



YORK ACTIVITY GUIDE

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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INVENTORS

The Morningstarr siblings were prolific inventors in the 19th century New York depicted in the series. Research some of these other famous 19th/early 20th century inventors:

- **Ada Lovelace** — 19th century mathematician, often credited as the first computer programmer.
- **Margaret E. Knight** — invented the flat-bottomed paper bag, patented in 1870, and several other designs related to rotary engines.
- **Miriam Benjamin** — In 1888, she was the second African American woman to receive a U.S. patent. She invented the Gong and Signal Chair for Hotels, which sent a signal to summon staff. The chair was later adapted for use in the House of Representatives.
- **Sarah E. Goode** — the first African American to receive a U.S. patent in 1885 for the Folding Cabinet Bed, a precursor to the Murphy bed.
- **Mary Anderson** — invented the windshield wiper in 1903.
- **George Washington Carver** — 19th century African American botanist and inventor who developed improved agricultural practices that enjoyed widespread use in the southern U.S.

If the Morningstarrs really existed, do you think any of these inventors would have crossed paths with them? Write a story or draw a picture of a conversation between the Morningstarrs and one of these other prolific inventors.

INVENTIONS

A man dressed entirely in silver armor complete with helmet clomped into the living room. He held a tray with a plate of cookies and three overfull glasses of water that sloshed all over his chain-mail gloves.

Jaime's mouth dropped open. "Is that what I think it is?"

"It is," said Theo, "A Lancelot. Servant model. Built by the Morningstarrs, based on designs by Leonardo da Vinci. Something they did when they were young, but the machines caught on."

Tess said, "In the early eighteen hundreds, everybody had a Lance — well, all the rich people had a Lance — but they went out of style more than a hundred years ago."

It sounds like "The Lance" was a hot invention at the time... a little bit like a robot Siri! And do those cleaning caterpillars on the subway remind you of a Roomba? Can you think of some other inventions that the Morningstarrs, or other real inventors that were ahead of their time, might have come up with in the 1800s? For example, what if Steve Jobs had come up with the iPod in the 1830s? What would it have looked like? What materials would he have used to make it? Would it still work today?

— pages 68-69



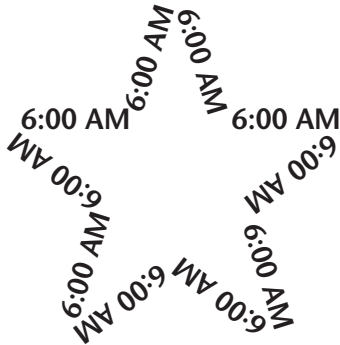
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REBUS PUZZLES

A Rebus puzzle, or pictogram puzzle, is a puzzle that uses words and visual puns to represent a message or phrase. Think you've got the skills of an Old York Cipherist? Try decoding the messages in the Rebus puzzles below.



1



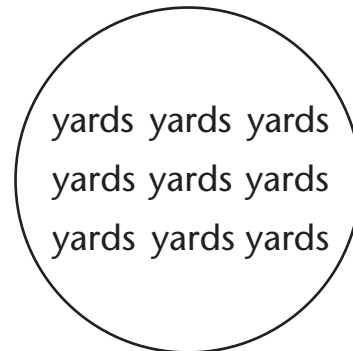
2

DISBLESSINGGUISE

3

cry
spilt milk

4



5

CIPHER
CIPHER

6

way
The

Answers: 1. Morningstar; 2. Blessing in disguise; 3. Cry over spilt milk; 4. The whole nine yards; 5. The Shadow Cipher; 6. The Underway

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FUN WITH CIPHERS

Theo recited, "42, 1, 2; 42, 19, 6; 42, 1, 10; 42, 2, 17; 42, 2, 18; 44, 18, 6; 60, 13, 24; 60, 14, 7; 48, 4, 13; 51, 10, 4; 42, 2, 5; 45, 7, 5..."

"The first number is the page number, the second number is the line number on that page, and the third number is the word in that line," Theo said.

