<table>
<thead>
<tr>
<th>Grade-Level Standard</th>
<th>DLM Essential Element</th>
<th>Linkage Level</th>
</tr>
</thead>
</table>
| M.5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm | M.EE.5.NBT.5 Multiply whole numbers up to 5 x 5 | **Initial Precursor**  
  - Recognize separateness  
  - Recognize set  
  - Recognize subset  

**Distal Precursor**  
  - Explain repeated addition  
  - Represent repeated addition with an equation  
  - Solve repeated addition problems  

**Proximal Precursor**  
  - Demonstrate the concept of multiplication  

**Target**  
  - Multiply by 1  
  - Multiply by 2  
  - Multiply by 3  
  - Multiply by 4  
  - Multiply by 5  

**Successor**  
  - Apply the relationship between multiplication and division

© 2020 The Dynamic Learning Maps Essential Elements, linkage levels, and nodes are copyrighted by the University of Kansas Center for Research. Linkage levels and nodes are available for use by educators in DLM states but may not be used by commercial entities without written permission. Linkage level information and nodes may not be altered by anyone without express written permission from the University of Kansas Center for Research.
<table>
<thead>
<tr>
<th><strong>How is the Initial Precursor related to the Target?</strong></th>
<th><strong>How is the Distal Precursor related to the Target?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial Precursor:</strong> 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, 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 &quot;concentration&quot; where the cards highlight one characteristic in a group of similar cards [e.g., shape]; incorporating creating sets into everyday activities [e.g., during independent reading, the teacher gives a student a pile of books and asks them to create two sets, then helps the student determine the criteria they want to use to sort them, such as books I want to read/books I don’t want to read; bugs/dogs; sports/gaming]).</td>
<td><strong>Distal Precursor:</strong> 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 and addition. Educators will provide multiple experiences counting sets and combining sets using multiple models. As student understanding progresses, educators provide experience with multiple (3-4) small sets, and students will use repeated addition to find the total. They can check their work by counting the individual items in each group. Educators should take care to use words like some, all, put, and add while defining and demonstrating their meaning. While students do not need to say these words, they do need to learn the meanings.</td>
</tr>
</tbody>
</table>

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

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

- IP Initial Precursor
- SP Supporting
- DP Distal Precursor
- S Successor
- PP Proximal Precursor
- UN Untested
- T Target
M.EE.5.NBT.5 Multiply whole numbers up to 5 x 5