



Activity Guide

STEM & Literacy Ideas for
Classrooms, Libraries, &
Makerspaces

ABOUT MADE BY MAXINE



Meet Maxine, an inspiring young maker who knows that with enough effort and imagination (and mistakes), it's possible to invent anything.

Maxine loves making new things from old things. She loves tinkering until she has solved a problem. She also loves her pet goldfish, Milton. So when it's time for her school's pet parade, she's determined to create something that will allow Milton to march with the other animals. Finally, after trying, trying, and trying again, she discovers just the right combination of recycled odds and ends to create a fun, functional-and absolutely fabulous-solution to her predicament.

School Library Journal

"A fun and uplifting picture book for all libraries that encourages children to engage with STEM concepts."

Colorado Parent – Books to Inspire Young Inventors

"This is an enchanting story of a tenacious and unusual little girl who is determined to make some sort of contraption that will allow her pet fish Milton to partake in her school's pet parade."

A Mighty Girl's 2018 Book of the Year

"This uplifting picture book with a resilient narrator is sure to please young tinkerers."

Kirkus Reviews

"Her ultimate creation adds more fun to the story, as do Spiro's many humorous asides and Hatam's joyful, expressive illustrations. Another worthy book for the girl-inventor shelf."

"If I can dream it, I can make it!"

DISCUSSION POINTS

Before Reading

- Make a prediction about the story. Did you use the text or the cover illustrations to make the prediction?
- Discuss the roles of the author and illustrator.
- Discuss the text type. Review the differences between literature and informational.



Common Core Standards These activities correlate to ELA Reading Standards for Literature: Craft and Structure RL.K.6 and RL.K-1.5.

During Reading

- Discuss potential meanings of new vocabulary words (i.e. tinkered, repurposed).
- Focus on the illustrations and discuss how they contribute to the storyline (i.e. how they show Maxine's feelings and how she continues to try again after failing).
- Discuss the point of view from which the story is being told. How do you know?



Common Core Standards These activities correlate to ELA Reading Standards for Literature: Integration of Knowledge and Ideas RL.K-3.7, Literature: Craft and Structure RL.1-2.6 and RL.3.4, and Language: Vocabulary Acquisition and Use L.K-3.4.

After Reading

- Discuss how Maxine's feelings changed throughout the story. What happened in the story that made her feel that way? How did her feelings change?
- What do you think is the central message that the author is trying to communicate?
- Discuss Maxine's character traits. What do you know about her? What happened in the story to tell you this?
- Retell the story to a classmate using the key details.
- Create a story map of the events in the book.

Common Core Standards These activities correlate to ELA Reading Standards for Literature: Key Ideas and Details RL.K-3.1, RL.K-3.2, and RL.K-3.3.

LITERACY ACTIVITIES

Grammar Review nouns, verbs, and adjectives with the class. Engage the class in a grammar hunt for them in the story. Depending on student readiness, pick one to focus on at a time. Complete the activity whole class using a document camera or copy specific pages for students to use independently or in groups. Extend the activity by using the words they found in new sentences. Students can also draw a picture to illustrate the meaning of the words.

Language The prefix “re” appears numerous times throughout the story as Maxine is working hard. Point out some of these words as you read, and engage students in a discussion about what “re” might mean. Extend the activity by creating a list of other words students know that use the same prefix. Activity options: Using a word (or more) from the list, draw a picture, write a sentence, or write a short story or paragraph to demonstrate understanding of the prefix.

Opinion Writing Introduce the concept of opinion writing and have students write an opinion piece in response to the story. Prompt ideas: What was your favorite moment? Who was your favorite character? Did you like the story? Is Maxine a good role model?

Narrative Writing Using *Made by Maxine* as a mentor text, have students write a fictional narrative that follows a similar storyline. Their character should be faced with a problem and have to go through steps to solve it.

Narrative Writing Discuss the meaning of *persistence*. Ask students to write about a time they faced a problem and how they solved it. Did they succeed the first time, or did they try multiple solutions? How did they feel when they succeeded?

SEL Connection: Growth Mindset

Maxine failed at first while trying to build a pet float, but she persevered and tried again until she succeeded! Engage students in discussing and writing about a time when they failed and tried again!



Common Core Standards These literacy activities correlate to ELA Standards for Writing: Text Types and Purposes W.K-3.1 and W.K-3.3, Language: Vocabulary Acquisition and Use L.1-3.4, and Reading Standards for Foundational Skills: Phonics and Word Recognition RF.3.3.A.

STEM IDEAS

SCIENCE - TECHNOLOGY - ENGINEERING - MATH

M **Graphing** Take a class survey of favorite pets. Have students help organize the data in a grade-appropriate graph. Engage students in a discussion to ask and answer questions regarding the graph and data.

