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.

Mathematics Exam Snapshot

<table>
<thead>
<tr>
<th>Time Allowed</th>
<th>240 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Multiple-choice</td>
</tr>
<tr>
<td>Number of Questions</td>
<td>125</td>
</tr>
<tr>
<td>On-Screen Exhibits</td>
<td>None</td>
</tr>
</tbody>
</table>
| Passing Score      | Proficient: 272  
                    | Distinguished: 340  
                    | (The number of questions answered correctly is converted to a scale score ranging from 0 to 500.) |

Exam Summary

<table>
<thead>
<tr>
<th>Content Domains</th>
<th>Approximate Percentage of Examination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Sense</td>
<td>12%</td>
</tr>
<tr>
<td>Algebra and Functions</td>
<td>26%</td>
</tr>
<tr>
<td>Geometry and Measurement</td>
<td>20%</td>
</tr>
<tr>
<td>Trigonometry</td>
<td>11%</td>
</tr>
<tr>
<td>Probability, Statistics, and Data Analysis</td>
<td>12%</td>
</tr>
<tr>
<td>Linear Algebra</td>
<td>6%</td>
</tr>
<tr>
<td>Calculus</td>
<td>13%</td>
</tr>
</tbody>
</table>

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 mathematical 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.

About 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

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 are do not recognize. After all, you cannot answer a question definitively if you don’t even know the terms.

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.

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.
### 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](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.

<table>
<thead>
<tr>
<th>Area of Study</th>
<th>Required Resource</th>
<th>Recommended Resource</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Sense</td>
<td>Review the specific Math standard</td>
<td>Web Resources SparkNotes Math Study Guides</td>
<td>(Time)</td>
</tr>
<tr>
<td></td>
<td>The accompanying sessions can be found in your ABCTE Refresher Workshops at:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Real Number Properties</td>
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</tbody>
</table>
**Mathematics Exam 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.

<table>
<thead>
<tr>
<th>Area of Study</th>
<th>Required ABCTE Resource</th>
<th>Recommended Resource</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The accompanying sessions can be found in your ABCTE Refresher Workshops at: <a href="http://www.abcte.org/drupal/courses/mathematics/index.html">http://www.abcte.org/drupal/courses/mathematics/index.html</a></td>
<td>Books</td>
<td></td>
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<tr>
<td></td>
<td>Algebra and Functions I</td>
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</tr>
<tr>
<td></td>
<td>- Parallel and Perpendicular Lines</td>
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<tr>
<td></td>
<td>- Absolute Values</td>
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<td></td>
<td>- Relations and Functions</td>
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<td></td>
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<tr>
<td></td>
<td>- Solving Systems of Equations</td>
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<tr>
<td></td>
<td>- Compositions and Inverses of Functions</td>
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<td></td>
<td>- Sequences and Series</td>
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<tr>
<td></td>
<td>- Solving Linear Equations and Inequalities</td>
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<td></td>
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<tr>
<td></td>
<td>- Graphing Linear Equations and Inequalities</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>- Finding the Equation of a Line</td>
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<tr>
<td></td>
<td>Algebra and Functions II</td>
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<tr>
<td></td>
<td>- Algebraic Functions</td>
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<tr>
<td></td>
<td>- Factoring Polynomials</td>
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<tr>
<td></td>
<td>- Simplifying Rational Polynomials</td>
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<tr>
<td></td>
<td>- Solving and Graphing Quadratic Equations</td>
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<td></td>
<td>- Binomial Expansion</td>
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<td></td>
<td>- Conic Sections</td>
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<tr>
<td></td>
<td>- Laws of Integral Exponents</td>
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<tr>
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<td>- Laws of Fractional Exponents</td>
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<td></td>
<td>- Exponential Functions</td>
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</tbody>
</table>

**Web Resources**
- SparkNotes Math Study Guides
- Algebra I Tutorials
- AlgebraHelp.com Calculators

**Books**
- The Idiot's Guide to Algebra
- Schaum's Outline of Intermediate Algebra

**These and other resources can be found at:**

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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,

1-877-669-2228 ● www.abcte.org
# 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.

