KHAN LAB SCHOOL

Middle School Course Catalog

2025-26

Middle School (Grades 6-8)

Middle School Course Descriptions (Grades 6-8)



English

English 6: Voices and Journeys – Exploring Who We Are and How We Grow

Our 6th grade English program encourages students to discover and develop their unique voices while preparing them for success in an academic environment. Students will learn how to express themselves and, importantly, convey complex thoughts through articulate and elaborative writing. The year begins with an introduction to design thinking and effective communication of what is important. As the course progresses, students will explore challenging and philosophical questions about their place within the Earth's ecosystem. Throughout the year, students will enhance their skills by engaging in diverse research methods, collaborative discussions, and various writing assignments to achieve mastery. A self-paced and fulfilling grammar course allows students to progress at their own speed, fostering personal understanding and skill development. Focusing on a variety of texts that examine what it means to be human and how these profound questions inspire individuals to reach greater heights will be integrated with our world history curriculum. This interdisciplinary approach aims to create a comprehensive, cross-curricular learning experience.

English 7-8: Across Borders and Bloodlines – What We Carry, What We Let Go
In this global culture-focused course, students begin the year with Shakespeare's *Romeo and Juliet*, analysing how loyalty to family and tradition can both preserve and destroy. This exploration of personal and communal conflict sets the stage for broader inquiries into how communities respond to change. In Term 2, students read *The Spirit Catches You and You Fall Down* by Anne Fadiman to examine what happens when cultural beliefs clash within systems of power. They investigate themes of assimilation, identity, and resistance through reflective writing and independent research. In the final term, students explore globalisation's human cost through case studies from Bangladesh, Nigeria, and beyond. They consider how global exchanges of labour, values, and culture impact communities—and who bears the burden of change. Across the year, students build analytical writing, research, and public speaking skills, culminating in a range of multimedia projects and literary essays that trace stories of change from the personal to the global.

English 7/8: The Individual vs. Society (Offered 2026-27)
In this American literature-based course, students consider what happens when an individual starts questioning the systems and beliefs of the society in which they live. Is the way a society has existed for years one in which we should accept because it is accepted by the majority? Authors have used the conflict between the individual and society as a way to illustrate a larger exploration of the societal and cultural happenings at large. In this course, we will journey through different individuals' battles with self-identity in correlation with the society they live in.

History

History 6: Ancient History
Students will explore the world's most ancient civilizations and examine how they adapted to their unique challenges. The course will emphasize how geography influences human development, shaping cultures that share many characteristics yet remain distinct. Students will also develop a deeper understanding of how societies are organized and, importantly, how they interact with each other and the diverse cultures that surround them. As we explore these compelling topics, students will gain insights into what it means to be human, tracing our history as a species alongside our individual development. This approach aims to foster a comprehensive understanding of our shared past and the diversity of human experience.

History 7-8: The Medieval World and Beyond
Students will discover the rich and complex history of the medieval world, spanning from the fall of the Roman Empire to the dawn of the Renaissance. They will investigate the rise and influence of major civilizations across Europe, the Middle East, Africa, and Asia, examining how political systems, religious movements, cultural traditions, and technological innovations shaped societies over time. Through engaging, inquiry-based lessons and interactive simulations, students will analyze primary sources, participate in historical investigations, and explore key topics such as

feudalism, the spread of Islam, the kingdoms of West Africa, imperial China, and the lasting effects of the Crusades and the Black Death. Emphasis will be placed on developing critical reading and writing skills, building historical thinking competencies, and drawing meaningful connections between past and present.

History 7/8: Early United States History & Geography (Offered 2026-27)
In this course, students will dive into the major events that shaped the United States, learning to think like historians by critically analyzing sources and exploring multiple perspectives. Beginning with the earliest days of European colonization and continuing through the Civil War and Reconstruction, students will examine how key political, social, economic, and cultural developments influenced the nation's growth. They will explore the foundations of American democracy through the Revolution, the Constitution, and the Early Republic, and consider how these ideals were tested through issues like slavery, westward expansion, the Age of Jackson, and the rise of social reform movements. Students will be challenged to avoid presentism — judging the past by today's standards — and instead seek to understand historical events through the eyes of those who lived them. Interactive lessons and simulations will support skill-building in historical inquiry, evidence-based writing, and civic understanding, helping students draw meaningful connections between early U.S. history and their roles as informed citizens today.

