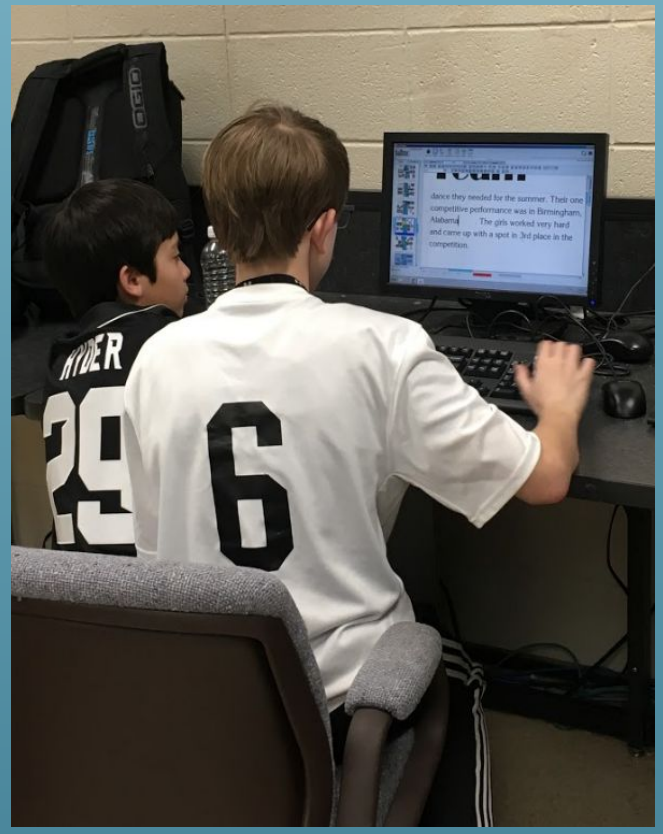

STEM
AT DISCOVERY MIDDLE SCHOOL

PLTW Computer Science for Innovators and Makers

- Throughout the nine week course, students will learn about programming by blending hardware design and software development, allowing students to discover computer science concepts and skills by creating personally relevant, tangible, and shareable projects.

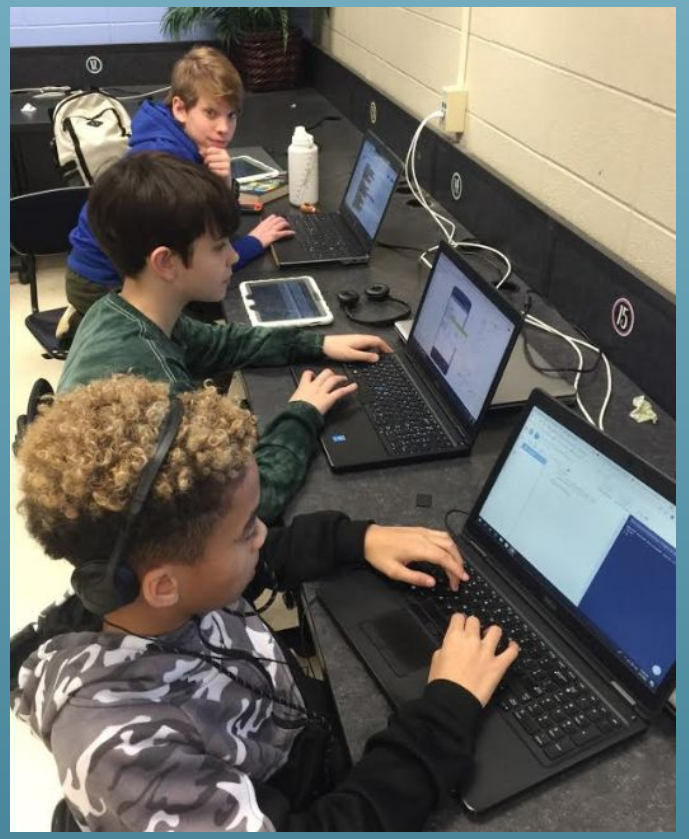


CodeX: Python

- **Prerequisite Required** - Computer Science for Innovators & Makers.
- 7th and 8th grade students only.

