ANDOVER SUMMER

SUMMER SESSION

at PHILLIPS ACADEMY

UPPER SCHOOL COURSE CATALOG SUMMER 2026

OCTOBER 17, 2026

ANDOVER SUMMER

2026 Upper School Course Catalog

UPPER SCHOOL OVERVIEW

Our Upper School is designed for rising 9th-12th graders (or ages ~14-17) seeking an enriching summer academic experience supplemented with afternoon activities, optional trips to area colleges and weekend trips to local destinations.

Upper School students can select from 50 course options, each taught by a member of our distinguished summer faculty. The Upper School provides the rigorous academic environment our students seek, while providing a nurturing and supportive community of learners.

COURSE SELECTION

Upon enrollment, students and parents/guardians will submit their course requests through the Family Portal. When selecting courses, all students* should enroll in the following:

- A Period 1 course (8:30 am-10:00 am)
- A Period 2 OR Period 3 course (Period 2: 10:30am-12:00pm)

  (Period 3: 1:00-2:30pm)

Students may use their free period for study, optional courses, or music lessons.

All Upper School Boarding students also participate in our afternoon activities program Mondays, Tuesdays, Thursdays and Fridays from either 4-5 pm or 5-6 pm.

**Day students may opt to enroll in one (1) course, but all boarding students must enroll in (2) two courses. Please note that Princeton Review Test Prep, College Counseling and Essential Study Skills do not count toward the course minimum. While we encourage day students to make an afternoon activity selection, this is optional.*

COURSE CHANGES

Students may utilize our Family Portal to make course changes until May 15th. After May 15th, students will be able to make changes via the add/drop period which begins on the first Friday of the program and ends on the first Sunday of the program.

PREREQUISITES AND GRADE LEVELS COURSE

Students and families should make themselves aware of required prerequisites and grade level restrictions (where listed) and should not enroll in any course for which they do not have the required prerequisite course or are not at the required grade level. If you have questions related to prerequisite or grade level requirements, please reach out to the summer office.

ACADEMIC ACCOMMODATIONS

Andover Summer can provide limited academic accommodations to admitted students. These accommodations may include extended time on testing, preferred classroom seating, and/or support at an evening study center. Once admitted, families should complete the required accommodations form in our medical portal and provide all necessary supporting documentation, in order to formally submit their request. All accommodations requests must be submitted by May 15, 2026. Requests made after this date may not be considered.

OPTIONAL COURSES AND ADD-ONS

Optional Courses and add-ons may be taken in addition to the required course minimum described above. These items are not included in tuition and fees.

Princeton Review Test Prep–$990*

Princeton Review courses prepare students for the verbal, quantitative, and reading comprehension sections of the SAT and SSAT standardized tests. Students will learn efficient test-taking strategies which, alongside full-length practice tests, will help relieve test taking anxiety and allow for students to maximize their score.
SAT is open to rising 10th–12th graders and 9th graders who have completed a full Algebra II curriculum. SSAT Prep is open to rising 9th graders. Princeton Review courses meet 4x weekly for 1 hour. Students are scheduled into sections depending upon overall course schedule. For more information on Princeton Review Test Prep, please visit their website at: https://www.princetonreview.com.
**Please note students may not enroll in both Princeton Review Test Prep and Essential Study Skills*

Essential Study Skills–$650

This course is designed to teach students the skills to thrive, both academically and personally, in challenging school environments. Invited to nurture the broader dispositions that lead to academic success, students will emerge from the course with a toolkit of strategies they can use throughout their academic careers and beyond for finding and maintaining curiosity and motivation, cultivating optimism and resilience, developing essential academic skills, and applying learning strategies for improved time management and effective study. Essential Study Skills courses meet 4x weekly for 1 hour. Students are scheduled into sections depending upon overall course schedule.
**Please note students may not enroll in both Princeton Review Test Prep and Essential Study Skills*

College Counseling–$350

Open to Upper School students, the College Counseling Program provides students with an insider's look at the college admissions process. Students who register for the college counseling program will have access to exclusive workshops led by admissions representatives from highly selective institutions, priority sign-up for weekly college trips and a one-to-one meeting with an Andover Summer college counselor.

A summer college fair will be held on Sunday, July 12th from 6:00-7:30 pm and is open to all Upper School students regardless of registration in the college counseling program. A list of college and university attendees will be provided at the start of the program.

Music Lessons–$400

Students can select optional music lessons to keep their practice going strong throughout the summer. Students may enroll in four 45-minute lessons; practice rooms and instrument rentals are also available. Summer Session musicians are also invited to take part in an end-of- session performance.

