# AoPS Academy Statement of Proposed Operations 

## Location

5200 Franklin Drive, Suite 110
Pleasanton, CA 94588

## Number of Classrooms:

6. On average, only about two-thirds of the classrooms are holding a class during a given class time slot.

Special Services Rooms will be used for testing and evaluation, as well as make-up exams and admissions testing, for 1-2 students at a time.

## Staffing

One teacher will run each class session. During class times, one staff member will sit at the reception desk, and there may be up to one other support staff member.

## Class Sizes:

Maximum of 12 .

## Class Times (tentative):

During peak traffic times in Pleasanton (M-F, 7-9 AM and 4-6 PM), no more than one class will start every 15 minutes. Otherwise, no more than three classes will start at any one time, and class start times will be offset by at least 15 minutes.

During Academic Year (Late August to Early June)

- Each class is 1 hour and 45 minutes long.
- Weekday class start times: 3:30pm, 3:45pm, 4:00pm, 6:00pm, 6:30pm
- Weekend class start times: 10:00am, 10:45am, 12:15pm, 1:00pm, 2:30pm, 3:15pm, 4:45pm or $8: 00 \mathrm{am}, 8: 45 \mathrm{am}, 10: 15 \mathrm{am}, 11: 00 \mathrm{am}, 12: 30 \mathrm{pm}, 1: 15 \mathrm{pm}, 2: 45 \mathrm{pm}, 3: 30 \mathrm{pm}, 5: 00 \mathrm{pm}$


## During Summer (July \& August)

- Each class is 3 hours long.
- Weekday class start times: 9:00am, 9:30am, 1:00pm, 1:30pm
- Weekends: Closed
- We typically offer 2 or 3 summer sessions per year. Each summer session is 2 weeks long. For 2019, at our existing campuses, the dates of those sessions are expected to be July 8-19, July 22-August 2, and August 5-16.

Drop off and pick up:
Parents usually drop students off at the campus within 15 minutes of the class start time and pick them up within 15 minutes. We reserve at least 30 minutes between classes so the overlap of the pickup and dropoff traffic will be minimal, which has been very successful at ensuring good traffic flow at our existing campuses.

EXHIBIT B


# AoPSAcademy <br> Art of Problem Solving 

## Tenant Profile

Art of Problem Solving (AoPS) is the world's most prestigious online training program for advanced students. Their books and online courses are used in over 100 countries. With AoPS Academy, this world-famous company is now building hundreds of in-person academies around the country to bring their esteemed online program into live classrooms.

With an existing base of thousands of online students, AoPS Academy campuses open to great enthusiasm from the local community. The students are eager to expand on their Art of Problem Solving online experiences and textbooks to interact in-person with exceptional peers and accomplished teachers in a small classroom setting. Their parents are key community leaders and professionals who are highly invested in their children's education.

AoPS Academy is an ideal tenant. Their program is low impact for office parks and similar locations because most classes are held on the weekends and after 5 PM on weekdays. Existing parking is minimally impacted even during program hours. Most parents drop off and pick up their students for weekly 1.75 -hour classes. The limited 6 -week summer session offers a few small daytime courses. These high-achieving, well-behaved students are fully supervised within their classrooms at all times and are not permitted outside the suite or building without parent escort.

Art of Problem Solving has an established history of excellence. The AoPS Online School boasts tens of thousands of annual enrollments worldwide in courses specifically designed for gifted and highly-motivated math students. AoPS has the great fortune of working with the best students in the world. Many competitors in the International Math Olympiad use AoPS as a primary training resource. Every year, students in the AoPS network earn admission to the most highly-selective colleges in the United States.

Each time a new AoPS Academy campus is announced, AoPS staff are flooded with requests from students and parents hoping the next campus will open near them. Every new campus opened has become an immediate financial success.

Please visit AoPS.com and AoPSAcademy.org to learn more.

## 19 AoPS Academy <br> Art of Problem Solving

Training today's brightest minds to solve tomorrow's problems


# AoPS Academy 

Art of Problem Solving

## Course Catalog

## July 2019 - June 2020

Below are the courses we offer for high-performing students in both math and language arts. We offer courses during the academic year and during the summer. For more details about any course, please visit https://aopsacademy.org/courses/catalog Please note, course offerings may vary by campus.

## Academic Year Math

Courses during the school year for high-performing math students in grades 2-12

## 2nd Grade Mathematics

Students expand their understanding of the number system and place value, and they develop fluency adding and subtracting multidigit numbers. They explore the properties of special types of numbers, such as odds and evens. Problem-solving strategies are emphasized throughout the course, and each lesson includes challenging word problems and puzzles that guide students from the basics toward a deep understanding of the material.

