

## 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 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.

## Preparing to Pass

American Board 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 the content and resources to review the material.

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 the syllabus for what you want to study.

## 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 on the topics you will be tested on.
- **Practice Exam/Section Quizzes:** a sample test questions and solutions.

## Biology Exam Snapshot

|                           |   |                           |
|---------------------------|---|---------------------------|
| <b>Time Allowed</b>       | 240 minutes                                   |                           |
| <b>Format</b>             | Multiple Choice                               |                           |
| <b># of Questions</b>     | 145   |                           |
| <b>On-Screen Exhibits</b> | Standard Calculator & Periodic Table          |                           |
| <b>Passing Score</b>      | Proficient: 266/500<br>Distinguished: 311/500 |                           |
| <b>Exam Summary</b>       | <b>Areas of Study</b>                         | <b>Percentage of Exam</b> |
|                           | General Science Knowledge                     | 20%                       |
|                           | Scientific Investigation                      | 15%                       |
|                           | Biochemical Basis of Life                     | 6%                        |
|                           | Cell Biology and Microbiology                 | 10%                       |
|                           | Classical Genetics                            | 4%                        |
|                           | Molecular Biology                             | 11%                       |
|                           | Evolution                                     | 7%                        |
|                           | Comparative Physiology                        | 6%                        |
|                           | Human Physiology                              | 9%                        |
|                           | Plant Biology and Physiology                  | 6%                        |
|                           | Ecology                                       | 6%                        |

## About This Exam

The American Board for Certification of Teacher Excellence believes that highly skilled biology teachers should possess a comprehensive body of knowledge that is research-based and promotes student achievement. The biology exam is a rigorous assessment of a candidate's knowledge and application of general biology. The topics assessed are characteristically covered in introductory college level biology courses, although some more advanced questions are included.

## 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 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.

## 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. 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 Resources  | Recommended Resources  |
|---|---|--|
| <b>General Domains 1-5 (Standards 1.01-5.17)</b><br><br><b>These standards cover:</b> <ul style="list-style-type: none"><li><input type="checkbox"/> Domain 1: Scientific Investigation</li><li><input type="checkbox"/> Domain 2: Biology</li><li><input type="checkbox"/> Domain 3: Chemistry</li><li><input type="checkbox"/> Domain 4: Earth Science</li><li><input type="checkbox"/> Domain 5: Physics</li></ul> | <b>Complete the following readings and watch the following videos in the Biology Refresher Course (PDF or Online version):</b><br><br><b>Basic Science Core</b> <ul style="list-style-type: none"><li><input type="checkbox"/> Scientific Investigation Part I</li><li><input type="checkbox"/> Scientific Investigation Part II</li><li><input type="checkbox"/> Basic Chemistry Part I</li><li><input type="checkbox"/> Basic Chemistry Part II</li><li><input type="checkbox"/> Earth Science</li><li><input type="checkbox"/> Physics</li><li><input type="checkbox"/> Biology Basics</li><li><input type="checkbox"/> Reproduction</li><li><input type="checkbox"/> Mendelian Genetics</li><li><input type="checkbox"/> Fossils, Evolution &amp; Diversity</li><li><input type="checkbox"/> Human Body Systems</li><li><input type="checkbox"/> Ecosystems</li></ul> | <b>Web Resources</b> <ul style="list-style-type: none"><li><input type="checkbox"/> <a href="#">MIT OpenCourseWare: Introductory Biology</a></li><li><input type="checkbox"/> <a href="#">What is Life: A Lifescience Educational Forum</a></li><li><input type="checkbox"/> <a href="#">Easyphysics.net</a></li><li><input type="checkbox"/> <a href="#">WebElements</a></li></ul><br><b>Books</b> <ul style="list-style-type: none"><li><input type="checkbox"/> <a href="#">The Complete Idiot's Guide to Biology</a></li><li><input type="checkbox"/> <a href="#">Foundations of Earth Science</a></li></ul> |

## Your Notes:

**Study Tip:**

One effective way of using the practice quizzes is to look at the incorrect answer choice 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 Resources  | Recommended Resources   |
|--|---|---|
| <p><b>Biology Domain 1.01-1.14</b></p> <p><b>These standards cover:</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Biomechanical Basis of Life</li></ul> | <p><b>Complete the following readings and watch the following videos in the Biology Refresher Course (PDF or Online version):</b></p> <p><b>Biochemical Basis of Life</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Biochemical Basis of Life</li><li><input type="checkbox"/> Genetic Engineering Lipids</li><li><input type="checkbox"/> Proteins</li><li><input type="checkbox"/> Nucleotides &amp; Nucleic Acids</li></ul> | <p><b>Web Resources</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> <a href="#">What is Life: A Lifescience Educational Forum</a></li></ul> <p><b>Books</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> <a href="#">A Dictionary of Biology (Oxford Paperback Reference)</a></li><li><input type="checkbox"/> <a href="#">Schaum's Outline of Biochemistry</a></li><li><input type="checkbox"/> <a href="#">Biochemistry: Board Review Series</a></li></ul> |

