Mini-Map for M.EE.6.NS.3

Subject: Mathematics
The Number System (NS)
Grade: 6

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.6.NS.3 Solve two-factor multiplication problems with products up to 50 using concrete objects and/or a calculator.	**M.6.NS.3** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

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.	Represent repeated addition problems in the form of an equation, including displaying the addition of the same numeral more than twice (e.g., 3 + 3 + 3 + 3) and finding the sum by adding the same number a certain number of times (e.g., 3 + 3 + 3 + 3 = 12). Communicate understanding of repeated addition as adding the same addend a given number of times (e.g., in the repeated addition equation 3 + 3 + 3 + 3 =	Demonstrate multiplication by combining multiple sets containing the same number of objects. Communicate understanding that the number of sets times the number of objects in each set equals the total number of objects.	Multiply numbers up to 12 by factors 1 to 5, using manipulatives or repeated addition (e.g., multiply 3 x 5 by adding 5 + 5 + 5 = 15).	Divide a number (up to 12) by one, two, three, four, or five, and determine the quotient using diagrams or manipulatives. Communicate understanding that the number of groups times the number of objects in each group equals the total number of objects (multiplication) and that the total number of objects divided by the number of groups equals the number of objects in each group (division).

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Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
	12, the addend 3 is added four times).			

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

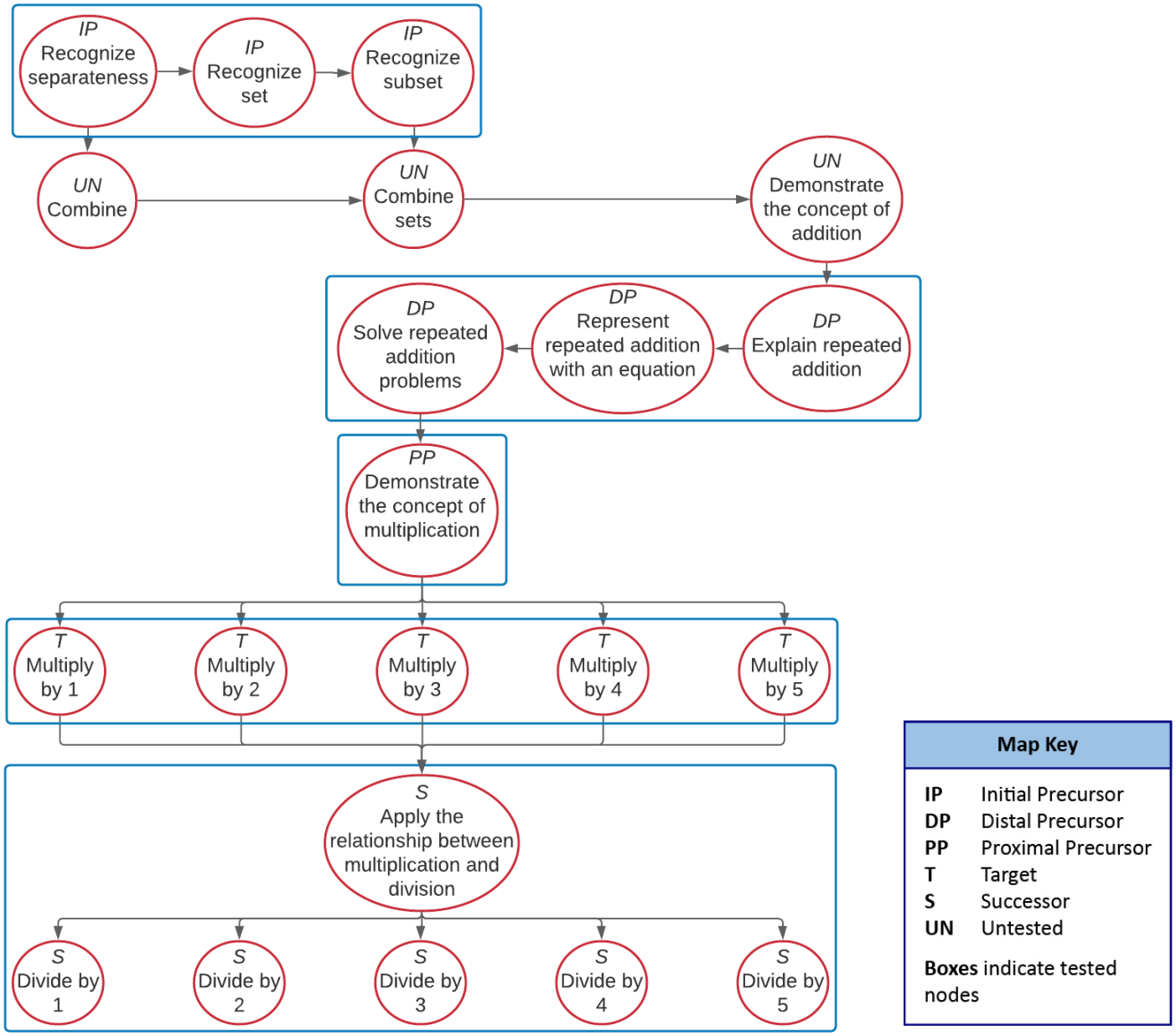
In order to solve multiplication problems, students must learn to organize items into groups/sets based on a common characteristic such as size, color, shape, or texture. Students learn how to sort items by separating a group of items into two groups (e.g., music I like/music I don't like; red fidgets/black fidgets). As students gain comfort sorting items into sets, they are encouraged to communicate their thought process by identifying and naming the characteristic that determines the set (e.g., color, length). Activities that require students to engage actively with the items will foster understanding of set, subsets, and separateness.

How is the Distal Precursor related to the Target?

As students' understanding of labeling and counting sets develops, they will begin working on adding items to a set and combining sets to create a new set. Additionally, students will work on developing an understanding of equal shares by actively participating in one-to-one distribution of objects to person, objects to objects, and objects to available space (e.g., giving each person in the group two pencils; 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 learn to work with sets and connect their understanding of equal shares to sets, educators will provide students experience with combining multiple sets (e.g., 3 sets with 4 counters each) and represent the problem (e.g., 4 + 4 + 4 = ?). Students will also learn to represent the problem in writing (e.g., the student is shown 4 equal sets each with 2 counters. The student counts the first set and writes a 2 or indicates 2, then writes or indicates the plus sign. The student repeats for all 4 sets and then indicates the equal sign and solves the problem.).

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

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