A Guide to The SAT Subject Tests

And how they relate to your AP + IB Courses

In this guide, you will learn the format, content, and skills covered for each of the SAT Subject Tests. You will also learn how your AP/IB courses relate to these tests. The Subject Tests covered in this guide are:

- Literature
- Math Level 1
- Biology-Molecular
- U.S. History
- Math Level 2
- Chemistry
- World History
- Biology-Ecological
- Physics

What are the SAT Subject Tests?

SAT Subject Tests are optional college entrance exams that highlight your strengths in particular subject areas. A handful of colleges require them, many top schools recommend them, and many admissions teams will consider them if you choose to send your scores.

What to Expect on SAT Subject Tests

There are 20 different SAT Subject Tests grouped into 5 categories: English, History, Mathematics, Science, and Languages. Though subjects range from Biology to Japanese, every test shares a few things in common:

- You have **60** minutes to complete each exam.
- All questions are multiple choice.
- All tests are scored on a scale of 200 to 800.
- You gain **1** point for each correct answer.
- You lose a fraction of a point for each wrong answer.
  - **¼** for 5-choice questions
  - **⅓** for 4-choice questions
  - **½** for 3-choice questions
- No points will be deducted for unanswered questions.

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Why take SAT Subject Tests?

They offer an opportunity to highlight your academic strengths — strengths that might not come through on the more general SAT and ACT. Beyond giving admissions teams a fuller picture of you, SAT Subject Tests:

- Act as course placement exams at some schools, enabling you to exempt entry-level classes.
- Bolster your case for admittance to a specific major or school within a university.
- Offer international students a chance to show subject mastery to admissions teams who are more familiar with U.S. standards of course rigor.
- Provide multilingual and/or ESL students an opportunity to showcase expertise.
- Give you a competitive edge.
- Are required or recommended at many top colleges and universities.*

*Don't be fooled by the word *recommended*. In recent years competitive schools have stopped officially requiring SAT Subject Tests so as not to disadvantage students who cannot afford to purchase elective exams. If you can afford to do so, recommended means you probably should.

How should you prepare?

To excel on an SAT Subject Test, you should start by taking the high school class that coincides with it! Next, think about prep. It's important to learn the structure of the tests you choose to take, practice testing within the 60-minute time constraint, develop a strategy for guessing vs. omitting, and brush up on content that you've forgotten or that you never quite mastered. At Applerouth, we've designed a study plan for every test taker, and our Program Advisors can help you decide what plan is best for you:

- Fine-Tuning Tutoring Package: Target specific areas for maximum score increase potential during 6 hours of tutoring. **We recommend this plan if you're planning to take one SAT Subject Test and need to brush up on content and strategies.**
- Comprehensive Tutoring Package: Dive into SAT Subject content and hone test-taking strategies during 12 hours of tutoring. **We recommend this plan if you're planning to take two SAT Subject Tests (you can divide the hours as you choose) or if you need to do a deeper review of one subject.**
- In-Depth Tutoring Package: Achieve the greatest score gains or focus on the largest scope of content during 18 hours of tutoring. **We recommend this plan if you're planning to take two or three SAT Subject Tests and need the most rigorous review.**

Learn more about SAT Subject prep by giving us a call at **866-789-PREP.**

We're here to answer questions about test choice, testing timeline, tutoring options, or any other testing topic you're curious about.

We would love to help you navigate this process.

Literature

Format + Content

About **60** multiple-choice questions.

6 to 8 reading selections followed by sets of **4 to 12** questions.

Source of Questions	Approximate % of Test*
English literature	40%–50%
American literature	40%–50%
Other literature written in English	0%–10%
Chronology	
Renaissance and 17th century	30%
18th and 19th centuries	30%
20th and 21st centuries	40%
Genre	
Poetry	40%–50%
Prose	40%–50%
Drama and other	0%–10%

**The distribution of passages may vary in different versions of the test. Above indicates typical or average content.*

You'll be expected to:

- Recognize denotative and connotative meanings of words in context.
- Identify the structure of a text, including genre, progression, and format.
- Respond to a writer's use of language, including diction, imagery, and figurative language, and to its effects on the reader.
- Analyze narrative elements such as voice, tone, and point of view.
- Analyze poetic elements such as speaker, audience, occasion, and purpose.

