

Unit 2: Hardware Components	Estimate Unit Length: 1-2 weeks
Course Code/Course Title: Robotics 1	Date Created: 7/16/2018

<p>Students will understand</p> <ul style="list-style-type: none"> Identify the hardware components of a robot, including sensors, motors, and servos, describing their functions and applications. Communicate with clarity and precision in design build and written representation of projects. Build a design and programming journal for each project 2 (Bo-Bot) 	<p>Essential Questions: How does science and Biology relate to me?</p> <ul style="list-style-type: none"> What are the essential components that make up robot hardware? Where and how is hardware used? What are the specific components and where/how are they used in the design and functionality?
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Sub-Unit Components/Sub-Headings/Objectives

Hardware Components	Sensors	Motors	Servos	Design and Programming Journal	Completed Robot Design
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Knowledge—Students will know...

<p>Identify the hardware components of a robot, including sensors, motors, and servos, describing their functions Communicate with clarity and precision on the development and construction of functional robot (Lego-NXT / Bo-Bot) Build a design and programming journal for project #2.</p>

Standards

Assessments/Evidence

<p>(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.</p>	<p>Closed –Ended Selected Response (Optional)</p> <ul style="list-style-type: none"> Multiple Choice True/False Matching <p>Open-Ended Constructed Response (Required)</p> <ul style="list-style-type: none"> Short Answer Visual Representation (Web, Concept Map, Flow Chart, Graph / Table, Picture) <p>Products (Required)</p> <ul style="list-style-type: none"> Log/Journal Project <p>Student Self-Assessment (Required)</p> <ul style="list-style-type: none"> Teacher-Made Prompts for Reflection Bell-Ringers Discussion (Whole-Class or Small Group) Self Evaluation
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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

- Logo NXT
- Parallax BOE-Bot
- Research Sources / Materials