SECTION I. Alignment to Tennessee State Mathematics Standards

Part A. Course Standards: The instructional materials represent 100% alignment with the Tennessee State Mathematics Standards and explicitly focus teaching and learning on the course standards, standards for mathematical practice, and literacy skills for mathematical proficiency at a level of rigor necessary for students to reach mastery:

Financial Mathematics (N.NQ)		**Yes**	**No**	**Evidence (e.g., page numbers and/or examples of inclusion)**
A.Use financial mathematics to solve problems.	**AM.N.NQ.A.1** Define interest, compound interest, annuities, sinking funds, amortizations, annuities, future value, and present value.			
	AM.N.NQ.A.2 Recognize the importance of applying a financial model to business.			
	AM.N.NQ.A.3 Determine future value and present value of an annuity.			
	AM.N.NQ.A.4 Determine the amortization schedule for an annuity and a home mortgage.			
B. Use financial mathematics to make decisions.	**AM.N.NQ.B.5** Apply financial mathematics to depreciation schedules.			
	AM.N.NQ.B.6 Solve contextual problems involving financial decision-making.			
	AM.N.NQ.B.7 Apply arithmetic and geometric sequences to simple and compound interest, annuities, loans, and amortization.			
	AM.N.NQ.B.8 Solve problems in mathematics of finance involving compound interest using exponential and logarithmic techniques.			
C. Determine appropriate models to solve contextual problems.	**AM.N.NQ.C.9** Know when to use transcendental functions to accomplish various application purposes such as predicting population growth.			
	AM.N.NQ.C.10 Use orders of magnitude estimates for determining an appropriate model for a contextual situation.			

Linear Programming (A.LP)		Yes	No	Evidence (e.g., page numbers and/or examples of inclusion)
A. Use linear programming techniques to solve real-world problems.	**AM.A.LP.A.1** Use mathematical models involving equations and systems of equations to represent, interpret, and analyze quantitative relationships, change in various contexts, and other real-world phenomena.			
	AM.A.LP.A.2 Read, interpret, and solve linear programming problems graphically and by computational methods.			
B.Solve real-world optimization problems.	**AM.A.LP.B.3** Use linear programming to solve optimization problems.			
	AM.A.LP.B.4 Interpret the meaning of the maximum or minimum value in terms of the objective function.			
Logic and Boolean Algebra (A.LB)		**Yes**	**No**	**Evidence (e.g., page numbers and/or examples of inclusion)**
A. Use logic and Boolean Algebra in real-world situations.	**AM.A.LB.A.1** Develop the symbols and properties of Boolean algebra; connect Boolean algebra to standard logic.			
	AM.A.LB.A.2 Construct truth tables to determine the validity of an argument.			
B. Apply Boolean Algebra to real-world network problems.	**AM.A.LB.B.3** Analyze basic electrical networks; compare the networks to Boolean Algebra configurations.			
	AM.A.LB.B.4 Develop electrical networks and translate them into Boolean Algebra equations.			
Problem Solving (A.PS)		**Yes**	**No**	**Evidence (e.g., page numbers and/or examples of inclusion)**
A. Apply problem solving techniques to real-world situations.	**AM.A.PS.A.1** Apply problem solving strategies to real-world situations. Strategies include, but are not limited to: making orderly lists or tables, drawing diagrams, considering simpler problems, looking for patterns, working backwards, guess and check, using logical reasoning, etc.			

Investigate Logic (G.L)		Yes	No	Evidence (e.g., page numbers and/or examples of inclusion)
A. Use logic to make arguments and solve problems.	**AM.G.L.A.1** Define the order of operations for the logical operators.			
	AM.G.L.A.2 Define conjunction, disjunction, negation, conditional, and biconditional.			
	AM.G.L.A.3 Solve a variety of logic puzzles.			
	AM.G.L.A.4 Construct and use a truth table to draw conclusions about a statement.			
B. Determine the validity of arguments.	**AM.G.L.B.5** Apply the laws of logic to judge the validity of arguments.			
	AM.G.L.B.6 Give counterexamples to disprove statements.			
	AM.G.L.B.7 Analyze arguments with quantifiers through the use of Venn diagrams.			
	AM.G.L.B.8 Represent logical statements with networks.			
Organize and Interpret Data (D.ID)		**Yes**	**No**	**Evidence (e.g., page numbers and/or examples of inclusion)**
A. Analyze data from multiple viewpoints and perspectives.	**AM.D.ID.A.1** Organize data for problem solving.			
	AM.D.ID.A.2 Use a variety of counting methods to organize information, determine probabilities, and solve problems.			
	AM.D.ID.A.3 Translate from one representation of data to another, e.g., a bar graph to a circle graph.			
	AM.D.ID.A.4 Calculate and interpret statistical problems using measures of central tendency and graphs.			
	AM.D.ID.A.5 Calculate expected value, e.g., to determine the fair price of an investment.			

