Exploring Technology

At-A-Glance

Intended Audience: 6th Grade
Course Length: 18 weeks

Exploring Technology: Prepares students by equipping students with an understanding of technology and engineering through the use of hands-on activities that promote both Technological and Engineering Literacy. Students will have opportunities to apply the engineering design process in real-world problem-solving lessons.

Meeting Technology: Engineering and technology impact every individual and society as a whole.

- Introduction to Technology and Engineering: Technology addresses our current wants and needs. Through innovation, humans have changed natural resources into products.
- Technology Over Time: Technology is a broad name for many fields of study.
- System Design: Technology is most useful when each facet of its creative design is carefully considered, such as its inputs, process, output, and feedback.
- Transforming Resources: The process of selecting necessary resources should be based upon the desired result of the technology being designed.
- Transportation Systems: Innovators use the design process to solve problems involving transportation systems/subsystems.

Impacts of Technology: Creative design solutions are often necessary for community-based problems that impact enormous numbers of people, in some instances nations or even the world.

- Reducing the Impact: Problems are often not a result of the desire to innovate designs but often a result of environmental tragedies out of the control of people.
- Alternative Energy: Solutions must be designed and documented in order for them to materialize in a working technology product or system to address the problems they were designed to solve.
- Innovating Solutions: Developing technology based on designed solutions must be continuously monitored.
- Inventing Energy Models: Discovering alternatives and selecting the best solution is not an easy task when dealing with realistic problems that impact many individuals and could have a lasting impact on communities and shared ecosystems.
- Solar Power Propulsion: Solar energy is the most abundant energy source on Earth.

Drafting and Design: Accurate drafting is a form of communication important to the fields of technology and engineering.

- Drafting: Drafting allows engineers to communicate when words cannot adequately describe the design.
- Interior and Exterior Design: In order to effectively communicate architectural designs, students must understand the roles of both interior and exterior designs given the location of the living or work space being designed and constructed.
- Digital Drafting: Digital forms of drafting are more efficient methods of communicating solutions to design problems.
- Will it Hold?: Architecture is the art and science of designing and building.
- Hydroponic Design Solutions: Technology creates new means of living in areas once thought uninhabitable.

Systems Technology: Electronics are a key component to the function of many of the technological products and systems used daily.

- It’s Electric: Electricity and electronics are concerned with the movement of electrons through a given space.
- Introduction to Micro:bits: Electronic circuits can be found in everyday objects.
- Micro:bit Controlled Car: Transportation is an important function in the success of the manufacturing process.
- Electric Systems: Electricity is an essential part of modern life.
- Tree Soil Moisture Project: Design in technology and engineering is an essential component in everyday lives to increase understanding of the importance of computation, automation, artificial intelligence, and robotics.