S **Environment** Discuss the importance of recycling and the impact on the Earth. Discuss how Maxine reuses materials in her projects. What objects can they reuse instead of throwing out?

S **Repurposing** Maxine creates new inventions from old things in her house. Review the benefits of reusing objects instead of throwing them out. Provide an assortment of items from the recycling bin (egg cartons, toilet paper tubes, etc.) and have students use them to create something new.

T **Parade Route** Design a parade route for the pets and program a bot to follow the route.



E **Build a Pet Float** Students can work independently or in groups to design and build a float for the pet parade using materials from around the classroom. Other suggested materials include boxes, tape, and string.

M **Geometry** Use pattern blocks to design a pet, float or other item from the story. Students can identify the different shapes they are using to create their design.

E **Fish Feeder** Have students design and build their own version of Maxine's fish feeder using a variety of materials.

M **Problem Solving** Use characters from the story to create word problems. Students can present to the class for their classmates to solve.

S **Sound** Maxine made music from objects she found around the house. What objects in the classroom can students use to make sounds? Can you use different objects to build an instrument? Experiment with different objects to discover different sounds they can make. To extend, discuss how vibrations cause sound and introduce the terms pitch and volume.

E **Build a Pet Home** Have students work independently or in groups to build a home for a class pet. Students can use materials from the classroom. Other suggested materials include boxes, tape, and string.

Extending STEM Ask students to evaluate each other's designs. Which perform the task better? How so? How can students improve on their own designs?



Standards Connection See the standards to which these activities connect on the following page.

MAKERSPACE CHALLENGES

NO TECH - LOW TECH - HIGH TECH

N Repurposing Provide an assortment of items from the recycling bin and have students use them to create something new.
Material Ideas: egg cartons, paper towel rolls, tape, string, boxes, paper, craft sticks

N Build a Pet Home Have students work independently or in groups to build a home for a class pet.
Material Ideas: classroom objects, objects egg cartons, paper towel rolls, tape, string, boxes, Legos

N Build an Instrument Have students work independently or in groups to build an instrument.
Material Ideas: tissue boxes, rubber bands, different sized containers, rice or beads, plastic cups, craft sticks

L Recycled Paper Reuse old items like Maxine and create paper using egg cartons or old paper.
Step 1: Tear paper into small pieces. Place in blender with warm water. Blend until mixture becomes a smooth pulp.
Step 2: Create a square mold by duct taping or stapling the screen or mesh to the old picture frame.
Step 3: Pour the mixture into the bin or pan. Dip the mold into the mixture so that the mixture covers the screen.
Step 4: Use the cloth or sponge to get rid of excess water. Remove the paper from the mold by flipping the mold over;
Step 5: Leave paper to dry for at least a day.
Repeat steps 3 and 4 to make additional pieces of paper.
Materials: old egg cartons or paper (not glossy), duct tape or staples, blender, old picture frame, mesh or screen, cloth or sponge, water, and a bin or pan to hold the water.

Directions from Earth911.com

H Circuits Maxine used circuits to create an instrument. You can make a circuit too!
Suggested Materials: Squishy Circuits, Snap Circuits

H Parade Route Design a parade route for the pets and program a bot to follow the route.
Suggested Materials: A programmable robot (ideas: Bee Bot, Wonder Workshop Dash), blocks, Legos



Common Core Standards These STEM and Makerspace activities correlate to Math Standards for Geometry: Reason with Shapes and Their Attributes 1.GA.3 and Measurement and Data: Represent and Interpret Data 1.MD.C.4, 2.MD.D.10, and 3.MD.B.3.

Next Generation Science Standards These STEM and Makerspace activities correlate to Physical Science: Waves: Light and Sound 1-PS4-1, Engineering and Design K-2-ETS1-1 and K-2-ETS1-2, Earth Science: Earth and Human Activity K-ESS3-3.

MAKERSPACE MATERIAL IDEAS

Found Around the Home or Classroom

Aluminum Foil
Cardboard
Craft Sticks
Empty Paper Towel Rolls
Empty Toilet Paper Rolls
Felt Scraps
Glue
Index Cards
Paper
Paper Clips
Paper Cups
Plastic Bags
Rubber Bands
Scissors
String
Tape
Tissue Boxes

Lower Cost

Base Ten Blocks
Brain Flakes
Dominoes
Foam Shapes
Keva Planks
K'Nex
Legos
Lego Baseplates
Play-Doh
Plus Plus Blocks
ScooterBots
Snap Cubes
Wood Blocks

Higher Cost Investments

Bee Bot
iPads/Tablets
Makey Makey
Ozobot
Snap Circuits
Squishy Circuits
Wonder Workshop Dash

