Unit 6: Motors, Servos, Sensors	Estimate Unit Length: 1-2 weeks
Course Code/Course Title: Robotics 1	Date Created: 7/16/2018

Students will understand	**Essential Questions: How does science and Biology relate to me?**
• Identify the hardware components of a robot, including sensors, motors, and servos, describing their functions • While working in teams, program several different functions for the built robot, utilizing different sensors • While working in teams, program several different functions for the built robot, utilizing different sensors • Communicate with clarity and precision. • Build a design and programming journal for each project.	• What are Motors, Servos, and Sensors and there connections to robotics function? • Where and how are Motors, Servos, and Sensors used to relate software commands to function?

Sub-Unit Components/Sub-Headings/Objectives

Sensors	Motors	Servos	Robot Build	Robot Programming	

Knowledge—Students will know…

Identify the hardware components of a robot, including sensors, motors, and servos, describing their functions
While working in teams, program several different functions for the built robot, utilizing different sensors
While working in teams, program several different functions for the built robot, utilizing different sensors
Communicate with clarity and precision.
Build a design and programming journal for each project.

Standards	**Assessments/Evidence**
(HS-ETS1-1) Analyze complex real-world problems by specifying criteria and constraints for successful solutions. (HS-ETS1-3) Evaluate a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and tradeoff considerations.	Closed –Ended Selected Response (Optional) • Multiple Choice • True/False • Matching Open-Ended Constructed Response (Required) • Short Answer • Visual Representation (Web, Concept Map, Flow Chart, Graph / Table, Picture) Products (Required) • Log/Journal Student Self-Assessment (Required) • Teacher-Made Prompts for Reflection • Bell-Ringers • Discussion (Whole-Class or Small Group)

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	• Self Evaluation Peer Evaluation (Required)

Reading and Writing Standards (except for English/Language Arts courses)

RST.11-12.7 - Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. (HS-ETS1-1), (HS-ETS1-3)
RST.11-12.8 - Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. (HS-ETS1-1), (HS-ETS1-3)
RST.11-12.9 - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. (HS-ETS1-1), (HS-ETS1-3)

Instructional Resources/Materials

- Lego NXT
- Parallax-BOE-Bot