

## About Your Study Plan

This Study Plan comprises the full spectrum of materials and resources available to a candidate. We encourage you to use the recommended resources to target preparation to your needs and goals.

There will be hyperlinks throughout this document. Please make sure that you visit the relevant pages to access all of the resources.

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

## How to study:

ABCTE is committed to making sure you are the best possible teacher.

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.

Think of the Snapshot below as an overview for what you need to know.

For more detail in each topic, review the exam [standards](#). The ABCTE exams are based on this blueprint, so consider this a syllabus for what you want to study.

## ABCTE Teacher Forums:

Become a part of the ABCTE community by participating in our Teacher Forums today!

You can discuss the program, ask questions, and learn what other candidates have done to succeed in their classrooms.

<http://www.abcte.org/drupal/forums>



## 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 ABCTE 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 in *testing mode* as a mid-term and final to work on your timing and endurance. You can use them again in *explore mode* to identify distractors.

# ABCTE's Standards Stepwise Method

## The right way to get started: using the Standards as your syllabus

Your Self Assessment is a summary of the standards; by doing it, you have identified which ones need the most attention. The Standards are your study lifeline; you can find them on your MyAccount page. Throughout the course of your study you will learn all of them. How to begin? Here is ABCTE's Standards Stepwise method:

**1 Approach in bite-sized chunks:** don't be overwhelmed or paralyzed by how many standards there are, simply pick a topic of a domain and get started.

**2 Define the terms:** take the first three items in the topic and make sure you know all the terms. Look up any you do not recognize. After all, you cannot answer a question definitively if you don't even know the terms.

## Domain 1: Instructional Design

### Topic 1: Selects, Organizes, Plans, and Designs Content

1.1.01	Writes measurable objectives for both individual or classroom performance based on student data and subject matter.
1.1.02	Guides curricular planning (e.g., content clusters, instructional methods, learning activities and assessment tools) based on goals of the instruction.
1.1.03	Substantiate or illustrate ideas.
1.1.05	Juxtaposes examples that differ in many ways but are the same in defining features, so that students can generalize to new examples and learn to discriminate same/different when faced with new examples.
1.1.06	Plans lessons, depending on size and content of unit, so that important ideas or skills are studied on several occasions rather than all at once.
1.1.07	Selects lessons.

Guides **curricular planning** (e.g., **content clusters**, instructional methods, learning activities and assessment tools) based on goals of the instruction.

**3 Use the required resources** in your Study Plan or a broad survey text to refresh your memory on the topic.

**4 Use the appropriate recommended resources** to probe deeper if you need better understanding. Use the Standards to target the sections you need to read.

**5 Your Notes:** go to the resources section of ABCTE.org and identify additional resources to use as needed. Use the Forums to see what other people are using.

**6 Check for understanding and reflect:** think about how you would use this in a classroom or how you would teach the subject. Use your quizzes to check for understanding and move on.

**7 Wash, rinse, and repeat:** once you finish a chunk of three, go back and attack the next three.

**PROFESSIONAL TEACHING KNOWLEDGE STUDY PLAN**

for \_\_\_\_\_ Area \_\_\_\_\_ Date \_\_\_\_\_

AMERICAN BOARD  
for Certification of Teacher Excellence

**The Study Plan:**  
Your study plan includes direction on how to use ABCTE's resources. We also include recommended resources to aid in your mastery. The full description of these can always be found at: [www.abcte.org/teach/learn-preparation](http://www.abcte.org/teach/learn-preparation). You should also rate these resources whenever possible.  
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 have completed the program in a shorter amount of time. Your advisor will provide you with a more efficient, customized plan based on your needs.

