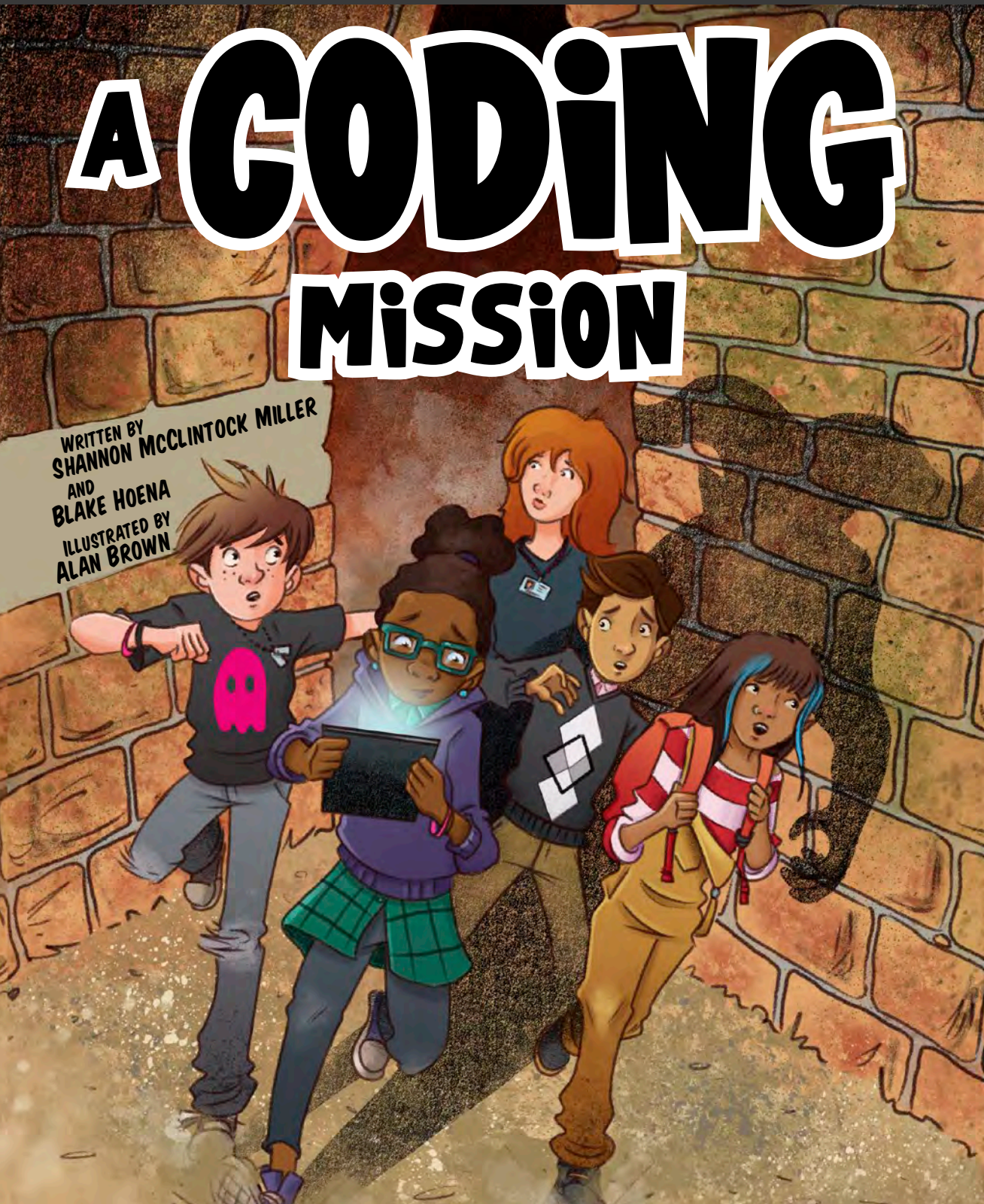
ADVENTURES IN MAKERSPACE

A CODING MISSION

WRITTEN BY
SHANNON MCCLINTOCK MILLER
AND
BLAKE HOENA
ILLUSTRATED BY
ALAN BROWN



