Reason quantitatively and use units to solve problems. Working with quantities and the relationships between them provides grounding for work with expressions, equations, and functions (Standards N.Q.1–3)

**Standard N.Q.1:** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

### Concepts and Skills to Master
- Use units as a way to understand problems and to guide the solution of multi-step problems.
- Choose and interpret units consistently in formulas.
- Choose and interpret the scale and the origin in graphs and data displays.

### Related Standards: Current Course

### Related Standards: Future Courses
- All standards related to expressions, equations, functions, and data displays

### Support for Teachers

#### Critical Background Knowledge (Access Background Knowledge)
- Graph points in all four quadrants of the coordinate plane (6.NS.8)
- Choose appropriate graph/plot for data (6.SP.4)
- Compute unit rates involving ratios of lengths, areas, and other quantities (7.RP.1)
- Approximately locate irrational numbers on a number line diagram (8.NS.2)
- Analyze features of a graph and sketch graphs that have been described verbally (8.F.5)
- Construct and interpret scatter plots (8.SP.1)

#### Academic Vocabulary
- Scale, units of measurement

#### Resources:
- **Curriculum Resources:** [http://www.uen.org/core/core.do?courseNum=5600#70106](http://www.uen.org/core/core.do?courseNum=5600#70106)
Reason quantitatively and use units to solve problems. Working with quantities and the relationships between them provides grounding for work with expressions, equations, and functions (Standards N.Q.1–3)

**Standard N.Q.2:** Define appropriate quantities for the purpose of descriptive modeling.

<table>
<thead>
<tr>
<th>Concepts and Skills to Master</th>
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<tbody>
<tr>
<td>• Choose appropriate measures and units when creating a model for data (descriptive modeling).</td>
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<table>
<thead>
<tr>
<th>Related Standards: Current Course</th>
<th>Related Standards: Future Courses</th>
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</thead>
</table>

**Support for Teachers**

**Critical Background Knowledge (Access Background Knowledge)**

• Choose appropriate graph/plot for data (**6.SP.4**)

• Construct and interpret scatter plots (**8.SP.1**)

**Academic Vocabulary**

Descriptive modeling

**Resources:**

Curriculum Resources: [http://www.uen.org/core/core.do?courseNum=5600#70106](http://www.uen.org/core/core.do?courseNum=5600#70106)
Reason quantitatively and use units to solve problems. Working with quantities and the relationships between them provides grounding for work with expressions, equations, and functions (Standards N.Q.1–3)

**Standard N.Q.3:** Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

### Concepts and Skills to Master
- Determine whether whole numbers, fractions, or decimals are most appropriate.
- Determine the appropriate power of ten to reasonably measure a quantity.
- Determine the resulting accuracy in calculations.
- Determine what level of rounding should be used in a problem situation.

<table>
<thead>
<tr>
<th>Related Standards: Current Course</th>
<th>Related Standards: Future Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.N.Q.1, I.N.Q.2, I.SI.MP.6, all standards related to expressions, equations, and functions</td>
<td>II.SI.MP.6, III.SI.MP.6, all standards related to expressions, equations, and functions</td>
</tr>
</tbody>
</table>

### Support for Teachers

#### Critical Background Knowledge (Access Background Knowledge)
- Know relative sizes of measurement units (*4.MD.1*)
- Approximately locate irrational numbers on a number line diagram (*8.NS.2*)
- Use powers of ten to estimate very large or very small quantities (*8.EE.3*)
- Attend to precision (*I.SI.MP.6*)

#### Academic Vocabulary
- Precision, accuracy

#### Resources:

**Curriculum Resources:** [http://www.uen.org/core/core.do?courseNum=5600#70106](http://www.uen.org/core/core.do?courseNum=5600#70106)