John Champe High School
Math Course Options

* All classes with an asterisk are honors courses that receive a 0.5 weight in GPA.
** All classes with two asterisks are AP level courses that receive a 1.0 weight in GPA.
*** All classes with three asterisks are DE level courses that receive a 1.0 weight in GPA.

What are you in now?	What can you take next?
Algebra 1	Geometry
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
Geometry	Functions, Algebra, and Data Analysis (FADA)
	Algebra II
	Algebra II Trig*
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
FADA	Algebra II
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders

What are you in now?	What can you take next?
Algebra II	Advanced Functions and Modeling (AFAM)
	Pre-Calculus
	Pre-Calculus DE*** (teacher recommendation advised)
	Probability and Statistics/Discrete Math can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Statistics** (not recommended until the student completes Pre-Calculus, Pre-Calculus DE or Math Analysis)
Algebra II Trig*	Advanced Functions and Modeling (AFAM)
	Pre-Calculus
	Pre-Calculus DE*** (teacher recommendation advised)
	Math Analysis* (teacher recommendation advised)
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Statistics** (not recommended until the student completes Pre-Calculus, Pre-Calculus DE or Math Analysis)

What are you in now?	What can you take next?
AFAM	Pre-Calculus
	Probability and Statistics/Discrete Math can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Statistics** (not recommended until completing Pre-Calculus, Pre-Calculus DE or Math Analysis)
Pre-Calculus	Calculus
	AP Calculus AB**
	AP Statistics**
	Probability and Statistics/Discrete Math can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders

What are you in now?	What can you take next?
Pre-Calculus DE* **	Calculus
	AP Calculus AB**
	AP Statistics** can be taken in conjunction with another math course for underclassmen or as a stand-alone course for rising seniors
	Probability and Statistics/Discrete Math can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
Math Analysis*	Calculus
	AP Calculus AB**
	AP Calculus BC**
	AP Statistics** can be taken in conjunction with another math course for underclassmen or as a stand-alone course for rising seniors
	Probability and Statistics/Discrete Math can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders

What are you in now?	What can you take next?
Calculus	AP Calculus AB**
	AP Statistics** can be taken in conjunction with another math course for underclassmen or as a stand-alone course for rising seniors
	Probability and Statistics/Discrete Math can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
AP Calculus AB**	AP Calculus BC**
	AP Statistics** can be taken in conjunction with another math course for underclassmen or as a stand-alone course for rising seniors
	Probability and Statistics/Discrete Math can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
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	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders

What are you in now?	What can you take next?
AP Calculus BC**	Multivariable Calculus DE*** (must get at least a 4 on the AP Calculus BC exam)
	AP Statistics** can be taken in conjunction with another math course for underclassmen or as a stand-alone course for rising seniors
	Probability and Statistics/Discrete Math can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
Probability and Statistics/Discrete Math • **This is a semester course** • **Semester 1: Prob/Stat** • **Semester 2: Discrete**	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
AP Statistics**	Computer Math (elective) can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be taken in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science A** (Must take Computer Math first) can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders

What are you in now?	What can you take next?
Computer Math	AP Computer Science A** can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders
	AP Computer Science Principles** can be take in conjunction with another math course for rising 9th, 10th, and 11th graders or as a stand-alone course for rising 12th graders

Math Course Pre-Requisites and Recommendations

Algebra 1 (pre-requisite: Pre-Algebra (new name for Math 8):

- Earns an Algebra 1 credit
- Takes the Algebra 1 SOL test in May
- Recommended for students currently in Pre-Algebra or students who are expunging their Algebra 1 credit due to earning a C+ or lower
- Algebra 1 is the basis of all math courses, so it is important to gain a strong foundation of this subject before moving forwards

Geometry (pre-requisite: Algebra 1):

- Takes the Geometry SOL test in May (if needed)
- Recommended for students who complete Algebra 1

Functions and Data Analysis [FADA] (pre-requisite: Algebra 1, recommended pre-requisite: Geometry):

- No SOL test in May
- Recommended for students currently in Geometry who completed Algebra 1 with a C/D/F (or needed a lot of retakes to earn a higher grade)
- Recommended for students who received an Algebra 1 SOL score below 425 (if taken)
- Recommended as a course in between Geometry and Algebra 2 to strengthen algebra skills and build number sense before entering Algebra 2

Algebra 2 (pre-requisite: Algebra 1 and Geometry):

- Builds on the skills taught in Algebra 1 and the logical reasoning skills developed in Geometry
- Takes the Algebra 2 SOL test in May (if needed)
- Recommended for students currently in Geometry who completed Algebra 1 with at least a B-
- Recommended for students who received an Algebra 1 SOL score of at least 425 (if taken)

Algebra 2/Trig (pre-requisite: Geometry):

- Extremely fast paced honors class designed for students who are passionate about math and are interested in focusing their attention on the math and science disciplines
- Builds on the skills taught in Algebra 1 and the logical reasoning skills developed in Geometry
- Completes the entire Algebra 2 course within 3 nine weeks and spends the rest of the year learning trigonometry
- Takes the Algebra 2 SOL test in May (if needed)
- Honors Algebra 2 course, receives a 0.5 bump in GPA
- Recommended for students currently in Geometry who completed Algebra 1 with an A (without needing retakes) and who currently hold an A in Geometry
- Recommended for students who received an Algebra 1 and Geometry SOL scores of at least 500 (pass advanced) if the SOL is taken.

