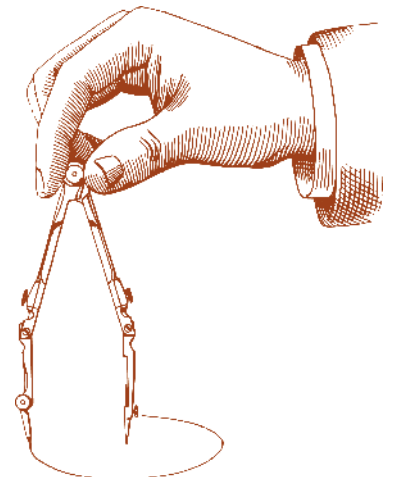
- Do you think Tess, Theo, and Jaime are making the right choice by hiding the truth when speaking to the adults?
- Why would Theo rather see Jaime's hand in his pocket than on Tess's arm?
- What scientific mystery does Theo believe they have stumbled upon?

Chapter 22

- Why would a butterfly be turning out lights around the city?
- Do you believe the Guildsmen are trying to harm the kids or help them? Defend your opinion with evidence from the book.
- Where do you think the twins might find a solarship?

Chapter 23

- Why do the kids finally decide to tell Uncle Edgar what they have discovered?
- What is a star map, and how is it used?
- Find out more about the Atlantic Avenue Tunnel. Why was it only open for twenty years?





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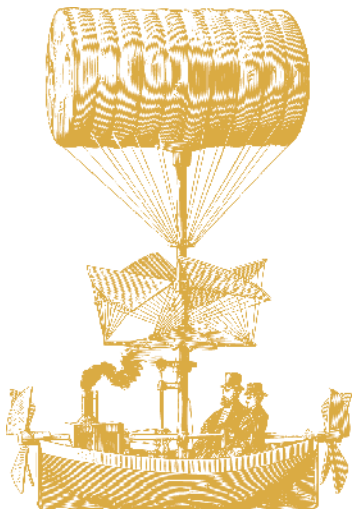
CHAPTER BY CHAPTER QUESTIONS

Chapter 24

- How would the mission to solve the Cipher be different if Grandpa Ben were not ill?
- How did Grandpa Ben get the Morningstarr letter, and what was his intent in mailing it to himself?
- What do you think Mr. Stoop and Mr. Pinscher are looking for?
- Why is Theo so attached to his lost dictionary?

Chapter 25

- What halted the Atlantic Avenue Tunnel project?
- Why is Uncle Edgar going to leave Tess, Theo, and Jaime in the tunnel and leave alone with the suitcase?
- How do Tess, Theo, and Jaime feel about Uncle Edgar's betrayal?
- Who helps lift the manhole cover for Jaime?



Chapter 26

- Why aren't Delancey DeBrule or Priya Sharma surprised about Uncle Edgar's choices?
- Why do the Society members continue to cover up the truth about what Tess, Theo, and Jaime are doing?
- Do you think the Cipher was intended specifically for the twins?
- Why are Tess and Theo's parents angered by their interest in the Cipher?
- Why does Cricket's necklace capture Tess's attention?

Chapter 27

- Why does the author insert another chapter from Cricket's point of view here?
- How does Cricket outsmart Mr. Stoop and Mr. Pinscher?
- Where does Cricket get the necklace? Why does she give the necklace to Tess?

Chapter 28

- Why does Jaime feel like he's failed his family?
- Aunt Esther winks at Tess like she's in on a secret. Is she? Explain your answer.
- Why is 354 W. 73rd Street looking "dead"?
- In their debate about setting the cane in place, Jaime thinks about how they needed to or else they would be letting Darnell Slant write their story. Do you agree or disagree with his thinking? Why? Would you have set the cane in place inside the clock?



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CHAPTER BY CHAPTER QUESTIONS

Chapter 29

- What happens to Mr. Stoop and Mr. Pinscher?
- How do Tess, Theo, and Jaime cause the destruction of 354 W. 73rd Street?
- Is any treasure worth any cost? Do you think the time spent trying to solve the Cipher was worthwhile?
- What thoughts do you have about the rectangular shadow?

