

# APPLICATION & PROBLEM SOLVING

*Students use the concepts and skills that they acquire to:*

**Solve** problems with the use of models and explanations.

**Solve and analyze** performance tasks for deep/rich contextualized problem solving and application of the concepts to new or unique situations.

**Apply towards** Problem Based Learning where students explore real-world problems and challenges for possible solutions.

**Work** individually and collaboratively to explain and justify their thinking.

## K-12 BALANCED MATHEMATICS INSTRUCTION

The Cobb Teaching and Learning Standards for Mathematics focus on the acquisition of math skills through conceptual instructional strategies. This results in an understanding of math principles to apply towards critical thinking and problem solving.

**Students use** manipulatives, software, and technology to investigate and discover math concepts.

**Students understand** concepts through models, simulations and relevant real world examples.

**Students represent** the mathematics through drawing pictures, graphics, tables, numbers, and symbols.

**Students are given** purposeful skills and practice to strengthen computation.

**Students engage** in explanatory writing to justify their thinking.

**Students become** fluent by applying strategies and procedures efficiently and accurately.

## MATHEMATICS FOUNDATIONAL SKILLS

# STANDARDS for MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Justify and explain their reasoning and critique the reasoning of others.
4. Model with mathematics, i.e. graphs, drawings, tables, symbols, etc.
5. Use appropriate math tools strategically, i.e. manipulatives, calculators, rulers, etc.
6. Attend to precision, i.e. clear communication, accuracy, measurement, calculations.
7. Look for and make use of patterns and structure.
8. Look for and express regularity in repeated reasoning through rules, properties and shortcuts.