

# CTE ELECTIVES

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## CAREER & COLLEGE EXPLORATION CLASSES

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The goal of these courses is to create a foundation for success in high school, future studies, and careers such as Science, Technology, Engineering, and Mathematics; Business and Industry; Public Service; Arts and Humanities; and Multidisciplinary Studies.

**Students will use decision making and problem-solving skills for college and career planning. Students will explore valid, reliable educational and career information to learn more about themselves and their interests and abilities. Students integrate skills from academic subjects, information technology, and interpersonal communication to make informed development of a college and career achievement plan.**

### **Career & College Exploration in IT / Engineering (Robotics 7):**

***Automation and Robotics:*** Students trace the history, development, and influence of automation and robotics as they learn about mechanical systems, energy transfer, machine automation, and computer control systems. Students use the VEX Robotics platform to design, build, and program real world objects such as robotic arms and traffic lights.

***Flight and Space:*** The exciting world of aerospace comes alive through this unit. Students explore the science behind aeronautics and use their knowledge to design, prototype, and test model rockets and gliders. Custom-built simulation software allows students to experience space travel.

### **Career & College Exploration in IT / Engineering (Robotics 8):**

***Design and Modeling:*** This course allows students opportunities to apply the design process to creatively solve problems. Students learn and utilize methods for communicating design ideas through sketches, solid models, and mathematical models. Students will understand how models can be simulated to represent an authentic situation and generate data for further analysis and observations. Students work in teams to identify design requirements, research the topic, and engage stakeholders.

**Computer Science for Innovators and Makers:** Students discover computer science concepts and skills by creating personally relevant, tangible, and shareable projects. Throughout the unit, students will learn about programming for the physical world by blending hardware design and software development. They will design and develop a physical computing device, interactive art installation, or wearable technology, and plan and develop code for microcontrollers that bring their physical designs to life.

### **Career & College Exploration in Business / Law:**

**Business** - This course is designed to guide students through the process of exploring potential careers in the business world while preparing for higher education opportunities. Students will gain insights into various business sectors, including marketing, finance, entrepreneurship, and management, and learn about the skills and education required for success in each area. The course will also focus on the college selection process, offering strategies for researching, applying to, and transitioning into business-related programs at the college level. Through interactive discussions, guest speakers, and real-world case studies, students will develop a clear understanding of both career paths and academic opportunities, helping them make informed decisions about their future.

**Paralegal** - This course is designed to introduce students to the dynamic field of paralegal studies while guiding them through the process of exploring various career paths and educational opportunities within the legal profession. Students will gain a comprehensive understanding of the role of paralegals, including key responsibilities, essential skills, and the variety of legal sectors they can work in, such as corporate law, criminal law, family law, and more.

### **Career & College Exploration in AV Technology / Commercial Photography:**

**A/V (Audio/Video) Technology** - This course offers students an in-depth exploration of careers and academic pathways in the world of Audio/Visual (A/V) Production. Students will be introduced to various fields within the A/V industry, including film, television, digital media, sound engineering, and live event production. Through hands-on projects and case studies, students will gain practical experience in using A/V equipment and software, while also learning about the skills, certifications, and education required for success in these dynamic fields. The course will also cover the college application process for students interested in pursuing A/V production programs, providing guidance on selecting the right college and

crafting a portfolio that shows their work. By the end of the course, students will have a clearer understanding of the diverse opportunities in A/V production and be better equipped to make decisions about their academic and career futures.

**Commercial Photography** - This course is designed to introduce students to the exciting field of commercial photography, helping them explore various career opportunities and educational pathways in this dynamic industry. Students will learn about the different sectors of commercial photography, including advertising, fashion, products, architectural, and editorial photography. Through hands-on assignments and real-world case studies, they will gain a practical understanding of the equipment, techniques, and creative skills needed for success in the field. The course will also guide students through the college selection process, offering insights into the best programs for aspiring photographers and strategies for creating a standout portfolio. By the end of the course, students will be equipped with the knowledge to make informed decisions about both their academic future and career in commercial photography.

**Career & College Exploration in Education & Training / Touch Systems Data:**

**Education & Training** - This course is designed to guide students through the various career paths and educational opportunities available in the Education & Training field. Students will explore the roles of educators, trainers, and administrators in different settings, including schools, corporate environments, and nonprofit organizations. The course will provide an overview of key topics such as curriculum development, classroom management, instructional technology, and educational leadership. Students will also learn about the skills and certifications required for various positions, as well as the steps to pursue a degree in education or training. Through case studies, guest speakers, and hands-on activities, students will gain a deeper understanding of the education profession while also developing a personalized plan for pursuing higher education and a career in this rewarding field.

In the exploration **Touch Systems Data** course students will apply technical skills to address business applications of emerging technologies. Students enhance reading, writing, computing, communication, and reasoning skills and apply them to the business environment. Students will need to apply for touch system data entry for production of business documents.

### **Career & College Exploration in Health Science:**

**Health Science** - This course offers an in-depth exploration of the diverse and rapidly growing field of health science. Designed for students interested in pursuing a career in healthcare, it provides a comprehensive overview of various career options, academic pathways, and the educational requirements needed for success in the field. Students will learn about a wide range of health science professions, including nursing, physical therapy, public health, medical technology, and more, while gaining insight into the skills, certifications, and training necessary to excel in each area.