Chapter 30

- Were the Morningstarrs ingenious (Tess's perspective) or inconsiderate (Theo's perspective)?
- The Biedermanns feel contempt towards Darnell Slant, but is there any truth in his statement about the Cipher: "But the solution is not in the streets or the buildings of this city, but in us, in its people. We are the magic. We are the treasure."
- What are the treasures Tess and Theo had all along?

Chapter 31

- How does Jaime imagine Slant might be prevented from erecting a tower of condos?
- If you were one of the kids, would you have returned to the shadow door? Would you have crossed the threshold?
- What do you imagine lies beyond the shadow door?

February 73, 1861

- Who summons Charles Reason?
- What letter is Charles Reason given? Who is the "them" the letter will help?
- What trouble does Charles Reason sense?





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FOR MORE DISCUSSION

Structure and Craft

Consider the structure of the book, specifically:

- Historical segments to begin and end the book;
- Alternating points of view between Tess, Theo, and Jaime;
- Two chapters from Cricket's point of view;

Why do you think the author made these choices?
How do these choices impact your understanding of the story?

[CCSS.ELA-LITERACY.CCRA.R.5, CCSS.ELA-LITERACY.CCRA.R.6]

The Black Box

In Chapter 11, Tess and her dad watch a movie where the character must choose between opening the safe white box or the black box that will reveal the hard, cold truth about the world. (page 187) They discuss the problem that many people think they have already opened the black box, that what they think they "know" already is the hard, cold truth, and that it's everyone else who has been tricked.

In Chapter 26, while arguing about the restrictions her parents are putting on her time and trying to garner her father's support, Tess asks, "What about the black box, Dad?" He tells her this is *her* black box.

In what ways is Tess's pursuit to solve the Old York Cipher her black box?

[CCSS.ELA-LITERACY.CCRA.R.1, CCSS.ELA-LITERACY.CCRA.R.2, CCSS.ELA-LITERACY.CCRA.R.3]

What it Means to be Alive

Throughout the book, the way of life of New Yorkers is impacted by Morningstarr machines that function and operate as if they are alive: Lancelot, the Underway caterpillars, Rollers, mechanical spiders and ladybugs, for example.

Discuss what it takes to "be alive." Are the Morningstarr machines alive? Could the Cipher be alive? If so, how?

[CCSS.ELA-LITERACY.CCRA.R.2, CCSS.ELA-LITERACY.CCRA.R.8]

Overlooked, Hidden, Forgotten

A big idea embedded within *York: The Shadow Cipher* is stories that have been overlooked or hidden or forgotten. This idea occurs to Tess when thinking about Eliza Hamilton, who tried to do the right thing and was often overlooked. Jaime points out that all the clues seem to be about forgotten things, forgotten people. Ava Oneal's library was full of published works by lesser-known writers.

Explore some of the figures mentioned in this book. Who were they? Their contributions? What were their stories?

Ada Lovelace

Ida B. Wells

Harriet Beecher Stowe

Phillis Wheatley

Cato

Anna Strong

Agent 355

Charles Babbage

William Waddell

Eliza Hamilton

Wendell Phillips

Frances Harper

Paul Laurence Dunbar

Lydia Marie Child

Who else do you know from history (or present day) who is often overlooked? Why do you think this happens? What becomes of these people and their contributions?

[CCSS.ELA-LITERACY.CCRA.R.2, CCSS.ELA-LITERACY.CCRA.R.7]





OTHER ENRICHMENT ACTIVITIES

Cryptography

Codes and ciphers have been used since ancient history. Take time to explore some of the ciphers that are part of the Old York Cipher. Make codes for your friends to decipher.