Math

Below is a description of each of the math courses a student can complete at their own pace in our Middle School Math Program. Students are not scheduled into a specific math class (ex. Pre-Algebra), rather our unique math program loosely groups students into cohorts by skill levels—such as those working on Algebra 2 with those completing Precalculus. Class sessions feature a teacher-led activity on a common topic relevant to all students, followed by focused individual and collaborative work periods. Khan Academy is integrated for reviewing concepts and practicing new skills, reinforcing personalized mastery and fostering both independence and peer-supported learning. This structure allows students to progress at their own pace, typically leading to a completion rate of about one-and-a-half years of math curriculum in a single academic year.

Pre-Algebra 1: Foundational Math
Prerequisites: Math 5

In Pre-Algebra 1, we will build a strong foundation in mathematics by covering the key concepts of Grade 6 and the first half of the traditional Grade 7 math curriculum. This combined course is designed to ensure a smooth transition from elementary to middle school math. Topics include operations with whole numbers, fractions, and decimals; ratios and proportional relationships; expressions and equations; integers and rational numbers; and an introduction to geometry and

data analysis. As we explore these topics, students will develop critical thinking and problem-solving skills, preparing them for the challenges of the Pre-Algebra 2 course and beyond. Our goal is to nurture a deep understanding of mathematical principles and an appreciation for the role math plays in the world around us.

Pre-Algebra 2: Creative Math
Prerequisites: Math 6 and first half of math 7 or placement exam

Math 7/8 is a continuation of the Pre-Algebra 1 course, covering the second half of Grade 7 and all of Grade 8 content. This combined course is designed to build upon the strong mathematical foundation established in Pre-Algebra 1. Students will explore a wide range of topics including solving multi-step equations and inequalities, rational numbers, ratios and proportions, percents, linear functions and graphing, geometry, real numbers and right triangles, perimeter, area, and volume, as well as statistics and probability. Throughout the course, students will deepen their mathematical understanding, strengthen their problem-solving abilities, and prepare for the transition to Algebra 1. Our focus is on equipping students with the skills and confidence needed to tackle complex mathematical concepts while fostering a lifelong appreciation for the beauty and logic of math.

Algebra 1: Algebraic Reasoning and Problem Solving
Prerequisites: Math 7/8 or placement exam

This foundational course serves as a gateway to the fascinating world of mathematical thinking and problem-solving. Through a systematic exploration of topics such as linear equations, inequalities, polynomials, functions, exponents, and radicals, you will develop essential skills for modeling real-world scenarios and making informed decisions. Whether you're preparing for advanced mathematics, science, or simply aiming to enhance your quantitative aptitude, Algebra 1 will lay the groundwork for your mathematical journey, fostering logical reasoning and analytical prowess that extend far beyond the confines of the classroom.

Geometry: Delving Into Mathematical Dimensions
Prerequisites: Algebra 1 or placement exam

This geometry course serves two purposes. First, students are introduced to the beauty of Euclidean geometry, learning the fundamentals of points, lines, 2D shapes, 3D objects, and how they all are related. Second, and just as important, students develop critical mathematical practices, including reasoning abstractly, modeling real-world situations, attending to precision, and developing detailed proofs. For many students, this is the first time they have rigorously constructed a proof. Understanding how the body of knowledge in math can be derived from a few fundamental axioms is one of the joys of this course.

Algebra 2: Predictive Modeling through Functions
Prerequisites: Algebra 1 or placement exam

The purpose of this course is to extend students' understanding of functions and the real numbers, and to increase the tools students have for modeling the real world. They extend their notion of number to include complex numbers and see how the introduction of this set of numbers yields the solutions of polynomial equations and the Fundamental Theorem of Algebra. Students deepen their understanding of the concept of function, and apply equation-solving and function concepts to many different types of functions. The system of polynomial functions, analogous to the integers, is extended to the field of rational functions, which is analogous to the rational numbers. Students explore the relationship between exponential functions and their inverses, logarithmic functions. Trigonometric functions are extended to all real numbers, and their graphs and properties are studied. Finally, students' statistics knowledge is extended to understanding the normal distribution, and they are challenged to make inferences based on sampling, experiments, and observational studies. Algebra 2 is divided into four modules: Polynomial, Rational, and Radical Relationships, Trigonometry, Exponential and Logarithmic Functions and Inferences and Conclusions from Data. Upon successful completion of Algebra 2, students should be able to demonstrate: quantitative reasoning skills, Building of arguments and critical reasoning skills, how to model with mathematics, which tools to use, how to use those tools and when to use them.

