

Great Minds
100 M Street SE, Suite 500
Washington, DC 20003

Phone: 844.853.1010
Email: info@eureka-math.org
Web: eureka-math.org
Twitter: [eureka_math](https://twitter.com/eureka_math)

**EUREKA
MATH™**

Grade 7 Pacing and Preparation Guide

Grade 7 Pacing and Preparation Guide

This guide includes three components. The first section, *Preparing to Teach a Module*, outlines a process for understanding the instructional sequences of the module—a vital foundation for making decisions about pacing. Next, *Preparing to Teach a Lesson* outlines a process for customizing a lesson to fit the daily time constraints and unique needs of the students.

The final section of this guide, *Suggestions for Consolidation or Omissions*, is intended to provide guidance in the event that educators need to reduce the number of days in the 180-day curriculum. Keep in mind that Grade 7 is comprised of 139 daily lessons. The remaining 41 instructional days are devoted to the 12 assessments. For each assessment, time is allotted to administer the assessment, to return and review the assessment, and for remediation or enrichment. The embedded 17 remediation/enrichment days are intended to provide some built-in flexibility for teachers. However, in the event that even more flexibility is needed, these suggestions for consolidation or omissions will free up additional days. These suggestions should not be viewed as a mandate to omit or consolidate lessons, but as guidance for how to do so wisely when the need arises.

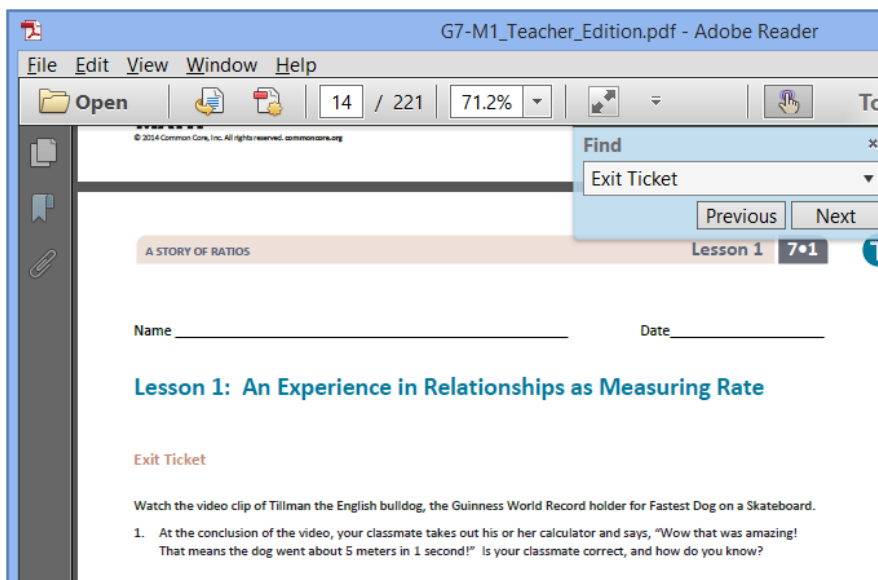
Preparing to Teach a Module

Preparation of lessons will be more effective and efficient if there has been an adequate analysis of the module first. Each module in *A Story of Ratios* can be compared to a chapter in a book. How is the module moving the plot, the mathematics, forward? What new learning is taking place? How are the topics and objectives building on one another? The following is a suggested process for preparing to teach a module.

Step 1: Get a preview of the plot.

- A: Read the Table of Contents. At a high level, what is the plot of the module? How does the story develop across the topics?
- B: Preview the module's Exit Tickets to see the trajectory of the module's mathematics and the nature of the work students are expected to be able to do.

Note: When studying a PDF file, enter "Exit Ticket" into the search feature to navigate from one Exit Ticket to the next.



Step 2: Dig into the details.

- A: Dig into a careful read of the Module Overview. While reading the narrative, liberally reference the lessons and Topic Overviews to clarify the meaning of the text—the lessons demonstrate the strategies, show how to use the models, clarify vocabulary, and build understanding of concepts.

- B: Having thoroughly investigated the Module Overview, read through the Student Outcomes of each lesson (in order) to further discern the plot of the module. How do the topics flow and tell a coherent story? How do the outcomes move students to new understandings?

Step 3: Summarize the story.

Complete the Mid- and End-of-Module Assessments. Use the strategies and models presented in the module to explain the thinking involved. Again, liberally reference the lessons to anticipate how students who are learning with the curriculum might respond.

