

## About Your Study Plan

This Study Plan is your syllabus for the American Board program. We encourage you to use the recommended resources to target preparation to your needs and goals.

There will be hyper-links throughout this document to both your [Mathematics Study Materials](#) and additional, optional resources. Please make sure that you visit the relevant pages to access all of the resources.

Your commitment to great teaching begins here and now. Your efforts will not only help you pass the test, but will also prepare you to become a successful teacher.

## How to Study:

American Board is committed to making sure you are the best possible teacher you can be. We will provide you with study tips to get ready for the exam and both the content and resources to review this material. It is your job to commit to preparing and stay dedicated while studying.

Take advantage off our exam preparation webinars. They go over how to best prepare for a multiple choice examination. We have found that those who watch our webinars have a much higher pass rate on the American Board exams.

## Your Materials

Standards: a list of everything that might be on the test.

Study Plan: your syllabus with links to what you need to study for each section.

Study Materials: an overview course materials on topics you will be tested on.

Practice Exam/Section Quizzes: sample test questions and solutions.

## Mathematics Exam Snapshot

<b>Time Allowed</b>	240 minutes	
<b>Format</b>	Multiple-choice	
<b>Number of Questions</b>	125	
<b>On-Screen Exhibits</b>	None	
<b>Passing Score</b>	Proficient: 272 Distinguished: 340	(The number of questions answered correctly is converted to a scale score ranging from 0 to 500.)
<b>Exam Summary</b>	<b>Content Domains</b>	<b>Approximate Percentage of Examination</b>
	Number Sense	12%
	Algebra and Functions	26%
	Geometry and Measurement	20%
	Trigonometry	11%
	Probability, Statistics, and Data Analysis	12%
	Linear Algebra	6%
	Calculus	13%

## About This Exam

The American Board for Certification of Teacher Excellence believes that highly skilled mathematics teachers should possess a comprehensive body of mathematical knowledge that is research-based and promotes student achievement. The mathematics exam is a rigorous assessment of a candidate's knowledge and application of mathematic concepts. Most topics assessed are characteristically covered in introductory college level mathematics courses, although some more advanced topics are included, as teachers must hold a more sophisticated understanding of mathematics content than that presented to their students. **Use of a calculator is not permitted.**

## How to use American Board Practice Tests

If you have chosen to use our practice tests, you may have already used the quizzes to get a better idea of where your strengths and weaknesses are. There are two full-length exams that we would suggest *you use* as a mid-term and final to work on your timing and endurance. You can use them again to identify distractors.

**The Study Plan:**

Your study plan includes direction on how to use American Board’s resources. We also include recommended resources to aid in your mastery.

This plan was designed for a 9 month period (4 months for Professional Teaching Knowledge (PTK); 4 months for the subject matter; 2 weeks to take each test) in which most people are able to complete the program. Many candidates have completed the program in a shorter amount of time.

Area of Study	Required Resource	Recommended Resource	Timeline
<p><b>Domain (Standards 1.1.01-1.1.25)</b></p> <p><b>These standards cover:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Number Sense</li> </ul>	<p>Complete the following readings and watch the following videos in the Mathematics Study Materials (<a href="#">PDF</a> or <a href="#">Online</a> version) to learn the material to understand these standards:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Real Number Properties</li> <li><input type="checkbox"/> Fundamental Theorem of Arithmetic</li> <li><input type="checkbox"/> Absolute Values</li> <li><input type="checkbox"/> Algebraic Expressions</li> <li><input type="checkbox"/> Complex Numbers</li> <li><input type="checkbox"/> Operations with Real Numbers</li> <li><input type="checkbox"/> Field Properties with Real Numbers</li> </ul>	<p>Web Resources</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">SparkNotes Math Study Guides</a></li> </ul>	<p>{Time}</p>

**Your Notes:**

**Note:** The resources recommended outside of the American Board program are often freely accessible online and can be found in your library. To make it easier for you, we have hyper-linked them in this study plan.

**Study Tip:**

One effective way of using the practice quizzes is to look at the incorrect answer choices before looking at the correct explanation to see if you can understand why those options are wrong. If you can understand how a test maker uses distractors, you will be able to eliminate wrong answer choices faster on test day.