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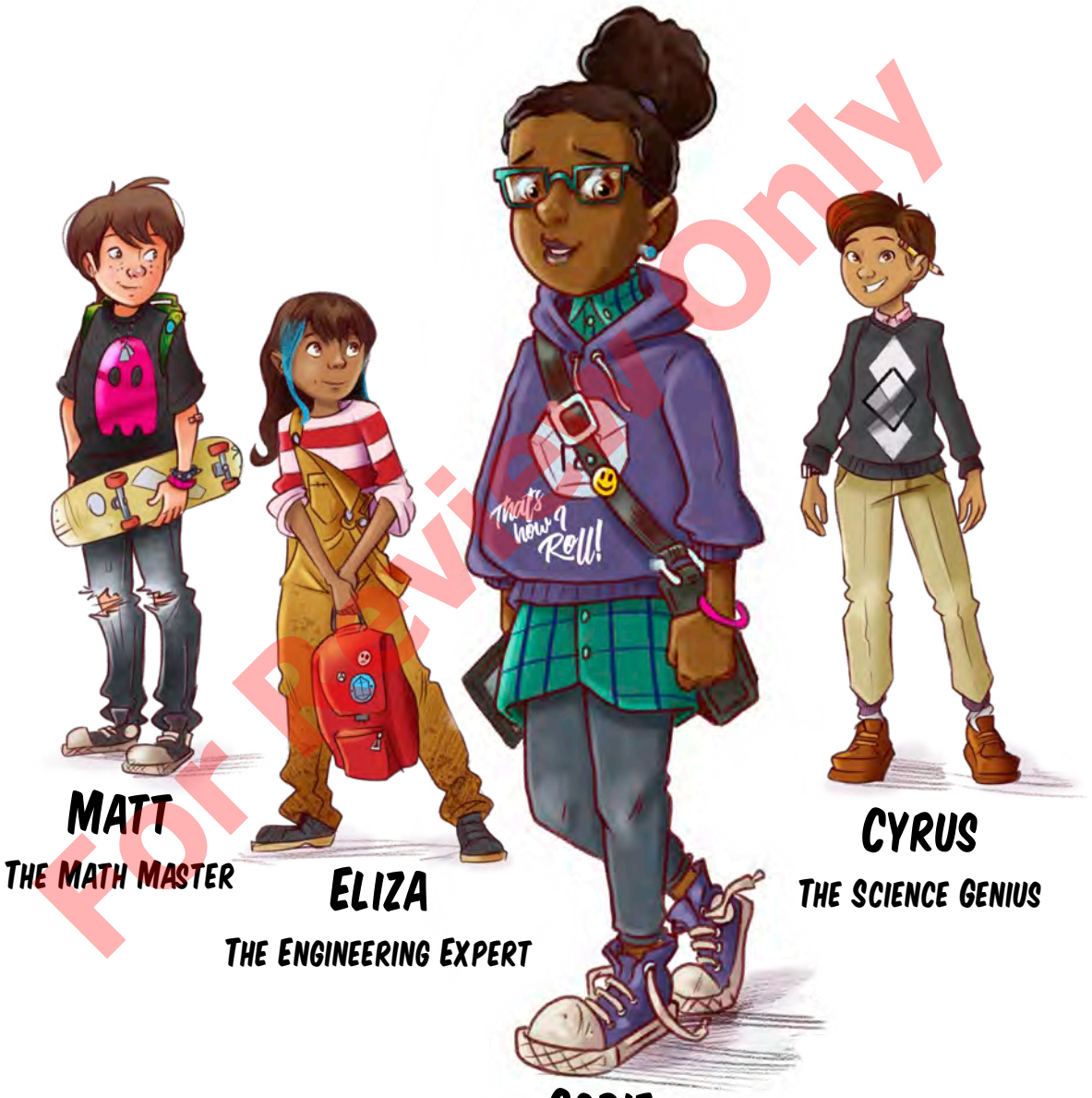
MEET THE SPECIALIST

ABILITIES:
speed reader, tech titan, foreign language master, traveler through literature and history