Throughout the nine week CodeX Python class, students will be introduced to text based computer programming.

Students will learn how to code using the Python programming language and will create a variety of projects using Micro:bit devices.



PLTW App Creators

- **Prerequisite Required** - Computer Science for Innovators & Makers.
- 7th and 8th grade students only.

- Throughout the nine week App Creators class, students will be introduced to computer science as a means of developing solutions to authentic problems through mobile app development.

PLTW Magic of Electrons

- **Prerequisite Required** - Open to 7th and 8th Grade Only

In this class, students examine the behavior and parts of atoms as well as the impact of electricity on the world around them. They learn skills in basic circuitry design and use what they know to propose authentic designs.

PLTW Energy and the Environment

- **Prerequisite Required** -
  7th & 8th Grade Students Only

Throughout this nine week class, students explore the advantages and disadvantages of alternative energies in comparison with fossil fuels or other traditional energy sources. One major project includes designing a wind turbine and measuring the amount of energy it produces.

PLTW Medical Detectives

- 7th and 8th grade students only.

- Medical Detectives (MD) explores the biomedical sciences through hands-on projects and labs that require students to solve a variety of medical mysteries.

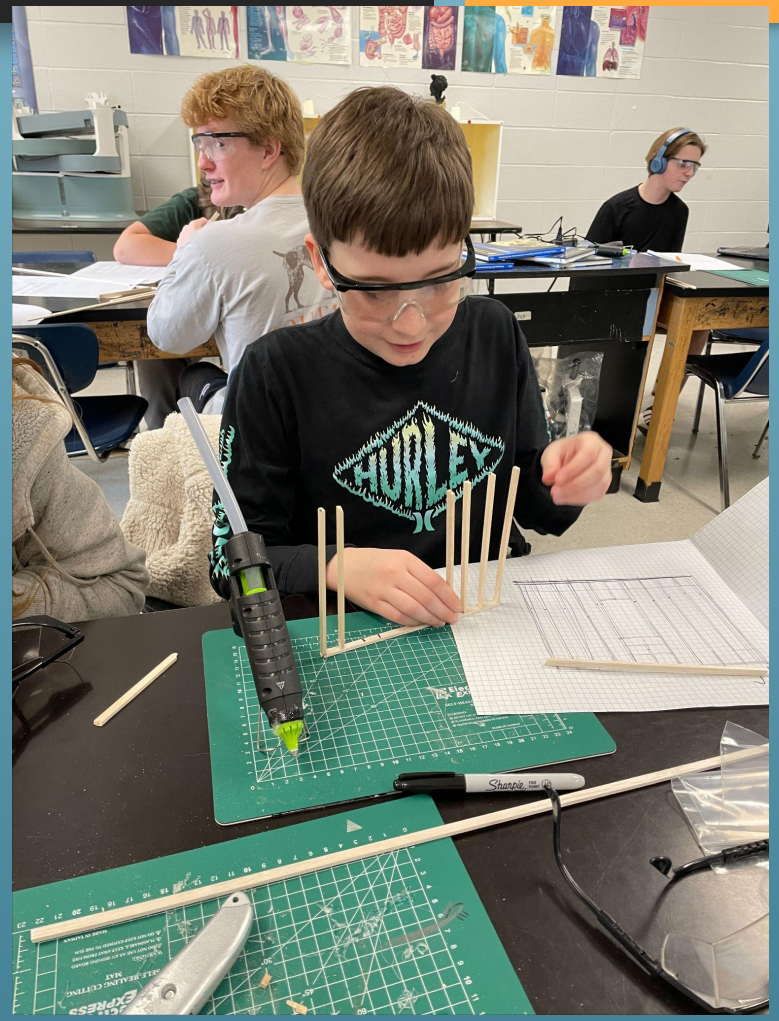
- Students investigate medical careers, vital signs, diagnosis and treatment of diseases, as well as human body systems such as the nervous system.