Upper School Daily Schedule

MONDAY	
7:00-9:00 a.m.	Breakfast available
8:30–10:00 a.m.	Period 1: Classes
10:30 a.m.–12:00 p.m.	Period 2: Classes
11:00 a.m.- 1:30 p.m.	Lunch available
1:00–2:30 p.m.	Period 3: Classes
2:45–3:45 p.m.	Period 4: College Counseling / Optional Courses
4:00-5:00 p.m.	Period 5: Afternoon Activities
5:00-6:00 p.m.	Period 6: Afternoon Activities
5:00–6:45 p.m.	Dinner available
7:00 p.m.	Initial Dorm Sign-in
7:00-7:45 p.m.	Study Hour
8:00-9:00 p.m.	Evening Electives
9:00-9:15 p.m.	"Paresky Late Night" break
9:30 p.m.	Final Dorm Sign-in
10:30 p.m.	Students in their rooms

TUESDAY	
7:00-9:00 a.m.	Breakfast available
8:30–10:00 a.m.	Period 1: Classes
10:00-10:30 a.m	"Milk & Cookies" break
10:30 a.m.–12:00 p.m.	Period 2: Classes
11:00 a.m.- 1:30 p.m.	Lunch available
1:00–2:30 p.m.	Period 3: Classes
2:45–3:45 p.m.	Period 4: College Counseling / Optional Courses
4:00-5:00 p.m.	Period 5: Afternoon Activities
5:00-6:00 p.m.	Period 6: Afternoon Activities
5:00–6:45 p.m.	Dinner available
7:00 p.m.	Initial Dorm Sign-in
7:00-7:45 p.m.	Study Hour
8:00-9:00 p.m.	Evening Electives
9:30 p.m.	Final Dorm Sign-in
10:30 p.m.	Students in their rooms

WEDNESDAY	
7:00-9:00 a.m.	Breakfast available
8:30-9:20 a.m.	Conference Period
9:30-10:30 a.m.	High School Meeting *(all students entering grades 9-12)*
10:30 a.m.- 1:30 p.m.	Lunch available
11:15 a.m.-6:00 p.m.	Optional College Visits
12:00-4:00 p.m.	Open Activities
5:00–6:45 p.m.	Dinner available
7:00 p.m.	Final Dorm Sign-in
7:30-9:15 p.m.	Dorm Meetings & Fun (meetings & activities)
10:30 p.m.	Students in their rooms

THURSDAY	
7:00-9:00 a.m.	Breakfast available
8:30–10:00 a.m.	Period 1: Classes
10:30 a.m.–12:00 p.m.	Period 2: Classes
11:00 a.m.- 1:30 p.m.	Lunch available
1:00–2:30 p.m.	Period 3: Classes
2:45–3:45 p.m.	Period 4: College Counseling / Optional Courses
4:00-5:00 p.m.	Period 5: Afternoon Activities
5:00-6:00 p.m.	Period 6: Afternoon Activities
5:00–6:45 p.m.	Dinner available
7:00 p.m.	Initial Dorm Sign-in
7:00-7:45 p.m.	Study Hour
8:00-9:00 p.m.	Evening Electives
9:00-9:15 p.m	"Paresky Late Night" break
9:30 p.m.	Final Dorm Sign-in
10:30 p.m.	Students in their rooms

FRIDAY	
7:00-9:00 a.m.	Breakfast available
8:30–10:00 a.m.	Period 1: Classes
10:00-10:30 a.m	"Milk & Cookies" break
10:30 a.m.–12:00 p.m.	Period 2: Classes
11:00 a.m.- 1:30 p.m.	Lunch available
1:00–2:30 p.m.	Period 3: Classes
2:45–3:45 p.m.	Period 4: College Counseling / Optional Courses
4:00-5:00 p.m.	Period 5: Afternoon Activities
5:00-6:00 p.m.	Period 6: Afternoon Activities
5:00–6:45 p.m.	Dinner available
7:00 p.m.	Initial Dorm Sign-in
7:30-9:15 p.m.	Study Hours
9:30 p.m.	Final Dorm Sign-in
10:30 p.m.	Students in their rooms

SATURDAY	
7:00-9:00 a.m.	Breakfast available
8:30–10:00 a.m.	Period 1: Classes
10:30 a.m.–12:00 p.m.	Period 2 and 3: Classes
11:15 a.m.–2 p.m.	Lunch available
1–5 p.m.	Optional Student Activities
5:00–6:45 p.m.	Dinner available
7:00 p.m.	Initial Dorm Sign-in (All on campus for rest of evening)
7:30-10:30 p.m.	Optional Student Activities
11:00 p.m.	Final Dorm Sign-in
11:45 p.m.	Students in their rooms