Area of Study	Required Resource	Recommended Resource	(Time)
<input type="checkbox"/> Instructional Delivery <input type="checkbox"/> Communicating effectively <input type="checkbox"/> Presents clear and focused instruction <input type="checkbox"/> Effective questioning techniques <input type="checkbox"/> Makes efficient use of learning time <input type="checkbox"/> Applications <input type="checkbox"/> Research Strategies	<input type="checkbox"/> Review the specific PTK standard <a href="http://www.abcte.org/teach/teaching-standards">http://www.abcte.org/teach/teaching-standards</a> The corresponding Prepare to Teach Workshops can be found at: <a href="http://www.abcte.org/prepare-to-teach-workshops.html">http://www.abcte.org/prepare-to-teach-workshops.html</a> <input type="checkbox"/> Characteristics of Successful Teachers <input type="checkbox"/> Characteristics 1- 8 <input type="checkbox"/> Characteristics 9 - 16 <input type="checkbox"/> VIDEO CASE STUDIES: Characteristics of Successful Teachers (13:57) Pedagogy and Instructional Design <input type="checkbox"/> How Students Learn <input type="checkbox"/> Whole Group Strategies Part 1 <input type="checkbox"/> Whole Group Strategies Part 2 <input type="checkbox"/> Small Group Strategies and Individual Instruction <input type="checkbox"/> Lesson Closure <input type="checkbox"/> VIDEO CASE STUDIES: Pedagogy and Instructional Design (14:58)	<input type="checkbox"/> Web Resources <input type="checkbox"/> <a href="http://www.abcte.org/teach/teaching-standards">www.abcte.org/teach/teaching-standards</a> <input type="checkbox"/> <a href="http://www.abcte.org/prepare-to-teach-workshops.html">www.abcte.org/prepare-to-teach-workshops.html</a> <input type="checkbox"/> <a href="http://www.abcte.org/teach/teaching-standards">www.abcte.org/teach/teaching-standards</a> <input type="checkbox"/> <a href="http://www.abcte.org/prepare-to-teach-workshops.html">www.abcte.org/prepare-to-teach-workshops.html</a> Books <input type="checkbox"/> <a href="http://www.abcte.org/teach/teaching-standards">www.abcte.org/teach/teaching-standards</a> <input type="checkbox"/> <a href="http://www.abcte.org/prepare-to-teach-workshops.html">www.abcte.org/prepare-to-teach-workshops.html</a> <input type="checkbox"/> <a href="http://www.abcte.org/prepare-to-teach-workshops.html">www.abcte.org/prepare-to-teach-workshops.html</a> <input type="checkbox"/> <a href="http://www.abcte.org/prepare-to-teach-workshops.html">www.abcte.org/prepare-to-teach-workshops.html</a> These and other resources can be found at: <input type="checkbox"/> <a href="http://www.abcte.org/teach/teaching-standards">http://www.abcte.org/teach/teaching-standards</a> <input type="checkbox"/> <a href="http://www.abcte.org/prepare-to-teach-workshops.html">http://www.abcte.org/prepare-to-teach-workshops.html</a> <input type="checkbox"/> <a href="http://www.abcte.org/teach/teaching-standards">www.abcte.org/teach/teaching-standards</a> <input type="checkbox"/> <a href="http://www.abcte.org/prepare-to-teach-workshops.html">www.abcte.org/prepare-to-teach-workshops.html</a>	

Your Notes:

Note: The resources recommended outside of the ABCTE program are often freely accessible online or can be found in your library. To ease your search we have hyperlinked them.

1-877-668-2228 • [www.abcte.org](http://www.abcte.org) • [advisor@abcte.org](mailto:advisor@abcte.org)

### Have a Plan

It is important to have a plan of attack to study. Block out set times to study and if you slip and miss a session, restart your plan instead of letting yourself get paralyzed and procrastinate.

# MATHEMATICS EXAM STUDY PLAN

for

Name:

Date:

## The Study Plan:

Your study plan includes direction on how to use ABCTE's resources. We also include recommended resources to aid in your mastery. The full description of these can always be found at: <http://www.abcte.org/drupal/teach/exam-preparation>. You should also rate these resources whenever possible.

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 have completed the program in a shorter amount of time.