A. Analyze data from multiple viewpoints and perspectives.	**AM.D.ID.A.6** Analyze survey data using Venn diagrams.			
	AM.D.ID.A.7 Evaluate and compare two investments or strategies, where one investment or strategy is safer but has lower expected value. Include large and small investments and situations with serious consequences.			
Counting and Combinatorial Reasoning (D.CR)		**Yes**	**No**	**Evidence (e.g., page numbers and/or examples of inclusion)**
A. Apply probability and counting principles to real-world situations.	**AM.D.CR.A.1** Use permutations, combinations, and the multiplication principle to solve counting problems.			
	AM.D.CR.A.2 Design and interpret simple experiments using tree-diagrams, permutations, and combinations.			
	AM.D.CR.A.3 Apply counting principles to probabilistic situations involving equally likely outcomes.			
	AM.D.CR.A.4 Solve counting problems by using Venn diagrams and show relationships modeled by the Venn diagram.			
	AM.D.CR.A.5 Use permutations and combinations to compute probabilities of compound events and solve problems.			
B. Use combinatorial reasoning to solve real-world problems.	**AM.D.CR.B.6** Apply the Law of Large Numbers to contextual situations.			
	AM.D.CR.B.7 Discuss the various examples and consequences of innumeracy; consider poor estimation, improper experimental design, inappropriate comparisons, and scientific notation comparisons.			

B. Use combinatorial reasoning to solve real-world problems.	**AM.D.CR.B.8** Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. **a.** Find the expected payoff for a game of chance. *For example, find the expected winnings from a state lottery ticket or a game at a fast-food restaurant.* **b.** Evaluate and compare strategies on the basis of expected values. *For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.*			
	AM.D.CR.B.9 Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).			
	AM.D.CR.B.10 Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).			
Normal Probability Distribution (D.ND)		**Yes**	**No**	**Evidence (e.g., page numbers and/or examples of inclusion)**
A. Work with the normal distribution in real-world situations.	**AM.D.ND.A.1** Calculate the mean (expected value) and standard deviation of both a random variable and a linear transformation of a random variable.			
	AM.D.ND.A.2 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.			
Understand and Use Confidence Intervals (D.CI)		**Yes**	**No**	**Evidence (e.g., page numbers and/or examples of inclusion)**
A. Work with confidence intervals in real-world situations.	**AM.D.CI.A.1** Understand the meaning of confidence level, of confidence intervals, and the properties of confidence intervals.			
	AM.D.CI.A.2 Construct and interpret a large sample confidence interval for a proportion and for a difference between two proportions.			
	AM.D.CI.A.3 Construct the confidence interval for a mean and for a difference between two means.			
Additional comments on course standards within the materials:				

SECTION I. Alignment to Tennessee State Mathematics Standards ***Part B. Focus:*** Instruction centers on the course standards, standards for mathematical practice, and literacy skills for mathematical proficiency.			
	Yes	**No**	**Evidence of extraneous or mathematically inaccurate materials**
a. Materials focus on the course standards. Topics from future courses and/or earlier grades/courses are clearly identified as such in the materials, and do not detract from focus.			
b. Materials connect the standards for mathematical practice and literacy skills for mathematical proficiency to the content standards in meaningful and intentional ways. The development of the math practices and literacy skills is well-grounded in content and not isolated.			
c. Materials include teacher-directed materials that explain the role of the standards for mathematical practice in the classroom and in students' mathematical development. Problems and activities present opportunities for students to make use of and exhibit the math practices as they work on content.			
d. Materials are mathematically accurate and course appropriate.			
Additional comments on focus within the materials:			

