



GRADE 7 MATH:
PROPORTIONAL REASONING
SUPPORTS FOR ENGLISH
LANGUAGE LEARNERS

GRADE 7 MATH: PROPORTIONAL REASONING

Supports for ELLs

Title: Proportional Reasoning	Grade: 7
Linguistic Access: <p>In these supportive materials, a distinction between the vocabulary and the language functions is needed to expand understanding and provide multiple representations of the math content. Both need to be clarified to ensure comprehension of the performance tasks. This can be done by introducing the most essential vocabulary and language functions before these tasks. The following vocabulary and language functions are suggested:</p> <p><u>Vocabulary Words/Phrases:</u></p> <p>Tier I (non-academic language): race (as in competition), drove, cross-country, gas (gasoline), grid, actual (false cognate)</p> <p>Tier II (general academic language): diagram, context, represent, as noted below</p> <p>Tier III (math technical language and concepts that must be carefully developed): rate, unit rate, centimeters (cm), patterns, miles (mi), gallons, line segment, average, proportional relationships, equation, coordinate pairs, slope.</p> <p><u>Language Functions:</u> explain, identify, describe, compute, assume</p> <p><u>Note:</u> Because some of the words used in the Arcs problems (see pages 64-71) might present difficulties for English Language Learners (ELLs), especially for newcomers, an annotated definition of key words (with visual representation when possible) in the margin of the page will be useful. Such challenging vocabulary can include the following: custom-made, interlocking gears, bunches, outlets (business).</p>	
Content Access: <ul style="list-style-type: none">• For this anchoring, a clear understanding of ratio and proportion is required.• In question 1 on page 5, the student is expected to state a unit rate for the situation represented by the graph. The connection between unit rate as used in this context and a ratio should be made explicit for ELLs.• In question 2 on page 6, the concept of a scale map may be a barrier. Clarify what is meant by a scale in a map and how to apply it to find relative distances.• In question 3b on page 7, students are expected to relate the concept of a slope of a line to the	

graph. The relationship between the slope and speed may not be obvious to all students and some clarifications may be necessary.

Scaffolds and Resources:

- As with all the Arcs, it is recommended that teachers use think-alouds so that ELLs verbalize their thinking as they solve the problems.
- Teachers should give appropriate wait time for ELLs to respond.
- Teachers should gather ideas and strategies from the students on how to tackle these problems and make a list of them available to the class.
- For the Arcs tasks, the technique of reciprocal teaching can be very useful for ELLs because involves four cognitive strategies: questioning, summarizing, clarifying, and predicting during the reading of the math text.