**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

**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 Resources  | Recommended Resources   |
|--|---|---|
| <p><b>Biology Domain 2.01-2.14</b></p> <p><b>These standards cover:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Cell Biology &amp; Microbiology</li> </ul> | <p><b>Complete the following readings and watch the following videos in the Biology Refresher Course (PDF or Online version):</b></p> <p><b>Cell Biology &amp; Microbiology</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Discovering Cells</li> <li><input type="checkbox"/> Animal Cells: Structure and Function</li> <li><input type="checkbox"/> Plant Cells</li> <li><input type="checkbox"/> Prokaryotes</li> <li><input type="checkbox"/> Eukaryotes</li> <li><input type="checkbox"/> Protista</li> <li><input type="checkbox"/> Viruses</li> <li><input type="checkbox"/> Molds</li> </ul> | <p><b>Web Resources</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">Cell and Molecular Biology Online</a></li> </ul> <p><b>Books</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">Dictionary of Cell Biology</a></li> <li><input type="checkbox"/> <a href="#">Microbiology</a></li> <li><input type="checkbox"/> <a href="#">The Way of the Cell: Molecules, Organisms and the Order of Life</a></li> <li><input type="checkbox"/> <a href="#">Outline of Molecular and Cell Biology</a></li> </ul> |

**Your Notes:**

We love to highlight ABCTE teachers in local newspapers. Not only does this provide publicity for 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/?s=share+your+story>

| Area of Study   | Required Resources   | Recommended Resources  |
|---|--|--|
| <b>Biology Domain 3.01-3.07</b><br><br><b>These standards cover:</b><br><input type="checkbox"/> Classical Genetics | <b>Complete the following readings and watch the following videos in the Biology Refresher Course (PDF or Online version):</b><br><br><b>Classical Genetics</b><br><input type="checkbox"/> The Discovery of DNA<br><input type="checkbox"/> Inheritance | <b>Web Resources</b><br><input type="checkbox"/> <a href="#">Ancient DNA</a><br><br><b>Books</b><br><input type="checkbox"/> <a href="#">DNA: The Secret of Life</a> |

**Your Notes:****Study Tip: Use a science survey test**

Biology textbooks or the *Idiot's Guide to Biology* are 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 Resources  | Recommended Resources  |
|--|---|--|
| <p><b>Biology Domain 4.01-4.14</b></p> <p><b>These standards cover:</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Molecular Biology</li></ul> | <p><b>Complete the following readings and watch the following videos in the Biology Refresher Course (PDF or Online version):</b></p> <p><b>Molecular Biology</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> DNA &amp; RNA Replication</li><li><input type="checkbox"/> DNA: Genetic Storage</li><li><input type="checkbox"/> Bacterial Operons and Gene Regulation</li><li><input type="checkbox"/> DNA Technology</li></ul> | <p><b>Web Resources</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> <a href="#">Cell and Molecular Biology Online</a></li></ul> <p><b>Books</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> <a href="#">Instant Notes in Molecular Biology</a></li><li><input type="checkbox"/> <a href="#">The Way of the Cell</a></li><li><input type="checkbox"/> <a href="#">Outline of Molecular and Cell Biology</a></li></ul> |

## Your Notes:

Did you know that your clock starts the moment you start the test? That means reading the instructions is part of the the timed test. Knowing what the instructions say before you go into the testing center gives you a slight advantage. That way you simply skim through the instructions for any surprises and then get right into the exam.

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

**Area of Study****Biology Domain 5.01-5.19****These standards cover:**

- Evolution

**Required Resources**

Complete the following readings and watch the following videos in the **Biology Refresher Course (PDF or Online version)**:

**Evolution**

- Natural Selection
- Evolution I
- Evolution II
- Evolutionary Support

**Recommended Resources****Web Resources**

- [Ancient DNA](#)

**Books**

- [DNA: The Secret to Life](#)

**Your Notes:**

## Test Day Tip:

In case of an incident on test day, like a blackout, or computer failure, do not despair! Report the incident immediately to the Pearson VUE test center personnel and then after the exam, contact your advisor. Minor incidents may not be considered problematic so continue the test to the best of your ability.