- Students will collect and analyze medical evidence to draw conclusions about mysteries such as epidemics.

PLTW Green Architecture

- **Prerequisite Required** -
  7th & 8th Grade Students Only

Throughout this nine week class, students learn the fundamentals of architectural design and building principles with an emphasis on using sustainable materials and energies. Students learn to draw and measure in architectural scale. They construct models in scale and design house plans on CAD software.



Healthcare Career Exploration

- **Prerequisite Required** -None
- **Class is available for 6-8th graders**

- This course is a 9 week elective.
- Different careers that you can have in the healthcare industry are discussed, such as:
  - Veterinarian
  - Social Worker
  - BioMedical Engineer
  - Dietician, etc.
- Some things we do:
  - Hands on activities
  - Interactive projects
  - Learn medical terminology
- Our goal is to learn about various careers in health care to encourage the growth of the industry.

Career pathways

1. Therapeutic Services
2. Diagnostic Services
3. Support Services
4. Health Informatics
5. Biotechnology, Research and Development

Health Science Discovery

- **Prerequisite Required** -None
- **Class is available for 6-8th graders**

- This course is a 9 week elective.
- If you are interested in healthcare this is for you! We will learn about…
  - The human body systems
  - Demonstrate basic first aid skills
  - CPR
  - Skills using medical equipment
  - And MORE!
- Our goal is to have fun learning about how to promote health and wellness and prevent disease.

Students learning Hands only CPR

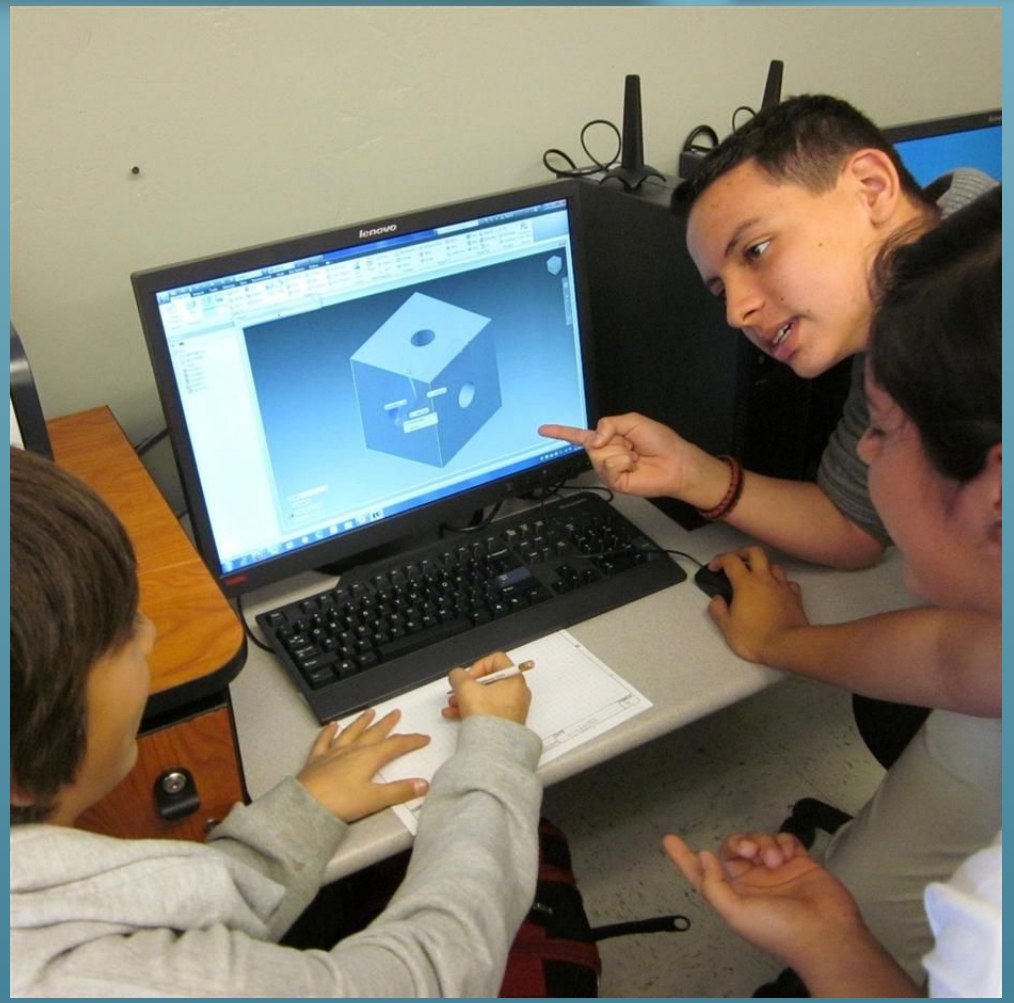
Design and modeling students partnering with healthcare to create a hand!

