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

Subject: Mathematics
Expressions and Equations (EE)
Grade: 7

Learning Outcome

DLM Essential Element	Grade-Level Standard
M.EE.7.EE.1 Use the properties of operations as strategies to demonstrate that expressions are equivalent.	**M.7.EE.1** Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Combine two or more sets of objects or numbers to form a new set. Divide a set of 10 or fewer objects into two or more distinct subsets (e.g., dividing a set containing 10 objects into two subsets containing 4 and 6 objects).	Demonstrate understanding that the sum or product of two numbers remains the same regardless of the order in which numerals are written (e.g., 3 + 4 = 4 + 3, 2 x 3 = 3 x 2) and that the sum or product of three or more numbers remains the same regardless of the grouping of the numbers [e.g., (2 + 3) + 5 = 2 + (3 + 5), 2 x (3 x 5) = (2 x 3) x 5].	Apply commutative (e.g., 3 + 4 = 4 + 3) and associative [e.g., (2 + 3) + 5 = 2 + (3 + 5)] properties of addition to add two or more numbers. Apply commutative (e.g., 3 × 4 = 4 × 3) and associative [e.g., (10 × 4) × 2 = 10 × (4 × 2)] properties of multiplication as strategies to multiply two or more numbers.	Recognize an expression equivalent to a given expression involving addition and subtraction operations by using commutative and associative properties of addition and multiplication {e.g., recognize [(3 + 4) - (5 x 6)] as an expression equivalent to [(4 + 3) - (6 x 5)]}.	Write two equivalent expressions that represent a given real-world problem. For example, "Joe has 5 books, John has 7 books, and Kayla has 8 books. How many books do they have altogether?" Two equivalent expressions that represent this word problem are (5 + 7) + 8 and (7 + 8) + 5.

Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

How is the Initial Precursor related to the Target?

In order to use properties of operations, students begin by counting small units, recognizing that two or more sets or groups of items exist. Work on this skill using a variety of sets. Help students recognize when items are grouped together into a set or separated out. As educators present a set, they label it (e.g., two balls, one marker, three CDs), count the items, label it again, and encourage students to use numerals to label and count the separate sets. The general goal is to explore how the set changes when items are separated out (partitioned) or combined.

How is the Distal Precursor related to the Target?

As students continue developing their understanding of how sets change, educators can use manipulatives to create sets that model the commutative and associative properties of addition and multiplication.

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.

M.EE.7.EE.1 Use the properties of operations as strategies to demonstrate that expressions are equivalent.

Map Key

IP	Initial Precursor
DP	Distal Precursor
PP	Proximal Precursor
T	Target
S	Successor
UN	Untested

Boxes indicate tested nodes

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