

# Maker Faire® Rochester



## Student S.T.E.A.M. Fest 2019 Strand Description and NGSS Alignment

**Robotics and Drones** - In this strand students will engage with many different robotics platforms ranging from robots assembled through kits and ready made robotics for coding, and drones. They will have the opportunity to see FIRST Robotics teams in action.

*Potential Next Generation Science Standards*

- **Physical Science: 3-PS2-2, 3-PS2-1, 4-PS3-1, 5-PS2-1**
- **Engineering, Technology, and Application of Science: 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3. MS-ETS1-2, MS-ETS1-3, MS-ETS1-4**

**Think, Design, Create** (Manufacturing and Engineering) - Students will be engaged in activities focused around manufacturing and engineering in this strand. They will see technologies that have brought manufacturing and engineering to the masses such as 3D printing, Laser Cutting/Engraving, CNC Machines, CAD, Blacksmithing, and perhaps even welding (through a simulator).

*Potential Next Generation Science Standards*

- **Physical Science: 3-PS2-1, 4-PS3-1, 4-PS3-3,**

- **Earth and Space Science: 4-ESS3-1, 5-ESS3-1**
- **Engineering, Technology, and Application of Science: 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4**

**Sustainability** - Demonstrations and hands on activities will focus on such topics as repurposing and recycling materials ranging from cardboard and fabric, to toys and technology. This strand will also encompass areas and technologies that help promote a greener environment.

*Potential Next Generation Science Standards*

- **Engineering, Technology, and Application of Science: 3-5-ETS1-2, 3-5-ETS1-3, 3-5-ETS1-1, MS-ETS1-3**
- **Earth and Space Sciences: 4-ESS3-1,**
- **Life Sciences MS-LS2-5**

**The Arts** - For those that want to focus on the arts, this strand focuses on the creative arts and the intersection of arts with technology. Activities and demonstrations ranging from performances, painting, interactive art, sewing, filmmaking, photography, making props, creating whimsical art, and more are available in this strand.

*Potential Next Generation Science Standards*

- **Engineering, Technology, and Application of Science: 3-5-ETS1-2, 3-5-ETS1-3, MS-ETS1-3**

**Hands on Science** (Applied Sciences) - Hands on science activities focused on areas such optics, circuits, astronomy, magnets, physics, aerodynamics, chemistry, and more.

*Potential Next Generation Science Standards*

- **Physical Sciences: 3-PS2-2, 3-PS2-1, 4-PS3-1, 4-PS3-3, 5-PS1-4, MS-PS2-1, MS-PS2-2, MS-PS3-1,**

- **Engineering, Technology, and Application of Science:**  
3-5-ETS1-2, 3-5-ETS1-3, 3-5-ETS1-1, MS-ETS1-2, MS-ETS1-4.

**Culinary** - This focus area will focus on the impact science has on the food you eat. Demonstrations and interactive activities will lead students to explore this interesting world of Culinary Science.

*Potential Next Generation Science Standards*

- **Physical Science: 5-PS1-4. MS-PS1-3. MS-PS1-8**

**Coding and Things that Go Beep** (Microcontrollers, MiniComputers, and Coding) - This strand focuses on the educational potential of devices such as Raspberry Pi, Arduino, and the Microbit. Also in this strand will be opportunities to engage with multiple coding applications such as Code.org, Makecode, Scratch and more.

*Potential Next Generation Science Standards*

- **Engineering, Technology, and Application of Science:**  
3-5-ETS1-2, 3-5-ETS1-3, 3-5-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4

**DIY** (jewelry, home repair/construction, etc.) - This broad ranging strand is all about fostering the DIY mindset. Be it making your own robot from scratch or making your own soap to recreational plumbing, basic home repair, or starting your own business.

*Potential Next Generation Science Standards*

- **Physical Sciences: 5-PS1-4, MS-PS3-1**
- **Engineering, Technology, and Application of Science:**  
3-5-ETS1-1