Precalculus: Foundations for Calculus and Advanced Modeling
Prerequisites: Algebra 2 or placement exam

This course is designed to bridge the gap between Algebra 2 and Calculus, providing students with the tools and understanding needed for higher-level mathematics and advanced problem solving. In Precalculus, students extend their knowledge of functions to include polynomial, rational, exponential, logarithmic, and trigonometric functions, as well as explore sequences and series, parametric equations, polar coordinates, and vectors. They will deepen their understanding of the properties of these functions, learn how to analyze and graph them, and see how they can be used to model real-world phenomena.

Students will also be introduced to limits and the concept of continuity as a foundation for Calculus. The course emphasizes the connections between algebraic, graphical, and numerical representations of functions and the importance of these representations in understanding and modeling real-world data. Throughout the course, students will develop critical thinking and quantitative reasoning skills, refine their ability to construct mathematical arguments, and become proficient in selecting and using appropriate tools and methods for problem solving.

Upon successful completion of Precalculus, students will be well-prepared to tackle the challenges of Calculus, with a solid grounding in the concepts and skills essential for future success in mathematics and related fields.

Science

Science 6: Chemistry and the Earth
Middle school science this year is designed to ignite curiosity about our planet and its chemical interactions. Students will explore geological processes, atmospheric phenomena, and chemical principles, with a special emphasis on local environmental issues. This hands-on course encourages students to become stewards of their environment, using scientific knowledge to understand and address community-specific challenges.

Science 7: Biochemistry
In Biochemistry, students explore the fascinating intersection of biology and chemistry to understand the chemical processes that power life. Through hands-on labs, collaborative projects, and inquiry-based learning, students investigate key biological molecules, enzyme reactions, metabolism, and cellular energy processes. They will gain foundational knowledge about proteins, carbohydrates, lipids, nucleic acids, and their roles in living organisms, supported by comprehensive content mastery through Khan Academy. By actively applying scientific thinking, online resources, and laboratory techniques, students develop critical thinking skills and a deeper appreciation for the molecular mechanisms underlying life.

Science 8: Physics
In this hands-on course, students will apply foundational physics concepts such as kinematics, rotational motion, simple machines, pneumatics, collisions, momentum, Ohm's law, circuitry, and input/output, while mastering content through Khan Academy's comprehensive physics course. Throughout the year, students will use design thinking protocols to create a unique arcade game tailored specifically to engage and delight a lower school audience. The students will then host the arcade at the lower school Khanival in May and get real-time user feedback from the lower school students.

Spanish

Spanish 6: Foundations of Communication
Spanish 6 is an engaging introduction to Spanish language and culture designed for middle school learners. Through interactive activities, students build foundational skills in speaking, listening, reading, and writing. They learn to engage in simple conversations on familiar topics and ask and answer questions about themselves and others. Students also explore cultural practices and products from Spanish-speaking communities, developing cross-cultural understanding. Conducted mostly in Spanish (75–90%), the class provides an immersive environment and meets twice per week.

Spanish 7: Language and Culture
Spanish 7 is an immersive introduction to Spanish language and Hispanic culture. Through contextual, real-life communicative activities, students build skills in speaking, listening, reading, and writing. Students learn to engage in simple conversations, present basic information, and write short descriptions on familiar topics. Students also develop interpretive skills to understand the main ideas in conversations and texts. Cultural exploration is woven throughout the course, allowing students to recognize and compare practices from Spanish-speaking communities with their own. The class is conducted primarily in Spanish (75–90%) to support language development and confidence.

Spanish 8: Communicating with Confidence
Prerequisites: Spanish 7 or placement exam
Spanish 2 builds on the foundation in Spanish 1 and enhances students' understanding of the material. In this course, students expand their vocabulary and master the use of different past tenses, including imperfect and present perfect or compound. They also improve their creative writing skills and oral proficiency through presentations, communicative activities, games, cultural activities, and reading-centered discussions. Class is conducted 80-90% in Spanish. Students successfully completing this course at mastery level generally continue on to Spanish 3 in high school.

Exploratory Courses

The Exploratory course series are courses offered in addition to our core academic courses. We have chosen the name "Exploratory" rather than just "Electives" to emphasize a proactive and adventurous approach to learning, inviting students to explore beyond their usual academic boundaries.

