

**Elementary Makerspace Curriculum Outline**

<b>Lesson</b>	<b>Objective</b>	<b>Indiana Standards Covered</b>	<b>Time Required</b>	<b>Grade Level</b>
Bristlebot Lab	Students will create a bristlebot.	Science: 3.PS.1, 4.PS.4, 3-5.E.1, 3-5.E.2, 3-5.E.3	1 hour	1
Bloxels – Choose Your Own Adventure Challenge	Students will create classic “choose your own adventure” stories and bring their stories to life with Bloxels.	K-2 Computer Science Standards: K-2.DI.1, K-2.PA.1, K-2.PA.2, K-2.NC.1	5 x 40 min class periods	2-3
Building a Fairytale with Bloxels	Students will write their own fairytale or story and create a video game based on that story in Bloxels.	Computer Science: 3-5.CD.4, 3-5.NC.1, 3-5.PA.2 English Language Arts: 4.RL.2.2, 4.RL.2.3, 4.RL.4.1, 4.W.4	55 minutes x 2 + days	4-6
Color Changing Experiments	Students will learn about thermochromic pigments by making color changing paint and slime and explore the scientific principals behind thermochromic pigments	Science & Engineering: 2.PS.1, 2.PS.2, 2.PS.3	1 hour	2
Design Your Own Piggy Bank	Students will be introduced to volume and budgeting by making their own piggy bank out of recycled materials.	Science & Engineering: 3-5.E.1 Math: 1.M.3, 1.M.4 Financial Literacy: 6-8.1	1 hour	K-6
DIY Bird Feeders	Students will learn what birds eat, benefits to feeding birds, and build their own bird feeder.	Science and Engineering: 1.LS.3, 4.LS.2, 5.LS.3, 3-5.E.1, 3-5.E.2	55 minutes	K-6

DIY Musical Instrument	Students will investigate the properties of sound, including pitch, amplitude, and vibration when designing a musical instrument out of recycled materials.	Science: 3.PS.3, 3.PS.4 Music: <i>See Lesson Plan</i>	60 minutes x 2 days (120 minutes)	3
Solar Cockroach	Students will create a solar cockroach.	Science: 6.PS.4, 6-8.E.1, 6-8.E.4 Engineering & Technology: ETE – 1.4, ETE – 2.1, ETE – 2.2	1 hour	6
Makedo Tower	Students will explore architecture and will build a tower out of cardboard.	Science: K-2.E.2, SEPS.6, SEPS.2 English/LA: 1.RL.2.1, 1.SL.2.5 Mathematics: 3.M.5, 3.M.6, 3.M.7	60 minutes x 3 days (180 minutes)	2
Marble Roller Coaster	Convert potential energy to kinetic energy by building a marble roller coaster and recording their data observations.	Science: 3.PS.1, 4.PS.4, 3-5.E.1, 3-5.E.2, 3-5.E.3	60 minutes x 2 days (120 minutes)	K-6
Laser Communication Relay	Students will be introduced to the Laser Communication Relay by learning how sound and data are related and building a device to transmit sound.	Science & Engineering: 3.PS.4, 3.PS.3	1 hour	K-6

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Light Up Pencil Pouch	Students will create a light up pencil pouch using Lectrify Light it pieces and conductive thread.	Science & Engineering: 4.PS.5, 3-5.E.1, 3-5.E.2, 3-5.E.3 <i>Family and Consumer Sciences (middle school):</i> <i>FCS-MS 5.4</i>	55 minutes x 2 days	4-8
Makey Makey Playdough Keyboard	Students will connect demonstrate how sound moves through a variety of materials by creating a piano out of playdough and a Makey Makey.	Science & Engineering: 3.PS.3, 4.PS.5, 6.PS.4 Music: Cn.2.5.1 (3-5)	90 minutes	3-6
Making a Wiggle Bot	Students will design and build a wiggle bot using Lectrify Shake it.	Science & Engineering: 3.PS.1, 3-5.E.1, 3-5.E.2, 3-5.E.3	55 minutes	3-6
Making Music 3D	Students will investigate the properties of sound, including pitch, amplitude, and vibration when creating a 3D printed musical instrument.	Science: 3.PS.3, 3.PS.4 Music: <i>See Lesson Plan</i>	60 minutes x 3 days (180 minutes)	3
Paper Circuit Cards	Students will model the flow of electrons in a circuit by making paper circuit cards.	Science: 4.PS.5, SEPS.2, SEPS.6	1 hour	4
Toy Design Workshop	Students will create their own unique pull-toy with animated parts that move as they roll. Students will use the engineering design process and utilize simple machines, linkages, kinetic and potential energy, and mechanical advantage in their plans and construction.	Science and Engineering: 3.PS.2, 3-5.E.1, 3-5.E.2, 3-5.E.3 Mathematics: 3.G.3, 3.M.2, 3.DA.2, Computer Science: 3-5.PA.1 3-5.PA.2	55 minutes x 5 days	3

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Toy Car and Racetrack	Students will build their own toy car and racing ramp.	Science & Engineering: 4.PS.2, 4.PS.1, SEPS.2, SEPS.6	1 hour	4
The Solar System in 3D	Students will investigate the scale of our solar system and its components by 3D printing and creating an informational travel flyer for a planet.	Science and Engineering: 5.EES.1, SEPS.2	55 minutes x 3 days	5
Pizza Racers	Students will design and test a pizza racer to explore the scientific processes of mass, friction, and the engineering design process.	1.PS.3, K-2.E.1, K-2.E.2, 2.PS.4, 3.PS.1, 4.PS.1, 4.PS.2, SEPS.1, SEPS.3, SEPS.4	55 minutes x 2 days	1