Unit 10: Design Projects //Capstone	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?**
• Draw the design of the robot, including wire diagram. • Programming robotics functions to complete set tasks. • Communicate with clarity and precision. • Build a design and programming journal Capstone Project.	• How to design a Robot from start to finish? • How to design a Robot including hardware, software and wiring diagram to complete set task(s).

Sub-Unit Components/Sub-Headings/Objectives

Robot Design	Wiring Diagram	Programming	Software	Controls / Hardware	

Knowledge—Students will know…

Draw the design of the robot, including wire diagram.
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-ETS1-2) Design a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and tradeoff considerations. (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) • 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)

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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

- Computers
- Software
- Logo NST
- Parallax-BOE-BOT
- Compiler
- Controllers