### Area of Study

#### Biology Domain 6.01-8.11

#### These standards cover:

- Comparative Physiology
- Human Physiology
- Plant Biology and Physiology

### Required Resources

Complete the following readings and watch the following videos in the **Biology Refresher Course (PDF or Online version)**:

#### Comparative Physiology

- Organization
- Embryogenesis
- Systems and Interactions

#### Human Physiology

- Nervous System
- Endocrine System
- Digestive System
- Circulatory System
- Urinary System
- The Liver
- Reproductive System
- Immune System
- Musculoskeletal System

#### Plant Biology & Physiology

- How Do Plants Grow?

### Recommended Resources

#### Web Resources

- [The Journal of General Physiology](#)
- [Plant and Cell Physiology](#)

#### Books

- [Physiology](#)
- [Plants and Microclimate: A Quantative Approach to Plant Physiology](#)
- [Anatomy and Physiology for Dummies](#)

## Your Notes:



**Resource Tip:**

Though your advisor is not a tutor, he or she are there to answer questions on how the program works and direct you to resources to aid in your studying. The advisor's job is to help you and hundreds of other candidates make it through the program. Our advisors will take your questions when you call in, but if your question requires more discussion, they may book an appointment with you.

| Area of Study  | Required Resources  | Recommended Resources   |
|--|---|---|
| <b>Biology Domain 9.01-9.14</b><br><br><b>These standards cover:</b><br><input type="checkbox"/> Ecology | <b>Complete the following readings and watch the following videos in the Biology Refresher Course (PDF or Online version):</b><br><br><b>Ecology</b><br><input type="checkbox"/> Ecological Growth and Limitations<br><input type="checkbox"/> Environmental Cycles & Factors | <b>Web Resources</b><br><input type="checkbox"/> <a href="#">The Concept of the Ecosystem</a><br><br><b>Books</b><br><input type="checkbox"/> <a href="#">A Citizen's Guide to Ecology</a><br><input type="checkbox"/> <a href="#">A Dictionary of Ecology: Evolution and Systematics</a> |

**Your Notes:**

Did you know that ABCTE is on Facebook? Come be an ABCTE fan.  
<http://facebook.com/abcte>

# American Board's Stepwise Method

## The Right Way to Get Started: using the Standards as your syllabus

The Standards are your study lifeline; you can find with your study materials. Throughout the course of your study, you will learn all of them. How to begin?

Here is the American Board'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.

### 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 | Substantiates or illustrates ideas.  |
| 1.1.04 | 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. |
| 1.1.05 | Plans lessons, depending on size and content of unit, so that important ideas or skills are stressed on several occasions rather than all at once.   |
| 1.1.06 | Selects lessons.   |
| 1.1.07 |  |

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:** identify additional resources to use as needed.

**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 | Effective Instructional Delivery

**Study Tip:**

One effective way of using the practice quizzes is to look at the incorrect answer choice 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 a wrong answer choice faster on test day.

| Area of Study   | Required Resources  | Recommended Resources  |
|---|---|--|
| <b>Domain 2 (Standards 2.1.01-2.5.01)</b><br><b>Effective Instructional Delivery</b><br>These standards cover:<br><input type="checkbox"/> Communicating effectively<br><input type="checkbox"/> Presenting clear and focused instruction<br><input type="checkbox"/> Effective questioning techniques<br><input type="checkbox"/> Making efficient use of learning time<br><input type="checkbox"/> Applications<br><input type="checkbox"/> Research Strategies | Complete the following readings and watch the following videos in the PTX Study Materials (PDF or Canvas version):<br><br><b>The Characteristics of Successful Teachers</b><br><input type="checkbox"/> Characteristics 1-8<br><input type="checkbox"/> Characteristics 9-16<br><input type="checkbox"/> VIDEO CASE STUDIES: Characteristics of Successful Teachers | <b>Web Resources</b><br><input type="checkbox"/> "The 21st Century Classroom" TED Talk<br><input type="checkbox"/> Teaching for the 21st Century<br><input type="checkbox"/> Personalized Learning<br><br><b>Books</b><br><input type="checkbox"/> Effective Teaching Methods: Research Based Practice<br><input type="checkbox"/> The First Days of School: How to be an Effective Teacher<br><input type="checkbox"/> Teaching in Today's Inclusive Classrooms<br><input type="checkbox"/> Inclusive Education Checklist |

**Your Notes:**

### 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.