Students teaching teachers CPR

PLTW Design and Modeling

- **Recommended before Robotics**

- Students in this class will learn basic Engineering Drafting techniques.
- Students will make a Rubik's Cube as well as complete other design challenges.
- The skills learned in this course will help build a solid foundation for the other PLTW courses we offer.



PLTW Robotics

- Students will work in teams to apply the design process in order to solve problems and understand the influence of creativity and innovation in their lives.

- Using 3D design software (such as Tinkercad), students will create virtual images of designs and learn how to build and program real-world objects such as traffic lights, toll booths, and robotic arms.

- Students will be utilizing VEX Robotics.

PLTW Flight and Space

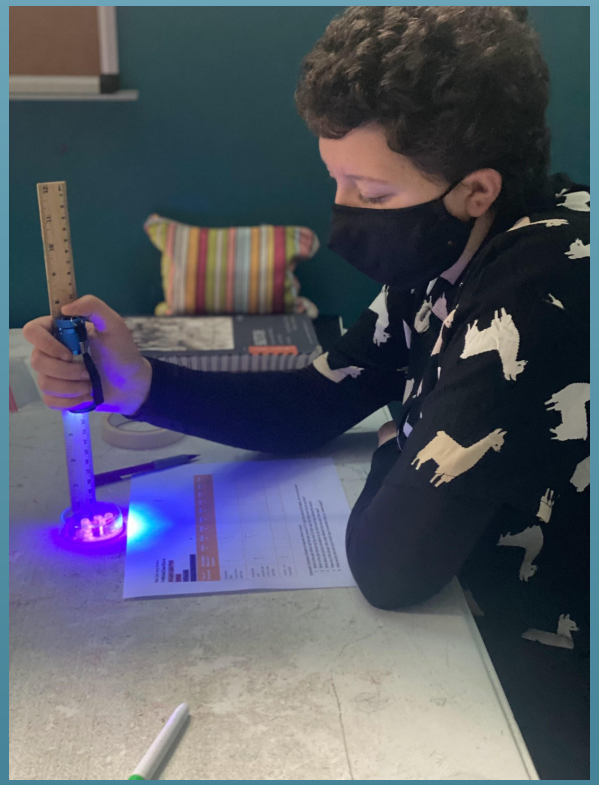
- 7th and 8th grade students only.

- 9 week course in which students will learn about the History of Flight and Space, Aeronautics, as well as traveling to and from space.
- Students will research different engineering designs related to space travel and learn about the forces which must be applied and overcome to reach space. Students will also get to participate in flight simulations and eventually build and test a rocket of their own.

