

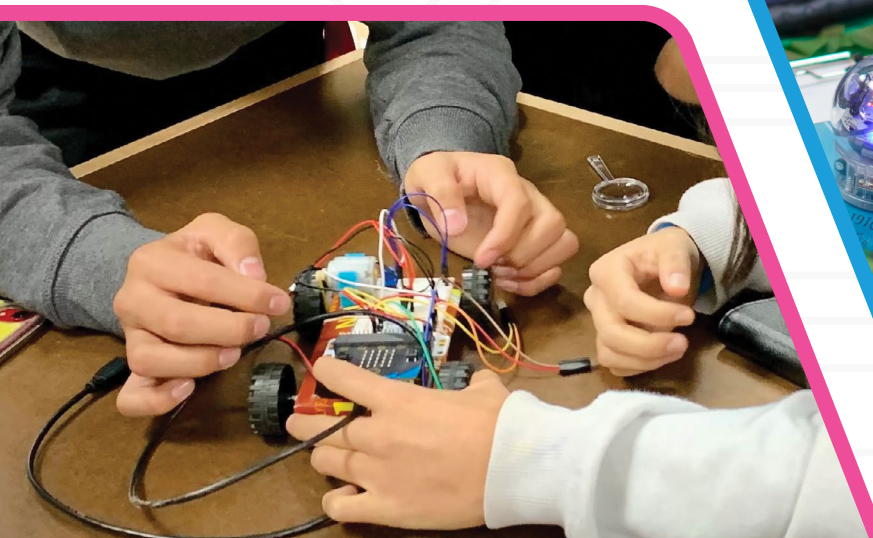


STEM Education Works®

Scope & Sequence

3D Printing - Middle School

Discoveries in Design and Innovation | Science Edition



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

Grade Band	Unit	Overview
6-8	Best “Celling” Author	Students fuse animal and plant cells, learning about their organelles and functions before creating a short story and building a cell model based on the fusion. They make inferences about the organelles and their functions in the new organism.
6-8	Crystal Collector	Students study Earth’s crystal formations and use that knowledge to design crystals imagined on other planets. Using research on a given planet’s conditions, students create a 3D model of a crystal that might form there and write a narrative on its usefulness on Earth.
6-8	Have a Seat	Students design a chair for a specific “sitter,” considering physical needs and learning style. They present their 3D model as a seat for a new line of school furniture, comparing and iterating on the best components from multiple models to create a final design. Empathy is emphasized throughout the Engineering Design Process.
6-8	All Wound Up	Students design and test themed shells for windup toys, learning about the transformation of potential energy into kinetic energy. They analyze the impact of shell characteristics such as size, mass, and shape on toy performance.
6-8	Light Artist	Students design lithophanes to explore the role of light in photography. They learn how materials react to light transmission and then write poetry to reflect the artistic mood of their creations.
6-8	Productive Architecture	Students plan and design productive architecture for a selected city using local resources and renewable energy. They work in groups, research the city’s problems, and create 3D models of their design using CAD software and a 3D printer.

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

NGSS Standards Alignment	NGSS Discipline	Connected Subjects	Time Required
MS-LS1-1 MS-LS1-2 MS-ETS1-1	Life science	ELA, science, art, SEL	3.5 hours
MS-PS1-1 MS-PS1-2 MS-ETS1-1	Earth and space science	ELA, science, art, SEL	3 hours
MS-ETS1-1 MS-ETS1-2 MS-ETS1-3 MS-ETS1-4	Physical science	ELA, social studies, art, SEL, movement	3.5 hours
MS-PS3-1 MS-PS3-5 MS-ETS1-1	Physical science	ELA, science, social studies, art, SEL	3.5 hours
MS-PS4-2 MS-ETS1-1 MS-ETS1-4	Physical science	ELA, science, art, SEL, movement	3.5 hours
MS-ESS3-3 MS-ETS1-1 MS-ETS1-4	Environmental Science	ELA, science, social studies, math, art, SEL, movement	3.5 hours

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



**Contact our team to learn more about
our products and curriculum!**

Sales

info@stemeducationworks.com

Curriculum and Professional Development

learn@stemeducationworks.com

Support

support@stemeducationworks.com



STEM Education Works®

Building STEM experiences with your students in mind