There are three sessions of Exploratory throughout the year (fall, winter and spring), and students can choose two different offerings each term. However, because we want students to have a broad exposure to the arts, applied sciences and other areas of study, they are required to take two courses from each of three categories listed below by the end of the year. Their advisors will work with them to help guide them through this requirement.

These credit/no credit courses are taught by both faculty and, as the year progresses and they have finished their Teaching Innovation class , Upper School students. Course offerings change each session. ***Below are the fall session offerings only.***

STEM

Architecture and Design
In this hands-on architecture elective, students will explore the principles of design, spatial planning, and human-centered architecture by reimagining new spaces within our evolving KLS campus. Using real-world constraints and opportunities, students will analyze current needs, develop creative solutions, and create models and presentations to bring their visions to life. This course blends design thinking, technical drawing, CAD, and prototyping to empower students to shape the future of our learning environment.

Exploring Learning Technologies
In this hands-on exploratory course, students will engage critically with emerging AI-powered learning technologies. Each week, we will investigate a new tool—testing its features, evaluating its educational value, and reflecting on its impact in the classroom. Students will collaboratively develop thoughtful policies on the responsible use of AI in schools and contribute weekly reviews and insights to a student-run website. Through discussion, debate, and digital publishing, this course fosters ethical reasoning, tech fluency, and real-world communication skills—preparing learners to be informed innovators in the 21st century.

Mathletes
Mathletes offers students a fun, collaborative, and highly engaging environment to strengthen their mathematical problem-solving skills through participation in dynamic competitions and interactive learning experiences. Guided by our math faculty, students compete in national contests such as the AMC and MOEMS, proctored on campus, and participate in local in-person tournaments. Mathletes fosters creative thinking, strategic problem-solving, teamwork, and confidence, all while nurturing a genuine enthusiasm and passion for mathematics.

Projects in Python
Students at all levels—from beginner to advanced—will embark on personalized coding projects tailored to their individual interests, such as creating digital art, designing games, or developing apps. The teacher acts more as a guide who provides resources, coaching, and targeted feedback, allowing students to independently explore programming fundamentals using Python. Students learn to articulate logic through code, model data, and progressively develop increasingly sophisticated programming projects throughout the semester. This supportive, student-centered course environment ensures each participant acquires practical coding skills applicable to their other classes and personal projects, with no prior programming experience required.

Science Olympiad
Science Olympiad engages students in hands-on, collaborative exploration across diverse scientific disciplines, from engineering and physics to biology and chemistry. Team members prepare for exciting competitions where they design innovative projects, conduct experiments,

and apply scientific principles to real-world challenges. Under the mentorship of dedicated faculty, students develop critical thinking, teamwork, and creativity, all while fostering a deeper appreciation for science and technology in a dynamic and supportive environment.

The Arts

Art

Both beginner and advanced students will be in the studio together.

Introductory Art

In this combined course, 6th and 7th grade students embark on a creative journey that encourages curiosity, confidence, and self-expression. They explore a wide range of materials and techniques—including cyanotype printing, pyrography, acrylic painting, collage, realism sketching, embroidery, and origami sculpture. The goal is to build a strong foundation in artistic skills while fostering a meaningful connection between students and their creative work. With an emphasis on thinking outside the box, students are empowered to take risks, explore their ideas freely, and shape their surroundings. As we move into our new school space, students will also design collaborative murals and participate in exhibitions—leaving their mark on a growing creative community. This year, students will also engage with AI tools in art projects, sparking thoughtful conversations about authorship, originality, and the evolving role of artists in a digital age.

Advanced Art

In 8th grade, students take their creativity into three dimensions, using clay sculpting, mixed media, and collaborative mural work to bring their aspirations to life. Through art projects, they explore how art can be a powerful tool to express identity, envision goals, and leave a lasting impact. As we move into a new school space, students will help shape it—designing murals and installations that reflect community values and brighten shared environments. They will also have the opportunity to participate in art exhibitions and competitions, gaining confidence as they share their voice with a wider audience. In addition, they will be introduced to AI tools in select projects—opening space for dialogue about creative authorship and the intersection of technology and art. This course builds both technical skill and conceptual depth, preparing students for high school art and beyond.

Center Stage

In this Exploratory, students prepare for the performance-focused categories of Speech & Debate tournaments, such as Duo Interpretation, Humorous Interpretation, Dramatic Interpretation, Poetry Interpretation, Program Oral Interpretation, and Original Spoken Word Poetry. In a fun,

supportive, and creative environment, students enhance their acting, storytelling, and expressive skills, building confidence both individually and collaboratively.

