

Table 11. Quantitative Literacy Performance Level Descriptors

Advanced	Proficient	Developing
<i>A typical student at the advanced level has demonstrated the ability to:</i>	<i>A typical student at the proficient level has demonstrated the ability to</i>	<i>A typical student at the developing level may sometimes:</i>
parse long, complicated word problems and extract relevant information to develop an appropriate model.	reason through a problem in a real context, understand relevant nuances of context, and translate to an equation to solve.	parse simple word problems, but may react to surface features rather than apply quantitative reasoning.
recall and apply standard definitions, formulas or algorithms that are appropriate for a given problem.	correctly use solution strategy of “plugging in appropriate numbers” or using a relevant example.	reason through a single-step word problem and translate to an equation to solve, but may have difficulty with complicated equations or calculations with large numbers.
set up and solve a model in a real-world context with two or three variables.	set up a model in a real-world context with two or three variables, but may have difficulty solving the model.	recognize when algebraic techniques are required to solve a problem, but may not recall the specific facts or techniques needed.
solve multi-step problems.	solve two- to three-step problems.	recognize when facts from Euclidean geometry are required to solve a problem, but may not recall the specific facts or techniques needed.
recall and use basic algebra to solve equations that model a problem — e.g., use variables appropriately, manipulate and simplify algebraic expressions.	recall and use basic algebra to solve equations that model a problem, but may have difficulty with algebraic manipulation.	read a chart or graph, but may have difficulty extracting the data required to solve a problem.
recall and use basic facts of Euclidean geometry to model and solve problems — e.g., know formulas for perimeter, area, and volume, parallel and perpendicular lines.	recall and use basic facts of Euclidean geometry to model and solve problems, but may not recall all the necessary facts.	perform the four basic operations (addition, subtraction, multiplication and division) with integers but not necessarily with decimals or fractions.
compute and interpret percents and percent change.	compute and interpret percents and percent change, but may have difficulty with percents greater than 100, and negative percent change.	read and interpret relationships between quantities expressed in terms of simple equations, well-known formulas or simple data representations, but may have difficulty with multiple variables, new formulas or complicated data representations.
read and interpret a chart or graph and extract data needed solve a problem.	read a chart or graph, but may have difficulty interpreting the data presented.	identify that mathematical terminology and notation are needed to communicate results, but may use incorrect terminology or incomplete notation.
solve problems using proportional reasoning.	perform the four basic operations (addition, subtraction, multiplication and division) with integers and decimals, but not necessarily fractions.	
perform the four basic operations (addition, subtraction, multiplication and division) with integers, decimals and fractions.	choose appropriate variables for data in a problem — e.g., let J be the number of cartons of juice purchased.	



Advanced	Proficient	Developing
recognize when there is insufficient information provided to solve a problem.	read and interpret relationships between quantities expressed in terms of equations, formulas or data representations, but may have difficulty with multiple variables or complex data representations.	
read and interpret relationships between quantities expressed in terms of equations, formulas or data representations.	identify mathematical terminology and notation for communicating results, but may use incorrect terminology or notation.	
identify correct mathematical terminology and notation for communicating results.		

