Mini-Map for M.EE.7.RP.1-3

Subject: Mathematics
Ratios and Proportional Relationships (RP)
Grade: 7

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.7.RP.1-3 Use a ratio to model or describe a relationship.	**M.7.RP.1** Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units. **M.7.RP.2** Recognize and represent proportional relationships between quantities. **M.7.RP.3** Use proportional relationships to solve multistep ratio and percent problems.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Communicate understanding of "separateness" by recognizing objects that are not joined together. Communicate understanding of set by recognizing a group of objects sharing an attribute. Communicate understanding of a subset by recognizing a subset as a set or group of objects within a larger set that share an attribute.	Divide familiar shapes, such as circles, squares, and/or rectangles, into two or more equal parts. Demonstrate understanding of a unit fraction (e.g., 1/4) as the quantity formed by one part when a whole is partitioned into *n* (e.g., 4) equal parts. Recognize a fraction as a number expressed as a quotient of two integers in the form	Communicate understanding that a ratio (e.g., 5:1) represents the relationship between two quantities (i.e., 5 of object *a* for every 1 object *b*). When shown two groups of objects, one group with one object and another group with multiple objects (e.g., 4), recognize that there are four times as many objects in the second	When shown two groups of multiple objects (e.g., one group with two objects and another group with three objects), recognize that for every two objects in the first group there are three objects in the second group. When shown two groups of multiple objects, represent a many-to-many ratio of the parts as 2:3.	Communicate understanding that rates (i.e., *a*/*b*) can be expressed as ratios (i.e., *a*:*b*). For example, instructions for a craft that uses 2/3 piece of paper for each drawing can be expressed in the ratio of pieces of paper to number of drawings as 2:3.

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
	a/*b*, with *b* not equal to zero.	group as in the first group.		

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

In order to understand ratios, students need to gain experience with creating sets. Educators can provide students with opportunities to take a set of objects (e.g., tiles, linking cubes, buttons) and separate them based on a given characteristic (e.g., shape, color, size) into two distinct sets. Then, separate the objects again based on another characteristic.

How is the Distal Precursor related to the Target?

As students become more adept at tracking discrete objects, they will begin working on one-to-one distribution of objects to person, objects to objects, and objects to available space (e.g., giving each person in the group a pencil; given four counters, they would line up four more counters in front of or on top of the first set; given three chairs at a table, the student would place a cup on the table for each available chair). As students understanding of one-to-one distribution develops, provide students many opportunities to recognize equivalence in sets with same items and then sets with differing items. As students work on all these skills and concepts, continue to draw their attention to parts and wholes.

Instructional Resources

Released Testlets
See the Guide to Practice Activities and Released Testlets.
Using Untested (UN) Nodes
See the document Using Mini-Maps to Plan Instruction.

[Link to Text-Only Map]

M.EE.7.RP.1-3 Use a ratio to model or describe a relationship.