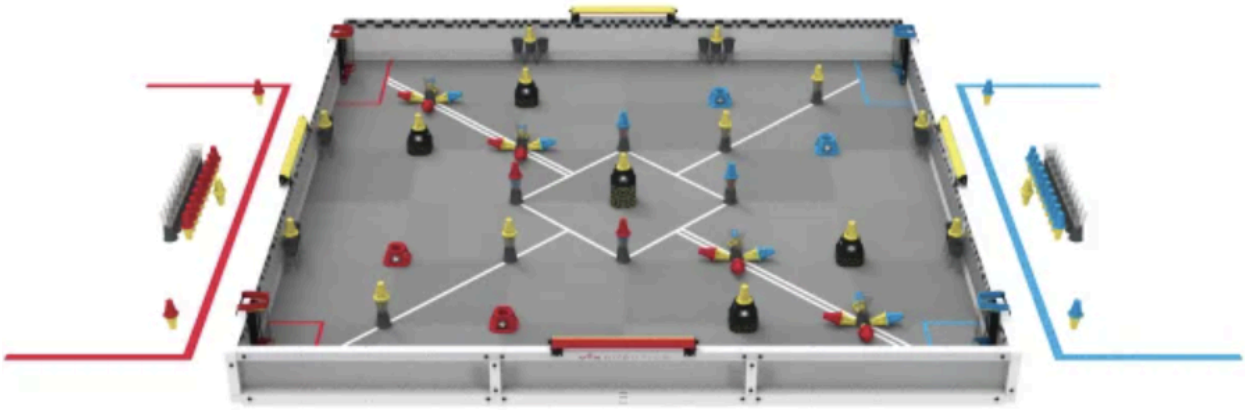
Upper St. Clair High School Summer Assignment	
Course: Honors Advanced Robotics	
Assignment Title:	VEX V5 Competition Manual Review - Override
Due Date:	First day of school
Purpose of the assignment:	☑ Review foundational material, concepts, or skills ☑ Build interest ☐ Provide a diagnostic measuring tool to help guide student differentiation & instruction ☐ Establish a supportive class culture & environment ☑ Expose students to required material, concepts, skills, and/or texts that will be referenced throughout the academic year
Resources needed to complete assignment:	☐ Textbook assigned by school ☐ Book(s) supplied by student ☐ Packet provided by teacher (please visit the Interactive Program of Studies) ☑ Other supplies: Visit the VEX V5 Override 2026/2027 website an
Estimated time for Completion:	Students may average an estimated 12 hours to complete the assignment, but we encourage students to spend time on this assignment over several weeks.
Impact on Semester 1 Grade	Graded: ☐ Yes ☑ No Teacher Note: Students will be quizzed on this material in the first couple of weeks of the school year.

Honors Advanced Robotics Summer Assignment 2026
Ms. Smith (tsmith@uscsd.k12.pa.us)

Your assignment for this summer is to become familiar with the VEX V5 Override game that your Advanced Robotics class is built around. It is 130 pages long and each page is packed with important information.

Below is a quick overview including links to the game manual. You will be quizzed on each section of the game manual at the start of the school year. The sooner we understand the game parameters, the sooner we can start designing and building a robot to compete. I am so excited to jump into this V5RC season!

Override is the official game for the 2026/2027 VEX V5 Robotics Competition (V5RC) season. It features an open field layout focused on precision stacking, multi-colored game pieces, and tactical field control elements.



📚 Official Resources

Game Manual: Access the official, updated game rules via the VRC Current Game Portal.

🕹️ Game Overview & Setup

Matches are played on a standard 12-foot by 12-foot field between a Red Alliance and a Blue Alliance, each containing two team robots.

- 119 Total Scoring Objects: The field contains 56 Cups (hourglass-shaped plastic structures with one transparent and one opaque side) and 63 Pins (two-sided cones housed in clear capsules).
- Pin Configurations: Pins are distributed across four color variants: red-blue, red-yellow, blue-yellow, and yellow-yellow.
- Field Goals: There are 9 scoring goals integrated with AprilTags for AI and Vision Sensor identification. This includes 4 neutral short goals, 1 neutral tall center goal, 2 red alliance goals, and 2 blue alliance goals.
- Toggles & Loaders: The field features 4 center-wall Toggles (one per perimeter wall) and 4 Match Loaders where teams can manually feed their 10 starting cups and 11 pins into the game.

📊 Scoring Mechanics

Scoring Element	Point Value	Rules & Conditions
Alliance-Color Pin	5 Points	Scored in any legal goal; only the upward-facing visible color counts.
Yellow Pin	10 Points	Scores 10 points *only* if your alliance controls the Toggle in that respective quadrant.
Cups	Multiplier / Extension	Placing a cup on a goal expands how many pins the goal can hold. Opaque sides block out specific color visibility.
Autonomous Bonus	12 Points	Awarded to the alliance that earns the highest points during the 15-second autonomous period.
Midfield Endgame	8 Points per Robot	Awarded for each robot successfully parked in the contested Midfield during the final 10 seconds of the match.

⚙️ Critical Rules & Strategy

- Wattage Limits: Drive motor power is strictly restricted to 55 Watts to prioritize manipulation strategy and precision scoring over aggressive speed builds.
- Possession Rules: Robots are limited to holding a maximum of 1 pin and 1 cup at a time, making fast cycle routines and precise intake designs essential.
- Descoring Constraints: Removing scored objects from neutral or opposing alliance goals is highly restricted; knocking over entire stacks can lead to disqualifications.