Applerouth Tutor Tips

- Practice active reading! Marking-up a passage as you go saves time and helps you recall information.
- If the old-fashioned language is giving you a hard time, paraphrase it into something relatable.

Content Related to Your Courses

AP English Literature Course 80%

Covers **80%** of the content on the Subject Test

What's left to review:

- Greater understanding in certain literary terms/techniques.
- The use of humor and satire.

AP English Language Course 50%

Covers **50%** of the content on the Subject Test

What's left to review:

- Literary techniques used in prose.
- Literary techniques when analyzing poetry.
- Vocabulary used in fiction and poetry from 1400-1900.

IB Language A: Literature Course 55%

Covers **55%** of the content on the Subject Test

What's left to review:

- Greater understanding in literary techniques when analyzing poetry.
- Greater understanding in Western-centric prose.
- Vocabulary used in fiction and poetry from 1400-1900.

IB Language A: Language and Literature Course 45%

Covers **45%** of the content on the Subject Test

What's left to review:

- Greater understanding in literary techniques used in prose and when analyzing poetry.
- Greater understanding in Western-centric prose.

IB Language A: Literature and Performance Course 10%

Covers **10%** of the content on the Subject Test

What's left to review:

- Literary techniques used in prose.
- Literary techniques when analyzing poetry.
- Vocabulary used in fiction and poetry in 1400-1900.

U.S. History

Format + Content

90 multiple-choice questions

Material Covered*	Approximate % of Test
Political history	31%–35%
Economic history	13%–17%
Social history	20%–24%
Intellectual and cultural history	13%–17%
Foreign policy	13%–17%
Periods Covered	
Pre-Columbian history to 1789	20%
1790–1898	40%
1899 to the present	40%

**Social science concepts, methods, and generalizations are incorporated in this material.*

You'll be expected to:

- Knowledge of historical terms, concepts, and themes.
- Ability to identify historical facts and chronology.
- Comprehension of important elements in U.S. History.
- Connect ideas to charts, maps, and graphs.
- Evaluate sources with a given purpose in mind.

Content Related to Your Courses

AP U.S. History Course 75%

Covers **75%** of the content on the Subject Test

What's left to review:

- Historical facts: people, legislation, events, literary works, terminology, and court cases.
- Greater depth in the Industrial Revolution and Post-1968 America.
- Government structures and the Constitution.

IB Route 2: 20th-Century World History (SL/HL) Course 20%

Covers **20%** of the content on the Subject Test

What's left to review:

- Historical content spanning 1400-1900.
- Greater understanding of U.S. History from 1900-present.
- Government structures and the Constitution.

Applerouth Tutor Tips

- Study up on culture and social trends, rather than military history and specific dates.
- Skip questions you are unsure about. You can skip questions and still get a great score.

World History

Format + Content

Approximately **90** to **95** multiple-choice questions

Material Covered	Approximate % of Test
Global or comparative	25%
Europe	25%
Africa	10%
Southwest Asia	10%
South and Southeast Asia	10%
East Asia	10%
Americas	10%
Periods Covered	
Prehistory and civilizations to 500 c.e.*	25%
500 to 1500 c.e.	20%
1500 to 1900 c.e.	25%
Post-1900 c.e.	20%
Prose	40%–50%
Cross-chronological	10%

**The World History Subject Test uses the chronological designations b.c.e. (before common era) and c.e. (common era). These labels correspond to b.c. (before Christ) and a.d. (anno Domini), which are used in some world history textbooks.*

You'll be expected to:

- Interpret cause-and-effect relationships.
- Understanding of major historical developments as demonstrated through knowledge of events and geography.
- Understand concepts essential to historical analysis
- Interpret artistic sources and quotations from published materials.

Applerouth Tutor Tips

- Study up on culture and social trends, rather than military history and specific dates.
- Make sure to know the basics of world religions.

Content Related to Your Courses

AP European History Course 30%

Covers **30%** of the content on the Subject Test

What's left to review:

- Historical facts: people, legislation, events, literary/artistic works, and terminology.
- Content related to Asia, Africa, and the Americas.
- Colonization from a non-Eurocentric viewpoint.

