



Letter from the Director of the Department of Defense Education Activity (DoDEA)

Dear DoDEA Student,

The mission of DoDEA is to Educate, Engage, and Empower military-connected students to succeed in a dynamic world. Through our Career and Technical Education (CTE) program, you will be actively engaged in coursework that has real world applications. The CTE program builds a foundation of learning on practical skills, providing Excellence in Education for Every Student, Every Day, Everywhere.

I strongly encourage you to find your niche within the CTE program. In this guide, you can explore Career Clusters and Career Pathways and employment and extended learning opportunities. Career Clusters represent the broad groupings of similar occupations and industries within the U.S. job market (e.g., business, information technology, health). Each Career Pathway focuses on the specific related courses and experiences. You can find tips to navigate the professional world and familiarize yourself with skills that really matter. CTE offers a cutting edge and rigorous curriculum to ensure that you will graduate both college AND career ready.

DoDEA supports your decision to pursue additional education and training, whether you choose to attend a two-year or four-year college, enter directly into the workforce, or enlist in the military. I join your teachers and counselors in wishing you success on this journey.

A handwritten signature in black ink that reads "Thomas M. Brady".

Thomas M. Brady

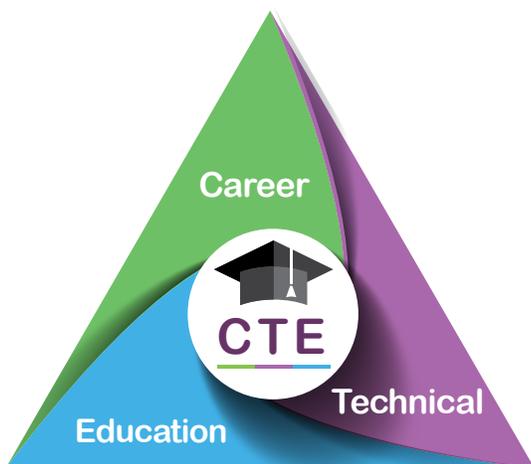
Director, Department of Defense Education Activity



COLLEGE AND CAREER READY
A WORLD-CLASS EDUCATION FOR MILITARY-CONNECTED STUDENTS

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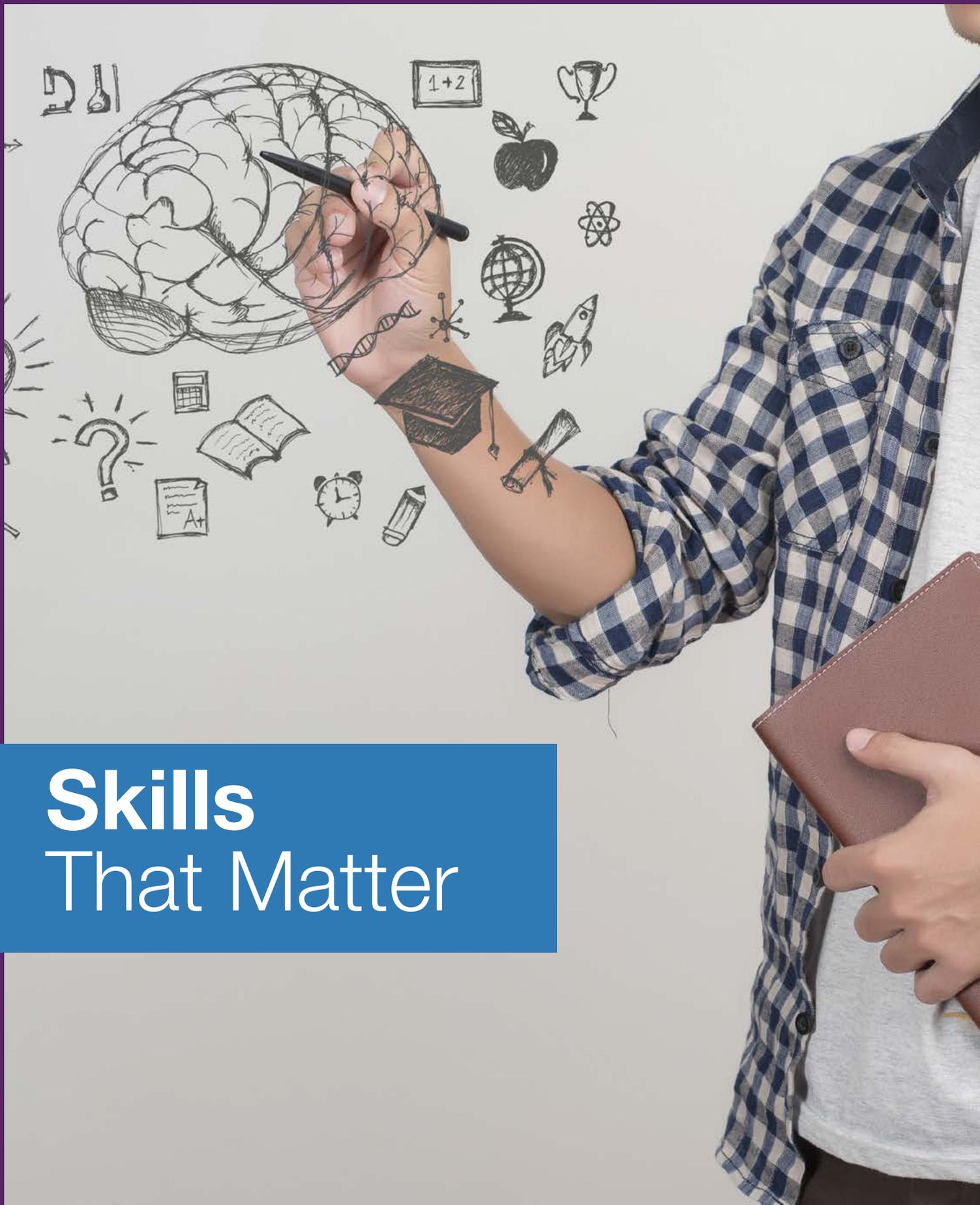