SUNDAY	
8:30-10:30 a.m.	Breakfast available
10:30 a.m.–1:30 p.m.	Brunch available
1–5 p.m.	Optional Student Activities
5:00–6:45 p.m.	Dinner available
7:00 p.m.	Initial Dorm Sign-in
7:30-9:15 p.m.	Study Hours *(Study Centers open)*
9:30 p.m.	Final Dorm Sign-in
10:30 p.m.	Students in their rooms

UPPER SCHOOL COURSE OFFERINGS

In the pages that follow you will find the full range of possible Upper School courses that are currently being offered for the summer of 2026. Please note that final course offerings are dependent upon enrollment and staffing, and courses with insufficient enrollment may be cancelled at any point prior to the start of the summer. Students enrolled in a course that is being cancelled will be notified and given the opportunity to enroll in an alternate course, based on what remains available at that time.

Course enrollment is a first-come, first-served process, with our most popular courses and programs typically filling up in February or March each year.

EVENING ELECTIVES

We are excited to share that in Summer 2026 Upper School students will be taking one evening ("Evening Elective") course. These courses will be held on M, T and Th evenings from 8:00-9:00 p.m. These courses are designed to be engaging, immersive and project-based offering opportunities for rich discourse and dialog. Evening Elective enrollment will be on a first-come, first-served basis. The evening elective courses will be shared in mid-February, with the selection process opening in early March for all Upper School students. There are no additional fees for the Evening Elective.

ARTS - VISUAL AND PERFORMING

Acting and Performance

Grades 9–12 | PERIOD 3

Working from the ground up, students learn how to use their minds, bodies, and voices as professional actors do. Beginning with physical and vocal exercises, improvisation games, and other ensemble-building workshops, the course then moves on to more advanced acting techniques. Students explore some of the most influential theatre styles, plays, and characters—as well as creating their own—through rehearsal and in- class presentation, culminating in a public performance of their work from the summer. No prior theatre experience necessary; this class is equally suited for beginners or performance pros.

Ceramics

Grades 9–12 | PERIOD 3

Express yourself through clay! This course discusses the elements of three- dimensional design and focuses on the creative potential of the student. *Ceramics* at Phillips Academy is comparable to ceramics courses taught at art schools and select universities; the Academy is equipped with facilities for pit firing, high fire gas, and Raku. Techniques, glazes, and firing procedures are introduced with the support of books, slides, and visits to the campus's Addison Gallery of American Art and Robert S. Peabody Museum of Archaeology.

Digital Photography

Grades 9–12 | PERIOD 2

Through this class, students gain an understanding of the principles of photographic composition and quality, as well as how technology can improve their images. Students learn the basics of photography and how to use digital cameras, then scan their images into Adobe Photoshop, where they can transform them by adding color and using the program's many altering techniques. The ultimate challenge is for students to push their creative limits. Students are encouraged to bring a digital camera; those who do not have one are welcome to borrow one for the duration of the program.

COMPUTER SCIENCE

Game Design and Development

Grades 9–12 | PERIOD 2

You know how to play games on Xbox, PlayStation, Nintendo and your mobile device but did you ever wonder how to build one yourself? The game design industry is an exciting, expanding field that requires both technical and creative ability. Dive into this interactive course where you'll learn ways to create and describe a game concept and specifically investigate what makes a compelling game design. Students will work with their instructors to construct board games and computer-based games, design characters, build terrains, and improve the interactive user experience. If you are passionate about gaming, like working with others, and have a big imagination – this is the course for you!

Introduction to Computer Science

Grades 9–12 | PERIOD 2

Unlock the world of coding and software development in our exciting Introduction to Computer Science course designed exclusively for high school students participating in our summer program. This course is tailored to provide a comprehensive introduction to the fundamentals of programming and computer science, making it perfect for students with little to no prior coding experience. With a focus on hands-on learning, problem- solving, and creativity, students will explore the exciting universe of coding and its real-world applications. Students explore the basics of computer programming while creating animations, games, and simulations. Topics include object-oriented programming, variables, decisions, events, and the basics of game design in a graphical environment. Students do not need a strong high school math background, making this an ideal course for younger students. Though the course is not taught with a traditional programming language, all concepts can be transferred to other object-oriented languages, such as Java and Visual Basic.

Robots: Design! Build! Program!