PLTW Science of Technology

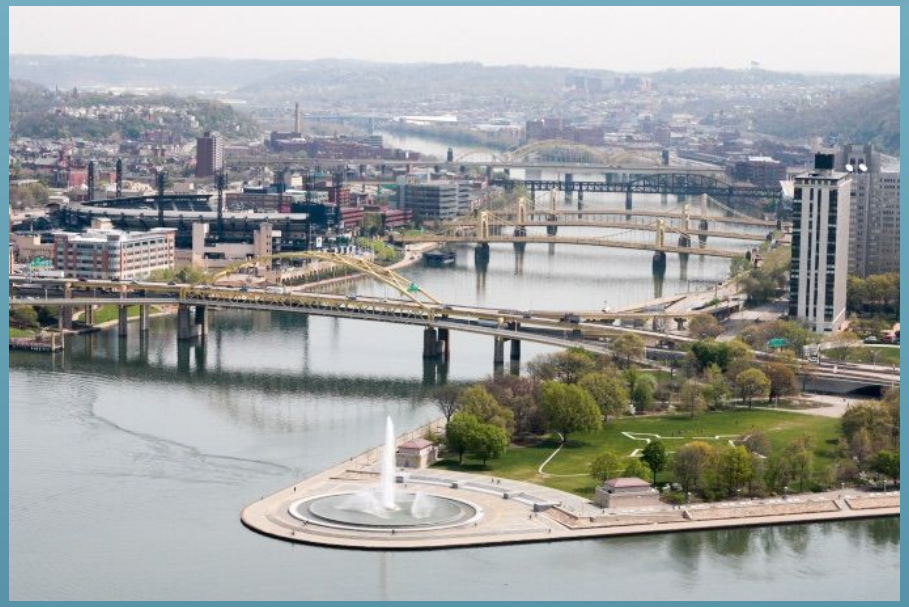
- 7th and 8th grade students only.

- 9 week course in which students will learn about nanoparticles, uses of technology, oil spill cleanup, and build a Rube Goldberg.

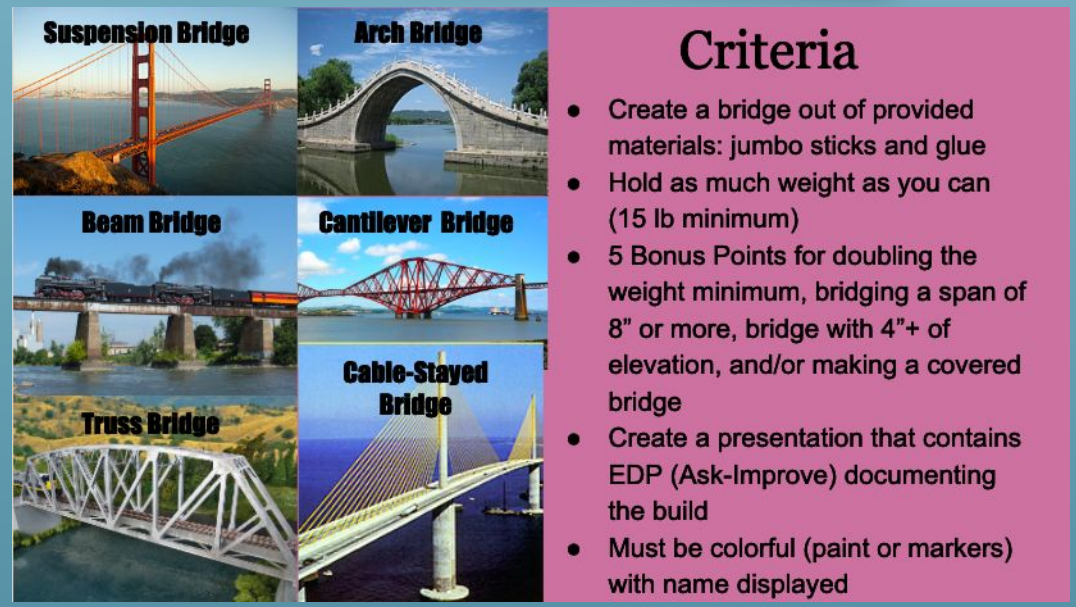


What is STEM?