Creative Spark
Creative Spark offers students a relaxed, supportive space to explore and develop their personal writing and creative expression. Each session begins with inspiring prompts—quotes, images, or memes—and provides students with quiet, comfortable time for journaling, freewriting, or sketching to ignite their creativity. Engaging read-alouds help students recognize the qualities of compelling writing, sparking ideas and lively discussions. Students then dive into personalized creative projects from a dynamic choice board, with options ranging from short stories, poetry anthologies, and newsletters to artistic endeavors such as doodle notes, comic strips, and custom coloring books. Emphasizing student ownership, each participant sets their own goals, manages their schedule, and develops meaningful projects at their own pace, fostering independence, creativity, and confidence in their writing abilities.

Mosaic: Language, Culture and More...

Arte y Alma
A Hands-On Journey Through Hispanic Art is a 12-week course designed for middle school students to explore the traditions, cultures, and creativity of the Hispanic world through hands-on artmaking. Each week blends history and culture with studio time, allowing students to learn about the origins behind artistic expressions from Latin America. Students will build cultural awareness and leave with a gallery of unique art pieces inspired by various Hispanic communities.

Latin
This exploratory course introduces students to Latin using the Cambridge Latin Course, a highly regarded curriculum known for its engaging, story-based approach and its emphasis on Roman culture, history, and mythology. Through a combination of reading comprehension, grammar instruction, and historical context, students will build foundational Latin skills while gaining insight into the ancient world. The Cambridge Latin Course is widely praised for its effectiveness in helping students develop language proficiency through meaningful narratives and cultural immersion. This elective is ideal for students who enjoy language, storytelling, or ancient civilizations.

Soccer
The Soccer Exploratory offers an opportunity for students of all skill levels to learn and play the team sport of soccer. We will cover fundamental skills such as dribbling, passing, shooting, and defensive techniques, while also introducing basic game rules and strategies. As students progress, we'll introduce more advanced drills, team tactics, and gameplay situations to challenge more experienced players and promote growth among beginners. With an emphasis

on teamwork, communication, and sportsmanship, the soccer exploratory will be an inclusive and active class where we will play the world's most popular sport.

Additional Programming

Physical Education
The Physical Education program provides students with the opportunity to learn the fundamentals of a wide variety of sports, including pickleball, flag football, soccer, and more. Through cooperative gameplay and skill-building activities, students not only improve their fitness levels but also gain valuable experience working as part of a team. The Physical Education program encourages an active lifestyle, boosts confidence, and fosters a lifelong appreciation for physical wellness.

Personal Expeditions
Personal Expeditions provide students with an opportunity to deeply explore areas of personal interest through student-driven, passion-led projects. Students independently identify compelling topics, formulate research questions, and manage projects ranging from scientific investigations and historical research to artistic endeavors and hands-on construction. With structured guidance from their advisors, students identify a personal project that they want to complete before the end of the term, document their progress, and reflect critically on their learning journey. Expeditions culminate in presentations to peers, teachers, and in some cases, the broader community, fostering a supportive environment that values student autonomy, collaboration, and authentic learning experiences. Through Personal Expeditions, students gain essential skills in self-directed learning, critical thinking, project management, and reflection, laying a foundation for lifelong curiosity and independent exploration.

Life Skills Lab
The Life Skills Lab offers a comprehensive and engaging approach to personal character development, blending essential practical skills with social and emotional learning. The course integrates Social and Emotional Learning (SEL) principles to foster self-awareness, empathy, and resilience. It also incorporates practices from the Council tradition, emphasizing group discussions and personal reflection to build community and self-understanding. Students engage in hands-on activities to develop practical life skills such as financial literacy, time management, and effective communication. Academic skills are reinforced through interactive lessons, while specialized modules cover critical topics including digital media literacy, sex education, and drug awareness, providing students with the knowledge they need to navigate complex challenges in their daily lives. This holistic approach ensures that students are well-equipped with both the emotional intelligence and practical knowledge necessary for success and well-being.

MS Robotics

The MS Robotics after-school program introduces students to engineering, coding, and teamwork through the FIRST LEGO League (FLL) framework. Using LEGO kits, students will learn how to design, build, and program autonomous robots to complete real-world themed challenges. The program emphasizes hands-on learning, problem-solving, and collaboration, and includes opportunities for students to explore core values like innovation, inclusion, and impact. If there is sufficient student interest and commitment, the team may have the opportunity to compete in an official FLL tournament during the season.