AP World History Course 55%

Covers **55%** of the content on the Subject Test

What's left to review:

- Historical facts: people, legislation, events, literary/artistic works, and terminology.
- Greater understanding and focus on Prehistory-1500 (especially up to 600 BCE and between 600 BCE and 600 CE) and 1900-Present.
- Greater understanding of Asian and European History.

IB Route 1: Europe and the Islamic World (SL/HL) Course 25%

Covers of the content on the Subject Test

What's left to review:

- Historical facts: people, legislation, events, literary works, and terminology.
- Content related to Asia, Africa, and the Americas.
- All content Prehistory-500 CE and 1500 CE-Present.

IB Route 2: 20th-Century World History (SL/HL) Course 35%

Covers **35%** of the content on the Subject Test

What's left to review:

- Historical facts: people, legislation, events, literary/artistic works, and terminology.
- All content Prehistory-1900.

Math Level 1

Format + Content

50 multiple-choice questions

	Approximate % of Test
Number and Operations Operations, ratio and proportion, complex numbers, counting, elementary number theory, sequences	10%–14%
Algebra and Functions Expressions, equations, inequalities, representation and modeling, properties of functions (linear, polynomial, rational, exponential)	38%–42%
Plane Euclidean/Measurement	18%–22%
Coordinate Systems and Graphing Lines, parabolas, circles, symmetry, transformations	8%–12%
3-D Geometry Solids, surface area and volume (cylinders, cones, pyramids, spheres, prisms)	4%–6%
Trigonometry Right triangles, identities	6%–8%
Data Analysis, Statistics and Probability Mean, median, mode, range, interquartile range, graphs and plots, least-squares regression (linear), probability	8%–12%

Applerouth Tutor Tips

- You get to use your calculator on this test, so make sure you are comfortable with it.
- Sometimes it is easier to test the answer choices to see which one works than to fully solve the problem.
- Write everything down and draw pictures! This can help you keep from getting stuck and can help prevent small mistakes.

Content Related to Your Courses

The content covered in high school math classes can vary from school to school and from teacher to teacher. The best way to determine how well your coursework aligns with the test is to look at the section above on test content and ask yourself whether you're familiar with most of the concepts from your high school classes. As a general rule, students who have completed three years of high-school level math math will have covered the material needed for Math 1. High-school level math usually begins with Algebra 1, so if you've taken Algebra 1 plus two more math courses beyond that, you should be ready for Math 1.

Math Level 2

Format + Content

50 multiple-choice questions

	Approximate % of Test
Number and Operations Operations, ratio and proportion, complex numbers, counting, elementary number theory, matrices, sequences, series, vectors	10%–14%
Algebra and Functions Expressions, equations, inequalities, representation and modeling, properties of functions (linear, polynomial, rational, exponential, logarithmic, trigonometric, inverse trigonometric, periodic, piecewise, recursive, parametric)	48%–52%
Coordinate Systems and Graphing Lines, parabolas, circles, ellipses, hyperbolas, symmetry, transformations, polar coordinates	10%–14%
3-D Geometry Solids, surface area and volume (cylinders, cones, pyramids, spheres, prisms), coordinates in three dimensions	4%–6%
Trigonometry Right triangles, identities, radian measure, law of cosines, law of sines, equations, double angle formulas	12%–16%
Data Analysis, Statistics and Probability Mean, median, mode, range, interquartile range, standard deviation, graphs and plots, least-squares regression (linear, quadratic, exponential), probability	8%–12%

Applerouth Tutor Tips

- The test-makers don't expect you to have seen everything on this test. Don't feel bad about skipping a few questions!
- Write everything down and draw pictures! This can help you keep from getting stuck and can help prevent small mistakes.
- If you are in an AP math class, make sure you go back and review how to do the Algebra 2 problems you likely haven't thought about in over a year.

Content Related to Your Courses

The content covered in high school math classes can vary from school to school and from teacher to teacher. The best way to determine how well your coursework aligns with the test is to look at the section above on test content and ask yourself whether you're familiar with most of the concepts from your high school classes. As a general rule, students who have completed three years of high-school level math math will have covered the material needed for Math 2. High-school level math usually begins with Algebra 1, so if you've taken Algebra 1 plus two more math courses beyond that, you should be ready for Math 2.

Biology-Ecological

Format + Content

80 multiple-choice questions

The first **60** of the 80 questions are common to both Biology-E and Biology-M, followed by **20** specialized questions for each section.