Introduction

As our economy evolves and the demand for specialized and soft skills increases, career and technical education (CTE) is an effective strategy for preparing a competitive workforce. CTE, which is generally offered in middle schools, high schools, area career and technical centers, community and technical colleges, and other postsecondary institutions, blends academic instruction with technical training relevant to the labor market. It aims to equip students with core academic, technical or job-specific, and employability skills (such as critical thinking) that are required to succeed in our dynamic and changing economy. In addition, participating in CTE as a Department of Defense Education Activity (DoDEA) student provides you with a wide variety of career-exposure activities that will help you to gain work-related experience, build skills for your future career, and navigate your options after high school. You can even earn college credit for some of the CTE courses that you successfully complete as a DoDEA student.

This guide will explain the types of CTE programs offered by DoDEA schools, the outlook for occupations in a variety of fields, the important skills required for labor market success, and the resources available to help you achieve your professional goals.





Skills That Matter

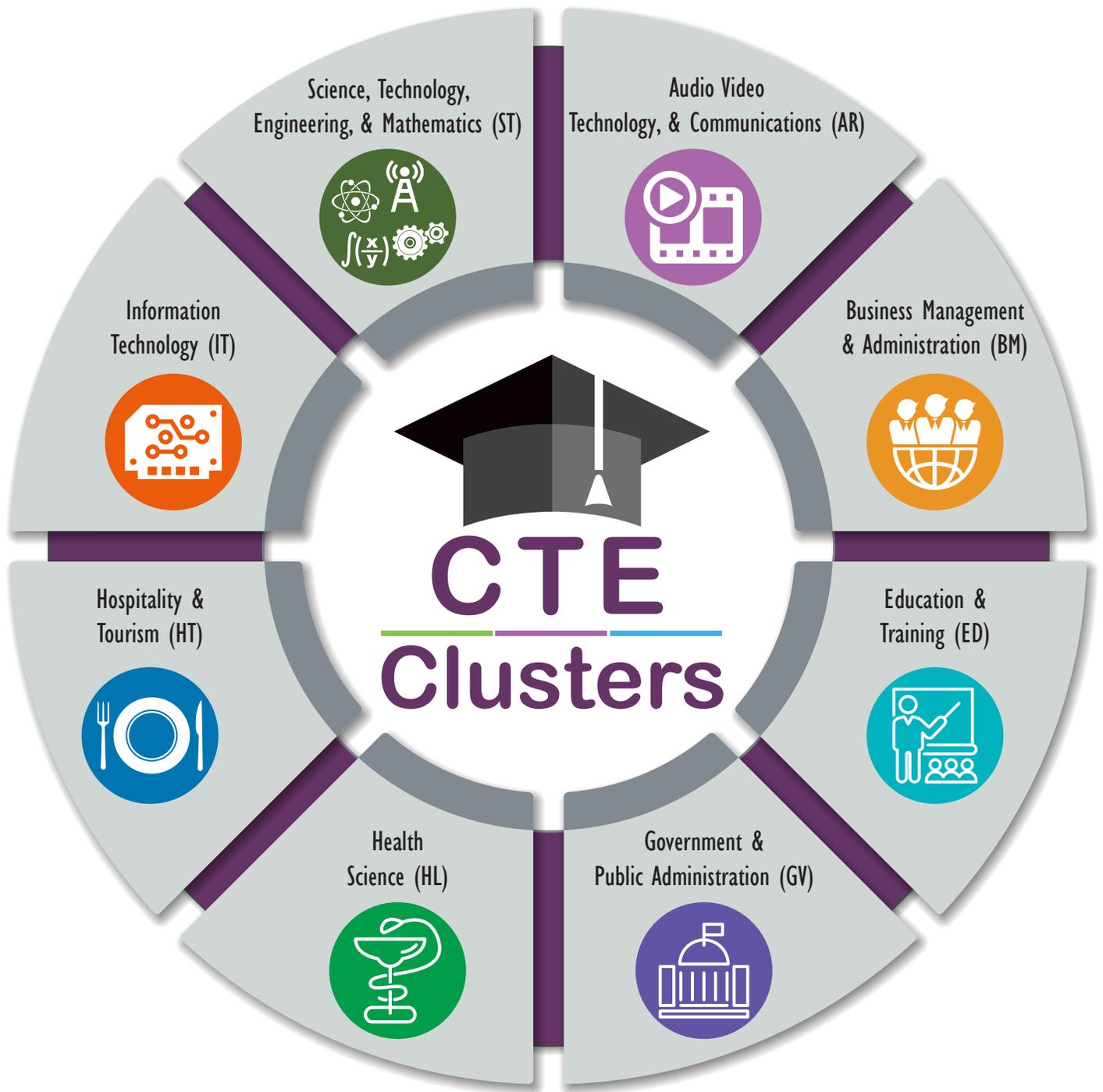


CTE is the DoDEA program that offers career-related courses to students. Within CTE, you engage with coursework tailored toward potential careers that you might be interested in, such as a career in engineering, health science, cybersecurity, or computer science. CTE is all about learning by doing; courses involve combining skills in multiple areas (for example using both