Area of Study	Required Resource	Recommended Resource	Timeline
<input type="checkbox"/> <b>Number Sense</b>	<input type="checkbox"/> Review the specific Math standard <a href="http://www.abcte.org/drupal/teach/exam-preparation/mathematics/standards">http://www.abcte.org/drupal/teach/exam-preparation/mathematics/standards</a>  <b>The accompanying sessions can be found in your ABCTE Refresher Workshops at:</b> <a href="http://www.abcte.org/drupal/courses/mathematics/index.html">http://www.abcte.org/drupal/courses/mathematics/index.html</a>  <input type="checkbox"/> Real Number Properties <input type="checkbox"/> Fundamental Theorem of Arithmetic <input type="checkbox"/> Absolute Values <input type="checkbox"/> Algebraic Expressions <input type="checkbox"/> Complex Numbers <input type="checkbox"/> Operations with Real Numbers <input type="checkbox"/> Field Properties with Real Numbers	Web Resources <a href="#">SparkNotes Math Study Guides</a>  <input type="checkbox"/> <b>These and other resources can be found at:</b> <input checked="" type="checkbox"/> <a href="http://www.abcte.org/drupal/teach/exam-preparation/Mathematics">http://www.abcte.org/drupal/teach/exam-preparation/Mathematics</a>	{Time}

Your Notes:

**Note:** The resources recommended outside of the ABCTE program are often freely accessible online or can be found in your library. To ease your search we have hyperlinked them.

Name:

Date:

## 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
<input type="checkbox"/> Algebra and Functions	<input type="checkbox"/> Review the specific Math standard <a href="http://www.abcte.org/drupal/teach/exam-preparation/mathematics/standards">http://www.abcte.org/drupal/teach/exam-preparation/mathematics/standards</a>  <b>The accompanying sessions can be found in your ABCTE Refresher Workshops at:</b> <a href="http://www.abcte.org/drupal/courses/mathematics/index.html">http://www.abcte.org/drupal/courses/mathematics/index.html</a>  <b>Algebra and Functions I</b> <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> <b>Algebra and Functions II</b> <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>	<b>Web Resources</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> SparkNotes Math Study Guides</li> <li><input type="checkbox"/> Algebra I Tutorials</li> <li><input type="checkbox"/> AlgebraHelp.com Calculators</li> </ul> <b>Books</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> The Idiot's Guide to Algebra</li> <li><input type="checkbox"/> Schaum's Outline of Intermediate Algebra</li> </ul> <input type="checkbox"/> <b>These and other resources can be found at:</b> <input checked="" type="checkbox"/> <a href="http://www.abcte.org/drupal/teach/exam-preparation/Mathematics">http://www.abcte.org/drupal/teach/exam-preparation/Mathematics</a>	{Time}

## Your Notes:

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*"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, ABCTE Teacher,

Name:

Date:

## 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
<input type="checkbox"/> Geometry and Measurement  <input type="checkbox"/> Geometry and Spatial Reasoning  <input type="checkbox"/> Measurement	<input type="checkbox"/> Review the specific Math standard <a href="http://www.abcte.org/drupal/teach/exam-preparation/mathematics/standards">http://www.abcte.org/drupal/teach/exam-preparation/mathematics/standards</a>  <b>The accompanying sessions can be found in your ABCTE Refresher Workshops at:</b> <a href="http://www.abcte.org/drupal/courses/mathematics/index.html">http://www.abcte.org/drupal/courses/mathematics/index.html</a>  <b>Geometry and Spatial Reasoning</b> <input type="checkbox"/> Symmetry and Space <input type="checkbox"/> Classifying Two- and Three-Dimensional Solids <input type="checkbox"/> Two-Dimensional Representations of Three-Dimensional Objects <input type="checkbox"/> Triangles <input type="checkbox"/> Similarity and Ratio <input type="checkbox"/> Convex Polygons <input type="checkbox"/> Quadrilaterals <input type="checkbox"/> Straightedge and Compass Constructions <input type="checkbox"/> Skew Lines <input type="checkbox"/> Special Triangles <input type="checkbox"/> Area of Triangles and Special Quadrilaterals <input type="checkbox"/> The Pythagorean Theorem <input type="checkbox"/> Circles <input type="checkbox"/> The Equation of a Circle <input type="checkbox"/> Geometric Proofs using Coordinate Systems  <b>Measurements and Linear Algebra</b> <input type="checkbox"/> About Measurement <input type="checkbox"/> Measuring Two-Dimensional Figures <input type="checkbox"/> Measuring Three-Dimensional Figures <input type="checkbox"/> Proportions in Measurement <input type="checkbox"/> Matrices—Operations and Inverses <input type="checkbox"/> Matrices for Systems of Equations <input type="checkbox"/> Geometric Interpretations <input type="checkbox"/> Special Matrix Products	<b>Web Resources</b> <input type="checkbox"/> <a href="#">SparkNotes Math Study Guides</a>  <b>Books</b> <input type="checkbox"/> <a href="#">Geometry For Dummies</a> <input type="checkbox"/> <a href="#">E-Z Geometry</a> <input type="checkbox"/> <a href="#">Geometry Success in 20 Minutes a Day</a>  <input type="checkbox"/> <b>These and other resources can be found at:</b> <input checked="" type="checkbox"/> <a href="http://www.abcte.org/drupal/teach/exam-preparation/Mathematics">http://www.abcte.org/drupal/teach/exam-preparation/Mathematics</a>	{Time}

