

COMMON CORE-ALIGNED TASK
WITH INSTRUCTIONAL SUPPORTS

Mathematics



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:

A. Performance Task Section

In this summative assessment, a distinction between the vocabulary and the language functions is needed to provide entry points to the math content. Both need to be clarified to ensure comprehension of the tasks. This can be done by introducing the most essential vocabulary and language functions before beginning the assessment. The following vocabulary/language functions are suggested:

Vocabulary words:

Tier I (Nonacademic language): race (as in a competition), drove, cross-country, gas (gasoline), grid, actual (false cognate)

Tier II (General academic language): diagram, context, represent, “as noted below”

Tier III (Math technical language and concepts that the students must be familiar with prior to assessment): rate, unit rate, centimeters (cm), patterns, miles (mi), gallons, line segment, average, proportional relationships, equation, coordinate pairs, slope.

Language Functions: explain, identify, describe, compute, assume

B. Instructional Support Section

Because some of the words used in the Arcs problems might present difficulties for 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 words can include the following: custom-made, interlocking gears, bunches, outlets (business).

Content Access:

For this performance assessment, a clear understanding of ratio and proportion is required.

In question 1a, 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 can be made explicit for ELLs.

In question 2, 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, 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:

- On page 3 of the document, the performance task “Proportional Reasoning” is a summative assessment and no scaffolds are appropriate at this time.
- On page 42, Instructional Supports, there are a series of optional math problems (Arcs) that can be a resource for ELLs to develop a conceptual understanding of proportionality. The Frayer Model can be used to elicit from the student what they know about ratio and proportion prior to engaging in these tasks. Another strategy for scaffolding the concept of ratio and proportion can be the use of visuals, for example, the Turning Wheel problem (page 44).
- As with all the Arcs, it is recommended that teachers use think-alouds to verbalize their thinking as they solve the problems.
- Teachers should gather from the class and make available ideas about how to tackle these problems (make students’ thinking available).
- For the Arcs Tasks, the technique of reciprocal teaching can be very useful for ELLs because it involves four cognitive strategies: questioning, summarizing, clarifying, and predicting during the reading of the math text.