"It begins, as everything does, with a lady. 'Her book holds your keys,'" said Tess. "We know. Everybody knows."

Theo said, "But did you know that the word begins doesn't actually appear in the story, only the word begin?"

"What does it matter?" said Tess.

"Details always matter," Theo said. "Like the fact that the Morningstarrs used that story in the first place. They could have used the Constitution. The Bill of Rights. The Bible. Something by Dickens or Melville or even a recipe for a cake. They could have

used anything. But they used a detective story about something hidden in plain sight, which pretty much describes all the clues they left."

— page 72

Theo and Tess are discussing a clue from the Edgar Allen Poe short story "The Purloined Letter." Let's make our own ciphers! Choose a document (could be a book, article, poem, or something you're reading in class). Using the Morningstarr's code, come up with your own clues for your classmates to solve! Or, use the same pattern to write a poem for your classmates to decode. Remember, the details always matter, so think hard about your source material and what message it's sending.

CUSTOM CROSSBREDS

...Nine definitely wasn't a regular cat. Nine was a mix of Siamese, serval, and who knows what else. A sprinkling of wolf, maybe. One day, Great-Aunt Esther showed up at the Biedermanns' apartment with an oversized spotted kitten. "I have brought you an animal," she said. "This animal is called Nine Eighty-Seven. I have also brought you some Fig Newtons. But not for the animal."

Aunt Esther, like a lot of people in Tess's family, was more than a little eccentric. And Nine was probably a little more saber-tooth than Siamese.

— page 31

York features some rather creative takes on family pets in the form of Karl, Cricket's raccoon crossbreed, and Nine, Tess's cat crossbreed. Imagine you lived in this world of "custom crossbreeds." What sort of crossbred pet would your family choose? Draw, sculpt, paint, or otherwise create an image of what your custom crossbreed would be.