Preparing to Teach a Lesson

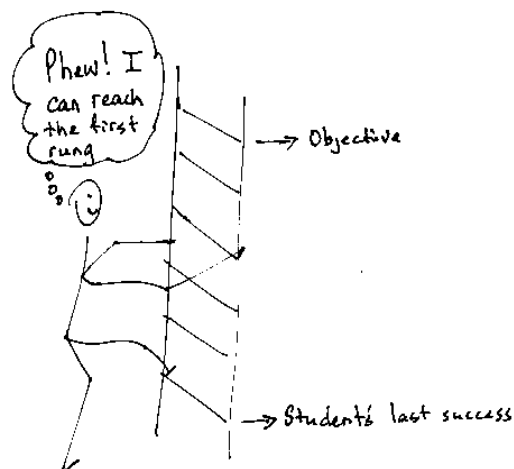
A three-step process is suggested to prepare a lesson. It is understood that at times teachers may need to make adjustments (customizations) to lessons to fit the time constraints and unique needs of their students. The recommended planning process is outlined below. Note: The ladder of Step 2 is a metaphor for the teaching sequence. The sequence can be seen at the macro level in the role that this lesson plays in the overall story, but also at the lesson level, where each rung in the ladder represents the next step in understanding or skill needed to reach the objective. To reach the objective, or the top of the ladder, all students must be able to access the first rung and each successive rung.

Step 1: Discern the plot.

- A: Briefly review the module’s Table of Contents, recalling the overall story of the module and analyzing the role of this lesson in the module.
- B: Read the Topic Overview related to the lesson, and then review the Student Outcome(s) and Exit Ticket of each lesson in the topic.
- C: Review the assessment following the topic, keeping in mind that assessments can be found midway through the module and at the end of the module.

Step 2: Find the ladder.

- A: Work through the lesson, answering and completing each question, example, exercise, and challenge.
- B: Analyze and write notes on the new complexities or new concepts introduced with each question or problem posed; these notes on the sequence of new complexities and concepts are the rungs of the ladder.
- C: Anticipate where students might struggle, and write a note about the potential cause of the struggle.
- D: Answer the Closing questions, always anticipating how students will respond.



Step 3: Hone the lesson.

Lessons may need to be customized if the class period is not long enough to do all of what is presented and/or if students lack prerequisite skills and understanding to move through the entire lesson in the time allotted. A suggestion for customizing the lesson is to first decide upon and designate each question, example, exercise, or challenge as either “Must Do” or “Could Do.”

- A: Select “Must Do” dialogue, questions, and problems that meet the Student Outcome(s) while still providing a coherent experience for students; reference the ladder. The expectation should be that the majority of the class will be able to complete the “Must Do” portions of the lesson within the allocated time. While choosing the “Must Do” portion of the lesson, keep in mind the need for a balance of dialogue and conceptual questioning, application problems, and abstract problems, and a balance between students using pictorial/graphical representations and abstract representations. Highlight dialogue to be included in the delivery of instruction so that students have a chance to articulate and consolidate understanding as they move through the lesson.
- B: “Must Do” portions might also include remedial work as necessary for the whole class, a small group, or individual students. Depending on the anticipated difficulties, the remedial work might take on different forms as suggested in the chart below.

Anticipated Difficulty	“Must Do” Customization Suggestion
The first question of the lesson is too challenging.	Write a short sequence of problems on the board that provides a ladder to Problem 1. Direct students to complete those first problems to empower them to begin the lesson.
There is too big of a jump in complexity between two problems.	Provide a problem or set of problems that bridge student understanding from one problem to the next.
Students lack fluency or foundational skills necessary for the lesson.	Before beginning the lesson, do a quick, engaging fluency exercise, such as a Rapid White Board Exchange or Sprint ¹ . Before beginning any fluency activity for the first time, assess that students have conceptual understanding of the problems in the set and that they are poised for success with the easiest problem in the set.
More work is needed at the concrete or pictorial level.	Provide manipulatives or the opportunity to draw solution strategies.
More work is needed at the abstract level.	Add a White Board Exchange of abstract problems to be completed toward the end of the lesson.

- C: “Could Do” problems are for students who work with greater fluency and understanding and can, therefore, complete more work within a given time frame.
- D: At times, a particularly complex problem might be designated as a “Challenge!” problem to provide to advanced students. Consider creating the opportunity for students to share their “Challenge!”

¹ Look for fluency suggestions at www.eureka-math.org.

solutions with the class at a weekly session or on video.

- E: If the lesson is customized, be sure to carefully select Closing questions that reflect such decisions and adjust the Exit Ticket if necessary.

Suggestions for Consolidation or Omissions

Module 1

If pacing is a challenge, consider the following modifications and omissions.

Lessons 3 and 4 both have the same Student Outcomes and can be consolidated. In order for students to achieve the Student Outcomes, lead students through the Example in Lesson 3 and the Example in Lesson 4. Students then complete the Exercises and Exit Ticket in Lesson 4.

