

9-12 Curriculum Outline

Unit	Lesson	Objective	Indiana Standards Covered	Time Required
Using Recyclables	Building an Anemometer	Students will design and build an anemometer to measure the speed of the wind.	<i>Earth Space Science:</i> ES 4.5 <i>Algebra I:</i> AI.DS.3, AI.DS.5	55 minutes x 2 days
	Recycled Art	Students will use recyclables to create a piece of art.	<i>Fine Arts:</i> VA:Cr1.1.IIIa, VA:CR1.2.IIIa, VA:Cr2.2.IIIa, VA:Pr5.1.Ia, VA:Cn11.1.IIa <i>Environmental Science:</i> Env.7.7	55 minutes x 5 days
3D Printing	Romeo and Juliet Chess	After reading the play Romeo and Juliet by William Shakespeare students will design and 3D print a chess piece that characterizes a character from the play.	<i>English Language Arts:</i> 9-10.RL.2.3, 9-10.SL.2.1, 9-10.SL.4.1, 9-10.SL.4.2 <i>Introduction to Engineering Design:</i> IED-1.5.7, 5.9.4, 6.10.4, 7.11.1	55 minutes x 4 days
	3D Printing a Monument from the Civil Rights Movement	Students will examine the civil rights movement of the 1960s and 1970s and create a monument based on a historically significant person or event.	<i>US History:</i> USH.7.1, USH.7.2 <i>Introduction to Engineering Design:</i> IED 0.1.1, 0.4.1, 0.4.2, 0.4.3, 0.4.5, 0.4.6, 1.5.4, 5.9.3, 5.9.4, 7.11.1 <i>Visual Art:</i> VA:Pr6.1.Ia, VA:Re.7.2.Ia, VA:Re8.1.Ia	55 minutes x 5 days
	3D Printing Teeth	Students will investigate how technology impacts the healthcare profession by 3D printing a set of teeth to explore tooth morphology.	<i>Health Sciences I:</i> HSEI-3.4, 11.1, 11.3	1 hour

Laser Cutting	Designing and Printing a Custom ID Tag	Using vector-based graphic design software and a laser cutter, students will learn to design and produce their very own custom backpack/luggage tag.	<i>Interactive Media:</i> IM-1.2, 4.2, 4.3, 4.4 <i>Computer Illustration and Graphics:</i> CIG-2.3, 3.1, 6.8	55 minutes x 2 days
	Designing a New Product	Students will design, develop, and create marketing materials for a new product or service.	<i>Introduction to Entrepreneurship:</i> IEN-1.4, 1.5, 3.2, 5.1, 5.2	55 minutes x 10 days
	Modeling the Law of Sines using a Laser Cutter	Students will create a tool using a laser cutter to model the Law of Sines.	<i>Trigonometry:</i> TR.G.2, TR.G.3, TR.G.4, TR.G.5	55 minutes x 2 days
	Cell Model Project	Students will create a model of a plant or animal cell by designing and cutting pieces that represent each organelle using a laser cutter.	<i>Biology:</i> B.1.3, B.1.3	55 minutes x 3 days
	Laser Cutting a Map	Using a laser cutter, students will laser cut a map to explore maps in a new way.	<i>World Geography:</i> WG.1.1, WG.1.2, WG.1.5, WG.1.4	55 minutes x 2 days
1 st Maker Space STEM Kits	Crazy Contraptions	Students will work in groups to create a unique crazy contraption, which is a machine that performs a simple task in an overly complex way.	<i>Physics:</i> PI.4.1, PI.4.2, PI.4.3	55 minutes x 6 days

Solar USB Charger	Students will explore sustainable and renewable sources of energy as they build and test a Solar USB Charger for a phone or small device.	<i>Earth Space Science:</i> ES.3.4 <i>Environmental Science:</i> Env.2.4, Env.2.11, Env.8.1, Env.8.2 <i>Environmental Sustainability:</i> ES-1.1, 1.3, 2.1, 2.2, 2.4, 2.5	55 minutes x 2 days
Squishy Sound	Students will create a circuit using the Crazy Circuits Touch Board and Squishy Circuits conductive dough that makes sound when the dough is touched.	<i>Introduction to Computer Science:</i> ICS-2.1, 2.2, 2.5 2.6 <i>Computer Science I:</i> CSI-1.1, 1.2, 1.4, 2.1, 5.1 <i>Integrated Chemistry and Physics:</i> PI.8.4, PI.8.5, PI.8.6	55 minutes x 2 days
Ugly Holiday Sweater	Students will design and create their own ugly holiday sweater using electrical components and a sweater.	<i>Introduction to Fashion and Textiles:</i> IFT-4.4, 4.5, 5.3, 5.4, 5.6 <i>Fashion and Textiles I:</i> FC-1.1, 1.4, 2.3, 2.5	55 minutes x 2