

Transition to Quantitative Literacy Unit Rubrics
Math in Decision Making

Standard	4 - Mastery	3 - Proficient	2 - Basic	1- Below Basic	0 - No Evidence
QL-A1-A Use variables to accurately represent quantities or attributes in a variety of authentic tasks.	A: Analyze authentic tasks to interpret variables and quantities.	A: Create an expression from any authentic task. Including naming the variable.	A: Create an expression from an authentic task-linear. Including naming the variable. A: Match correct expression to given task.	A: Identify parts of an expression. ie term, coefficient, variable. A: Given an authentic task student can identify the variable.	A: Not yet able to apply vocabulary to identify parts of an expression.
QL-A1-B Predict and then confirm the effect that changes in variable values have in an algebraic relationship.	B: Predict and confirm, with support, of changes for a variable.	B: Mathematically confirm predictions to authentic task changes.	B: Predict what changes in an authentic task would do to an expression	B: Can complete one of the following: either predict or confirm what changes in an authentic task would do to an expression.	B: Not yet able to predict or confirm what changes in an authentic task would do to an expression.
QL-A1-C Interpret parts of expressions such as terms, factors, and coefficients.	C: Interpret and communicate the parts of an expression in comparison to an authentic task.	C: Interpret parts of an expression in comparison to an authentic task.	C: Identify the parts of an expression needed for an authentic task.	C: Group types of expressions discussing similarities - linear, radical, rational, and quadratic.	C: Not yet able to identify the parts of an expression needed for an authentic task.
QL-A3.A Create equations and inequalities that describe numbers or relationships.	A: Create and solve their own authentic task for equations.	A: Explain if an authentic task would be set-up as an equation or inequality.	A: Match the appropriate equation or inequality given an authentic task.	A: Create an appropriate equation or inequality given an authentic task.	A: Not yet able to describe a relationship or a system. A: Not yet able to solve an equation or inequality
QL-A3.C Use and justify reasoning while solving equations.	C: Find and correct error in a given problem explaining how error was made and how it should be corrected.	C: Solve equations and compound inequalities and can justify answer mathematically, explain steps and reasons taken to solve an equation or inequality.	C: Order given steps for solving an equation or inequality.	C: Prove a solution to an equation or inequality.	C: Not yet able to justify reasoning skills.
QL-N1-A Demonstrate operation sense and the effects of common operations on numbers in words and symbols. QL-N1-B Apply mathematical properties in numeric and algebraic contexts.	A-C. Use mathematical properties and statistical summaries to justify more advanced concepts	A-C. Explain mathematical properties and statistical summaries.	A-C. Use mathematical properties and statistical summaries.	A-C. Identify mathematical properties and statistical summaries.	A-C. Not yet able to use or identify mathematical properties or statistical summaries.
QL-N1.D Read, interpret, and make decisions based upon information from various data displays.	D. Create and use various representations of data.	D. Read and interpret representations of data and use this to make decisions.	D. Read and interpret various representations of data.	D. Read various representations of data.	D. Read only limited representations.
QL-N2-A Perform arithmetic operations on whole numbers, integers, fractions, and decimals including basic operations without a calculator.	A. Create and solve a real- world task that requires conversion and operations with decimals and fractions without a calculator.	A. Choose and convert between fractions and decimals to represent and solve for real-world quantities and justify their choice without a calculator.	A. Fluently perform multiple operations with fractions, decimals, and integers without use of calculator.	A. Perform simple operations with decimals, fractions, and integers without use of a calculator.	A. Not yet able to perform operations with decimals and fractions, or positive and negative integers without a calculator.

Transition to STEM Unit Rubrics

QL-N2-B Apply quantitative reasoning to solve problems involving quantities or rates	B. Analyze methods used by others to solve similar problems.	B. Justify choice of problem-solving strategy and identify pros and cons	B. Choose and apply an appropriate problem solving strategy.	B. Apply a given problem solving strategy.	B. Not yet able to apply a problem solving strategy.
QL-N3-A Use estimation skills	A. Justify choice of statistical methods used to create estimates.	A. Use statistical measures of estimation, including, but not limited to normal distribution, confidence intervals, and linear regression A-B. Determine the accuracy of their estimation. (come back to later)	A. Use statistical measures of estimation, including, but not limited to measures of central tendency and linear regression A-B. Create an estimate of a reasonable solution for a problem. (come back to later)	A. Use statistical measures of central tendency to estimate.	A. Not yet able to use estimation skills accurately.
QL-N3-B State convincing evidence to justify estimates.	B. Compare estimations to find the most accurate and/or most reasonable solution.	B. Determine if solution is appropriate in context of the problem and justify. A-B. Determine the accuracy of their estimation. (come back to later)	B. Determine if solution is reasonable in context of the problem. A-B. Create an estimate of a reasonable solution for a problem. (come back to later)	B. Eliminate unreasonable solutions and estimates.	B. Not yet able to analyze solutions for reasonableness.
QL-FM1.B Predict and then confirm the effect that changes in variable values have in an algebraic relationship	B. Analyze and correct others' predictions including what may have led them to that prediction.	B. Make a correct prediction, confirm the answer mathematically, and can interpret that answer in an authentic task.	B. Make a correct prediction about the algebraic relationship and confirm the answer mathematically.	B. Not yet able to make a correct prediction about the algebraic relationship	B. Not yet able to make a prediction about the algebraic relationship.
QL-FM2-A Translate problems from a variety of contexts into mathematical representations and vice versa.	A. Choose and efficient model to analyze problems in a variety of context.	A. Translate between tables, graphs, equations, and written descriptions in a variety of authentic tasks.	A. Translate between visual representations (tables/graphs), equations, and sometimes written descriptions.	A. Translate between tables and graphs (between two visual representations) and sometimes equation.	A. Not yet able to translate problems into any other form of representation.
QL-FM2.D Construct and compare models such as linear and nonlinear models and use them to solve problems.	D. Analyze problems and construct an appropriate model in an authentic task.	D. Construct a variety of models. Students can draw useful conclusions from comparing models. Students can use models and comparisons to solve authentic tasks.	D. Construct a variety of models. Students can draw some useful conclusions from comparing models.	D. Construct models in a few different representations.	D. Not yet able to construct or compare different models.
QL-FM2.E Interpret expressions for functions in terms of the situation they model.	E. Defend and analyze interpretations of function and what the answer means in the context of an authentic text.	E. Solve situations mathematically and provide an interpretation of the function as a whole as well as what the answer means in the context of the situation.	E. Solve situations and provide an interpretation for individual pieces of the function/expression.	E. Solve situations mathematically but are not yet able to interpret pieces of the expression.	E. Not yet able to mathematically solve situations.