Grades 9–12 | PERIOD 1

Welcome to the world of robots! Science, math, engineering, creativity, and logic are combined in this exciting introductory robotics and robotics programming course, cross-listed under science. This course provides a solid foundation in the principles and practices of robotics, blending theoretical knowledge with hands-on experience. Students will be taught to understand the fundamental concepts of robotics, including kinematics, dynamics and control systems. They will explore various types of robots and their application in different industries as well as learn about sensors, actuators, and the integration of hardware and software in robotic systems. At the end of the program, students will test their skills with a fun and competitive robotics challenge among their classmates.

ENGLISH

Creative Writing

Grades 9–12 | PERIOD 1 or PERIOD 2

This course is for students who think of writing as an art, not just a useful skill. Students read and write in several genres—short story, poetry, and nonfiction memoir—using the readings as models for their own work. In their writing, students are expected to develop mastery of fundamental techniques of good writing, from basic grammar and usage to metaphorical language and plot structure. Required to write daily, revise, and produce polished final drafts as well as share in class, students begin to transform raw talent into true skill.

Literary Analysis

Grades 9–12 | PERIOD 1

Explore and appreciate the world of literature in our *Literary Analysis* course. Designed for enthusiastic readers, budding writers, and future scholars of literature, this course provides students with an exploration of literary works from various genres and time periods. Through lively discussions, critical thinking exercises, and close textual analysis, students will develop the skills to appreciate, analyze, and articulate the profound themes and ideas woven into great works of literature. Students will develop an in-depth understanding and appreciation of a range of different writers, and will practice actively reading novels, plays, short stories, and/ or essays, writing articulately, and discussing text using evidence. Students will learn to see themselves as independent thinkers and to give voice to their thoughts through the written word

NEW! Playwriting: Telling Stories for the Stage

Grades 9–12 | PERIOD 1

This course invites students to step into the role of playwright, exploring how stories are transformed from imagination to performance. Students will study the fundamentals of dramatic structure, dialogue, character development, and stage direction while reading and analyzing a variety of plays for inspiration. Through writing exercises, workshops, and peer feedback, they will craft original one-act plays or scenes. The course emphasizes revision, collaboration, and creative risk-taking, giving students the tools to shape their unique voices as writers. By the end of the semester, students will have a polished script ready for performance or staged reading.

Speech and Debate

Grades 9–12 | PERIOD 1 or PERIOD 2

In a survey, 3,000 Americans were asked what they dreaded most. Public speaking came in first—ahead of death! In an encouraging classroom atmosphere, students are taught to improve both the delivery and the content of their public speaking. Students write, revise, and speak extensively and are introduced to competitive high school speech activities, such as extemporaneous speaking, impromptu speech, and the Lincoln-Douglas debates. Close analysis of contemporary American political speeches and research of cutting- edge controversial topics provide issues for classroom debate. Students develop an invaluable skill that will serve them for the rest of their lives. This course assumes no prior knowledge of public speaking or debate.

ENGLISH

Writing for Success: Expository Writing

Grades 9–12 | PERIOD 1, PERIOD 2, or PERIOD 3

The most important writing course students will ever take–and the most sought-after writing course at Andover–*Writing for Success* emphasizes essay composition as a craft and exposes students to different uses and combinations of rhetorical modes, including definition, description, narration, process, comparison, and analysis. Over the course of the program, students practice constructing effective sentences and paragraphs to suit a variety of topics, audiences, and aims. By writing every day as well as reading and discussing the style and mechanics of published essays, students experience writing as a rewardingly rigorous, recursive, and creative process that involves brainstorming, planning, composing, editing, reverse outlining, and constructive peer review.

HISTORY AND SOCIAL SCIENCES

Ethics to Action: Innovating for a Better World

Grades 9–12 | PERIOD 2

What if a business could change the world? From Tom's one-for-one shoe model to Too Good To Go's fight against food waste and Fairtrade's global push for justice, many of today's most successful ventures are built on ethical choices. In this course, you won't just study these examples, you'll step into the role of an ethical entrepreneur yourself. We'll begin by asking big questions: What problems matter most in your life, your school, your community? What responsibility do we carry to solve them? Then, with guidance and teamwork, you'll turn your ideas into action, designing a venture that balances innovation with impact. The course ends in a high-energy pitch competition, where student teams showcase their ventures. Recent projects have ranged from apps tackling mental health of teenagers to accessible ride sharing platforms for the elderly to access medical services.

NEW! Intelligence: Human and Artificial

Grades 9–12 | PERIOD 1

What is intelligence, and how do we build it? This interdisciplinary course explores the nature of intelligence through the lens of psychology, cognitive science, artificial intelligence, and computer science. Students will investigate how humans think, learn, and make decisions, and how these cognitive processes have inspired technologies like neural networks and large language models.