STEM is a cross-disciplinary approach to problem solving where kids apply math and science, and engineer solutions to real-world technological issues.



INTRODUCTION OF A REAL-WORLD PROBLEM



IDENTIFY POSSIBLE SOLUTIONS/CONDUCT DESIGN RESEARCH

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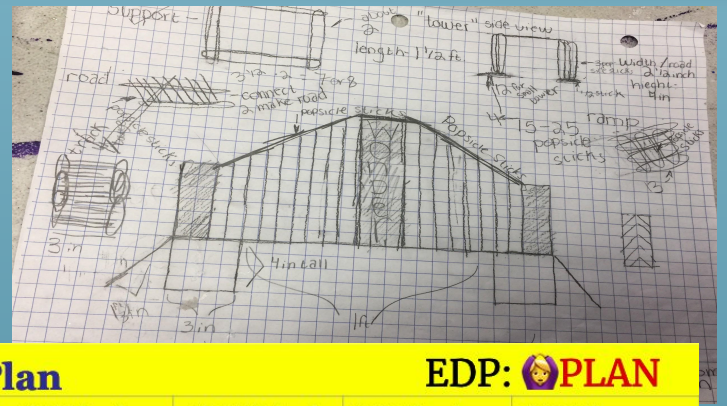

Work Plan — **EDP: PLAN**

1/28/19 Monday	1/29/19 Tuesday	1/30/19 Wednesday	1/31/19 Thursday Introduction to Bridges Ask Slide Begin Imagine	2/1/19 Friday Finish Imagine Get Design Approval
2/4/19 Monday Begin Create *Supports Progress Picture	2/5/19 Tuesday Continue Create *Supports/Track Progress Picture	2/6/19 Wednesday Continue Create *Track/Ramp Progress Picture	2/7/19 Thursday Begin Improvements/ Aesthetics Progress Picture	2/8/19 Friday Continue Improvements/ Aesthetics Progress Picture
2/11/19 Monday Continue Improvements/ Aesthetics Progress Picture	2/12/19 Tuesday Continue Improvements/ Aesthetics Progress Picture	2/13/19 Wednesday Finish Final Improvements/ Aesthetics Progress Picture Final Design Picture	2/14/18 Thursday PRESENTATION	

PLAN: MATERIALS AND TIME

COLLABORATE IN GROUPS TO CREATE

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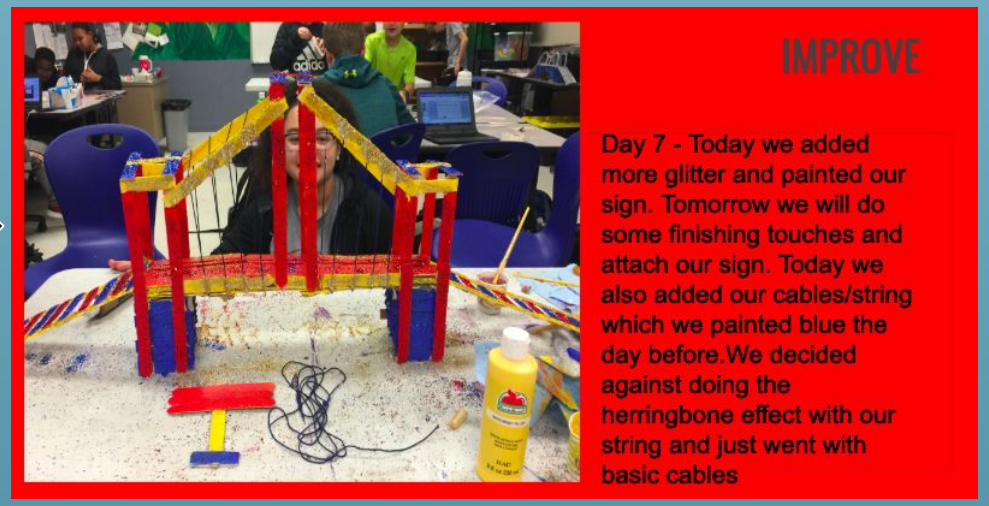

