VEXcode VR Lab Schedule

Unit A-1: Introduction to VEXcode VR Programming

1. VEXcode VR environment (web-based, https://vr.vex.com/), blocks panel, project panel
2. Simple programming example (follow square path), run program
3. Introduction to algorithm and program
4. Explain in details **Drivetrain** blocks, **wait** block, and **pick random** block. Explain other categories of blocks (briefly)
5. Playground, select different playground, coordinates for grid map playground, overhead view (2D), behind robot view (3D), front view (3D), dashboard indicators
6. Help button to display help information about each block
7. Monitor window (print and variable data), code viewer window (Python code)
8. Share your project as a PDF file, save your project on your device, load your saved project from your device

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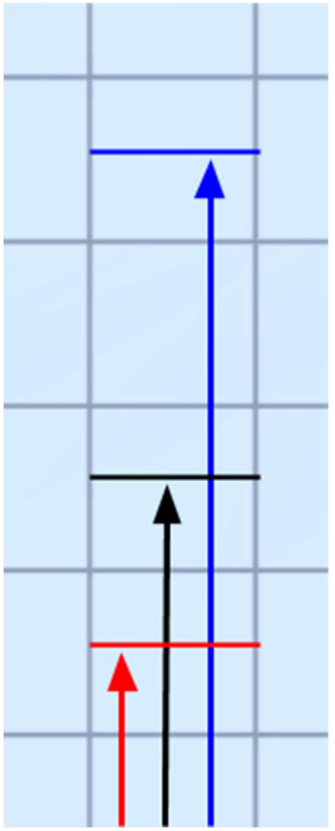
Unit A-2: Hands-on Practice - VEXcode VR Activities:



1) Basketball Drills

   Playground: Grid Map
   Challenge:
   Level 1: Program the VR Robot to drive forward 1 grid square. Next, program the VR robot to drive in reverse to the beginning point. Continue this pattern for 2 grid squares, then 4 grid squares.
   Level 2: Program the VR Robot to drive forward 1 grid square, stop, and return back 1 grid square to where the VR Robot started **without** using the reverse block. The VR Robot will need to turn around to drive back to the first position. Continue this pattern for 2 grid squares, then 4 grid squares.
   Level 3: Build an algorithm (a process or set of rules) to move through all 1 to 8 grid squares in sequential order. The VR Robot should move to 1, go back to start, move to 2, go back to start. Continue this pattern for all 8 grid squares.

2) Program the robot to go forward for a **random** number of seconds (between 0 and 3) and then turn a random number of degrees (between -90 and 90).

3) Save the project in both pdf file and vrblocks format.