<table>
<thead>
<tr>
<th>Area of Study</th>
<th>Required Resource</th>
<th>Recommended Resource</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement</td>
<td></td>
<td><a href="http://www.abcte.org/drupal/courses/mathematics/index.html">These and other resources can be found at:</a></td>
<td></td>
</tr>
</tbody>
</table>

- Symmetry and Space
- Classifying Two- and Three-Dimensional Solids
- Two-Dimensional Representations of Three-Dimensional Objects
- Triangles
- Similarity and Ratio
- Convex Polygons
- Quadrilaterals
- Straightedge and Compass Constructions
- Skew Lines
- Special Triangles
- Area of Triangles and Special Quadrilaterals
- The Pythagorean Theorem
- Circles
- The Equation of a Circle
- Geometric Proofs using Coordinate Systems

**Measurements and Linear Algebra**
- About Measurement
- Measuring Two-Dimensional Figures
- Measuring Three-Dimensional Figures
- Proportions in Measurement
- Matrices—Operations and Inverses
- Matrices for Systems of Equations
- Geometric Interpretations
- Special Matrix Products

## 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
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](http://www.abcte.org/get-involved/share-your-story).

### Area of Study

**Trigonometry**

- Review the specific Math standard

The following sessions can be found in your ABCTE Refresher Workshops at:


- Trigonometric Ratios
- Law of Sines & Law of Cosines
- The Unit Circle
- Introduction to Tangent, Cotangent, Secant, and Cosecant
- Pythagorean Trigonometric Identities
- Amplitude, Frequency, Period, and Phase Shift
- Graphing Trigonometric Functions and Inverse Trigonometric Functions
- Half-Angle and Double-Angle Formulas
- Rectangular and Polar Coordinates

### Web Resources

- An Introduction to Trigonometry
- Dave's Short Course in Trigonometry

### Books

- Trigonometry Demystified
- Trigonometry

### Recommended Resource

- These and other resources can be found at:

### Timeline

(Time)
## Mathematics Exam Study Plan

**Area of Study** | **Required Resource** | **Recommended Resource** | **Timeline**
--- | --- | --- | ---
- Probability, Statistics and Data Analysis
  - Probability, Statistics, Data Analysis
    - The following sessions can be found in your ABCTE Refresher Workshops at: [http://www.abcte.org/drupal/courses/mathematics/index.html](http://www.abcte.org/drupal/courses/mathematics/index.html)
  - Linear Algebra
    - Matrices—Operations and Inverses
    - Matrices for Systems of Equations
    - Geometric Interpretations
    - Special Matrix Products
  - Calculus
    - Limits and Continuity
    - Differential Calculus
    - Differential Calculus II
    - Integral Calculus
    - Differential Equations, Sequences, and Series

- Linear Algebra
  - Matrices for Systems of Equations
  - Geometric Interpretations
  - Special Matrix Products

- Calculus
  - Limits and Continuity
  - Differential Calculus
  - Differential Calculus II
  - Integral Calculus
  - Differential Equations, Sequences, and Series

**Web Resources**
- StatSoft Electronic Textbook
- Linear Algebra Toolkit
- Pre-calculus
- Calc101.com
- Calculus-Help.com

**Books**
- *Introduction to Statistics*
- *Statistics for People Who (Think They) Hate Statistics*
- *The Cartoon Guide to Statistics*
- *3,000 Solved Linear Algebra Problems*
- *Linear Algebra and its Applications*
- *Calculus Made Easy*
- *The Humongous Book of Calculus Problems: For People Who Don't Speak Math*

**Your Notes:**

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Did you know that ABCTE is on Facebook? Become an ABCTE fan. [http://www.abcte.org/drupal/facebook](http://www.abcte.org/drupal/facebook)

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