- **Anagrams:** Scramble the letters of your message so they form other words to conceal your real message. (page 310)
- **Cipher Alphabet:** A transposition or substitution cipher where each letter of the alphabet is represented by a different letter in a determined cipher sequence (page 308)
- **Rosicrucian Cipher and Pigpen Cipher:** Uses assigned positions of dots inside a grid that correlate to the letters of the alphabet (pages 166 and 304)
- **Steganography:** Hidden messages on or inside what appears to be something else, like on the shell of an egg or in a microdot. (page 163)
- **Turkish Irish:** Insert "AB" before each vowel in your words, best when spoken at a fast pace. (page 136)



Old Cipher
Society

Comics

Draw your own renditions of some of Jaime's comic art.

Superheroes

Jaime, the grandson of a Cuban immigrant, has a keen interest in superheroes. Pick some of the superheroes Jaime draws or mentions and learn their backstories. Why do you think Jaime feels such a connection with the main characters of his favorite comics?

[\[CCSS.ELA-LITERACY.CCRA.R.1, CCSS.ELA-LITERACY.CCRA.R.2, CCSS.ELA-LITERACY.CCRA.R.7\]](#)

Crossword Puzzles

The clues to crossword puzzles often require the puzzler to consider multiple definitions of words or multiple angles on a clue. In *York: The Shadow Cipher*, Tess plays with the possible meanings for "enlightening" at the Seabury Tredwell House (Ch. 8), and later she remembers Grandpa Ben wrestling with whether a crossword clue meant "number" or "numb-er" (page 284). Try your own skill with crossword puzzles and their clues.



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OTHER ENRICHMENT ACTIVITIES

Humanities

- Compare New York City of *York: The Shadow Cipher* to present-day New York City.

[CCSS.ELA-LITERACY.CCRA.R.1,
CCSS.ELA-LITERACY.CCRA.R.7]

- Learn more about the Statue of Liberty and what she represents. The Morningstars were European immigrants. Many of the leaders and historical figures referenced in this story were immigrants. Jaime's grandmother was a Cuban immigrant. Find and read stories of immigration and immigrants who have impacted life as we know it with their contributions.

[CCSS.ELA-LITERACY.CCRA.R.2, CCSS.ELA-LITERACY.CCRA.R.7]

- Research the role of spies in American history. What was the Culper Ring, and how was cryptography important to the history of our country?

[CCSS.ELA-LITERACY.CCRA.R.2, CCSS.ELA-LITERACY.CCRA.R.7]

- Learn more about the creatures of Jewish mythology.

[CCSS.ELA-LITERACY.CCRA.R.7]



- Imagine the potential shifts that may have resulted from a different outcome than the real historical events of our country. For example, when Tess, Theo and Jaime are studying the letter from Theresa Morningstarr, they refer to President Andrew Jackson and his legislation to force Native Americans from their land. Jaime says it "didn't pass though," even though we know the Trail of Tears was in fact a true historic event. However, York is an alternate-history that allows us to imagine history happening differently.

What other examples can you find in the novel where history must have happened differently for York to exist as it does in the book? Pick another historic event and consider how things would be different had there been another outcome.

[CCSS.ELA-LITERACY.CCRA.R.1, CCSS.ELA-LITERACY.CCRA.R.2,
CCSS.ELA-LITERACY.CCRA.R.7]

- Grandpa Ben gives the twins many wisdoms to ponder. Twice the twins recall a hard truth that he had shared with them about people:

"Remember," Grandpa said, "history is filled with horrors as well as wonders. And so are people." (p. 125)

"Grandpa Ben always told us that great people are capable of doing terrible things and that we shouldn't ever forget it." (p. 206)

What are some examples of "great people" who have also done "terrible things"? Why does Grandpa Ben caution against romanticizing individuals from the past? Why is it so important to be mindful that good and evil can coexist?

[CCSS.ELA-LITERACY.CCRA.R.1, CCSS.ELA-LITERACY.CCRA.R.2,
CCSS.ELA-LITERACY.CCRA.R.7]



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OTHER ENRICHMENT ACTIVITIES

Transportation

Compare and contrast the modes of transportation used by the people of New York City in this novel to the transportation we are familiar with today.

