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

#### Math: Grade 8

**M.EE.8.NS.1**

<table>
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<tr>
<th>Grade-Level Standard</th>
<th>DLM Essential Element</th>
<th>Linkage Levels</th>
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| M.8.NS.1. Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert expansion which repeats eventually into a rational number | **M.EE.8.NS.1** Subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends less than or equal to one | **Initial Precursor**  
- Recognize separateness  
- Recognize subset  

**Distal Precursor**  
- Recognize parts of a given whole or unit  

**Proximal Precursor**  
- Decompose a fraction into a sum of unit fractions with the same denominator  
- Explain the concept of addition and subtraction of fractions  

**Target**  
- Subtract fractions with common denominators  

**Successor**  
- Add or subtract fractions with denominators of 10 and 100  

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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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<tr>
<td><strong>Initial Precursor:</strong> Subtracting fractions requires students 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. 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. Use tools like the ten-frame to point out whole and parts (e.g., a set of 9 is part of 10).</td>
<td><strong>Distal Precursor:</strong> As students work toward greater understanding of sets, educators provide students with many set models (see below) of fractions using the same unit fraction: either halves, thirds, fourths, or tenths. Students will work on identifying the whole.</td>
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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.8.NS.1 Subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends less than or equal to one.