Variables can have different meanings depending upon their use

- as quantities that vary and change,
- as a specific unknown value, or
- as quantities that vary in relation to one another

A variety of representations (including tables, charts, graphs, number lines, expressions, equations, and inequalities) can be used to illustrate mathematical relationships, to model mathematical situations, or to describe and generalize patterns

Functions are rules that associate each member of one set with exactly one member of another set (i.e. one variable is defined in terms of the other)

Different representations provide a variety of ways to view functions; the usefulness of a particular representation depends on its intended purpose
The understanding of proportional reasoning and rates of change promotes algebraic thinking and development
Expanded understanding and use of classes of numbers increases students' abilities to describe situations and solve problems

Fluency with different types of reasoning (quantitative, additive, multiplicative, proportional) is necessary for mathematical development

Fluency (accuracy, efficiency, flexibility) using operations with rational numbers becomes solidified in the middle grades

The attribute to be measured determines the unit and the tool

Measurements are estimates; the more precise the tools/units, the closer one can get to the actual measure

Measurements are accurate to the extent that the appropriate units/tools are used properly

Perimeter/circumference and area of 2-D figures are related to surface area and volume of 3-D figures

Formulas are derived from the measures of the attributes and relationships of 2-D and 3-D figures

Two- and three-dimensional figures can be classified and distinguished by their properties or attributes

Two-dimensional figures are viewed in the rectangular coordinate plane and transformations of two-dimensional figures within the plane may produce figures that are similar and/or congruent to the original figure

Mathematical equations can be used to describe geometric relationships within and between geometric figures

Formulas that describe attributes of geometric figures can be utilized for indirect measurements and problem solving

Multiple counting strategies and sample space representations are used to determine theoretical probabilities; experimental and theoretical probabilities can be computed and compared

Collection, analysis, and interpretation of univariate data are used to make decisions and solve problems

Bivariate data may be displayed and then analyzed within the rectangular coordinate plane, where a linear equation may be a good model for the relationship between the two attributes

Statistical investigations are completed through a process that includes posing a problem, collecting and analyzing data, and interpreting results