	Approximate % of Test
Cell and Molecular Biology Cell structure and organization, mitosis, photosynthesis, cellular respiration, enzymes, biosynthesis, biological chemistry	12%
Ecology Energy flow, nutrient cycles, populations, communities, ecosystems, biomes, biodiversity, effects of human intervention	25%
Genetics Meiosis, Mendelian genetics, inheritance patterns, molecular genetics	12%
Organismal Biology Structure, function and development of organisms (with emphasis on plants and animals), animal behavior	25%
Evolution and Diversity Origin of life, evidence of evolution, patterns of evolution, natural selection, speciation, classification and diversity of organisms	25%

You'll be expected to:

- Demonstrate knowledge of core concepts, including specific facts and terminology (about 30% of test).
- Reformulate information into equivalent forms; apply knowledge to unfamiliar and/or practical situations and demonstrate proficiency at problem solving with mathematical relationships (about 35% of test).
- Interpret, infer, and deduce from qualitative and quantitative data; integrate information in order to form conclusions; and recognize unstated assumptions (about 35% of test).

Content Related to Your Courses

AP Biology Course 85%

Covers of the content on the Subject Test

What's left to review:

- Greater understanding of topics tested on Ecological Emphasis section.

AP Environmental Science 55%

Covers of the content on the Subject Test

What's left to review:

- Cell and Molecular Biology
- Genetics
- Function and development of organisms

IB Biology (SL) Course 80%

Covers of the content on the Subject Test

What's left to review:

- Greater understanding of some topics.
- Lab design

IB Biology (HL) Course 90%

Covers of the content on the Subject Test

What's left to review:

- Lab design

Applerouth Tutor Tips

- On test day, make sure you fill in the appropriate circle on your answer sheet to indicate you will be talking Biology-E or Biology-M.
- There's a lot of vocabulary! Make sure you study early and find the study style that works for you.

Biology-Molecular

Format + Content

80 multiple-choice questions

The first **60** of the 80 questions are common to both Biology-E and Biology-M, followed by **20** specialized questions for each test.

Cell and Molecular Biology	Approximate % of Test
Cell structure and organization, mitosis, photosynthesis, cellular respiration, enzymes, biosynthesis, biological chemistry	25%
Ecology	12%
Energy flow, nutrient cycles, populations, communities, ecosystems, biomes, biodiversity, effects of human intervention	
Genetics	25%
Meiosis, Mendelian genetics, inheritance patterns, molecular genetics	
Organismal Biology	25%
Structure, function and development of organisms (with emphasis on plants and animals), animal behavior	
Evolution and Diversity	12%
Origin of life, evidence of evolution, patterns of evolution, natural selection, speciation, classification and diversity of organisms	

You'll be expected to:

- Demonstrate knowledge of core concepts, including specific facts and terminology (about 30% of test).
- Reformulate information into equivalent forms; apply knowledge to unfamiliar and/or practical situations and demonstrate proficiency at problem solving with mathematical relationships (about 35% of test).
- Interpret, infer and deduce from qualitative and quantitative data; integrate information in order to form conclusions; and recognize unstated assumptions (about 35% of test).

Content Related to Your Courses

AP Biology Course 100%

Covers of the content on the Subject Test

IB Biology (SL) Course 70%

Covers of the content on the Subject Test

What's left to review:

- Greater understanding of topics tested on Molecular Emphasis section.
- Lab design

IB Biology (HL) Course 80%

Covers of the content on the Subject Test

What's left to review:

- Greater understanding of topics tested on Molecular Emphasis section.
- Lab design

Applerouth Tutor Tips

- On test day, make sure you fill in the appropriate circle on your answer sheet to indicate you will be talking Biology-E or Biology-M.
- There's a lot of vocabulary! Make sure you study early and find the study style that works for you.

Chemistry

Format + Content

85 multiple-choice questions.*

Topics Covered	Approximate % of Test
Structure of Matter Atomic structure, molecular structure, and bonding	25%
States of Matter Gases, liquids and solids, and solutions	16%
Reaction Types Acids and bases, oxidation-reduction, and precipitation	14%
Stoichiometry Mole concept and chemical equations	14%
Equilibrium and Reaction Rates Equilibrium systems, rates of reactions	5%
Thermochemistry	6%
Descriptive Chemistry	12%
Laboratory	8%

You'll be expected to:

- Demonstrate knowledge of core concepts, including specific facts and terminology (about 20% of test).
- Apply a single principle to an unfamiliar and/or practical situation and obtain a qualitative result or solve a quantitative problem (about 45% of test).
- Synthesize knowledge by inferring and deducing from qualitative and/or quantitative data and integrate two or more relationships to draw conclusions or solve problems (about 35% of test).

