## Essential Element, Linkage Levels, and Mini-Map

### Math: Grade 4

**M.EE.4.NF.1-2**

### Grade-Level Standard

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| M.4.NF.1 Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions; M.4.NF.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or < and justify the conclusions, e.g., by using a visual fraction model | M.EE.4.NF.1-2 Identify models of one half (1/2) and one fourth (1/4) | Initial Precursor
- Recognize separateness
- Recognize wholeness

Distal Precursor
- Partition shapes

Proximal Precursor
- Partition any shapes into equal parts

Target
- Recognize one half on an area model
- Recognize one fourth on an area model

Successor
- Recognize halves on an area model
- Recognize fourths on an area model

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<table>
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<th>How is the Initial Precursor related to the Target?</th>
<th>How is the Distal Precursor related to the Target?</th>
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<td><strong>Initial Precursor:</strong> When working toward an understanding of fractions, students need exposure to a wide variety of items that can be taken apart and put back together (e.g., linking cubes, magnetic tiles, puzzles, cake, clay, apple). Encourage students to interact with the objects. Educators should take care to use the words “whole” and “part” to describe them. While students do not need to say these words, they do need to learn the meanings.</td>
<td><strong>Distal Precursor:</strong> As students begin to understand whole and part, educators will introduce partitioning shapes (which do not need to be equal parts). Educators will introduce the idea that shapes can be cut into parts, and when they are put back together, they form the whole shape. As students gain experience with cutting shapes into parts, the educator will introduce the concept of equal parts. In all partitioning activities, the student will work on counting the parts.</td>
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NOTE: Students do not need to physically cut the shape to work on this concept. Cutting can be accomplished via computer technology, assistive technology, directing another where to cut, etc.

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
- **DP** Distal Precursor
- **PP** Proximal Precursor
- **T** Target

- **SP** Supporting
- **S** Successor
- **UN** Untested
**M.EE.4.NF.1-2** Identify models of one half (1/2) and one fourth (1/4).