By drawing connections between the brain and AI systems, students will explore questions like: How do our minds form concepts? How do computers learn? What can human and machine errors teach us about intelligence? Along the way, students will deepen their understanding of their own cognitive patterns while gaining foundational knowledge in how intelligent systems are built.

International Relations

Grades 9-12 | PERIOD 1

This course is designed to stimulate students' interest in international relations and foreign policy. As a result of their experiences in the class, they become more astute observers of the international scene and learn to better understand the problems facing the world today. Emphasis is placed on both the historical background and the realities of the modern world scene. Students are assigned readings and gain considerable experience in utilizing library sources emphasizing a variety of viewpoints. Much attention is given to the development of critical thinking, and a large portion of the course is devoted to activities that promote student involvement. Students engage in seminars; serve as prosecutors, defenders, and court members in mock World Court cases; and become involved in a major simulation modeled on the United Nations, utilizing debate, negotiation, compromise, and decision- making skills.

HISTORY AND SOCIAL SCIENCES

Law and Society

Grades 9-12 | PERIOD 1 or PERIOD 2

In this course, students will learn about the foundations of the American legal system and how they apply to social, economic, political, and individual issues. We will delve into issues of law, crime prevention, conflict resolution, advocacy, and human rights through a combination of case studies, legal analyses, and mock trials. This class will study several landmark cases from the American legal system's history and explore their impact on our society, while considering how the precedents set in these cases apply to current issues. If you love discussion, if legal issues intrigue you, if you're thinking about studying law, or if you just want to look at society from a new point of view, this is the class for you.

Money, Economy, and Society

Grades 9–12 | PERIOD 1 or PERIOD 2

Our lives are impacted by economic forces in surprising and powerful ways. Learn to appreciate these forces and you'll make smarter personal decisions and better sense of the world around you. What constitutes a "fair price" when you purchase a new iPhone? Why is LeBron James paid forty million dollars a year to play basketball when a nurse or firefighter is paid forty thousand dollars a year to save human lives? Is it possible to bring manufacturing jobs back to America by placing tariffs on Chinese imports? Can we reduce income inequality by taxing the rich and writing checks to the poor? Why is a stay-at-home-mom who cares for her children and cleans the house classified by economists as "unproductive"? To answer these and many more questions, we trace the main currents of economic thought from Adam Smith and Karl Marx to Marilyn Waring and Thomas Piketty.

NEW! Philosophy: Epistemic (In)Justice

Grades 9–12 | PERIOD 3

How is knowledge shared, valued, or dismissed—and who gets to be heard? This course explores the idea of *Epistemic Injustice*: the ways bias and power can shape whose knowledge counts. Students will study concepts such as testimony, credibility, and authority while drawing on philosophic, historical, and contemporary examples. Through readings, discussions, and case studies, they will examine questions like: Why are some voices silenced or ignored? How do stereotypes affect who is believed? What responsibilities do we have as knowers and listeners? By the end of the course, students will gain tools to recognize and challenge epistemic injustice in both academic and everyday contexts.

NEW! Rebel Youth: Social Protest Movements Around the World

Grades 9–12 | PERIOD 3

What happens when teenagers refuse to accept injustice? They change the world. From sit-ins that shut down segregated lunch counters to wildcat strikes on the streets of Paris, young people have consistently sparked the most powerful social revolutions in world history. This captivating summer course dives deep into the raw energy and brilliant strategies of youth who said "enough" to discrimination, police violence, and systemic oppression. You'll discover how ordinary high schoolers and college students became the force behind extraordinary social change. Get ready to explore the extensive grassroots networks, revolutionary manifestos, and the bold tactics that shook the world to its core.

HISTORY AND SOCIAL SCIENCES

Social Psychology

Grades 9-12 | PERIOD 1

This summer, embark on a thought-provoking journey into the complexities of human behavior and social interactions. Whether you are interested in psychology as a potential field of study or simply want to better understand the world and people around you, this course will provide you with the tools to explore the intricacies of social psychology and its impact on our daily lives. Gain a deeper understanding of human behavior and society and develop critical thinking skills that will serve you well in any field. This course will provide an introduction to the theories and applications of social psychology in research, academic and social settings. Through class activities and discussions, students experience and reflect on constructs of social psychology that they will have read about in scientific settings. Students are also involved in discussing the relevance of gender and ethnic diversity in the construction of social values, with specific focus on their own lives and experiences. Topics include group dynamics, conformity, self- knowledge, attitude formation and change, interpersonal attraction, prejudice, and aggression.