IMPROVE AESTHETICS AND DESIGN FUNCTION

PRESENT PROJECT SUMMARY AND TEST

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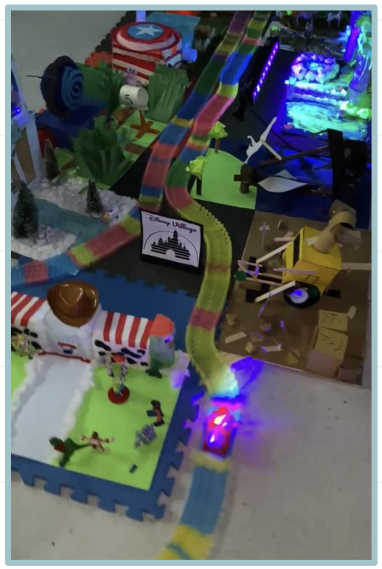
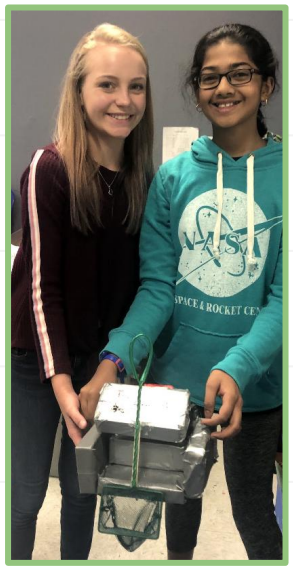
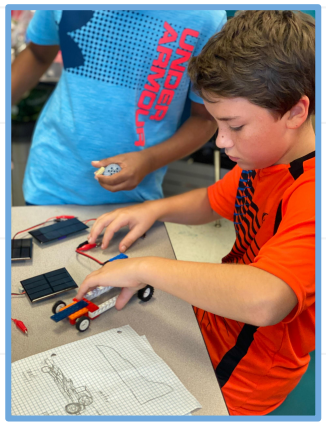
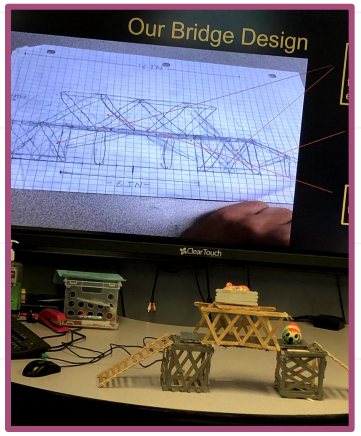
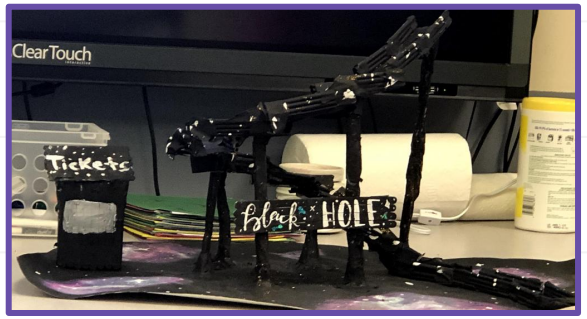
Previous Projects