Area of Study	Required ABCTE Resource	Recommended Resource	Timeline
<p><b>Domain 2 (Standards 2.1.01-2.1.31) These standards cover:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Algebra and Functions</li> </ul>	<p>Complete the following readings and watch the following videos in the Mathematics Study Materials (<a href="#">PDF</a> or <a href="#">Online</a> version) to learn the material to understand these standards:</p> <p><b>Algebra and Functions I</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Parallel and Perpendicular Lines</li> <li><input type="checkbox"/> Absolute Values</li> <li><input type="checkbox"/> Relations and Functions</li> <li><input type="checkbox"/> Solving Systems of Equations</li> <li><input type="checkbox"/> Compositions and Inverses of Functions</li> <li><input type="checkbox"/> Sequences and Series</li> <li><input type="checkbox"/> Solving Linear Equations and Inequalities</li> <li><input type="checkbox"/> Graphing Linear Equations and Inequalities</li> <li><input type="checkbox"/> Finding the Equation of a Line</li> </ul> <p><b>Algebra and Functions II</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Algebraic Functions</li> <li><input type="checkbox"/> Factoring Polynomials</li> <li><input type="checkbox"/> Simplifying Rational Polynomials</li> <li><input type="checkbox"/> Solving and Graphing Quadratic Equations</li> <li><input type="checkbox"/> Binomial Expansion</li> <li><input type="checkbox"/> Conic Sections</li> <li><input type="checkbox"/> Laws of Integral Exponents</li> <li><input type="checkbox"/> Laws of Fractional Exponents</li> <li><input type="checkbox"/> Exponential Functions</li> </ul>	<p><b>Web Resources</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">Spark Notes Math Study Guides</a></li> <li><input type="checkbox"/> <a href="#">Algebra I Tutorials</a></li> <li><input type="checkbox"/> <a href="#">AlgebraHelp.com Calculators</a></li> </ul> <p><b>Books</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">The Idiot's Guide to Algebra</a></li> <li><input type="checkbox"/> <a href="#">Schaum's Outline of Intermediate Algebra</a></li> </ul>	<p>{Time}</p>

Your Notes:

*"I can give children the inspiration and encouragement to confront their own challenges, surpass negativity and persevere....Without this program, I wouldn't have had the opportunity to pursue teaching."*

–Traci Brown, American Board Teacher

**Testing on the Computer:**

This may be your first time taking a test on a computer. On average, people read 20% slower on a screen vs. paper. Because of this and other issues, practice as much as you can on the computer to become comfortable working in that environment.

Familiarity with the test and its standards will go a long way towards your ABCTE success.

The online practice tests are great practice to get a feel for the testing environment.

Area of Study	Required Resource	Recommended Resource	Timeline
<p><b>Domain (Standards 3.1.01-3.2.08) These standards cover:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Geometry and Measurement</li> <li><input type="checkbox"/> Geometry and Spatial Reasoning</li> <li><input type="checkbox"/> Measurement</li> </ul>	<p>Complete the following readings and watch the following videos in the Mathematics Study Materials (<a href="#">PDF</a> or <a href="#">Online</a> version) to learn the material to understand these standards:</p> <p><b>Geometry and Spatial Reasoning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Symmetry and Space</li> <li><input type="checkbox"/> Classifying Two- and Three-Dimensional Solids</li> <li><input type="checkbox"/> Two-Dimensional Representations of Three-Dimensional Objects</li> <li><input type="checkbox"/> Triangles</li> <li><input type="checkbox"/> Similarity and Ratio</li> <li><input type="checkbox"/> Convex Polygons</li> <li><input type="checkbox"/> Quadrilaterals</li> <li><input type="checkbox"/> Straightedge and Compass Constructions</li> <li><input type="checkbox"/> Skew Lines</li> <li><input type="checkbox"/> Special Triangles</li> <li><input type="checkbox"/> Area of Triangles and Special Quadrilaterals</li> <li><input type="checkbox"/> The Pythagorean Theorem</li> <li><input type="checkbox"/> Circles</li> <li><input type="checkbox"/> The Equation of a Circle</li> <li><input type="checkbox"/> Geometric Proofs using Coordinate Systems</li> </ul> <p><b>Measurements and Linear Algebra</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> About Measurement</li> <li><input type="checkbox"/> Measuring Two-Dimensional Figures</li> <li><input type="checkbox"/> Measuring Three-Dimensional Figures</li> <li><input type="checkbox"/> Proportions in Measurement</li> <li><input type="checkbox"/> Matrices—Operations and Inverses</li> <li><input type="checkbox"/> Matrices for Systems of Equations</li> <li><input type="checkbox"/> Geometric Interpretations</li> <li><input type="checkbox"/> Special Matrix Products</li> </ul>	<p><b>Web Resources</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">SparkNotes Math Study Guides</a></li> </ul> <p><b>Books</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">Geometry For Dummies</a></li> <li><input type="checkbox"/> <a href="#">E-Z Geometry</a></li> <li><input type="checkbox"/> <a href="#">Geometry Success in 20 Minutes a Day</a></li> </ul>	<p>{Time}</p>

