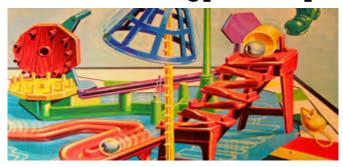
## Science of Technology Class Syllabus



**Instructor: Sarah Sarton** 

Contact: <u>ssarton@greenvilleschools.us</u>

Classroom: 505

### **Course Description:**

This STEAM course integrates Science, Technology, Engineering, Arts, and Mathematics to foster creativity, problem-solving, and innovation. Students will work individually and in teams to complete hands-on projects that apply real-world concepts through inquiry-based learning, design thinking, and collaboration.

It is a semester-long course where students get to dive into hands-on activities that really help teach them how to be independent learners in the classroom. This is a progressive course, meaning we add on to their knowledge and skills as we move through each unit.

#### Course Goals:

#### Students will:

- Develop critical thinking and problem-solving skills.
- Understand how STEAM connects to them and their world.
- Gain confidence using technology and engineering tools.
- Learn the design process from concept to prototype.
- Practice collaboration, creativity, and communication.

# Units & Projects

Unit 1 - Instant Design Challenge (Week1-2)	<ul> <li>Introduce the design process to students</li> <li>Work in teams using a decision matrix to show their thinking</li> <li>Reflect on team collaboration to collectively come up with a set of team rules for the year</li> </ul>
Unit 2 - Applied Chemistry (Weeks 3-4)	<ul> <li>Properties of matter (states, chemical/physical changes)</li> <li>Polymer science and reactions (yogurt and ice cream making)</li> <li>Material science basics</li> <li>Chemical safety</li> <li>Project: Oil Spill Clean-up Simulation</li> </ul>
Unit 3 - Nanotechnology (Weeks 5–8)	<ul> <li>Introduction to nanoscience</li> <li>Scales and measurement (macro vs. nano)</li> <li>Current and emerging nanotechnologies</li> <li>Scientific modeling</li> <li>Project: Nanotechnology on Fabrics Experiment</li> </ul>
Unit 4 - Applied Physics (Weeks 9-15)	<ul> <li>Study simple machines and different types of energy.</li> <li>Understand potential and kinetic energy</li> <li>Build, test, and evaluate models</li> <li>Project: Rube Goldberg Machine creating</li> </ul>

# Unit 5 - Careers in the Field

- Identify and reflect on personal strengths, transportable skills, and opportunities for growth.
- Identify jobs of interest based on personal strengths and interests
- Research career opportunities and complete a career exploration and present findings for the class.

### **Materials Needed:**

- Notebook
- Pencils/pens

### **Classroom Expectations:**

- Be respectful and open to others' ideas.
- Be safe with tools and materials.
- Take risks, make mistakes, and learn from them.
- Stay engaged and contribute to your team.
- Be curious and engaged.
- Collaborate respectfully with peers.
- Complete assignments on time.