Quantitative Reasoning (QR)

"How do I measure, compare, or represent it?"
This goal is to think like a mathematician: to understand numbers, to analyze uncertainty, to comprehend the properties of shapes, and to study how things change over time.

Questions to develop your project:

- How can I use numbers to evaluate my hypothesis?
- What numerical information can I collect about this?
- Can I estimate this quantity?
- How can I represent this information as a table, graph, and/or formula?
- How can I interpret this formula or graph?
- How can I measure its shape or structure?
- What trends do I see? How does this change over time?
- What predictions can I make?
- Can I show a correlation?

Solve Mathematical Problems.	Formulating and understanding mathematical problems; selecting or generating relevant information; using mathematical concepts, models, and representations; choosing appropriate strategies and tools to devise solutions; evaluating processes, strategies, calculations, and solutions to verify reasonableness; exploring alternative approaches, extensions, and generalizations; representing and communicating processes, solutions, ideas, and conclusions; using appropriate mathematical technologies, terminology, symbols, and notation.
Perform Algebraic Operations.	Solving equations and inequalities numerically, graphically and/or algebraically; using computation, estimation, and mathematical properties to solve problems; estimating and checking the reasonableness of results, including those obtained by technology.
Use Geometric Concepts and Models.	Representing and solving problems with two- and three-dimensional geometric models; measuring directly and indirectly using geometry and right-angle trigonometry.
Use Probability and Statistics to Collect and Study Data.	Understanding and applying concepts of probability; collecting, organizing and displaying data using charts, tables and graphs, and using these to draw inferences, make predictions, and solve problems; developing and evaluating inferences and predictions based on data; designing, conducting, and critiquing statistical experiments, simulations, or surveys.
Use Functions to Understand Mathematical Relationships.	Representing functions using and translating among words, tables, graphs, and symbols; recognizing and distinguishing various classes of functions; using a variety of functions to model situations and solve problems.