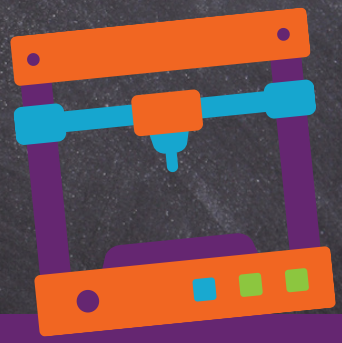
NextWaveSTEM

Discovery of 3D Design Using Tinkercad

Designed for learners in Grades 3-5



Course Description:

3D printing used to only exist in the realm of science fiction but now it's science fact. Students build key skills that are essential to the next industrial revolution by designing 3D objects using Tinkercad, creating a detailed blueprint and sketch of a design solution, brainstorming ways that 3D Printing can solve a real-world problem, and physically printing using slicing software and 3D Printing machines.

Equipment, Curriculum, and Training Available:

- Classroom set of 3D Printers
- 15 Lesson Hours
- Curriculum and supporting materials
- Ongoing product and curriculum support
- Professional development
- Facilitation by a trained STEM instructor (optional)

LESSONS	LEARNING TARGET EXAMPLES
Lesson One: Design Tools Pt. 1	I can navigate Tinkercad to change the workspace and use different design tools.
Lesson Two: Design Tools Pt. 2	I can group simple 3D shapes into more complex 3D shapes.
Lesson Three: Make a Signature	I can create a 3D signature.
Lesson Four: Importing 3D Files	I can search and modify an object already found in Tinkercad.
Lesson Five: Modeling Pt. 1	I can use Tinkercad to model an object found in the real world.
Lesson Six: Modeling Pt. 2	I can use Tinkercad to design an object to print at full scale.
Lesson Seven: Designing a Stamp	I can understand how stamps are designed.
Lesson Eight: Mirroring	I can use the Engineering Design Process to develop and build a personal stamp.
Lesson Nine: Introducing 3D Printers	I can brainstorm and organize ways that 3D Printing can solve a real-world problem.
Lesson Ten: CAD Applications	I can identify and define a design that solves a problem using CAD software.
Lesson Eleven: Prepare for Printing Pt. 1	I can choose the best orientation of a model for 3D printing.
Lesson Twelve: Prepare for Printing Pt. 2	I can calculate the cost of a 3D print.
Lesson Thirteen: Test, Improve, Reflect Part 1	I can test a product solution.
Lesson Fourteen: Test, Improve, Reflect Part 2	I can test a 3D printed object.
Lesson Fifteen: Test, Improve, Reflect Part 3	I can reflect on my design and my development experience and suggest improvements.