

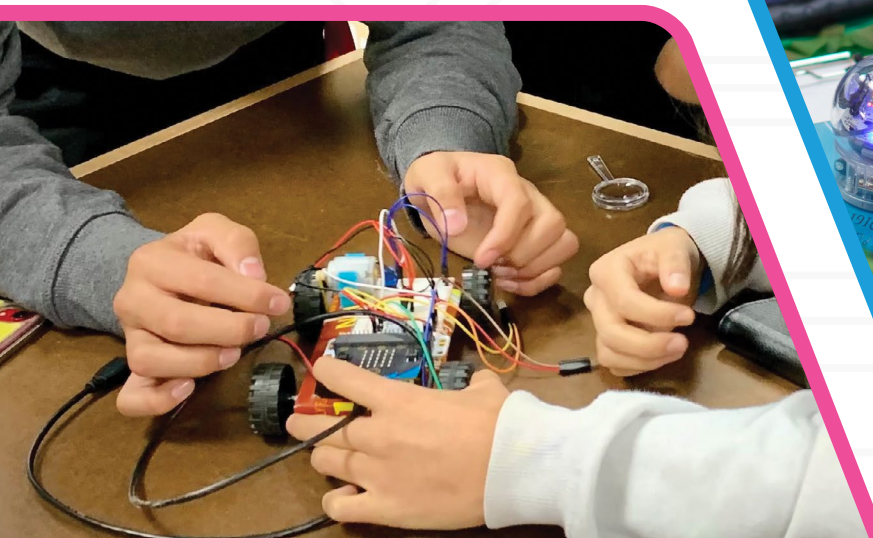


STEM Education Works®

Scope & Sequence

3D Printing - Middle School

Discoveries in Design and Innovation | Engineering Design Edition



3D PRINTING – Middle School Discoveries in Design and Innovation Engineering Design Edition

3D PRINTING – Middle School Discoveries in Design and Innovation Engineering Design Edition	Grade Band	Unit	Overview
	6-8	Locker Madness	This lesson is designed to introduce students to 3D printing and computer-aided design (CAD). Participants will craft personalized locker tags, and then be guided through the steps of the 3D printing process, gaining insights into file conversion, slicing, construction, and the realization of their designs.
	6-8	Checkmates	Students explore chess and its intriguing history and learn the strategic moves of each piece on the board. This exciting project encourages students to apply their math skills to innovate and design original chess pieces while providing an opportunity to play against their peers using their newly crafted creations.
	6-8	Double-Sided Words	Students apply their knowledge of parallel lines and congruent angles to a real-world 3D application. In this lesson, students become designers of double-sided words, crafting an optical illusion sculpture that cleverly transforms into two different words when viewed from two different angles.
	6-8	Buttoned Up	Students study the historical and design significance of buttons and create their own button and hole closure for a garment using effective and stylish design principles.
	6-8	Create a Candy Dispenser	Students design custom candy dispensers, learning about product design and using Tinkercad® to create and 3D-print their models.
	6-8	Marvelous Manufacturer	Are you ready to introduce a world of delectable creativity in your classroom? Guide your students as they transform their digital designs into molds for mouthwatering chocolates. They'll explore how the world of chocolate production intersects with cutting-edge additive manufacturing (3D printing).

3D PRINTING – Middle School Discoveries in Design and Innovation Engineering Design Edition	NGSS Standards Alignment	NGSS Discipline	Connected Subjects	Time Required
	MS-ETS1-1 MS-ETS1-2 MS-ETS1-4	Engineering, technology, and applications of science	ELA, science, math, art	3.25 hours
	MS-ETS1-1 MS-ETS1-3 MS-ETS1-4	Engineering, technology, and applications of science	ELA, science, math, social studies, art, SEL, movement	3.5 hours
	MS-ETS1-1 MS-ETS1-3 MS-ETS1-4	Engineering, technology, and applications of science	ELA, science, math, art, SEL	3.5 hours
	MS-ETS1-1 MS-ETS1-2 MS-ETS1-4	Engineering, technology, and applications of science	ELA, science, math, social studies, art, SEL, movement	3.5 hours
	MS-ETS1-1 MS-ETS1-4	Engineering, technology, and applications of science	ELA, social studies, art, SEL	3.5 hours
	MS-ETS1-1 MS-ETS1-4	Engineering, technology, and applications of science	ELA, social studies, art, SEL, movement	3.5 hours



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