



Mini-Map for M.EE.4.OA.1-2

Subject: Mathematics

Operations and Algebraic Thinking (OA)

Grade: 4

Learning Outcome

DLM Essential Element	Grade-Level Standard
<p>M.EE.4.OA.1-2 Demonstrate the connection between repeated addition and multiplication.</p>	<p>M.4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.</p> <p>M.4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.</p>

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
<p>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</p>	<p>Combine two or more sets of objects to create a new set. Combine two or more parts (e.g., toys, shapes) to form a new whole. Demonstrate an understanding of addition by combining the objects of two or more sets.</p>	<p>Use models, such as mathematical equations (e.g., $5 + 5 + 5 = 15$), sets of manipulatives, or number line diagrams to represent a repeated addition problem.</p>	<p>Demonstrate understanding of multiplication by combining multiple sets of the same quantity to find the total number of objects.</p>	<p>Multiply numbers up to 12 by factors 1 to 5, using manipulatives.</p>

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
subset as a set or group of objects within a larger set that share an attribute.				

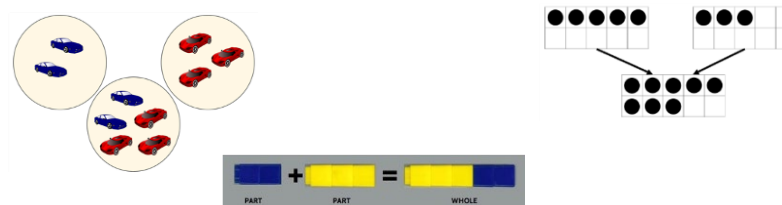
Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

In order to understand multiplication, students must learn to organize items into groups/sets based on a common characteristic such as size, color, shape, texture, or flavor. Students learn how to sort items by separating a group of items into two groups (e.g., vehicles and animals). As students gain comfort sorting items into sets, they are encouraged to use their language to convey their thought process by identifying and naming the characteristic that determines the set (e.g., wheels and legs). Activities that require students to engage actively with the items will foster the students' understanding of set, subsets, and separateness (e.g., the game "one of these things is not like the other;" highlighting one characteristic [e.g., color] in a group of similar items by which the items will be grouped; incorporating creating sets into everyday activities [e.g., during cleanup time, students place items into one of two bins based on a designated characteristic]).

How is the Distal Precursor related to the Target?

As students gain an understanding of how to group items into sets, educators will begin to help students connect their knowledge of sets with their knowledge of counting. Educators will provide multiple experiences counting sets and combining sets using multiple models (see below for examples). Educators also need to introduce the concept of equal sets using the students' background knowledge of same and different.



Instructional Resources

Released Testlets

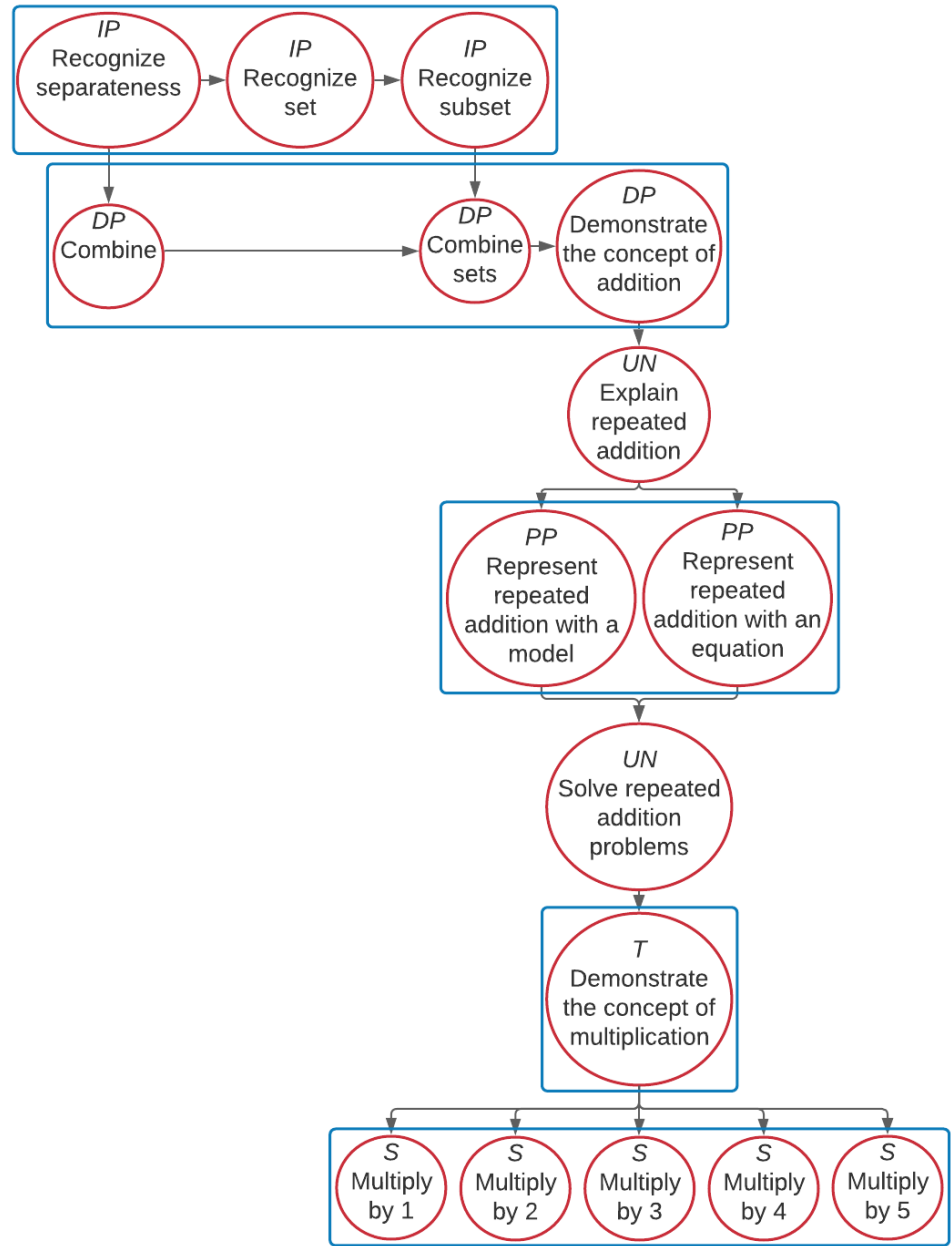
See the [Guide to Practice Activities and Released Testlets](#).

Using Untested (UN) Nodes

See the document [Using Mini-Maps to Plan Instruction](#).

[Link to Text-Only Map](#)

M.EE.4.OA.1-2 Demonstrate the connection between repeated addition and multiplication.



Map Key	
IP	Initial Precursor
DP	Distal Precursor
PP	Proximal Precursor
T	Target
S	Successor
UN	Untested
Boxes indicate tested nodes	