

Name: Date: **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/forums>

**Chemistry Exam Snapshot**

Time Allowed	240 minutes	
Format	Multiple-choice	
Number of Questions	125	
On-Screen Exhibits (available as relevant)	Scientific calculator; Formula sheet; Periodic Table; Standard Reduction Potentials	
Passing Score	Proficient: 285 Distinguished: 357	(The number of questions answered correctly is converted to a scale score ranging from 0 to 500.)
Exam Summary	Content Domains	Approximate Percentage of Examination
	General Science Knowledge	4%
	Scientific Investigation	7%
	Atomic Structure, Periodicity, and Matter	26%
	Chemical Naming and Structure	14%
	Reactions and Reactivity	26%
	Gas Laws and Solutions	18%
Organic Chemistry	5%	

About This Exam

The American Board for Certification of Teacher Excellence believes that highly skilled chemistry teachers should possess a comprehensive body of scientific knowledge that is research-based and promotes student achievement. The chemistry exam is a rigorous assessment of a candidate's knowledge and application of general chemistry. The topics assessed are characteristically covered in introductory college-level chemistry courses, although some more advanced questions are included, as teachers must hold a more sophisticated understanding of chemistry content than that presented to their students.

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.

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/teach/exam-preparation/Chemistry>. 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"/> Domain 1: Scientific Investigation <input type="checkbox"/> Domain 2: General Science Knowledge	<input type="checkbox"/> Review the specific Chemistry standard http://www.abcte.org/teach/chemistry-standards The corresponding sessions can be found in your ABCTE Refresher Workshops at: http://www.abcte.org/courses/chemistry/index.html Scientific Knowledge <input type="checkbox"/> Scientific Investigation <input type="checkbox"/> Interpreting and Measuring Data <input type="checkbox"/> General Science I <input type="checkbox"/> General Science II <input type="checkbox"/> Review	Books <input type="checkbox"/> A Beginner's Guide to Scientific Method <input type="checkbox"/> Scientific Method in Practice Other Media <input type="checkbox"/> These and other resources can be found at: ↻ http://www.abcte.org/teach/exam-preparation/Chemistry	{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 Resource	Recommended Resource	Timeline
<input type="checkbox"/> Domain 3: Atomic Structure, Periodicity, and Matter <input type="checkbox"/> Topic 1: Atomic Structure and Theory <input type="checkbox"/> Topic 2: Periodic Table <input type="checkbox"/> Topic 3: Quantum Mechanics <input type="checkbox"/> Topic 4: Nuclear Chemistry	<input type="checkbox"/> Review the specific Chemistry standard http://www.abcte.org/teach/chemistry-standards The corresponding sessions can be found in your ABCTE Refresher Workshops at: http://www.abcte.org/courses/chemistry/index.html Atomic Structure, Periodicity, and Matter <input type="checkbox"/> Development of the Atomic Theory <input type="checkbox"/> The Structure of the Atom <input type="checkbox"/> The Periodic Table <input type="checkbox"/> Quantum Mechanics Part I <input type="checkbox"/> Quantum Mechanics Part II <input type="checkbox"/> The Nucleus and Nuclear Reactions <input type="checkbox"/> Review	Web Resources <input type="checkbox"/> Chemguide <input type="checkbox"/> Periodic Table <input type="checkbox"/> WebElements <input type="checkbox"/> ABCTE Chemistry Exam Formulas and Constants Books <input type="checkbox"/> Atomic Structure and Periodicity <input type="checkbox"/> ABCTE Chemistry Exam Periodic Table <input type="checkbox"/> ABCTE Chemistry Exam Table of Standard Reduction Potentials Other Media <input type="checkbox"/> These and other resources can be found at: <input checked="" type="checkbox"/> http://www.abcte.org/teach/exam-preparation/Chemistry	{Time}

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, ABCTE Teacher, FL

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"/> Domain 4: Chemical Naming and Structure <input type="checkbox"/> Topic 1: Molecular Bonding and Structure <input type="checkbox"/> Topic 2: Chemical Naming and Formulas	<input type="checkbox"/> Review the specific Chemistry standard http://www.abcte.org/teach/chemistry-standards The corresponding sessions can be found in your ABCTE Refresher Workshops at: http://www.abcte.org/courses/chemistry/index.html Chemical Naming and Structure <input type="checkbox"/> Ionic, Covalent or In-Between? <input type="checkbox"/> Patterns in Space <input type="checkbox"/> Lewis Structures <input type="checkbox"/> VSEPR <input type="checkbox"/> Hybridization and Molecular Orbital Theory <input type="checkbox"/> Comparison of Properties <input type="checkbox"/> Writing Names and Formulas <input type="checkbox"/> Acids and Oxides <input type="checkbox"/> Percent Composition and Formulas <input type="checkbox"/> Review	Web Resources <input type="checkbox"/> Chemical Formulas Review <input type="checkbox"/> Stoichiometry and Balancing Chemical Equations Books <input type="checkbox"/> Chemistry <input type="checkbox"/> Chemical Bonds: An Introduction to Atomic and Molecular Structure Other Media <input type="checkbox"/> These and other resources can be found at: <input checked="" type="radio"/> http://www.abcte.org/teach/exam-preparation/Chemistry	{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