technology and science skills), technical training, and using hands-on and project-based learning to provide engaging classroom experiences. Such courses allow you to partake in real-world applications as well as help to improve skills, such as teamwork, problem-solving, and communication, necessary to successfully enter into occupations and careers. After completing a CTE program, you will have a better idea of your interests and be prepared for life after high school.

Through CTE, you also can learn science, technology, engineering, and mathematics (STEM) skills in other courses beyond your typical science or math classes. Increased exposure to, experience with, and application of STEM knowledge and skills equips you with the critical thinking and reasoning skills necessary to enter the workforce. Often, STEM-related CTE courses integrate two or more STEM components so that you can learn multiple STEM skills.

CTE Career Clusters and associated Career Pathways and courses provide a powerful foundation in basic STEM skills and career-ready practice skills. Taking CTE and STEM-related CTE courses in high school helps students to develop career-ready practice skills (CRPs), such as communication, creativity, innovation, leadership, teamwork, and management, that are linked to increased college, career, and life success.

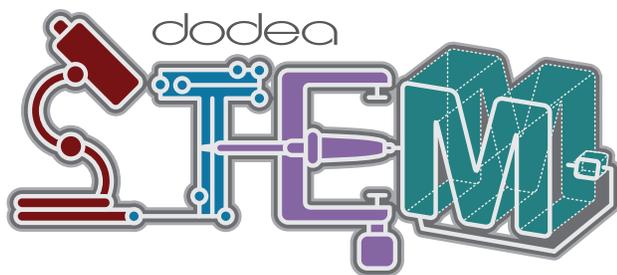
DoDEA CTE Career Clusters



STEM-Intensive DoDEA CTE Career Clusters

Information Technology	Science, Technology, Engineering, & Mathematics
POTENTIAL OCCUPATIONS	POTENTIAL OCCUPATIONS
<ul style="list-style-type: none"> • 3-D animator • Network administrator • Computer programmer 	<ul style="list-style-type: none"> • Mechanical Engineer • Chemist • Economist