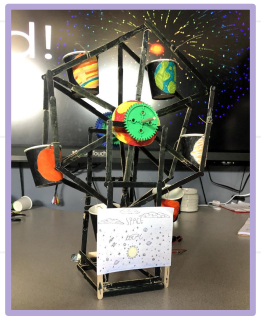


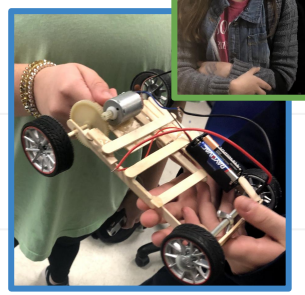




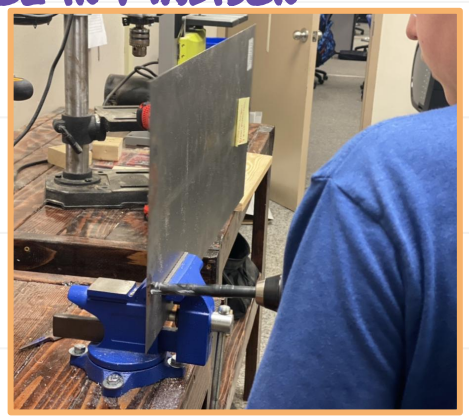




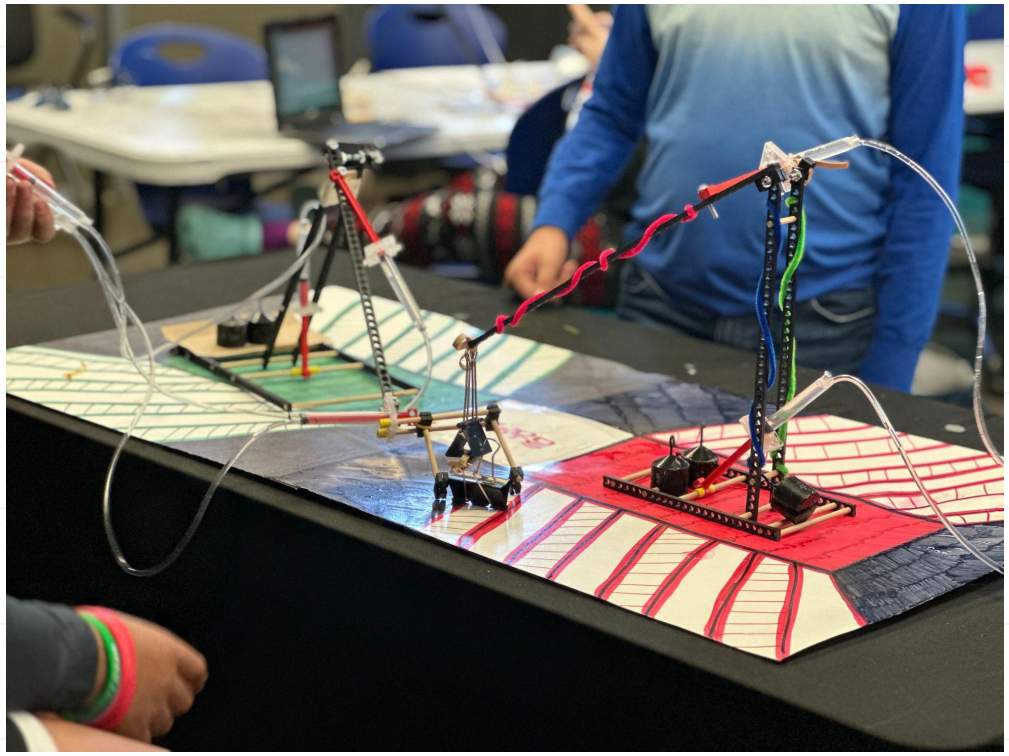


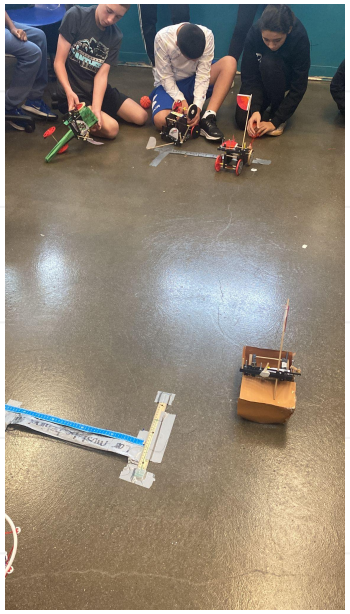


Community Service Project: Mud Kitchen and other Outdoor Play Equipment for Preschool in Madison



Previous Projects





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