Criteria for Entering Various Competitions | Exams | Advanced Projects starting 8th or 9th grade

	RoboCupJunior ①.1				USACO ②	ZeroRobotics ③	Independent Project ⑤
	Rescue Line	OnStage	Soccer	Maze			
Required Algorithms in C/C++ levels with Proficiency	I & up	I & Up	I & Up	III & Up	II & Up	I & up	IV & Up
Internal Test	NO	NO	YES	YES	NO	NO	NO
Math	Algebra I (prefer with Combinatorial Math for Maze)					Trignometry +	Trignometry +
Software development Skill	Demanding	Demanding	Demanding	Highly Demanding	Highly Demanding in Computational Thinking	Demanding	Highly Demanding in Computational Thinking
Electronic	Optional	Prefer	II ①.2	II	none	none	Optional
Demanding in Time (in additional to time at SR)	4hrs+ /wk	6hrs+ /wk	6hrs+ /wk	6hrs+ /wk	Self-adjustable	4hrs+ /wk	Self-adjustable
When	Spring Term, but prep must start in Fall				Dec to Apr	Sep to Dec	Any
Type	Competitions (away)				Exam (online)	Competition (Online)	---
Hardware	Mindstorms | Raspberry PI | other development boards such as Arduino, STM32, etc.				none	none	self-defined
URL	robocupJunior.org				usaco.org	zeroRobotics. mit.edu	mp.stormingro...

①RCJ: (①.1) Does not restrict platform types like other competitions in USA. This allows continuous and drastic improvement in software and hardware design. (①.2) Electronic knowledge is highly demanding for Soccer League. All must complete Level II in electronic track and pass an internal test.

②USACO: Usually High School, Not a must. Algebra I+ for Bronze (beginner).
However, knowledge in Statistics and Combinatorial math will be greatly helpful, esp. for Platinum.
Usually students with AMC-10 and above.
One exam per month from Dec to Apr. Encourage student do as many as they can.

③ZeroRobotics: Should start reviewing their math work over summer time if participating in the Fall
Linear Algebra and Motion in Physics will be a big plus.
Since most H.S. do not offer Linear Algebra, most students self-study it as they go.

⑤ Indep. Proj. Will require an individual being very self-disciplined and possessing aptitude to self-learn. (Ideally, starting no later than Summer before 11th grade.)