Source: U.S. Bureau of Labor Statistics



Glossary of Important Skills

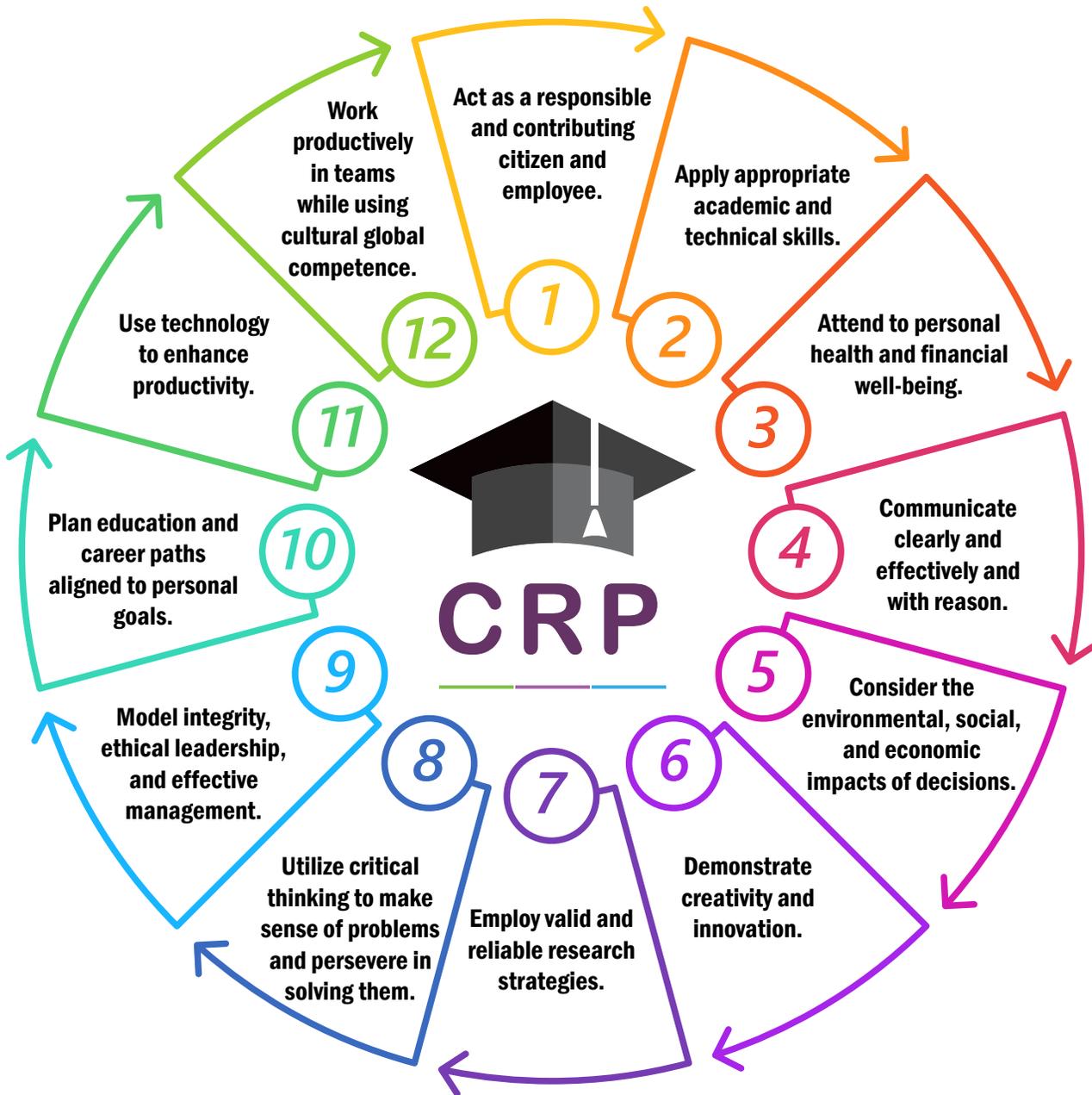
Check out this list of the most important skills required in the 8 CTE Career Clusters for which DoDEA prepares students to enter.

Skill	Definition
Active Listening	Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Coordination	Adjusting actions in relation to others' actions.
Critical Thinking	Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.
Learning Strategies	Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.
Reading Comprehension	Understanding written sentences and paragraphs in work-related documents.
Service Orientation	Actively looking for ways to help people.
Speaking	Talking to others to convey information effectively.
Writing	Communicating effectively in writing as appropriate for the needs of the audience.

Source: O*Net

Getting Career Ready

There are a number of career-ready practices (CRPs) in which you can engage that are linked to increased college, career, and life success. In particular, DoDEA emphasizes the importance of attending to personal health and financial well-being; modeling integrity, ethical leadership and effective management; and working productively in teams while using cultural global competence.





CAREER READY PRACTICES

“To do your best work each day, you must maintain a healthy work-life balance. You need to take time to recharge, exercise, eat healthy, spend time with your family and friends, get finances in order, and—most importantly—take care of yourself. Work-life balance is finding a way to connect your personal and professional lives into a happy, healthy, and productive You!”

