Content Standard	***MAFS.4.OA*** *Operations and Algebraic Thinking* ***MAFS.4.OA.2*** *Gain familiarity with factors and multiples.* **MAFS.4.OA.2.4** Investigate factors and multiples. **MAFS.4.OA.2.4a** Find all factor pairs and multiples in the range of 1—100. **MAFS.4.OA.2.4b** Recognize that a whole number is a multiple of each of its factors. **MAFS.4.OA.2.4c** Determine whether a given whole number in the range 1—100 is prime or composite.
Assessment Limits	Whole numbers in the range 1—100. Vocabulary may include prime, composite, factor, or multiple.
Calculator	No
Acceptable Response Mechanisms	Equation Response Multi-Select Response Graphic Response – Drag-and-Drop, Hot Spot Matching Item Response Multiple Choice Response Table Response

Context	Allowable
Example	
Context	Use numbers with 3 or 4 factors (aside from 1 and the number itself). Use numbers between 17 and 50.
Context easier	Use numbers with 2 or 3 factors (aside from 1 and the number itself). Use numbers less than 17.
Context more difficult	Use numbers with more than 4 factors (aside from 1 and the number itself). Use numbers greater than 50.

Sample Item Stem	Response Mechanism	Notes, Comments
What are the factors of 10?	Equation Response	

<table>
<tr>
<td>Select the multiples of 8 shown in the chart.

<table>
<tr><td>×</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>1</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>2</td><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr>
<tr><td>3</td><td>3</td><td>6</td><td>9</td><td>12</td><td>15</td></tr>
<tr><td>4</td><td>4</td><td>8</td><td>12</td><td>16</td><td>20</td></tr>
<tr><td>5</td><td>5</td><td>10</td><td>15</td><td>20</td><td>25</td></tr>
<tr><td>6</td><td>6</td><td>12</td><td>18</td><td>24</td><td>30</td></tr>
<tr><td>7</td><td>7</td><td>14</td><td>21</td><td>28</td><td>35</td></tr>
<tr><td>8</td><td>8</td><td>16</td><td>24</td><td>32</td><td>40</td></tr>
<tr><td>9</td><td>9</td><td>18</td><td>27</td><td>36</td><td>45</td></tr>
<tr><td>10</td><td>10</td><td>20</td><td>30</td><td>40</td><td>50</td></tr>
</table>
</td>
<td>Graphic Response – Hot Spot</td>
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<tr>
<td>Which factors do 36 and 42 have in common?</td>
<td>Multi-Select Response</td>
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<tr>
<td>Determine whether each number is prime or composite.

<table>
<tr><td></td><td>Prime</td><td>Composite</td></tr>
<tr><td>16</td><td></td><td></td></tr>
<tr><td>13</td><td></td><td></td></tr>
<tr><td>12</td><td></td><td></td></tr>
<tr><td>9</td><td></td><td></td></tr>
<tr><td>7</td><td></td><td></td></tr>
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</td>
<td>Matching Item Response</td>
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<tr>
<td>Sarah is arranging the chairs for a recital. She wants to put the 16 chairs into a rectangular array. Complete the table to show three ways that Sarah can arrange the chairs.

<table>
<tr><td></td><td>Number of Rows</td><td>Number of Chairs in Each Row</td></tr>
<tr><td>Arrangement 1</td><td></td><td></td></tr>
<tr><td>Arrangement 2</td><td></td><td></td></tr>
<tr><td>Arrangement 3</td><td></td><td></td></tr>
</table>
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<td>Table Response</td>
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<tr>
<td>Write a number between 80 and 100 that has exactly 3 factors, one of which is 5.</td>
<td>Equation Response</td>
<td></td>
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