

MATHEMATICAL STORY PLANNING TOOL

A **mathematical story** is a framework for thinking about lessons, where one can consider the characters, plot, and setting within the context of our math classrooms. The characters are the mathematical objects, and the setting is where we operate on those mathematical objects (for example, on a graph, algebraically on a piece of paper, a table, etc.). Students and teachers can perform actions on these mathematical objects to arrive at new understandings. The plot is how these actions unfold in the lesson and what understandings or insights are reached through these developments. Successful stories are designed to provoke particular aesthetic reactions that spur student curiosity, captivate students with complex mathematical content, and compel students to engage and persevere.

Topic:	
Objective/Moral of the Story:	Subject/Level:
Aesthetic:	
Characters: What mathematical objects are important to this story?	Setting: Where does the math happen?
Plot Arc (one model): How will the mathematical story unfold? How do I expect that to impact the student experiences?	
<p>The diagram illustrates a plot arc as a series of connected line segments. It begins with a horizontal line labeled 'Hook'. This line rises to a peak, forming a triangle with the rising slope labeled 'Rising Action'. From the peak, the line descends to a lower horizontal level, with the descending slope labeled 'Unfolding Action'. Finally, it ends with a horizontal line labeled 'Resolution'.</p>	
<small>Mathematics Lessons as Stories: Engaging Learners with Plot Twists</small>	
<small>Laura Ryan and Leslie Dietiker, Boston University</small>	

Questions to consider while designing:

- What prior knowledge do students need to access this lesson?
- How will I facilitate the aesthetic responses from my students? During which moments?
- What are the transitions between the moments? How does each part lead to the next? What will progress the story?
- How does my classroom culture facilitate this story?

Draw a storyboard that depicts what you envision you and your students will do during the lesson.