NEW! The Explorer's Lab: Ideas Across Disciplines

Grades 9-12 | PERIOD 1

For students who don't want to choose just one path, The Explorer's Lab is a fast-paced, hands-on journey across disciplines. Think of it as a "sampler plate" of big ideas and skills, from the arts and sciences to philosophy, psychology, design, economics, technology, and even emerging fields like AI and social entrepreneurship. Each week brings a new theme and a new challenge, encouraging students to make unexpected connections and practice leading through uncertainty. In this course, learning isn't just about mastering material, it's about asking better questions, testing ideas, and adapting when the answers aren't clear. Students will learn to notice the problems that matter most in their own lives and communities, experiment with different ways of addressing them, and develop the emotional resilience to keep going when the path forward is uncertain. Along the way, they'll build core skills in creative thinking, ethical reasoning, storytelling, teamwork, and presentation. The course culminates in a student-designed interdisciplinary capstone project that tackles a real-world issue. Perfect for Upper Schoolers who are still exploring what excites them most, The Explorer's Lab equips students with the mindset and confidence to be lifelong learners: curious, adaptable, empathetic, and unafraid to ask bold questions.

HISTORY AND SOCIAL SCIENCES

NEW! World Revolutions: The Forces That Reshape the World

Grades 9-12 | PERIOD 1

What drives ordinary people to risk everything to tear down the world as they know it and build something entirely new? This intensive five-week exploration examines three pivotal revolutions that forever altered human history: the Haitian Revolution's unprecedented triumph of enslaved people over colonial masters, the Russian Revolution's dramatic collapse of imperial rule, and the decades-long struggle that dismantled South Africa's apartheid system. Through rigorous analysis of primary sources and eyewitness accounts, you'll uncover the complex web of economic pressures, social inequalities, and political catalysts that ignite revolutionary fervor while developing sophisticated critical thinking and analytical writing skills. You'll craft your own revolutionary manifesto, design a compelling protest poster that captures the visual language of resistance, and step into the boots of a Russian peasant in 1917, navigating the competing promises of Bolsheviks, Mensheviks, and other political factions vying for your allegiance. From the sugar plantations of Saint-Domingue to the townships of Soweto, you'll investigate how revolutionaries navigate the treacherous path between idealistic vision and brutal reality, discovering what separates mere reform from true revolution and why some movements succeed in reshaping civilizations while others collapse into chaos.

MATHEMATICS

Geometry*

Grades 9–12 | PERIOD 1 or PERIOD 2

Explore the fascinating world of shapes, angles, and spatial relationships, and get a jump on the high school geometry curriculum. For students who have had a strong elementary or middle school algebra course but no geometry, this course is a thorough study of the fundamentals. The development of logical, structured proofs and deductive reasoning is emphasized. Along with numerical solutions to problems, topics include basic postulates of geometry, lines and angles, congruent triangles, parallel lines in the plane and in space, quadrilaterals and polygons, circles, similar triangles and other figures, and the Pythagorean Theorem.

**Prerequisite: successful completion of one year of algebra*

Dynamic Data-Statistics in Action*

Grades 11 and 12 | PERIOD 1

Prepare to unleash the power of data-driven decision-making, and to use mathematical analysis to better understand the world around you. This course offers a comprehensive introduction to the world of statistics, data analysis, and their real-world applications. Covering the exploratory analysis of data, students will make use of graphical and numerical techniques to study patterns and develop plans for data collection of valid information. Topics include probability as the tool for producing models, random variables, independence, normal distribution, simulation, sampling, statistical inference, confidence intervals, and tests of significance.

**Prerequisite: successful completion of one year of algebra*

Personal Finance

Grades 9–12 | PERIOD 1 or PERIOD 2

In a world of complex financial decisions and endless possibilities, *Personal Finance* is designed to empower you with the knowledge, skills, and strategies necessary to navigate your financial journey successfully. This course is tailored to equip students with the essential tools to make informed financial decisions, achieve financial security, and build lasting wealth. By developing students' financial literacy skills and emphasizing real-world applications of mathematics in the areas where students will need to be most skilled when they become financially independent, *Personal Finance* helps students set the stage for a prosperous future. Budgeting, learning to borrow and invest wisely, understanding the stock market and basics of investing, and planning for major purchases and life events will all be covered. Through a combination of reading, research, simulation activities, projects, and data analysis, students will learn to prepare for their financial futures.

MATHEMATICS

Topics in Algebra I*

Grades 9-10 | PERIOD 3

A practical overview for students entering high school, this course reviews and reinforces math skills found in the pre-algebra and Algebra I curriculum. It should provide a solid foundation for Algebra II and Intermediate Algebra. Topics include several fundamental concepts of Algebra, graphing and solving linear and quadratic functions, solving systems of linear equations and properties of exponents.