<i>Underway</i>	<i>Shark-shaped</i>
<i>Solarship</i>	<i>submersible</i>
<i>Starrboard</i>	<i>Car with cantilevered</i>
<i>Solar bus</i>	<i>solar panels</i>
<i>Tramway</i>	

Which vehicles could realistically exist? Are there any other ideas for transportation you can imagine by modifying their present form to capitalize on the solar power of York?

[CCSS.ELA-LITERACY.CCRA.R.8]

Engineering

Experiment with building your own Underway cars and track. See if you can construct the car that can travel the fastest, turning sharp corners and handling inclines and descents without derailling. You may choose to use physical materials in this engineering challenge or try an online site or app.

Research the science and engineering behind implosion. How is this form of demolition different from an explosion? How does implosion work?

Invention

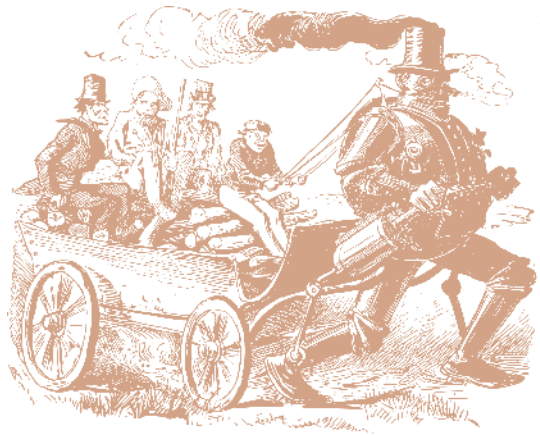
York: The Shadow Cipher showcases all sorts of Morningstarr machines and inventions that were born of necessity, or as a result of trying to make life better, easier, or more efficient. Consider these examples. What do these inventions do to make life easier or more efficient?

<i>Beetles</i>	<i>Caterpillars</i>
<i>Rollers</i>	<i>Solarship</i>
<i>Lion batteries</i>	<i>Exoball</i>
<i>Solar-powered glass</i>	<i>Mechanical spiders/</i>
<i>Genetically-altered pets</i>	<i>ladybugs</i>
<i>Lancelot (automaton)</i>	<i>Digging machine</i>

What other examples can you provide from the novel?

What other inventions would you dream up to make life easier or more efficient?

[CCSS.ELA-LITERACY.CCRA.R.1]





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OTHER ENRICHMENT ACTIVITIES

Persuasive Writing

Assume the perspective of one of the characters in the book and write a persuasive letter to Darnell Slant convincing him to forego his plans to evict the tenants of 354 W. 73rd Street and demolish the Morningstarrs' building. Be sure to develop your opinion with strong supporting reasons.

For an added challenge, write yourself a response from Darnell Slant's perspective, explaining why you will not change your course of action.

[CCSS.ELA-LITERACY.CCRA.W.1, CCSS.ELA-LITERACY.CCRA.W.4, CCSS.ELA-LITERACY.CCRA.W.5, CCSS.ELA-LITERACY.CCRA.R.1]



Creative Writing — World Building

York: The Shadow Cipher is referred to as an "alternate-history adventure" because of the imagined setting, an alternate New York City. By reimagining some of the events of the New York City of our history books, the author crafted her own setting for the novel. To do this, Laura started with what was real about New York City from prehistoric times through modern times. Then, she considered what changes or additions she wanted to include and the impact of these changes.

You can try your hand at world building, too. Start with a setting for your story. Research what is "real" about the time and place you choose. And then, make your changes.

Try this:

- Look for hidden things: lost buildings, abandoned things, ruins. (This is how the Atlantic Tunnel became part of *York: The Shadow Cipher*.)
- Consider inventions, for example, technology like Rollers and exoskeletons or energy sources like solar energy.
- Evaluate and include the impact of your additions or changes, including the impact on the environment, human choices, and potential dangers.

Explore what happens when you set your characters to play in the setting you create. Don't forget to make them operate within the rules of your new world!

[CCSS.ELA-LITERACY.CCRA.W.3, CCSS.ELA-LITERACY.CCRA.W.4, CCSS.ELA-LITERACY.CCRA.W.5]