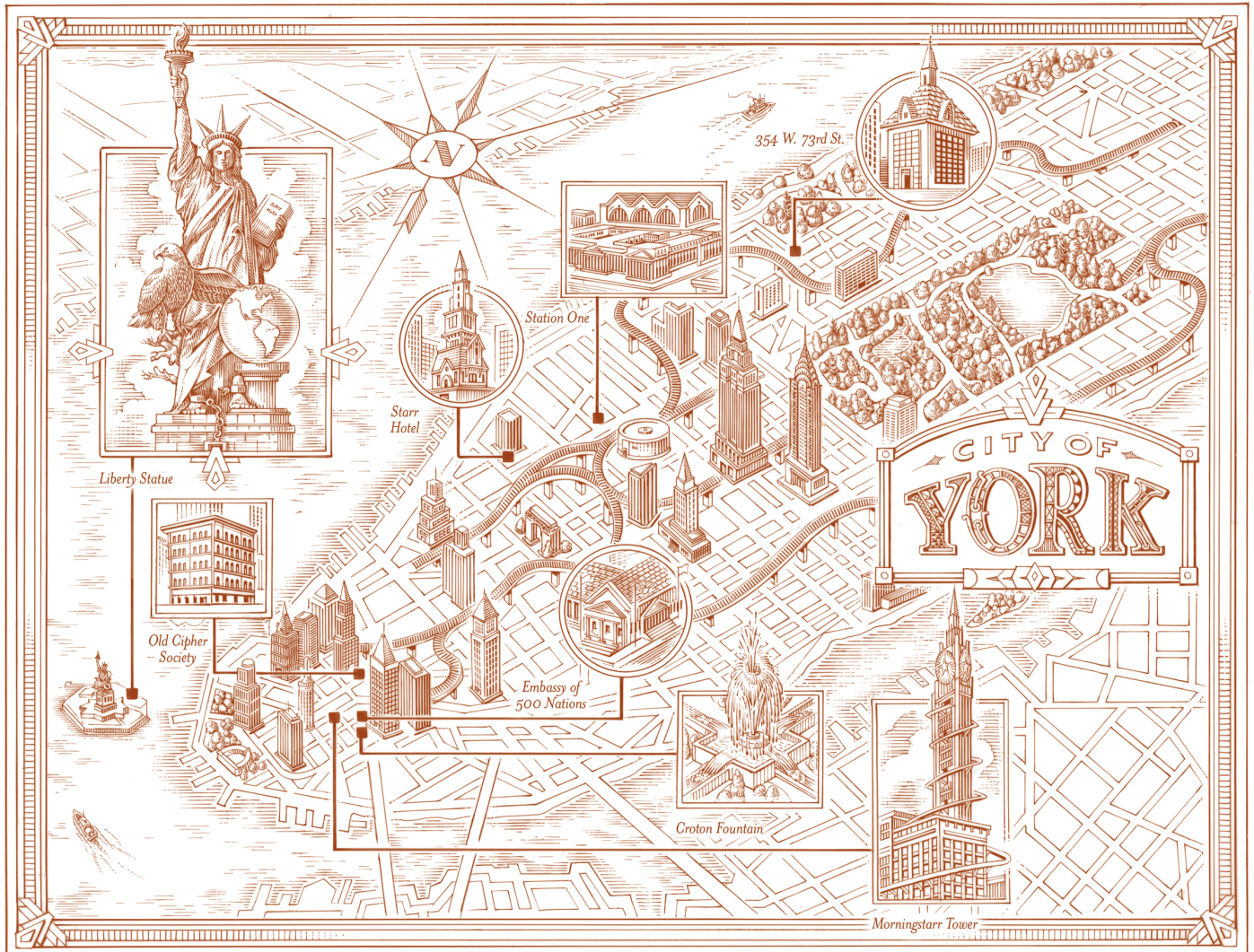


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NEW YORK

New York is an important character in this story. While this version of New York is a little different from the New York we know (the subway is always clean??), the real New York is also full of history and mystery.

For example, did you know that there actually used to be an entire village in what we now know as Central Park? Do some research on the history of New York and see what other lost stories you can dig up!





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ROSICRUCIAN CIPHERS

Jaime gestured to a bunch of papers strewn across a nearby table. "What are these? They kind of look like tic-tac-toe games."

"That's a Rosicrucian cipher. Sometimes called a pigpen cipher," Edgar said.

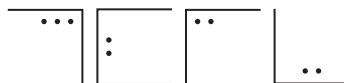
"That's not a Rosicrucian cipher," said Gunter. "I've never seen a Rosicrucian cipher that used sets of dots in that particular way."

"It's a variant of the Rosicrucian cipher," said Edgar. "A lot of secret guilds use ciphers like these. But it's really rather simple. Each letter is represented by a dot or set of dots in a particular location. This is the key."

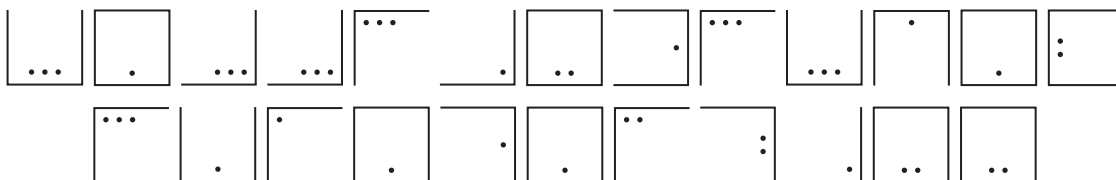
— page 149

On their visit to the Old York Puzzler and Cipherist Society, Jaime, Tess, and Theo learn about the Rosicrucian, or pigpen, cipher, and a particular variant used by the Cipherists on their quest. With the help of Uncle Edgar's cipher key on page 140 (reproduced at right), see if you can break the following Rosicrucian cipher codes:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| A | B | C | J | K | L | S | T | U |
| · | · | · | · | · | · | · | · | · |
| D | E | F | M | N | O | V | W | X |
| · | · | · | · | · | · | · | · | · |
| G | H | I | P | Q | R | Y | Z | · |
| · | · | · | · | · | · | · | · | · |







Now try to write your name, your school's name, or any other deep, dark secrets you desire in the Cipherists' Rosicrucian code!