**Prerequisite: successful completion of one year of algebra*

Topics in Intermediate Algebra*

Grades 9-11 | PERIOD 2

Engage in a more detailed exploration of fundamental algebraic concepts and techniques that build upon the foundational principles introduced in Algebra I. This course is designed for students seeking to deepen their mathematical proficiency and prepare for more advanced mathematics and science courses, and will cover math skills found in the Algebra II curriculum. It should provide a solid foundation for pre-calculus. Topics include solving linear equations and inequalities and absolute value equations and inequalities. A study of linear functions will be followed by polynomials and rational expressions. An in-depth study of quadratic functions may be followed by exponential and logarithmic functions, time permitting.

**Prerequisite: successful completion of one year of algebra*

Topics in Precalculus*

Grades 10-12 | PERIOD 1

Upperclassmen, take your mathematical skills to the next level with our *Topics in Precalculus* course. Designed for rising juniors and seniors who have a strong foundation in algebra and trigonometry, this course explores advanced precalculus concepts and lays the groundwork for future studies in calculus. Topics covered will include linear systems of equations, linear functions, quadratic functions, polynomial functions, logarithmic functions, and radical functions. Additional topics may include sequences and series, counting and probability, matrices, and partial fractions. A graphical calculator will be used in class, enabling students to gain both a graphical and an algebraic understanding of concepts.

**Prerequisite: successful completion of algebra I and algebra II*

SCIENCE

Exploring Astronomy: Are We Alone in the Universe

Grades 9–12 | PERIOD 1 or PERIOD 2

Astronomers have discovered over 6000 planets orbiting other stars. These exoplanets are being examined in greater detail in the hope that scientists will uncover unequivocal evidence of extraterrestrial life proving what most astronomers already assume; we are not alone. Groups like SETI are also exploring why we have yet to discover life in our solar system and beyond. The answer may lie in the age, scale and timing of the evolution of these exoplanets. Modern astronomy is a quest for a greater understanding of the evolution and diversity of the Universe, as well as an application of critical thinking skills to broader questions in physics, chemistry, geology, biology, and environmental science. This class examines the current state of the science as well as future avenues of research and discovery. Topics include traditional areas of emphasis, such as the electromagnetic spectrum, the scientific method, light, telescopes, navigating the night sky, cosmology, solar system formation, the planets, global climate change, comets and asteroids, the sun, and the lifecycle of stars. We also apply a critical analysis to the broader questions that include the search for life in the Universe and connections to the history of life on this planet. We keep a close eye on current research and examine the history of science through the eyes of non-conventional thinkers, including Einstein and Galileo. Lastly, we examine some of the more exotic subjects that are stretching the limits of modern science such as black holes, ion propulsion, dark energy, spacetime, and life in extreme environments. We make use of the extraordinary imagery and resources available here at Phillips Academy, often including the state-of-the art observatory in Gelb Science Center. Throughout the session, students critically engage with the science, enhance their science literacy and capture a snapshot of
these emerging areas of research and discovery!

Biology: Introductory

Grades 9–12 | PERIOD 1

Start to unlock the secrets of life in this overview of biological concepts and principles. Designed as an intensive introductory lecture, laboratory, and field course, students will investigate and explore ecology, plant biology, animal diversity, concepts of animal structure, and cellular biology. Scientific writing is an ongoing focus. The framework anchors in a student's conceptual understanding of biology with an emphasis on biology as a process rather than an accumulation of facts.

Advanced Biology*

Grades 9–12 | PERIOD 2

Move beyond the basics in your study of biology, and explore topics like evolution, energetics, information storage and transfer, and system interactions. This is an advanced, pre-AP course designed to introduce students to the rigors of a college level laboratory course in general biology by providing them with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the continually developing science of biology. Topics of study include but are not limited to the chemistry of life, cell biology, metabolism, cellular respiration, photosynthesis, the cell cycle, meiosis, and genetics. Laboratory work and skills in scientific writing will be developed throughout the summer.

SCIENCE

Chemistry: Introductory*

Grades 9–12 | PERIOD 1

The course enables students to understand and use basic concepts of chemistry to think critically about current issues in science and technology. Geared toward motivated students who show an interest in science, students will study essential chemical principles such as the mole concept; stoichiometry; atomic structure; chemical bonding and reactivity; gas laws, and molarity of solutions. The course is balanced by a combination of lectures, problem-solving, and laboratory work, providing a strong foundation in chemistry.

