

**ADVENTURES IN MAKERSPACE**

# **A 3-D PRINTING MISSION**



**WRITTEN BY  
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AND  
BLAKE HOENA**

**ILLUSTRATED BY  
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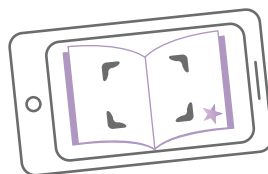
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Download the Capstone **4D** app!



- Ask an adult to download the Capstone 4D app.
- Scan the cover and stars inside the book for additional content.

When you scan a spread, you'll find fun extra stuff to go with this book! You can also find these things on the web at [www.capstone4D.com](http://www.capstone4D.com) using the password: 3dpr.77450



# MEET THE SPECIALIST

## **ABILITIES:**

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



**MS. GILLIAN**  
**TEACHER - LIBRARIAN**



# MEET THE STUDENTS



**ELIZA**

**THE ENGINEERING EXPERT**



**CODIE**

**THE CODING WHIZ**



**MATT**

**THE MATH MASTER**



**CYRUS**

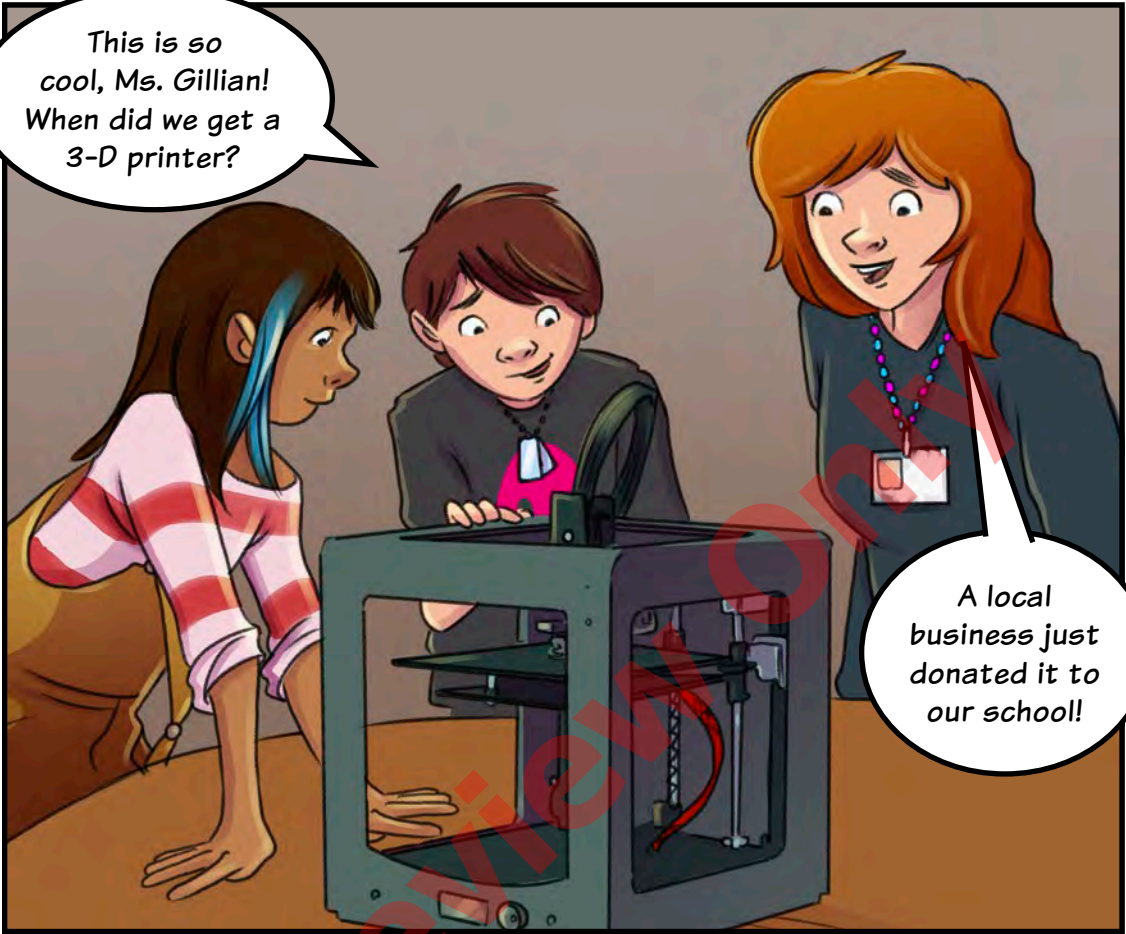
**THE SCIENCE GENIUS**

# A COOL SURPRISE

TODAY, MATT AND HIS FRIENDS ARE IN THEIR FAVORITE PLACE IN ALL OF EMERSON ELEMENTARY. AT THE BACK OF THE SCHOOL'S LIBRARY IS AN AREA THAT MS. GILLIAN CALLS THE MAKERSPACE.