Your Notes:

*“The information presented in the courses and the workshops was extremely helpful to me because they provided real examples that I have been able to implement immediately in my classroom.”*

–Lauren Masino, American Board Teacher

We love to highlight American Board teachers in local newspapers. Not only does this provide publicity for a potential job search, it can also help highlight your school as one that is committed to providing students with the best possible teacher. Visit <https://www.americanboard.org/share-your-story/>


Area of Study	Required Resource	Recommended Resource	Timeline
<p><b>Domain 4 (Standards 4.1.01-4.1.15)</b> These standards cover:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Trigonometry</li> </ul>	<p>Complete the following readings and watch the following videos in the Mathematics Refresher Course (<a href="#">PDF</a> or <a href="#">Online</a> version) to learn the material to understand these standards:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Trigonometric Ratios</li> <li><input type="checkbox"/> Law of Sines &amp; Law of Cosines</li> <li><input type="checkbox"/> The Unit Circle</li> <li><input type="checkbox"/> Introduction to Tangent, Cotangent, Secant, and Cosecant</li> <li><input type="checkbox"/> Pythagorean Trigonometric Identities</li> <li><input type="checkbox"/> Amplitude, Frequency, Period, and Phase Shift</li> <li><input type="checkbox"/> Graphing Trigonometric Functions and Inverse Trigonometric Functions</li> <li><input type="checkbox"/> Half-Angle and Double-Angle Formulas</li> <li><input type="checkbox"/> Rectangular and Polar Coordinates</li> </ul>	<p><b>Web Resources</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">An Introduction to Trigonometry</a></li> <li><input type="checkbox"/> <a href="#">Dave's Short Course in Trigonometry</a></li> </ul> <p><b>Books</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">Trigonometry Demystified</a></li> <li><input type="checkbox"/> <a href="#">Trigonometry</a></li> </ul>	<p>{Time}</p>

Your Notes:

Questions and concerns can be directed to the Help Desk. Sign in to your Dashboard to submit a Help Desk Ticket.

Area of Study	Required Resource	Recommended Resource	Timeline
<p><b>Domains 5-7</b> (Standards 5.1.01-7.1.29) These standards cover:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Probability, Statistics and Data Analysis</li> <li><input type="checkbox"/> Linear Algebra</li> <li><input type="checkbox"/> Calculus</li> </ul>	<p><b>Complete the following readings and watch the following videos in the Mathematics Refresher Course (PDF or Online version) to learn the material to understand these standards:</b></p> <p><b>Probability, Statistics, Data Analysis</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Defining Probability</li> <li><input type="checkbox"/> Combinations and Permutations</li> <li><input type="checkbox"/> Utilizing Combinations and Permutations</li> <li><input type="checkbox"/> Independent and Dependent Events</li> <li><input type="checkbox"/> Beginning Statistics</li> <li><input type="checkbox"/> Data Displays, Normal Distributions and Lines of Best Fit</li> </ul> <p><b>Linear Algebra</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Matrices—Operations and Inverses</li> <li><input type="checkbox"/> Matrices for Systems of Equations</li> <li><input type="checkbox"/> Geometric Interpretations</li> <li><input type="checkbox"/> Special Matrix Products</li> </ul> <p><b>Calculus</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Limits and Continuity</li> <li><input type="checkbox"/> Differential Calculus</li> <li><input type="checkbox"/> Differential Calculus II</li> <li><input type="checkbox"/> Integral Calculus</li> <li><input type="checkbox"/> Differential Equations, Sequences, and Series</li> </ul>	<p><b>Web Resources</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">StatSoft Electronic Textbook</a></li> <li><input type="checkbox"/> <a href="#">Linear Algebra Toolkit</a></li> <li><input type="checkbox"/> <a href="#">Pre-calculus</a></li> <li><input type="checkbox"/> <a href="#">Calc101.com</a></li> <li><input type="checkbox"/> <a href="#">Calculus-Help.com</a></li> </ul> <p><b>Books</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">Introduction to Statistics</a></li> <li><input type="checkbox"/> <a href="#">Statistics for People Who (Think They) Hate Statistics</a></li> <li><input type="checkbox"/> <a href="#">The Cartoon Guide to Statistics</a></li> <li><input type="checkbox"/> <a href="#">3,000 Solved Linear Algebra Problems</a></li> <li><input type="checkbox"/> <a href="#">Linear Algebra and its Applications</a></li> <li><input type="checkbox"/> <a href="#">Calculus Made Easy</a></li> <li><input type="checkbox"/> <a href="#">The Humongous Book of Calculus Problems: For People Who Don't Speak Math *</a></li> </ul>	<p>{Time}</p>

Your Notes:

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