**Prerequisite: successful completion of one year of algebra*
**Requirement: scientific calculator*

Accelerated Chemistry with AP Prep*

Grades 9–12 | PERIOD 3

This intensive course is intended for highly motivated students who are planning to take either an accelerated introductory chemistry course or an AP Chemistry course and who have demonstrated strong mathematical and conceptual abilities. This course teaches students essential chemical principles, such as the mole concept; stoichiometry; atomic structure; chemical bonding and reactivity; gas laws, and molarity of solutions. In addition, students will have access to exclusive AP Chem prep videos and materials. The course is balanced by a combination of lectures, problem-solving exercises, and substantial laboratory work where students will learn techniques such as spectrophotometry and titration. Utilizing a college-level textbook, the course covers most topics at a depth equivalent to that of an introductory college chemistry course.

**Prerequisite: successful completion of one year of algebra with strong grades*
**Requirement: scientific calculator*

Genetics*

Grades 10–12 | PERIOD 1

This rigorous course studies the profound implications of recent advances in genetics. It will begin with a review of the structure and function of DNA in addition to the basics of Mendelian genetics. Further exploration of the topics will lead to a deeper understanding of genetic diseases, cancer, evolution, and the new field of epigenetics. The course considers methods of detecting genetic defects and genetic engineering and includes discussions of the ethical implications of both. A significant portion of this course will include work in the lab with a variety of techniques.

**Prerequisites: successful completion of one year of biology and one year of chemistry*

SCIENCE

Marine Biology

Grades 9–12 | PERIOD 2

Dive into the wonders of the underwater world! This course offers a unique opportunity to explore the mysteries of the ocean, from vibrant coral reefs to the depths of the open sea. Students will be introduced to several different aspects of marine biology through lectures, laboratory investigation, and field trips. Topics include, but are not limited to, oceanography, marine invertebrate, and vertebrate zoology (including physiological adaptations to a marine environment), aquaculture, and ecology of the various habitats within aquatic ecosystems. We will examine the physical and chemical properties of seawater, organisms that have evolved to an aquatic environment, the physiological and behavioral adaptations those organisms have developed, and the different ecosystems within oceanic zones.

Neuropsychology

Grades 10–12 | PERIOD 2

Come explore the neurological basis for how our brain impacts everyday behavior. Students enrolled in this course will study the relationship between the brain, nervous system structures, and human behavior, learning about basic brain anatomy and function as well as cognitive disorders and behavioral disorders from a neuropsychological perspective. Students will engage in an exploration of how everyday actions, such as using a cell phone, impact nervous system function, their own behaviors, and the behaviors of those around them. Students will have the opportunity to take a more in-depth look at an area of their choosing ranging from the study of Alzheimer's and Parkinson's to the more controversial subject of CTE in NFL athletes.

**This course is cross listed with History and Social Sciences*

Physics: Introductory*

Grades 9–12 | PERIOD 3

What are the fundamental laws that govern our world, from the motion of the stars to the behavior of subatomic particles? This course covers the main ideas of foundational principles of physics, focusing primarily on mechanics, and provides a solid foundation of concepts, confidence in problem solving, and exposure to laboratory techniques. Although this course does not cover a full year's worth of material, the techniques learned serve as excellent preparation for all introductory physics topics.

**Requirement: Texas Instruments TI-84 graphing calculator or its equivalent*

**Prerequisite: successful completion of one year of algebra*

SCIENCE

Accelerated Physics with AP Prep*

Grades 9–12 | PERIOD 1

This course is an algebra-based, advanced physics course, intended to prepare students for Advanced Placement. Students cultivate their understanding of physics through classroom study, in-class activity, and hands-on, inquiry-based laboratory work as they explore concepts like systems, fields, force interactions, change, conservation, and waves. By confronting complex physical situations or scenarios, the course is designed to enable students to develop the ability to reason about physical phenomena using important science practices, such as explaining relationships, applying and justifying the use of mathematical routines, designing experiments, analyzing data, and making connections across multiple topics within the course.

**Prerequisites: successful completion of one year of algebra with strong grades.*

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Afternoon Activity Offerings

Grades 9-12

- Basketball (Beginner/Intermediate)
- Basketball (Intermediate/Advanced)
- Cardio Kickboxing
- Dance - modern (Beginner/Intermediate)
- Dance - modern (Intermediate/ Advanced)
- Fitness
- Outdoor Games
- Racquet Sports (badminton, pickleball)
- Running
- Soccer (Beginner/Intermediate)
- Soccer (Intermediate/Advanced)
- Swimming (Learn to Swim)
- Swimming (Intermediate)
- Swimming (Advanced)
- Spinning
- Squash
- Tennis (Intermediate)
- Tennis (Advanced)
- Volleyball (Beginner/Intermediate)
- Volleyball (Intermediate/Advanced)
- Walking Group
- Yoga/Pilates