

SUBJECT: Robotics		GRADE: 9-12	
Unit Title: Basic Programming: Input and Output		Time Frame: Days 1-12	
UNIT OVERVIEW			
This unit explores the basic programming concepts and syntax necessary for input. Output will be through the LCD on the brain			
LRG SKILLS AND DISPOSITIONS		PA STANDARDS	
Critical Thinking and Problem Solving: Introduction to Coding (S4C)		3.5.9-12.A 3.5.9-12.K (ETS) 3.5.9-12.Z 3.5.9-12.CC 3.5.9-12.II	
COMPETENCIES		LEARNING TARGETS	
I can code a program to express an idea or solve a problem.		- I can write a program that causes output to the LCD. - I can write a program that uses the LCD to output correct information based upon parameters given by the instructor.	
I can use best practices while programming.		I can write a program using correct syntax	

SUBJECT: Robotics		GRADE: 9-12	
Unit Title: Dead Reckoning		Time Frame: Days 13 - 30	
UNIT OVERVIEW			
This unit explores the use of Dead Reckoning to navigate the robot			
LRG SKILLS AND DISPOSITIONS		PA STANDARDS	
Critical Thinking and Problem Solving: Basic Navigation (S4C)		3.5.9-12.A 3.5.9-12.K (ETS) 3.5.9-12.Z	

	3.5.9-12.CC 3.5.9-12.II
COMPETENCIES	LEARNING TARGETS
I can code a program to express an idea or solve a problem.	- I can write a program that will navigate the robot through a predefined course correctly. - I can correctly add components to my program as new motors are added to the robot.
I can demonstrate an understanding of many digital devices	- I can make adjustments to my program to compensate for inconsistencies in the mechanical parts of my robot. - I can correctly install the mechanical arm to the robot chassis. - I can make adjustments to my arm and claw motors so that they move and grip with the correct pressures/degrees.
I can approach a challenge with computational thinking.	I can describe why Dead Reckoning is not a fool-proof way of programming a robot to accomplish a task.

SUBJECT: Robotics		GRADE: 9-12	
Unit Title: Using sensors for input to control the output of the robot		Time Frame: Days 31 - 70	
UNIT OVERVIEW			
This unit explores the use of sensors to assist with the navigation of the robot			
LRG SKILLS AND DISPOSITIONS		PA STANDARDS	
Problem Solving: Advances Motio Critical and Thinking (S4C)		3.5.9-12.A 3.5.9-12.K (ETS) 3.5.9-12.Z 3.5.9-12.CC 3.5.9-12.II	

COMPETENCIES	LEARNING TARGETS
I can demonstrate an understanding of many digital devices.	I can build a conveyor system to use in the “basketball challenge” which uses sensors to activate the conveyors and allow my teammates and I to complete the challenge as quickly as possible.
I can code a program to express an idea or solve a problem.	- I can write a program that utilizes the inertial sensor in the turning of the robot and affect output. - I can write a program that utilizes the distance sensor to navigate the robot and affect output. - I can write a program that utilizes the color sensor to navigate the robot and affect output. - I can write a program that utilizes the “timeout” function to assist with the completion of a program. - I can write a program that utilizes the bumper-switch to assist with the navigation of the robot.

SUBJECT: Robotics		GRADE: 9-12	
Unit Title: Advanced robotics Challenge		Time Frame: Days 71-90	
UNIT OVERVIEW			
This unit explores the use of “Expert” programming mode in Vexcode Pro to fine-tune the code for competition			
LRG SKILLS AND DISPOSITIONS		PA STANDARDS	
Critical Thinking and Problem Solving: Classroom Competitoin Challenge (S4C)		3.5.9-12.A 3.5.9-12.K (ETS) 3.5.9-12.Z 3.5.9-12.CC 3.5.9-12.II	
COMPETENCIES		LEARNING TARGETS	

I can code a program to express an idea or solve a problem.	• I can build a robot and write a program that will allow me to navigate a robotics challenge course as quickly and as efficiently as possible.
I can use best practices while programming.	• I can write a program in which I switch to “expert” mode and then make modification to the robot.config file. The changes should customize the robot to fit my driving skills.