MS. GILLIAN

TEACHER - LIBRARIAN

MEET THE STUDENTS



MATT
THE MATH MASTER

ELIZA
THE ENGINEERING EXPERT

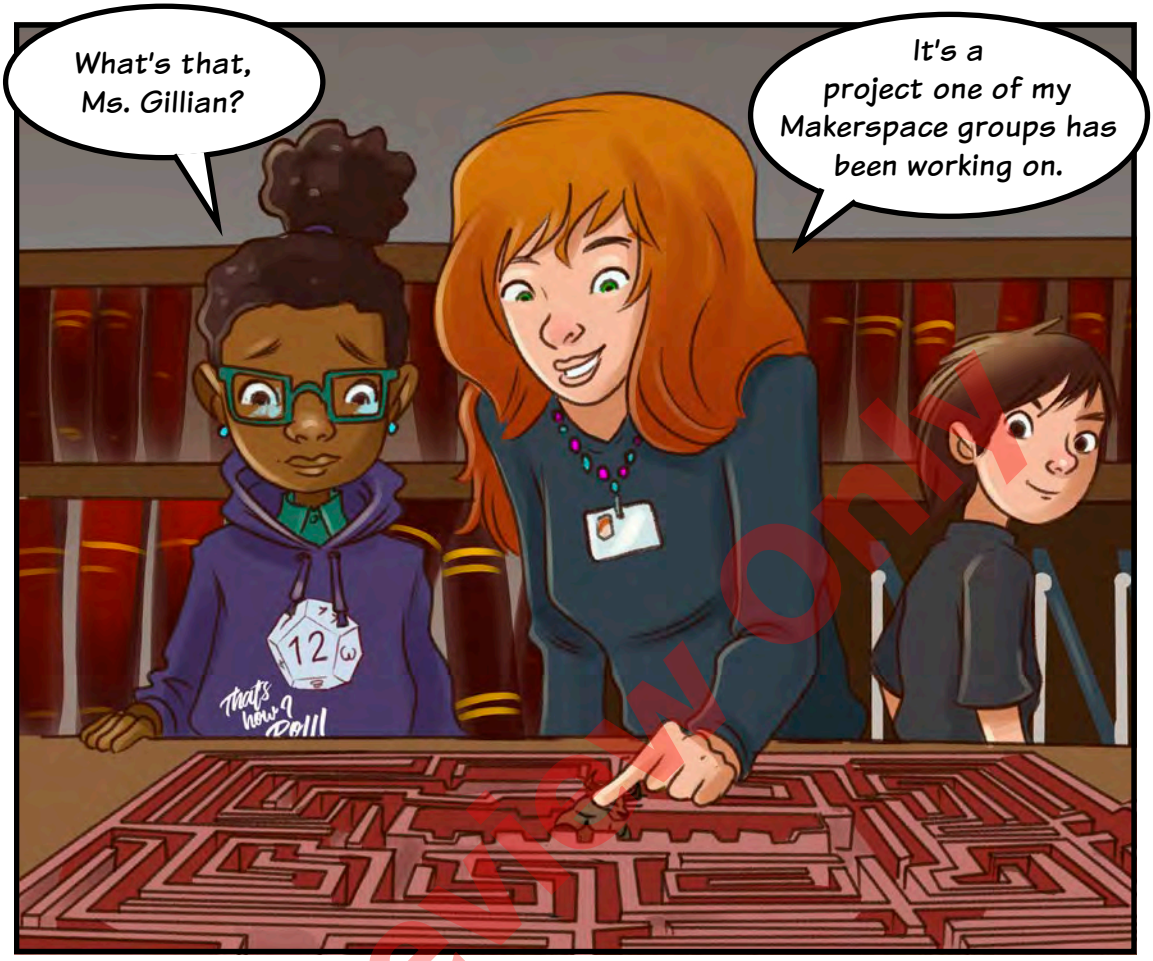
CODIE
THE CODING WHIZ

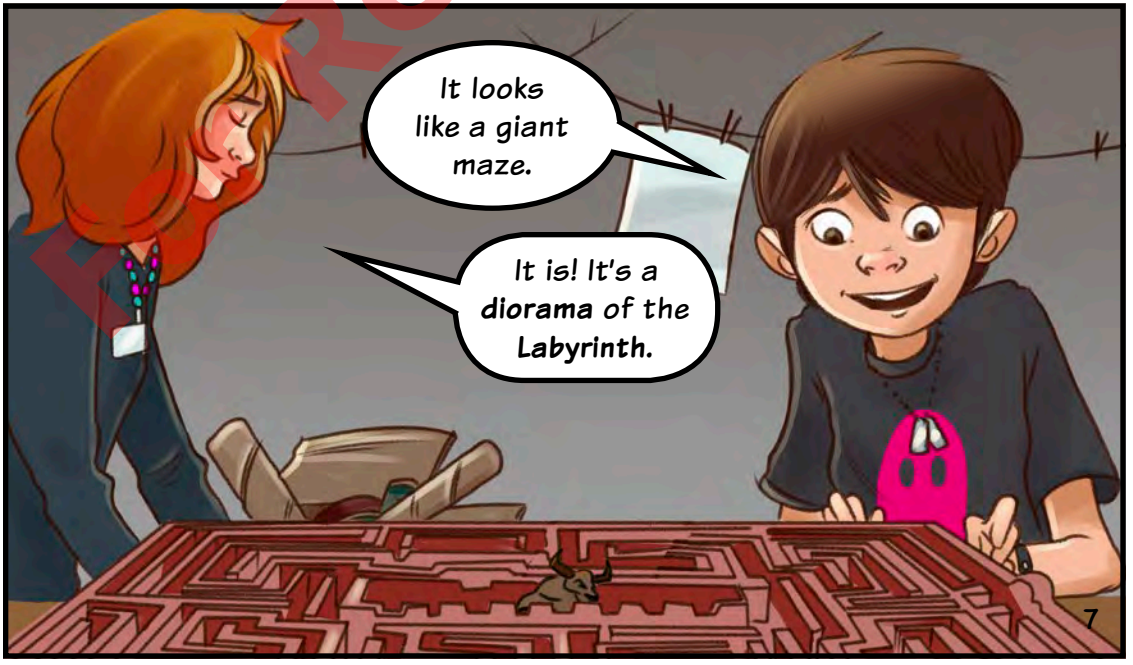
CYRUS
THE SCIENCE GENIUS

THE LABYRINTH