## 5th Grade Mathematics

Students complete their study of the arithmetic of fractions, decimals, and negative integers. They are also introduced to topics in geometry, number theory, statistics, and beginning algebra through lessons on threedimensional solids, factors and multiples, statistics and data, sequences, and ratios. As with our earlier elementary school classes, we include challenging word problems and puzzles to teach students mathematical modeling and deductive reasoning.

## Geometry

Students learn how to think spatially in our Geometry course. We start with fundamental concepts, from which we build a rich, rigorous tapestry of relationships. Students learn how to dissect complex configurations and discover the key insights that allow them to solve difficult problems. We also teach analytic methods for tackling geometry problems by placing them on the Cartesian plane, and we introduce trigonometry, thereby laying foundations for precalculus and calculus.

## 3rd Grade Mathematics

Students develop fluency with multiplication and division, including using the distributive property to simplify calculations. They also explore two-dimensional shapes, estimation, using variables to write expressions and equations, and other topics. Students expand their understanding of numbers by learning about fractions. We use word problems to teach students how to interpret words with mathematics, and puzzles to teach higherorder strategic thinking.

## Prealgebra

Prealgebra starts by formalizing the rules of arithmetic, so students can build on a rigorous foundation as they move into algebra. We then survey topics in number theory, algebra, geometry, counting, statistics, and probability. We place special emphasis on challenging word problems throughout the course.

## Algebra 2

We review the key concepts of Algebra 1 , expanding upon them to solve more difficult problems. We explore the rich field of polynomials, and lay foundations for calculus with a study of sequences and series. Students learn about a variety of common algebraic forms and important functions, and about tools for understanding new forms and functions they'll encounter in the future. We also lay the groundwork for understanding optimization problems with a study of inequalities.

4th Grade Mathematics
Students master multiplication and division of multi-digit numbers and build upon their understanding of addition and multiplication to include fractions. They also explore a wide variety of other topics, including properties of special two-dimensional shapes, symmetry, logic, factors, and probability. Students expand their understanding of numbers to include decimals and negative integers, and they encounter challenging word problems throughout to learn how to create and use mathematical models.

## Algebra 1

In Algebra 1, students learn how to work with various types of expressions both algebraically and geometrically. They learn how to solve linear and quadratic equations and how to represent various expressions in the Cartesian plane. We introduce students to the rich field of complex numbers, as well as to important common functions and concepts in discrete math. We continue the emphasis on challenging word problems from Prealgebra, so that students learn when and how to apply their new tools.

## Precalculus

Our Precalculus class prepares students for a variety of college-level courses. Precalculus provides a deep exploration of trigonometry, complex numbers, and two- and threedimensional vector spaces, with a special focus on how these areas of math are related. This gives students a solid foundation for collegiate courses in calculus, linear algebra, multi-variable calculus, complex analysis, and physics.

## Calculus

Our calculus class goes well beyond mechanics and calculators, and provides students a rigorous understanding of the fundamental operations of calculus, delivering a first-year calculus course like those students would find at a top-tier university. Students completing our calculus course will be in an excellent position to apply their new skills to physics, economics, engineering, and more advanced mathematics.

Middle School Contest Math *
This course covers middle school contests such as MATHCOUNTS and the American Mathematics Competitions 8 (AMC 8), as well as beginning high school contests like the American Mathematics Competitions 10 (AMC 10). Students are introduced to important new topics in counting, probability and number theory, while reviewing topics in algebra and geometry and applying these concepts to advanced problems

High School Contest Math *
High school students have relied on AoPS for high school contest preparation since 1993. Over the last decade, most of the winners of the USA Mathematical Olympiad (USAMO) have been AoPS students, including the team members of the 2015 US team that won the International Math Olympiad (IMO). In this course, students study strategies needed for success on the American Mathematics Competitions 12 (AMC 12), the American Invitational Math Exam (AIME), the HarvardMIT Math Tournament, and other major high school contests.

* We alternate between two different versions of Middle School Contest Math and High School Contest Math one year to the next. Therefore, students taking either of these courses for two consecutive years will have different material in the second year than in the first. The two versions are roughly the same difficulty, but provide students different lessons, practice contests, and homework.


## Academic Year Language Arts

Courses during the school year for high-performing language arts students in grades 2-12

## 2nd Grade Language Arts

Our second grade class helps students develop an excitement for language arts. Each week, students learn tools to help them become better writers, expand their vocabularies to use advanced words in their own writing, and deepen their reading comprehension skills to become critical thinkers. Through class readings, discussions, and creative writing activities, students gain independence and confidence in their language arts abilities.

## 5th Grade Language Arts

In our fifth grade course, students will learn the art of research and essay writing, applying advanced grammar skills in the construction of each written piece. They will continue developing deep vocabularies through the study of classic words and Latin and Greek stems. This course will expand on fifth grade reading and writing objectives for written communication, oral communication, literature, and syntax.