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"/> Domain 5: Reactions and Reactivity <input type="checkbox"/> Topic 1: Chemical Reactions and Stoichiometry <input type="checkbox"/> Kinetics <input type="checkbox"/> Electrochemistry <input type="checkbox"/> Thermodynamics and Equilibrium	<input type="checkbox"/> Review the specific Chemistry standard http://www.abcte.org/teach/chemistry-standards The corresponding sessions can be found in your ABCTE Refresher Workshops at: http://www.abcte.org/courses/chemistry/index.html Reactions and Reactivity <input type="checkbox"/> Classifying Chemical Reactions and Predicting Products <input type="checkbox"/> Types of Chemical Equations <input type="checkbox"/> The Mole <input type="checkbox"/> Chemical Calculations and Yields <input type="checkbox"/> Kinetics <input type="checkbox"/> Oxidation and Reduction <input type="checkbox"/> Cell Potential, Electric Work, and Free Energy <input type="checkbox"/> Energy, Work and Heat Flow <input type="checkbox"/> Hess's Law and Gibbs Free Energy <input type="checkbox"/> Le Chatelier's Principle and Equilibrium Constants <input type="checkbox"/> Review	Web Resources <input type="checkbox"/> Electrochemistry <input type="checkbox"/> MIT OpenCourseWare: Principles of Chemical Science Books <input type="checkbox"/> Chemical Kinetics and Reaction Dynamics <input type="checkbox"/> Chemical Kinetics: The Study of Reaction Rates in Solution Other Media <input type="checkbox"/> These and other resources can be found at: <input checked="" type="checkbox"/> http://www.abcte.org/teach/exam-preparation/Chemistry	{Time}

Your Notes:

Study Tip: Use a science survey text

A basic survey text on chemistry like *The Cartoon Guide to Chemistry* or *The Idiot's Guide to Chemistry* is recommended as a starting point. If you have another survey book from college, or you have access to a different text from your library, that is perfectly fine. It is important that you have access to a survey book because it will assist in covering the various domains of the exam.

Study Tip: Websites like Wikipedia and other unverified sources of information are *NOT* a good source of study. Much information found on the World Wide Web consists of unverified sources. Stick to verified sources with full citations. Many resources selected for study by our experts can be found on ABCTE's resource pages.

Area of Study	Required Resource	Recommended Resource	Timeline
<input type="checkbox"/> Domain 6: Gas Laws and Solutions <input type="checkbox"/> Topic 1: Gas Laws <input type="checkbox"/> Topic 2: Solution Chemistry <input type="checkbox"/> Topic 3: Acids and Bases	<input type="checkbox"/> Review the specific Chemistry standard http://www.abcte.org/teach/chemistry-standards The corresponding sessions can be found in your ABCTE Refresher Workshops at: http://www.abcte.org/courses/chemistry/index.html Gas Laws and Solutions <input type="checkbox"/> Gas Laws <input type="checkbox"/> Solution formation and Concentrations <input type="checkbox"/> Solution Interactions <input type="checkbox"/> Colligative Properties and Related Laws <input type="checkbox"/> The Development and Theories of Acids and Bases <input type="checkbox"/> Relationships Between Acids, Bases, and Salts <input type="checkbox"/> Review	Web Resources <input type="checkbox"/> Gas Laws <input type="checkbox"/> Solutions Books <input type="checkbox"/> Shaun's Outline Of General Organic and Biological Chemistry <input type="checkbox"/> The Complete Idiot's Guide to Chemistry Other Media <input type="checkbox"/> These and other resources can be found at: <input checked="" type="radio"/> http://www.abcte.org/teach/exam-preparation/Chemistry	{Time}

Your Notes:



Did you know that ABCTE is on Facebook? Come be an ABCTE fan.

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

Name: Date:

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

Area of Study	Required ABCTE Resource	Recommended Resource	Timeline
<input type="checkbox"/> Domain 7: Organic Chemistry	<input type="checkbox"/> Review the specific Chemistry standard http://www.abcte.org/teach/chemistry-standards The following sessions can be found in your ABCTE Refresher Workshops at: http://www.abcte.org/courses/chemistry/index.html Organic Chemistry <ul style="list-style-type: none"> <input type="checkbox"/> Introduction <input type="checkbox"/> Naming Organic Molecules <input type="checkbox"/> Organic Molecules Containing Oxygen <input type="checkbox"/> Halogenated Hydrocarbons and Hydrocarbon Reactions <input type="checkbox"/> Aromatics <input type="checkbox"/> Polymers <input type="checkbox"/> Review 	Web Resources <ul style="list-style-type: none"> <input type="checkbox"/> Organic Chemistry OnLine Books <ul style="list-style-type: none"> <input type="checkbox"/> The Vocabulary and Concepts of Organic Chemistry <input type="checkbox"/> Organic Chemistry I For Dummies Other Media <ul style="list-style-type: none"> <input type="checkbox"/> These and other resources can be found at: ➔ http://www.abcte.org/teach/exam-preparation/Chemistry 	{Time}

Your Notes:



"The podcast for new teachers is very helpful. I have them all on my iPod and they really hit some good topics."

- Lisa Mayo, ABCTE Teacher, PA

Dr. Glen Moulton, a supervisor of instruction and life-long teacher trainer, and Michael Kelley, author of *Rookie Teaching for Dummies*, provide advice, tips, and discussions for new and veteran teachers monthly. Sign up for this great resource. It is free for anyone to download for help in the classroom:

www.newteacherhotline.com