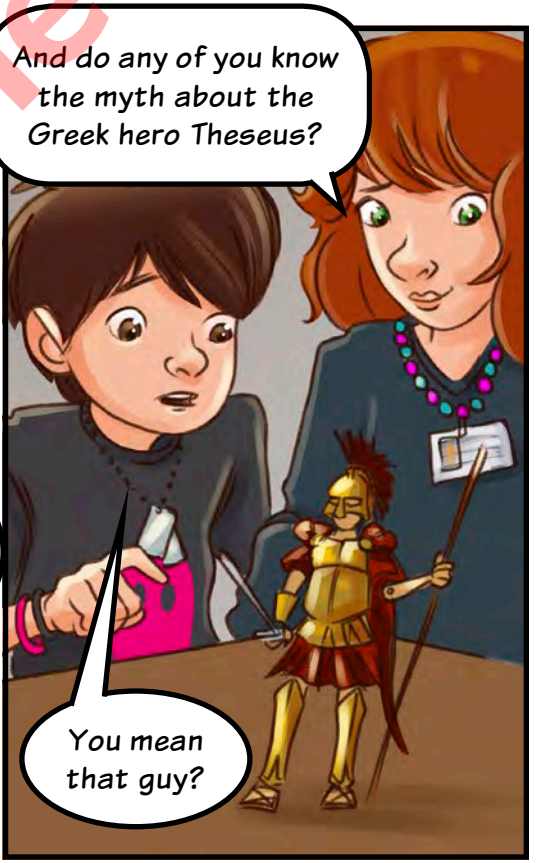
FOR CODIE AND HER FRIENDS, IT IS ANOTHER BUSY DAY AT EMERSON ELEMENTARY. THEY ARE ON THEIR WAY TO ONE OF THE MOST EXCITING PLACES IN SCHOOL. IT IS AN AREA OF THE LIBRARY THAT MS. GILLIAN CALLS THE MAKERSPACE.