Advanced Functions and Modeling [AFAM] (pre-requisite: Algebra 2):

- No SOL test in May
- Recommended for students who are interested in continuing with the algebra and calculus track in math
- Recommended for students currently in Algebra 2 with a C or below or in Algebra 2 Trig with a D+ or below
- Recommended as a course in between Algebra 2 and Pre-Calculus to strengthen Algebra 2 skills and preview trigonometry
- Recommended for students who received an Algebra 1, Geometry, and Algebra 2 SOL score below 425 (if taken)

Pre-Calculus (pre-requisite: Algebra 2):

- No SOL test in May
- Recommended for students who are passionate about math and are interested in taking the calculus route in high school or college
- Recommended for students currently in Algebra 2 with a C+ or above (with little or no re-takes) or in Algebra 2 Trig with a C- or above (with little or no re-takes)
- Recommended for students who received an Algebra 1, Geometry and Algebra 2 SOL scores of at least 425 (if taken)

Pre-Calculus DE (pre-requisite: Algebra 2 or Algebra 2/Trig):.

- Dual Enrollment class with NOVA
- Receives a 1.0 bump in GPA
- Does NOT follow LCPS grading policy
- Has a final exam at the end of each semester
- No late work is accepted in this course
- No re-takes are offered
- Recommended for students in Algebra 2 with an A- or above (with little or no re-takes) or in Algebra 2 Trig with a B or above (with little or no re-takes)

Math Analysis (pre-requisite: Algebra 2/Trig):

- Extremely fast paced honors class designed for students who are passionate about math and are interested in focusing their attention on the math and science disciplines
- Honors pre-calculus course that covers the entire pre-calculus curriculum in Semester 1 as well as Calculus A (limits and differentiation) in Semester 2.
- Honors Pre-Calculus course receives a 0.5 bump in GPA
- No SOL test in May
- Recommended for students currently in Algebra 2/Trig with an A or A+ (without needing retakes)
- Recommended for students who received an Algebra 1, Geometry, and Algebra II SOL score of at least 500 (pass advanced) if the SOL is taken

Calculus (pre-requisite: Pre-calculus or Math Analysis):

- Designed for students who want to take Calculus without the pressure of the AP pacing
- No AP exam
- Covers limits, differentiation, and integration
- Recommended for students currently in Pre-Calculus with a B or below

AP Calculus AB (pre-requisite: Pre-calculus or Math Analysis):

- Designed for students who are passionate about math and are interested in focusing their attention on the math and science disciplines
- Advanced placement course, receives a 1.0 bump in GPA
- Takes AP exam in May
- Covers both Calculus A (limits and differentiation) and B (integration) material
- Recommended for students currently in Pre-Calculus with a B+ or higher
- Recommended for students currently in Mathematical Analysis with an A- or below

AP Calculus BC (pre-requisite: AP Calculus AB or Mathematical Analysis)

- Extremely fast paced course designed for students who are passionate about math and are interested in focusing their attention on the math and science disciplines
- Advanced placement course, receives a 1.0 bump in GPA
- Takes AP exam in May which provides a score for both AP Calculus AB and BC
- Covers Calculus A (limits and differentiation), B (integration), and C (advanced techniques and sequences & series) material
- Recommended for students currently in AP Calculus AB with an A or B
- Recommended for students currently in Mathematical Analysis with an A or A+ (without needing retakes)

Multivariable Calculus (pre-requisite: AP Calculus BC)

- Dual enrollment class with NOVA
- No AP exam
- Receives a 1.0 bump in GPA
- Recommended for juniors who are currently in AP Calculus BC with an A or B
- Must receive at least a 4 on the AP Calculus BC exam

Probability and Statistics/ Discrete Math (pre-requisite: Algebra 2):

- No SOL test in May
- Recommended for rising seniors currently in Algebra 2 or Pre-calculus with a C or below
- Recommended for students who are not as interested in algebra but would like to see a different type of mathematics
- If a student is not a rising senior, it can be taken at the same time as another algebraic math class
- Semester course (first semester Probability and Statistics, second semester Discrete Math)
- Probability and Statistics – focuses on data analysis and probability
- Discrete Math – logic and problem solving

AP Statistics (pre-requisite: Algebra 2)

- Advanced placement course, receives a 1.0 bump in GPA
- Takes AP exam in May
- Recommended for students who are interested in a different type of math (from the algebra and calculus track)
- Recommended for students currently Algebra 2 or higher with an A or B (it is recommended to have taken a higher-level math after Algebra 2 prior to AP Statistics)

Computer Math (pre-requisite: Algebra 1)

- No SOL or AP test
- Math elective course that can be taken in conjunction with other math courses
- Recommended for students who are interested in computer science
- Focuses on learning basic computer programming through Java
- No previous coding experience needed

AP Computer Science A (pre-requisite: Computer Math)

- Takes AP exam in May
- Advanced placement course, receives a 1.0 bump in GPA
- Math elective course that can be taken in conjunction with other math courses
- Recommended for students with some experience in computer science
- Focuses on learning computer programming through Java

AP Computer Science Principles (pre-requisite: Algebra 1)

- Creative Task completed during the year and submitted to College Board
- Takes Multiple Choice AP exam in May
- Advanced placement course, receives a 1.0 bump in GPA
- Math elective course that can be taken in conjunction with other math courses
- No previous coding experience needed
- Focuses on learning computer programming through Java Script in Semester 1
- Focuses on other computer science topics (data, internet, global impact, cyber security) in Semester 2