STEM Education Works®

Scope & Sequence

Robotics with Dobot - Foundations of Design and Innovation

ROBOTICS WITH DOBOT – Foundations of Design and Innovation

	Grade Band	Unit	Overview
ROBOTICS WITH DOBOT – Foundations of Design and Innovation	K-5	Meet Dobot	Students are introduced to the Dobot robotic arm (Magician or Magician Lite). Students explore the different end effectors and use DobotLab to interact with the Dobot.
	K-1	Ocean Arms	Students learn about how coral reefs form, why they are important, and how they can be protected. Students take on the role of marine biologist as they use the Dobot robotic arm to help rebuild a coral reef.
	K-1	Little Red's Shipping Co.	Using *Little Red Riding Hood* as a backdrop, students explore the field of manufacturing as they simulate an assembly line and investigate how machines can aid individuals to manufacture goods in an efficient manner. They take on the role of a manufacturer as they label, package, and ship goods for Little Red's Shipping Co.
	2-3	Making Your Mark	Students explore marketing, manufacturing, and logistics by acting as brand managers for a fictional marker company. They learn about the context and technology associated with building a company brand and brainstorm a company name and mission statement. Finally, they use Dobot to draw a logo for their fictional company.
	4-5	Coding in the Classroom	Students learn and practice block-based coding by first carrying out an analog coding activity, then using Dobot, Blockly coding, and Scratch to create and test their own code.
	4-5	Bottleneck Breakdown	Students learn how products make it from idea to completed product. They explore concepts like supply chain management, bottlenecks, and process optimization. Students participate in a simulated assembly line.

NGSS Standards Alignment	NGSS Discipline	Connected Subjects	Time Required
3-5 ETS1-1 3-5 ETS1-2	Engineering, technology, and applications of science	ELA, science, SEL	2.5 hours
K-ESS3-1 K-ESS3-3	Life science	ELA, science, social studies, art, SEL, movement	3 hours
K-ESS3-1 K-2-ETS1-1	Engineering, technology, and applications of science	ELA, science, social studies, art, SEL, movement	3 hours
3-5-ETS1-1 3-5-ETS1-2	Engineering, technology, and applications of science	ELA, science, social studies, art, SEL, movement	3 hours
3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	Engineering, technology, and applications of science	ELA, science, math, social studies, art, SEL, movement	5 hours
3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	Engineering, technology, and applications of science	ELA, science, math, social studies, SEL, movement	3 hours