**Grade-Level Standard**  | **DLM Essential Element**  | **Linkage Levels**  
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M.N-CN.2.a  
Use the relation \( i^2 = -1 \) and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers  | M.EE.N-CN.2.a  
Use the commutative, associative, and distributive properties to add, subtract, and multiply whole numbers  | **Initial Precursor**  
- Recognize separateness  
- Recognize set  
- Recognize subset  
**Distal Precursor**  
- Combine sets  
- Demonstrate the concept of addition  
- Combine  
- Demonstrate the concept of multiplication  
- Solve repeated addition problems  
**Proximal Precursor**  
- Add 1 and 1  
- Add 1 to 2, 3, and/or 4  
- Add within 5  
- Add within 10  
- Add within 20  
- Multiply by 1, 2, 3, 4, 5, and/or 10  
**Target**  
- Apply associative property of addition  
- Apply commutative property of addition  
- Apply the commutative property of multiplication  
- Apply the associative property of multiplication  
- Apply the distributive property  
**Successor**  
- Explain the associative property of addition  
- Explain the commutative property of addition  
- Explain the commutative property of multiplication  
- Explain the distributive property  
- Explain the associative property of multiplication  

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

**Initial Precursor:** Using the properties of addition and multiplication requires a student to be able to recognize 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. The educator presents a set, labels it (e.g., two balls, one marker, three CDs), counts the items, labels it again, and encourages students to use numerals to label and count the separate sets. Use tools like the ten-frame to point out whole and parts (e.g., a row of 5 dots and a row of 4 dots are parts or subsets of 9).

![Initial Precursor diagram](image)

### How is the Distal Precursor related to the Target?

**Distal Precursor:** 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, students 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).

A diagram showing the relationship of nodes in the mini-map appears below.

**Key to map codes in upper right corner of node boxes:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP</td>
<td>Initial Precursor</td>
</tr>
<tr>
<td>SP</td>
<td>Supporting</td>
</tr>
<tr>
<td>DP</td>
<td>Distal Precursor</td>
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<tr>
<td>S</td>
<td>Successor</td>
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<tr>
<td>PP</td>
<td>Proximal Precursor</td>
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<tr>
<td>T</td>
<td>Target</td>
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<tr>
<td>UN</td>
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</tr>
</tbody>
</table>
M.EE.N-CN.2.a Use the commutative, associative, and distributive properties to add, subtract, and multiply whole numbers.