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, ABCTE Teacher, FL

for

Name:

Date:

We love to highlight ABCTE 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 <http://www.abcte.org/get-involved/share-your-story>.

Area of Study	Required Resource	Recommended Resource	Timeline
<input type="checkbox"/> <b>Trigonometry</b>	<input type="checkbox"/> Review the specific Math standard <a href="http://www.abcte.org/drupal/teach/exam-preparation/mathematics/standards">http://www.abcte.org/drupal/teach/exam-preparation/mathematics/standards</a>  <b>The following sessions can be found in your ABCTE Refresher Workshops at:</b> <a href="http://www.abcte.org/drupal/courses/mathematics/index.html">http://www.abcte.org/drupal/courses/mathematics/index.html</a>  <input type="checkbox"/> Trigonometric Ratios <input type="checkbox"/> Law of Sines & Law of Cosines <input type="checkbox"/> The Unit Circle <input type="checkbox"/> Introduction to Tangent, Cotangent, Secant, and Cosecant <input type="checkbox"/> Pythagorean Trigonometric Identities <input type="checkbox"/> Amplitude, Frequency, Period, and Phase Shift <input type="checkbox"/> Graphing Trigonometric Functions and Inverse Trigonometric Functions <input type="checkbox"/> Half-Angle and Double-Angle Formulas <input type="checkbox"/> Rectangular and Polar Coordinates	<b>Web Resources</b> <input type="checkbox"/> <a href="#">An Introduction to Trigonometry</a> <input type="checkbox"/> <a href="#">Dave's Short Course in Trigonometry</a>  <b>Books</b> <input type="checkbox"/> <a href="#">Trigonometry Demystified</a> <input type="checkbox"/> <a href="#">Trigonometry</a>  <input type="checkbox"/> <b>These and other <a href="#">resources</a> can be found at:</b> <input checked="" type="checkbox"/> <a href="http://www.abcte.org/drupal/teach/exam-preparation/Mathematics">http://www.abcte.org/drupal/teach/exam-preparation/Mathematics</a>	{Time}

Your Notes:

Questions and concerns can be directed to the Help Desk at: <http://helpdesk.abcte.org/>  
Or contact your advisor at: [advisor@abcte.org](mailto:advisor@abcte.org)

Area of Study	Required Resource	Recommended Resource	Timeline
<input type="checkbox"/> Probability, Statistics and Data Analysis  <input type="checkbox"/> Linear Algebra  <input type="checkbox"/> Calculus	<p>Review the specific Math standard <a href="http://www.abcte.org/drupal/teach/math-standards">http://www.abcte.org/drupal/teach/math-standards</a></p> <p><b>The following sessions can be found in your ABCTE Refresher Workshops at:</b>                      ↻ <a href="http://www.abcte.org/drupal/courses/mathematics/index.html">http://www.abcte.org/drupal/courses/mathematics/index.html</a></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><input type="checkbox"/> <b>These and other resources can be found at:</b>                      ↻ <a href="http://www.abcte.org/drupal/teach/exam-preparation/Mathematics">http://www.abcte.org/drupal/teach/exam-preparation/Mathematics</a></p>	{Time}

Your Notes:



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<http://www.abcte.org/drupal/facebook>