SECTION I. Alignment to Tennessee State Mathematics Standards ***Part C. Rigor***: The three aspects of rigor are given full attention: conceptual understanding, procedural fluency, and application.			
	Yes	**No**	**Evidence of the three aspects of rigor**
a. The three aspects of rigor are given full attention: conceptual understanding, procedural fluency, and application.			
b. High quality problems and questions designed to invite exploration and support conceptual understanding are included for content standards and clusters that explicitly call for it. A variety of conceptual problems enable students to connect mathematical ideas and representations, and transfer understandings to new situations.			
c. Materials support the development of fluency and include opportunities to practice algebraic manipulation and computation, appropriately apply tools, and use technology. Sometimes problems are purely procedural, none are based on non-mathematical tricks or mnemonics.			
d. Students are given opportunity to apply mathematical knowledge and skills for standards that set a clear expectation for modeling. A variety of course appropriate problems provide students the opportunity to apply mathematical models in a variety of contextual situations using knowledge and skills articulated in the standards prior to or during the current course.			
Additional comments on the three aspects of rigor within the materials:			

SECTION I. Alignment to Tennessee State Mathematics Standards ***Part D. Coherence***: Provides learning experiences that supports coherence across and within courses and grade levels.			
	Yes	**No**	**Evidence (include evidence of knowledge and skill progression within units, course, and between grade levels)**
a. Connections are made within a course between clusters and domains, where these connections are appropriate and natural, as set forth by the Standards.			
b. Content progressions between this course and other mathematics courses reflect those seen in the Standards. These progression connections are clearly indicated in the materials and enhance the required learning in the course. They are clearly aimed at helping students meet the Standards as written.			
Additional comments on coherence within the materials:			

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY

All submissions must be aligned to the Tennessee State Mathematics Standards and therefore must meet 100% of the non-negotiable criteria of Section I prior to moving to Section II.

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY ***Part A. Key Areas of Focus***			
	Yes	**No**	**Evidence of focus**
a. Learning experiences provide opportunities for thought, discourse, and practice in an interconnected and social context.			
b. Units and instructional sequences are coherent and organized in a logical manner that builds upon knowledge and skills learned in prior grades or earlier in the course.			
c. Materials support student communication within a mathematical context by providing consistent opportunities for students to utilize literacy skills for mathematical proficiency in reading, writing, vocabulary, speaking and listening.			
Additional comments on focus within the materials:			

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY *Part B. Student Engagement and Instructional Supports*			
	Yes	**No**	**Evidence of student engagement and instructional supports**
a. Provides learning experiences that incorporate the course standards, standards for mathematical practice, and literacy skills for mathematical proficiency.			
b. Engages students through real-world, relevant, thought-provoking questions, problems, and tasks that stimulate interest and elicit critical thinking and problem solving.			
c. Integrates appropriate supports for students who are ELL, have disabilities, or perform below grade level.			
d. Includes differentiated materials that provides support for students approaching mastery as well as extensions for students already meeting mastery or with high interest.			
Additional comments on student engagement and instructional supports within the materials:			

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY ***Part C. Monitoring Student Progress***			
	Yes	**No**	**Evidence of monitoring student progress**
a. Assessments provide data on the content standards.			
b. Assesses student mastery using methods that are unbiased and accessible to all students.			
c. Includes aligned rubrics or scoring guidelines that provide sufficient guidance for interpreting student performance.			
d. Uses varied modes of curriculum embedded assessments that may include pre-, formative-, summative-, and self-assessment measures.			
e. Assessments are embedded throughout instructional materials as tools for students' learning and teachers' monitoring of instruction.			
f. Assessments provide teachers with a range of data to inform instruction.			
Additional comments on monitoring student progress within the materials:			

SECTION II: ADDITIONAL ALIGNMENT CRITERIA AND INDICATORS OF QUALITY ***Part D. Teacher Support Materials***			
	Yes	**No**	**Evidence of teacher support materials**
a. Provides guidance to support teachers in ways such as the following: planning, introducing lessons, assessment types, and vocabulary.			
b. Provides strategies that support teachers in incorporating appropriate and integral connections between the course standards, standards for mathematical practice, and literacy skills for mathematical proficiency.			
c. Provides strategies to support differentiated instruction for all learners, e.g., EL, students who are below grade-level, and advanced students.			
d. Provides guidance to support teachers in identifying student misconceptions and the reason(s) that prevent student mastery of the content standards.			
e. Provides strategies that assist teachers in incorporating appropriate connections between mathematics and other subject areas (e.g., ELA, science, social studies, visual and performing arts, CTE)			
Additional comments on teacher support within the materials:			