



## Mini-Map for M.EE.HS.A.SSE.3

Subject: Mathematics

Algebra—Seeing Structure in Expressions (A.SSE)

Grade: 9

### Learning Outcome

DLM Essential Element	Grade-Level Standard
<b>M.EE.HS.A.SSE.3</b> Solve simple algebraic equations with one variable using multiplication and division.	<b>M.A.SSE.3</b> Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

### Linkage Level Descriptions

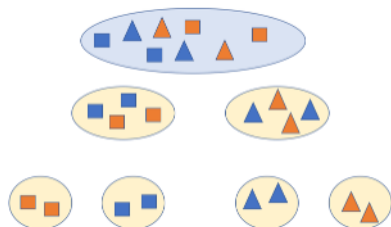
Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
Combine two or more sets of objects or numbers to form a new set. Divide a set of 10 or fewer objects into two or more distinct subsets (e.g., dividing a set containing 10 objects into two subsets containing 4 and 6 objects).	Demonstrate 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. Demonstrate understanding of division by splitting a set into an equal number of subsets and communicating the quotient as the number of equal subsets (e.g., a set consisting of 15	Determine the unknown factor or product in an equation involving multiplication (e.g., $6 \times 7 = ?$ ). Determine the unknown divisor, dividend, or quotient in an equation involving division (e.g., $24 \div 4 = ?$ ).	Solve linear equations with non-negative rational numbers involving addition or subtraction operations in one variable (e.g., $3.3 + x = 8.9$ ).	Solve linear inequalities in one variable (e.g., $2.5x > 100.25$ ).

Initial Precursor	Distal Precursor	Proximal Precursor	Target	Successor
	objects has three subsets, each containing 5 objects).			

## Initial Precursor and Distal Precursor Linkage Level Relationships to the Target

### *How is the Initial Precursor related to the Target?*

The knowledge needed to represent equations requires students to manipulate sets (i.e., combining and separating or partitioning). Provide students many 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 them again based on another characteristic. Guide students to notice how the set size changes each time you combine or partition the sets.



### *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 (e.g., giving each person in the group two pencils), objects to objects (e.g., given four counters, they would line up four more counters in front of or on top of the first set), and objects to available space (e.g., given three chairs at a table, the student places a cup on the table for each available chair). Students should also experience dividing a whole into equal shares (e.g., having 15 counters and 3 people in the group, give one to each person until there are no more, then count how many each person received).

## 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.HS.A.SSE.3** Solve simple algebraic equations with one variable using multiplication and division.

