- Apply strategies for solving open-ended questions requiring analysis and synthesis of multiple calculations, data summaries, and/or models.
- Apply problem solving strategies to applications requiring multiple levels of engagement.

Reasoning

- Reason, model, and draw conclusions or make decisions with quantitative information.
  - Draw conclusions or make decisions in quantitatively based situations that are dependent upon multiple factors. Students will analyze how different situations would affect the decisions.
  - Present written or verbal justifications of decisions that include appropriate discussion of the mathematics involved.
  - Recognize when additional information is needed.
  - Recognize the appropriate ways to simplify a problem or its assumptions.

Evaluation

- Critique and evaluate quantitative arguments that utilize mathematical, statistical, and quantitative information.
  - Evaluate the validity and possible biases in arguments presented in real world contexts based on multiple sources of quantitative information – for example; advertising, internet postings, consumer information, political arguments.

Technology

- Use appropriate technology in a given context.
  - Use a spreadsheet to organize quantitative information and make repeated calculations using simple formulas.
  - Search for and apply internet-based tools appropriate to a given context – for example, an online tool to calculate credit card interest (m)-6(8(r)-5 (e t5 (t)-9]T0 0 Tc 0 Tw 31.97m(

- Solve real-life problems that include interpretation and comparison of summaries which extend beyond simple measures, such as weighted averages, indices, or ranking and evaluate claims based on them.
- Solve real-life problems requiring interpretation and comparison of various representations of ratios (i.e., fractions, decimals, rates, and percentages including part to part and part to whole, per capita data, growth and decay via absolute and relative change).
- Distinguish between proportional and non-proportional situations and, when appropriate, apply proportional reasoning leading to symbolic representation of the relationship. Recogn.141 TD6n.141 TD6n6(i)26(t)-66).0 Td[(ons)-2(hi)26(p.)-66(sLc)-2(o.6(i)23 sel)26(at)-66(i)6

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Validity Studies

- Identify logical fallacies in popular culture: political speeches, advertisements, and other attempts to persuade
- Analyze arguments or statements from all forms of media to identify misleading information, biases, and statements of fact.
- Develop and apply a variety of strategies for verifying numerical and statistical information found through web searches.
- Apply the use of basic symbolic logic, truth values, and set theories to justify decisions made in real-life applications, such as if-then-else statements in spreadsheets, Venn Diagrams to organize options, truth values as related to spreadsheet and flow-chart output. [Students must have experience with both symbolic logic and basic truth tables to meet this standard.]

- Financial Literacy (Interest, Borrowing, and Investing)
- Perspective (Complex Numeric Summaries, Ratios, Proportions, Conversions, Scaling, Scientific Notation)
- Modeling (Observation, Mathematical Modeling and Analysis, Application)
- Validity Studies (Statements, Conclusions, Validity, Bias, Logic, Set Theory)