Content Related to Your Courses

AP Chemistry Course 100%

Covers of the content on the Subject Test

IB Chemistry (SL) Course 80%

Covers of the content on the Subject Test

What's left to review:

- Greater understanding of: oxidation/reduction, rate expression, reaction mechanism, bond hybridization, acids/bases.
- Experience with measurement and analysis.

IB Chemistry (HL) Course 100%

Covers **100%** of the content on the Subject Test

Applerouth Tutor Tips

- Make sure you practice your estimation skills before you take this test! You have no calculator and less than a minute per question, but the test will still ask you to do messy looking computations. The answer choices are generally different enough that rough estimations will narrow you down to only one reasonable answer.
- The Relationship Analysis questions may seem very strange when you first look at them. Make sure you practice with the question style before you take the test.

* **25 Classification questions:** For these questions you will be given a set of answer choices that belong to a set of questions. Each of the choices may be used once, more than once, or not at all across its set of questions.

15 Relationship Analysis questions: These questions take the form Statement 1 BECAUSE Statement 2. Your job is to individually determine whether Statement 1 is True or False and whether Statement 2 is True or False. IF both statements are true, then you also need to determine whether the causal relationship is correct. This means you will bubble in 2 or 3 bubbles per question in this section and you must get all three components correct to get the point for the problem.

45 standard 5 answer multiple choice

Physics

Format + Content

75 multiple-choice questions.

Topics Covered	Approximate % of Test
Mechanics	36%–42%
Kinematics, dynamics, energy and momentum, circular motion, simple harmonic motion, and gravity.	
Electricity and Magnetism	18%–24%
Electric fields, forces and potentials, capacitance, circuit elements and DC circuits, and magnetism.	
Waves and Optics	15%–19%
General wave properties, reflection and refraction, ray optics, and physical optics.	
Heat and Thermodynamics	6%–11%
Thermal properties, laws of thermodynamics.	
Modern Physics	6%–11%
Quantum phenomena, atomic, nuclear physics, and relativity.	
Miscellaneous	4%–9%
General, analytical skills, and new topics in physics.	

You'll be expected to:

- Understand concepts or information (about 12%–20% of test).
- Apply a single physical relation or concept (about 48%– 64% of test).
- Integrate two or more physical relationships or concepts (about 20%–35% of test).
- Understand simple algebraic, trigonometric, and graphical relationships and the concepts of ratio and proportion and the application of these to physics problems.
- Apply laboratory skills in the context of the physics content.

Content Related to Your Courses

AP Physics 1 Course — 60%

Covers **60%** of the content on the Subject Test

What's left to review:

- Electric Fields and Potentials, Capacitance, Magnetism
- Optics and Electromagnetic waves
- Heat and Thermodynamics
- Modern and Contemporary Physics
- Thermal physics
- Magnetism

AP Physics 2 Course — 60%

Covers **60%** of the content on the Subject Test

What's left to review:

- Greater understanding in thermal physics and optics
- Contemporary Physics
- Mechanics
- Relativity

AP Physics C: Electricity and Magnetism Course — 50%

Covers **50%** of the content on the Subject Test

What's left to review:

- Kinematics
- Newton's Laws
- Optics

IB Physics (SL/HL) Course — 85%

Covers **85%** of the content on the Subject Test

What's left to review:

- Optics
- Electric and magnetic fields (SL only)
- Electromagnetic induction (SL only)

Applerouth Tutor Tips

- Know which equations are right for which problem, and see what cancels when you combine them. Save plugging in numbers for the last step and estimate!
- The Subject Test covers some topics you might not know, so don't get hung up on those questions. Use your time to answer the questions you recognize and don't worry about leaving some answers blank.

Learn more about SAT Subject prep by giving us a call at **866-789-PREP.** We're here to answer questions about test choice, testing timeline, prep options, and any other testing topic you're curious about!

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