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

### Math: Grade 5

**M.EE.5.MD.2**

<table>
<thead>
<tr>
<th>Grade-Level Standard</th>
<th>DLM Essential Element</th>
<th>Linkage Levels</th>
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</thead>
</table>
| **M.5.MD.2** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally. | **M.EE.5.MD.2** Represent and interpret data on a picture, line plot, or bar graph | **Initial Precursor**  
- Arrange objects in pairs  
- Recognize attribute values  
**Distal Precursor**  
- Classify  
- Order objects  
**Proximal Precursor**  
- Use bar graphs to read the data  
- Use picture graphs to read the data  
- Use line plots (dot plots) to read the data  
**Target**  
- Represent data using bar graph  
- Represent data using picture graph  
- Represent data using line plot (dot plot)  
- Use graphs to read between the data  
**Successor**  
- Use graphs to read beyond the data |

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<table>
<thead>
<tr>
<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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</thead>
<tbody>
<tr>
<td><strong>Initial Precursor:</strong> In order to be able to understand data on a graph, students begin learning to notice what is new. The educator draws the students' attention to new objects or stimuli, labels them (e.g., “these are two red cubes and two blue cubes,” “you have two fidgets; one is big and one is small but they are both fidgets”), and the student observes, feels, or otherwise interacts with it. Educators encourage students to begin placing like objects together, drawing attention to the characteristics that make an item the same or different.</td>
<td><strong>Distal Precursor:</strong> As the students’ attention to objects increases, educators will begin to draw the students' attention to what is the same and different between familiar items; color, shape, quantity (1–4), size, texture, and pattern. Educators should take care to use attribute words while defining and demonstrating their meaning. While students do not need to say these words, they do need to learn the meanings. Students will also begin to group two or more items in the same set based on an attribute (e.g., two tigers, bumpy balls and bumpy gravel, red spoons). As the students group two or more items, the educator will demonstrate the representation in a bar or picture graph and encourage students to actively participate in the creation of the graph.</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:*

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP</td>
<td>Initial Precursor</td>
</tr>
<tr>
<td>DP</td>
<td>Distal Precursor</td>
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<tr>
<td>PP</td>
<td>Proximal Precursor</td>
</tr>
<tr>
<td>SP</td>
<td>Supporting</td>
</tr>
<tr>
<td>S</td>
<td>Successor</td>
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<tr>
<td>UN</td>
<td>Untested</td>
</tr>
<tr>
<td>T</td>
<td>Target</td>
</tr>
</tbody>
</table>
M.EE.5.MD.2 Represent and interpret data on a picture, line plot, or bar graph.

F-61 arrange objects in pairs
F-65 recognize attribute values
M-76 classify
M-45 order objects
M-207 gather real world data
M-1232 ask questions about real world data
M-1231 organize real world data into categories
M-209 recognize the structure of a bar graph
M-326 recognize the structure of a picture graph
M-2443 recognize the structure of a line plot (dot plot)
M-2476 choose the appropriate graph for a given set of data
M-210 use bar graphs to read the data
M-327 use picture graphs to read the data
M-2444 use line plots (dot plots) to read the data
M-211 represent data using bar graph
M-328 represent data using picture graph
M-2445 represent data using line plot (dot plot)
M-214 use graphs to read between the data
M-2675 use graphs to read beyond the data