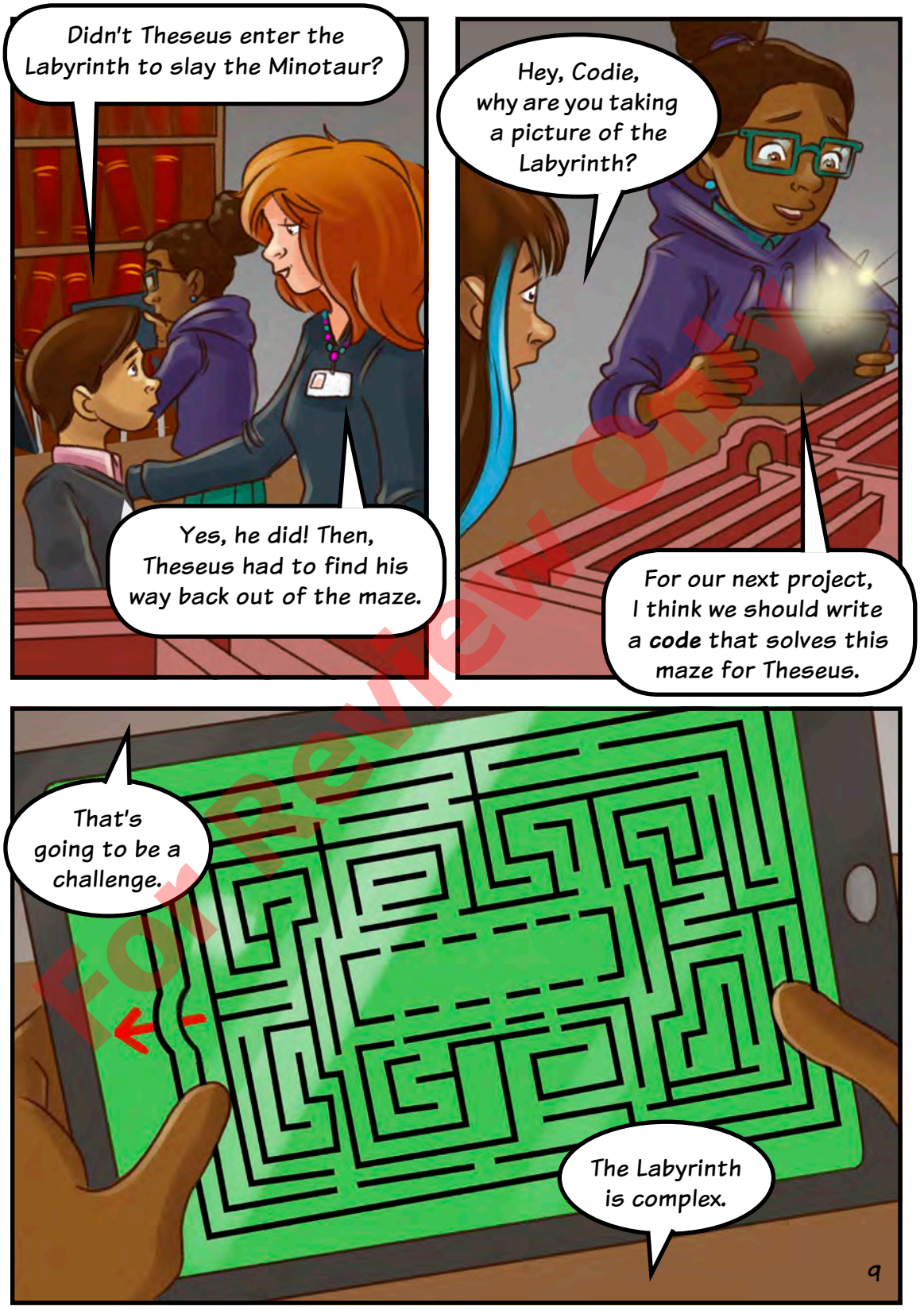
MS. GILLIAN SET UP THE MAKERSPACE FOR STUDENTS TO WORK TOGETHER ON PROJECTS. THE SPACE IS FULL OF SUPPLIES FOR CODING, EXPERIMENTING, BUILDING, AND INVENTING. IT IS THE ULTIMATE PLACE TO CREATE!





THE MINOTAUR IS A MONSTER FROM ANCIENT GREEK MYTHS. IT HAS THE HEAD OF A BULL AND THE BODY OF A MAN.





SOLVE A MAZE!

WHAT YOU NEED

- 1 six-sided die
- Theseus
  (a toy figure to mark your place in the maze)
- Paper and pencil
- A maze

In this story, the students use different algorithms to try to get out of the Labyrinth. Algorithms are important in coding. They tell a computer how to solve a specific problem.

Test out two of Codie's algorithms to see which works best for your maze.

RANDOM MOUSE ALGORITHM

Randomly pick a direction to turn.

1. Place Theseus at the start of the maze.
2. Move him forward until he needs to decide which way to turn or runs into a wall.
3. Make a tally mark on your paper.
4. Roll the die. If it shows 1, 2, or 3, take the left path; if it shows 4, 5, or 6, take the right path. (If there are three possible directions, turn left on a roll of 1 or 2, go straight on a 3 or 4, and turn right on a 5 or 6.)
5. Repeat steps two through four until you reach the end of the maze. If you have not reached the end after one hundred turns, stop.

WALL-FOLLOWER ALGORITHM

Follow the left wall through the maze.

1. Place Theseus at the start of the maze.
2. Move him forward until there is a left turn or he runs into a wall.
3. Make a tally mark on your paper.
4. Turn Theseus ninety degrees so that he always follows the wall on his left.
5. Repeat steps two through four until you reach the end of the maze. If you have not reached the end after one hundred turns, stop.

   Note: You can also try this algorithm using the right wall.

Compare the tally marks for each algorithm. Which one used the fewest steps or got you farthest through the maze?