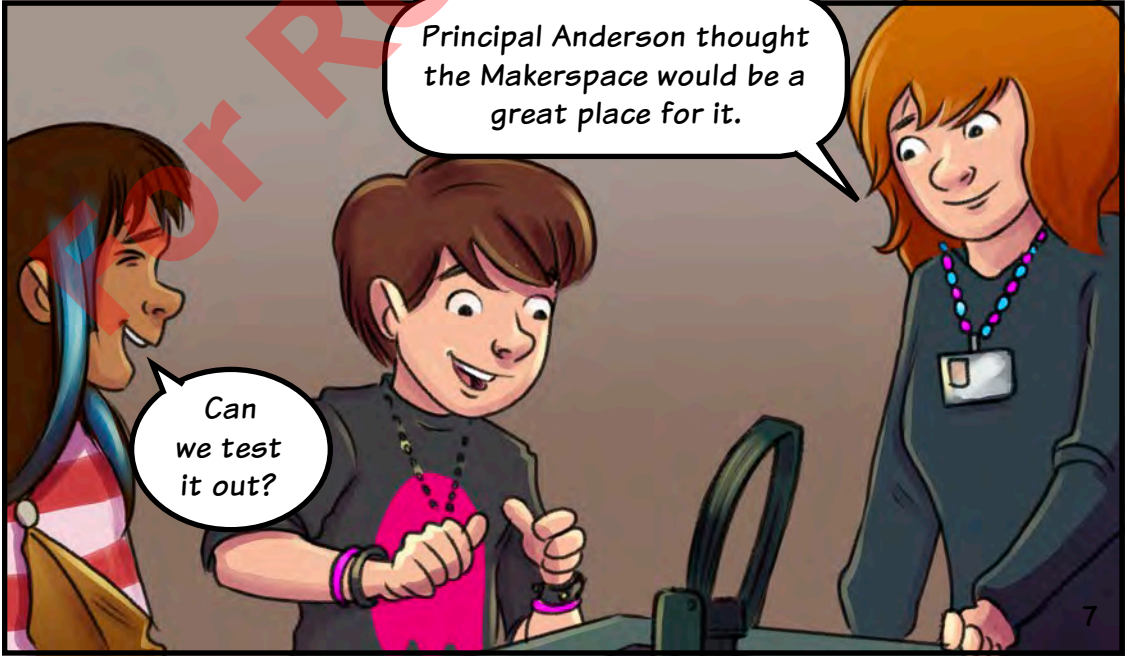
MS. GILLIAN SET UP THE MAKERSPACE FOR STUDENTS TO WORK TOGETHER ON PROJECTS. THE SPACE IS FULL OF SUPPLIES FOR CODING, EXPERIMENTING, BUILDING, AND INVENTING. IT IS THE ULTIMATE PLACE TO CREATE!



This is so cool, Ms. Gillian! When did we get a 3-D printer?



A local business just donated it to our school!



Principal Anderson thought the Makerspace would be a great place for it.



Can we test it out?



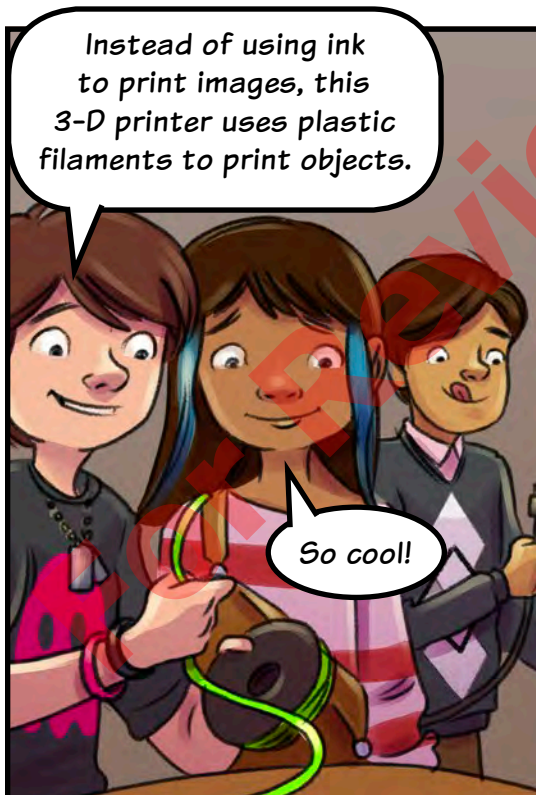
Sure. But first, I was hoping you could help me set it up.

