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.

For More Information

Contact Us At

ebdbuzzsupport@iteea.org