"Unwrapped" Skills (Depth of Knowledge Level)

- USE REASONING (analyze) = (level 4)
- MAKE =(level 2)
- FIND (patterns) = (level 2)
- USE = (level 2)
- COMPARE = (level 3)
- PLOT = (level 2)
- SOLVE =(level 2)
- MANIPULATE =(level 4)
- TRANSFORM = (level 4)

"Unwrapped" Concepts

- USE ratio and rate reasoning to solve real-world and mathematical problems
- MAKE tables of equivalent ratios
- FIND missing values in a table of equivalent ratios
- USE tables to compare ratios
- PLOT the pairs of values on the coordinate plane.
- SOLVE unit rate problems including those involving unit pricing and constant speed.
- FIND a percent of a quantity as a rate per 100 (30% is the same as 30/100)
- SOLVE problems involving finding the whole, given a part and the percent.
- USE ratio reasoning to convert measurement units (use conversion factors)
- MANIPULATE units and
- TRANSFORM units appropriately.

Unit Vocabulary

- **Ratio** - A pair of nonnegative numbers, A:B, where both are not zero, and that are used to indicate
  that there is a relationship between two quantities such that when there are A units of one quantity,
  there are B units of the second quantity.
- **Rate -** A rate indicates, for a proportional relationship between two quantities, how many units of one quantity there are for every 1 unit of the second quantity. For a ratio of A:B between two quantities, the rate is A/B units of the first quantity per unit of the second quantity.
- **Unit Rate** - The numeric value of the rate, e.g., in the rate 2.5 mph, the unit rate is 2.5.)
- **Unit Price**
- **Value of a Ratio -** For the ratio A:B, the value of the ratio is the quotient A/B.
- **Equivalent Ratios -** Ratios that have the same value.
- **Percent** - Percent of a quantity is a rate per 100.Percent (as part of 100)
- **per** - **of** (example context: 30% of 150 = .30 x 150)
- **Associated Ratios -** e.g., if a popular shade of purple is made by mixing 2 cups of blue paint for every
  3 cups of red paint, not only can we say that the ratio of blue paint to red paint in the mixture is 2:3,
  but we can discuss associated ratios such as the ratio of cups of red paint to cups of blue paint, the
  ratio of cups of blue paint to total cups of purple paint,the ratio of cups of red paint to total cups of purple paint, etc.
- **Double Number Line**
- **Ratio Table -** A table listing pairs of numbers that form equivalent ratios.