Lesson 12 can be omitted because it is a continuation of Lesson 11, which provides more options on how to solve unit rate problems and encourages students to share their thinking with the class. Also, in Lesson 11, students use unit rates to make informed decisions.

Consider omitting Lesson 21 because the lesson uses a dream classroom to explain the idea of changing scales. However, each students' dream classroom will have different items, so the instruction of changing scales would have to be personalized for individual students. Lesson 22 has the same Student Outcomes as Lesson 21 but provides the same Examples and Exercises for every student, which makes instruction to the whole class possible.

Module 2

If pacing is a challenge, consider the following modifications and omissions.

Consider omitting Lesson 9. Lessons 8 and 9 have the same Student Outcomes, but Lesson 8 provides more description and teacher instruction as to why the methods of simplifying expressions work.

Lessons 22 and 23 can be consolidated because they both focus on writing and solving equations. To ensure that students are successful with this topic, lead students through Examples 1 and 2 in Lesson 22, and then have students complete Exercise 2 and the Exit Ticket from Lesson 23.

Module 3

If pacing is a challenge, consider the following modifications and omissions.

Consider omitting Lesson 3. Lesson 3 provides an introduction to the distributive property; however, this topic is continued in Lesson 4 and was introduced in Grade 6 Module 2 Lesson 10. Lesson 4, however, must not be omitted because students use the distributive property to write equivalent expressions with negative

values. The introduction of this topic in Grade 6 and Lesson 3 of this module does not include negative values.

Lessons 10 and 11 have the same Student Outcomes and can be consolidated. It is necessary to cover the Opening of Lesson 10 to introduce the angle relationships. After the Opening, lead students through Example 2 and Exercises 3 and 4 from Lesson 10. Students can then complete Exercise 1, Example 4, and the Exit Ticket from Lesson 11. Note that this topic is also covered in Module 6 Topic A.

Surface area was introduced in Grade 6 Module 5 Topic D and again in Lessons 21 and 22 of this module; therefore, these two lessons can be consolidated. Lead students through Example 1 of Lesson 21 to introduce a new formula that can be used to determine the surface area of a variety of right prisms. The first two Examples of Lesson 22 should also be presented. The Exit Ticket from Lesson 22 should be presented to conclude the lesson. Note that surface area is also covered in Module 6 Topic D.

Lessons 23 and 24 both ask students to calculate the volume of right prisms. This topic is also covered in Module 6 Topic E; therefore, Lessons 23 and 24 can be consolidated. In order for students to meet the Student Outcomes for both lessons, lead students through Example 1 from Lesson 23 and Examples 1 and 3 from Lesson 24. Students can then complete the Exercise and Exit Ticket in Lesson 23. The Exit Ticket from Lesson 24 can be used as the formative assessment for these two lessons.

Lessons 25 and 26 can also be consolidated as they both combine volume and surface area. Students can complete Exercise 1 from Lesson 25. Lead students through Example 1 in Lesson 26, and then allow students to complete Exercise 1 from the same lesson. Combining these problems with the Exit Ticket from Lesson 26 will help students gain the necessary knowledge of both volume and surface area and prepare them for the more complex problems found in Module 6.

Module 4

If pacing is a challenge, consider the following modifications and omissions.

Lesson 6 can be omitted if students are able to demonstrate proficiency with the first five lessons of the module. This lesson combines the different types of percent problems introduced in the first five lessons. Therefore, it is not necessary to complete this lesson if students already have a good understanding of percent problems.

Module 5

If pacing is a challenge, consider the following modifications and omissions.

Lessons 10 and 11 can be consolidated because they both discuss conducting simulations to estimate probabilities of events. In order for students to achieve the Student Outcomes, lead students through Examples 1 and 2 from Lesson 10 and Example 4 from Lesson 11. Students can then complete Exercises 1–5 in Lesson 10 and Exercises 1–4 from Lesson 11. Although the two Exit Tickets are very similar, the Exit Ticket from Lesson 11 provides a little more complexity than the one found in Lesson 10.

Lesson 23 can be omitted if students are successful with Lesson 22 and understand how to determine whether the difference between the means of two different populations is meaningful or not.

Module 6

If pacing is a challenge, consider the following modifications and omissions.

Lessons 2 and 3 of this module can be consolidated or omitted depending on the level of proficiency students demonstrated in Module 3 Lessons 10 and 11. These lessons use the same angle relationships introduced in Module 3 but also include supplementary and complementary angles, which were introduced in Lesson 1. Choose problems throughout these two lessons that students need to practice more based on students' strengths and weaknesses from previous lessons.

Lesson 24 can be omitted, or selected problems can be chosen for an extension for advanced students. The three-dimensional figures presented throughout Lesson 23 cover the different types of figures outlined in the standards for surface area. Therefore, if students are successful with Lesson 23, completing Lesson 24 is unnecessary.