### **Career & College Exploration in Hospitality & Tourism / Culinary:**

**Hospitality & Tourism** - This course is designed to introduce students to the diverse and vibrant world of the hospitality industry, helping them explore the wide range of career opportunities available and the educational paths required for success. Students will gain an in-depth understanding of the key sectors within hospitality, such as hotel management, event planning, culinary arts, tourism, and customer service, while learning about the skills, certifications, and professional experiences necessary to thrive in each area.

**Culinary Arts** - This course offers students a comprehensive introduction to the dynamic field of culinary arts, helping them explore a variety of career opportunities and academic paths within the culinary industry. Students will gain an understanding of the diverse roles in the culinary world, from chefs and pastry artists to food stylists, restaurant managers, and food critics, while learning the essential skills, techniques, and certifications necessary for success in the field.

### **Career & College Exploration in Engineering / Manufacturing:**

**Engineering** - This course is designed to introduce students to the diverse world of engineering, helping them explore a wide range of career opportunities and educational pathways in this dynamic and evolving field. Students will learn about the various branches of engineering, including mechanical, electrical, civil, chemical, and software engineering, and understand the skills and qualifications required for each specialty. The course will also cover the college application process, with guidance on selecting the right engineering programs, preparing for admissions, and navigating internship and research opportunities. Through hands-on projects, real-world case studies, and guest speakers, students will

gain a deeper understanding of what it takes to succeed in engineering and develop a clear plan for pursuing both higher education and a fulfilling career.

**Manufacturing** - This course provides students with an in-depth exploration of careers and educational opportunities in the manufacturing industry. Students will gain an understanding of the various sectors within manufacturing, including advanced manufacturing, industrial design, automation, production management, and quality control. The course will highlight the skills, technologies, and certifications needed to succeed in manufacturing roles, along with the educational pathways available for pursuing a career in this field. Students will also learn about the application process for college programs related to manufacturing and industrial technology, and how to build a portfolio or resume that stands out to employers. Through hands-on activities, case studies, and industry insights, students will develop a clearer understanding of how to navigate their career and academic journeys in this essential and ever-evolving sector.

**Career & College Exploration in Maritime, Distribution & Logistics / Automotive:**

**Maritime, Distribution & Logistics** - This course is designed to introduce students to the dynamic and essential fields of maritime, distribution, and logistics. Students will explore the various career opportunities within these industries, including roles in shipping, supply chain management, transportation, and port operations. The course will focus on the skills, certifications, and technologies needed for success in these sectors, as well as the educational pathways available through college programs. Students will also learn about the global impact of logistics and maritime operations, including the movement of goods across countries and the infrastructure that supports these industries. Through case studies, guest speakers, and hands-on activities, students will gain a deeper understanding of the career possibilities and academic opportunities in maritime, distribution, and logistics.

**Automotive** - This course is designed to provide students with a comprehensive overview of the automotive industry, helping them explore the wide variety of career opportunities and educational pathways available in this dynamic field. Students will learn about the different sectors of the automotive industry, including vehicle design, manufacturing, repair and maintenance, sales, and automotive technology. The course will cover the skills, certifications, and technical knowledge needed for various automotive careers, as well as the educational programs available to aspiring professionals. Through hands-on experiences, case studies, and industry insights, students will develop a deeper

understanding of automotive careers, and the steps needed to pursue both higher education and a successful career in the automotive world.

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## **COMMUNITY ELECTIVES (CTE) (HIGH SCHOOL CREDIT- OFFERED TO 8<sup>TH</sup> GRADE ONLY)**

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**Please be aware that these courses will become a permanent part of the students' high school transcript.**

### **Principles of Business, Marketing, and Finance**

Credit: 1.0 High School Elective Credit

In Principles of Business, Marketing, and Finance, students gain knowledge and skills in economies and private enterprise systems, the impact of global business, the marketing of goods and services, advertising, and product pricing. Students analyze the sales process and financial management principles. This course allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings in business, marketing, and finance.

### **Principles of Technology**

Credit: 1.0 High School Elective credit

**Design and Modeling:** This course allows students opportunities to apply the design process to creatively solve problems. Students learn and utilize methods for communicating design ideas through sketches, solid models, and mathematical models. Students will understand how models can be simulated to represent an authentic situation and generate data for further analysis and observations. Students work in teams to identify design requirements, research the topic, and engage stakeholders.

**Science of Technology:** Science impacts the technology of yesterday, today, and the future. Students apply the concepts of physics, chemistry, and nanotechnology to STEM activities and projects, including making ice cream, cleaning up an oil spill, and discovering the properties of nanomaterials.

### **Fundamentals of Computer Science (Coding)**

High School Elective Credit

Credit: 1.0

Students will learn about the computing tools that are used every day. Students will foster their creativity and innovation through opportunities to design, implement, and present solutions to real-world problems. Students will

collaborate and use computer science concepts to access, analyze, and evaluate information needed to solve problems. Students will learn the problem-solving and reasoning skills that are the foundation of computer science. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will gain an understanding of the principles of computer science through the study of technology operations and concepts.