I'm on it!

I'll help.



Eliza, please put these on the table while I find the instructions.

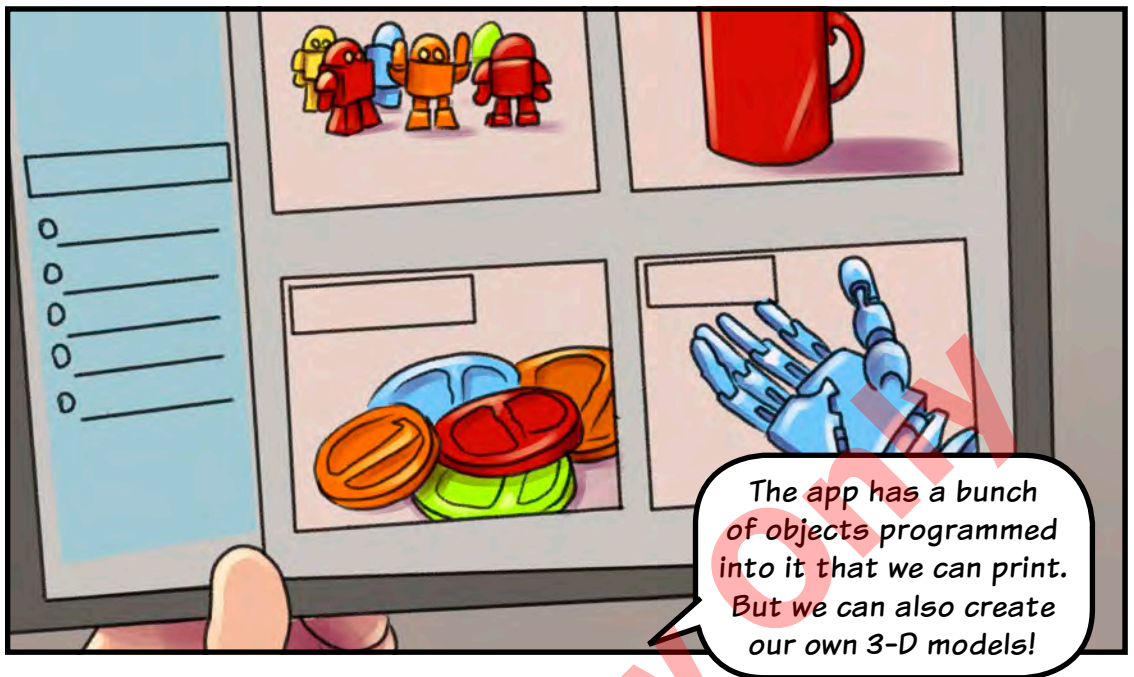


**3-D PRINTERS CAN ALSO USE FILAMENTS OF METAL, WOOD, AND WAX. THESE AND MANY OTHER MATERIALS ARE USED TO PRINT 3-D TOYS, CAR PARTS, AND EVEN HOUSES!**









The app has a bunch of objects programmed into it that we can print. But we can also create our own 3-D models!



Let's print the parts to a robot.

Or the pieces to a board game!

Or we could build a spaceship!

# CREATE YOUR OWN STORY!



Even if you do not have a 3-D printer in your school, you can still make your own characters. You can mold them out of modeling clay or draw them on paper. Once you have characters, you can create your own story!

YOU CAN THINK OF A STORY AS A SIMPLE EQUATION:

**PROTAGONIST + PROTAGONIST'S GOAL + ANTAGONIST = STORY**



- 1. CREATE YOUR PROTAGONIST, OR HERO.** Your protagonist can be anything you imagine: a person, an animal, or even a dancing pineapple! Think of the things this character likes, how the character *acts*, and whether this character has any special abilities. Then give your protagonist a name.
- 2. GIVE YOUR PROTAGONIST A GOAL.** In every story, each character has a goal. It can be anything from finding a hidden treasure to defeating a villain to saving the world.
- 3. CREATE AN ANTAGONIST, OR VILLAIN.** An antagonist is anyone or anything that tries to stop your protagonist from reaching a goal. Think of the things this character likes, how the character *acts*, and whether this character has any special abilities. Then give your antagonist a name.
- 4. START WRITING YOUR STORY!** How does your protagonist set out to achieve the goal you described? When the antagonist gets in the way, what happens? How does your protagonist finally achieve the goal?