## 3rd Grade Language Arts

Our second grade class helps students develop an excitement for language arts. Each week, students learn tools to help them become better writers, expand their vocabularies to use advanced words in their own writing, and deepen their reading comprehension skills to become critical thinkers. Through class readings, discussions, and creative writing activities, students gain independence and confidence in their language arts abilities.

## 6th Grade Language Arts

Our sixth grade course guides students beyond grade level in reading, writing, and critical thinking. Through integrated grammar, vocabulary, reading, and writing lessons, students build the skills they need to craft their own insightful interpretations of a text and convey their ideas clearly and elegantly in writing. Lessons guide students through increasingly sophisticated selections from a variety of fiction and non-fiction sources. Along the way, students practice emulating the authors they are reading, and work closely with their teachers to learn the craft of literary analysis.

## 4th Grade Language Arts

Our fourth grade students begin a rigorous study of classic words, Latin and Greek stems, paragraph construction, and grammar analysis. This course expands on fourth grade reading and writing objectives for written communication, oral communication, literature, and syntax.

## 7th Grade Language Arts

This class focuses on strengthening and deepening students' language arts skills as they begin the transition into serious academic writing and developing skills in research, critical thinking, argumentation, and effective rhetoric. The class is structured around three writing projects: an exploratory essay, an evaluation of academic ideas, and a research paper. Additionally, students will review grammar concepts in greater depth and study challenging vocabulary words and roots.

## 8th Grade Language Arts

Our 8th grade class prepares students for high-school level academic writing. There are three long-term writing projects: a position paper, an analysis essay, and a research paper. Students will begin to think critically about their topics and evaluating their sources. Additionally, students study grammatically complex sentences from classic literature and continue their rigorous study of advanced vocabulary containing Greek and Latin roots. These lessons help improve students' writing mechanics for implementation in their multi-week writing projects.

Advanced Language Arts Seminar
This course introduces students to the craft of literary studies at the college level. Through close reading of challenging texts, students learn to form their own critical interpretations, to write and speak with sophistication, and to build well-crafted arguments one piece of evidence, one claim, and one draft at a time. Over the course of the year, students polish their style, grammar, and vocabulary as they produce creative texts, and develop the research skills integral to successful academic writing and public speaking.

## Summer Math

Courses during the summer for high-performing math students entering grades 3-9

## Math Beasts Camp 3-4

Math Beasts Camp 3-4 is designed for students entering a 3rd or 4th grade math class in the fall. The course keeps students' math skills sharp over the summer while introducing new avenues of mathematical discovery, with a focus on honing students' deductive reasoning and spatial thinking abilities.

## Math Beasts Camp 7-9 (Algebra and Geometry Prep)

The Math Beasts Camp 7-9 summer program is designed for students who have just completed a Prealgebra or Algebra 1 equivalent math class. The course reviews key algebraic and geometric concepts, provides some early practice with ideas they'll master in the upcoming year, and offers an exploration of cryptography, with an emphasis on important areas of number theory that make internet security possible.

## Math Beasts Camp 5

Math Beasts Camp 5 is designed for students entering a 5th grade math class in the fall. The course reviews key concepts from 4th grade, provides some early practice with ideas they'll master in the upcoming year, and introduces advanced problem solving strategies through a study of strategic mathematical games.

## Middle School Math Contests: Number Theory and Geometry

This course covers middle school contests such as MATHCOUNTS and the American Mathematics Competitions 8 (AMC 8), as well as beginning high school contests like the American Mathematics Competitions 10 (AMC 10). Students are introduced to important topics in number theory and geometry, and will work individually or collaboratively to solve challenging problems related to these topics. In addition, students will also participate in mock individual and team competitions during the camp.

Math Beasts Camp 6 (Prealgebra Prep)
Math Beasts Camp 6 is designed for students entering a 6th grade math class or Prealgebra class in the fall. The course reviews key concepts from 5th grade, provides some early practice with ideas they'll master in the upcoming year, and offers an early exploration of graph theory, a rich field of advanced math with many important realworld applications.

## Middle School Math Contests: Algebra

 and CountingThis course covers middle school contests such as MATHCOUNTS and the American Mathematics Competitions 8 (AMC 8), as well as beginning high school contests like the American Mathematics Competitions 10
(AMC 10). Students are introduced to important topics in algebra, counting, and probability, and will work individually or collaboratively to solve challenging problems related to these topics. In addition, students will also participate in mock individual and team competitions during the camp.

## Summer Language Arts

Courses during the summer for high-performing language arts students entering grades 3-10

## Creative Writing for Elementary School

This engaging course teaches students how to weave narratives that will enchant readers. Students encounter poetry and short fiction across a variety of genres as they learn to craft riveting stories and poems. Along the way, students draft, revise, and polish their own short narratives. This course is intended for students in grades 3-4.

## Middle School Book Club

Our book clubs help students build skills for reading, critical thinking, writing, and discussion. In the Middle School Book Club, students learn about the genre of metafiction-books that know you're reading them-by deeply reading and analyzing one novel and several shorter works. Each day of class includes a variety of writing, reading, and speaking activities designed to challenge and engage students. This course is intended for students in grades 6-8.

## Elementary School Book Club

Our book clubs help students build skills for reading, critical thinking, writing, and discussion. Over two weeks, students in the Elementary School Book Club engage with two novels and several shorter works through deep, independent reading and guided analysis. Each day of class includes a variety of writing, reading, and speaking activities designed to challenge and engage students. This course is intended for students in grades 4-5.

## Academic Essay Writing

This course offers an intensive study of the how and why of academic writing. Students learn how to read academic writing effectively and efficiently, and they learn how to respond to an academic argument by writing an essay. Over two weeks, students plan, draft, and revise their own academic essays as they examine several examples of excellent academic writing. This course is intended for students in grades 7-10.

## Mock Trial

This course introduces students to public speaking, rhetoric, and law. Over two weeks, students read and write across multiple genres as they prepare to participate in a mock trial on the last day of class. Through this project, students learn how the court system works, how to gather and interpret evidence, how to use rhetoric to craft persuasive arguments, and how to speak confidently and convincingly to an audience. This course is intended for students in grades 5-6.

## AoPS Academy Pleasanton Sample Time Slots (tentative)

## Sample Schedule - Academic Year, Weekend



Sample Schedule - Academic Year, Weekend (alternate)


Sample Schedule - Academic Year, Weekday Evening


## Sample Schedule - Summer, Weekday



Tentative Schedule for AoPS Academy Pleasanton
Please note this schedule is subject to change, pending student demand.


|  | Monday | Tuesday | Tuesday | Tuesday | Tuesday | Tuesday | Wednesday | Wednesday | Wednesday | Wednesday | Wednesday | Thursday | Thursday | Thursday | Thursday | Thursday | Friday |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Room | no classes MONDAY | 3:30-5:15 PM | 3:45-5:30 PM | 4:00-5:45 PM | 6:00-7:45 PM | 6:30-8:15 PM | 3:30-5:15 PM | 3:45-5:30 PM | 4:00-5:45 PM | 6:00-7:45 PM | 6:30-8:15 PM | 3:30-5:15 PM | 3:45-5:30 PM | 4:00-5:45 PM | 6:00-7:45 PM | 6:30-8:15 PM |  |
| 1 |  | 3rd Grade Math |  |  | Alg 2 |  | Prealgebra |  |  | Geometry |  | 5th Grade Math |  |  | Algebra 1 |  |  |
| 2 |  |  | 4th Grade LA |  |  |  |  | 4th Grade Math |  |  |  |  | 6 th Grade LA |  | MS Contest |  |  |
| 3 |  |  |  |  |  |  |  | 5th Grade LA |  |  |  |  |  |  | Adv LA Seminar |  | NO CLASSES friday |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


|  | Saturday | Saturday | Saturday | Saturday | Saturday | Saturday | Saturday | Sunday | Sunday | Sunday | Sunday | Sunday | Sunday | Sunday | Sunday | Sunday |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Room | 10:00-11:45 PM | 10:45-12:30 PM | 12:15-2:00 PM | 1:00-2:45 PM | 2:30-4:15 PM | 3:15-5:00 PM | 4:45-6:30 PM | 8:00-9:45 AM | 8:45-10:30 AM | 10:15-12:00 PM | 11:00-12:45 PM | 12:30-2:15 PM | 1:15-3:00 PM | 2:45-4:30 PM | 3:30-5:15 PM | 5:00-6:45 PM |
| 1 | MS Contest |  | HS Contest |  | Precalculus |  | Calculus | 4th Grade Math |  | 2nd Grade Math |  | 3rd Grade Math |  | 4th Grade Math |  | 5th Grade Math |
| 2 | Prealgebra |  | 5th Grade Math |  | Proalgebra |  |  | 5 th Grade Math |  | 3rd Grade LA |  | 4th Grade LA |  | Algebra 1 |  | Alg 2 |
| 3 | 3rd Grade Math |  | 8th Grade LA |  | Algebra 1 |  |  |  |  |  |  |  |  | Prealgebra |  | 7 th Grade LA |
| 4 |  | MS Contest |  | 4th Grade Math |  | 2nd Grade LA |  |  |  |  |  |  |  |  | 6th Grade LA |  |
| 5 |  | 2nd Grade Math |  | 7th Grade LA |  |  |  |  |  |  |  |  |  |  | 5th Grade LA |  |
| 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Geometry |  |



 OAYRES