—Cynthia Gilbride

DoDEA Employee Relations-WorkLife Coordinator

Highlighted Career-Ready Practices

③ ATTEND TO PERSONAL HEALTH AND FINANCIAL WELL-BEING

Career-ready individuals understand the relationship between personal health, workplace performance, and personal well-being; they act on that understanding to regularly practice healthy diet, exercise, and mental health activities. Career-ready individuals also take regular action to contribute to their personal financial well-being, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.

⑨ MODEL INTEGRITY, ETHICAL LEADERSHIP, AND EFFECTIVE MANAGEMENT

Career-ready individuals consistently act in ways that align to personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act with integrity in every decision. They use a variety of means to positively affect a team or organization and they apply insights into human behavior to change others' actions, attitudes, and beliefs. They recognize the short-term and long-term effects that management's actions and attitudes can have on productivity, morale, and organizational culture.

⑫ WORK PRODUCTIVELY IN TEAMS WHILE USING CULTURAL GLOBAL COMPETENCE

Career-ready individuals positively contribute to every team they are on, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interactions. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.



Tips for Navigating Your Career Options

It is never too early to begin exploring your career interests. Luckily, there are several tools that you can use to help you discover what interests you professionally.

Get to know yourself

Assessing your skills, the skills you want to build through your career, the topics that interest you, and your preferred work environments will help you to find professional and personal fulfillment. There is no single way to discover what drives you. However, you might consider the following activities:

- Create a list of likes and dislikes about school and work
- Take the Armed Services Vocational Aptitude Battery (ASVAB) to learn more about your skills, interests, and work values (<http://www.asvabprogram.com>) or a career interest assessment using MyNextMove (<https://www.mynextmove.org/explore/ip>)
- Create a skills profile using Choices360

Research possible careers

Before settling on your first career, be sure to learn about as many professions as you can—you never know which one will ignite your passion! There are many online tools that allow you to gather information about occupations that exist, educational requirements to enter those occupations, and the important skills they use.

In addition, consider setting up an informational interview or informal conversation with a professional working in a field that interests you. Informational interviews can be conducted over the phone or in-person and can provide useful information and advice to job seekers. The blue box on page 12 has some questions to guide your informational interviews.

Find a mentor

It is often helpful to learn from the experiences of others who share some of the same interests and goals as you. Teachers, counselors, family friends, and even peers can serve as mentors. Mentors can help you to shape your class schedule, research colleges and training opportunities post-high school, identify financial aid to help pay for school, offer career advice, and much more. No two mentor relationships are the same. Here are some things to keep in mind as you look for the right mentor(s) for you:

- Be clear on the sort of advice you need and identify people who can offer you an informed perspective
- Don't shy away from asking a seasoned professional to serve as a mentor, but recognize that someone closer in age also can provide you with valuable and relevant career insights

“Mentors provide insight, guidance, and support that help you view things from different perspectives as you grow and strive to achieve new heights. Additionally, mentors can recognize strengths and characteristics within you that you are sometimes unable to see in yourself.”

—Dr. Lisa Holloway, DoDEA Chief,
Standards and Curriculum

Helpful Questions to Ask During an Informational Interview

- What is your education and employment background?
- What does a typical day/week at your job look like?
- What skills, abilities, and personal attributes are essential to success in your job/this field?
- Given my interests, what related fields do you suggest I look into?



Seek extended learning experiences

There is no better way to figure out if a career is right for you than to get to know it firsthand through work-based learning. Work-based learning involves on-the-job experiences that help individuals to develop academic, technical, and employability skills under the guidance of employers. Furthermore, participating in work-based learning will make you an attractive candidate to future employers. There are many types of work-based learning opportunities. Talk to your DoDEA teachers and counselors about work-based learning opportunities that you can pursue while in high school and beyond.

TYPES OF WORK-BASED LEARNING

- **Apprenticeship:** a learning experience in which a paid worker new to a job undergoes an organized program of classroom instruction and on-the-job training leading to certified mastery of the craft.
- **Cooperative education (co-op):** a learning arrangement in which classroom career instruction is coordinated with work.
- **Externship:** an out-of-classroom learning arrangement in a workplace offered as part of a program of study. Through direct experience, students learn about trends, skill requirements, and opportunities in industries related to a specific occupation or field.
- **Internship:** a working and learning arrangement in which students hold temporary jobs in their chosen career field, usually under the guidance of an on-the-job mentor.
- **Job shadowing:** an out-of-classroom learning experience in which students learn about particular occupations as they make their way through a day at work.
- **Career practicum:** a course or program that covers a specialized topic in depth. In some cases, this word refers to work-study arrangements that earn college credit.
- **Pre-apprenticeship:** a preparatory program that grooms individuals who want to begin an apprenticeship for a certain industry and trade.

What is a 4-6 Year Plan?

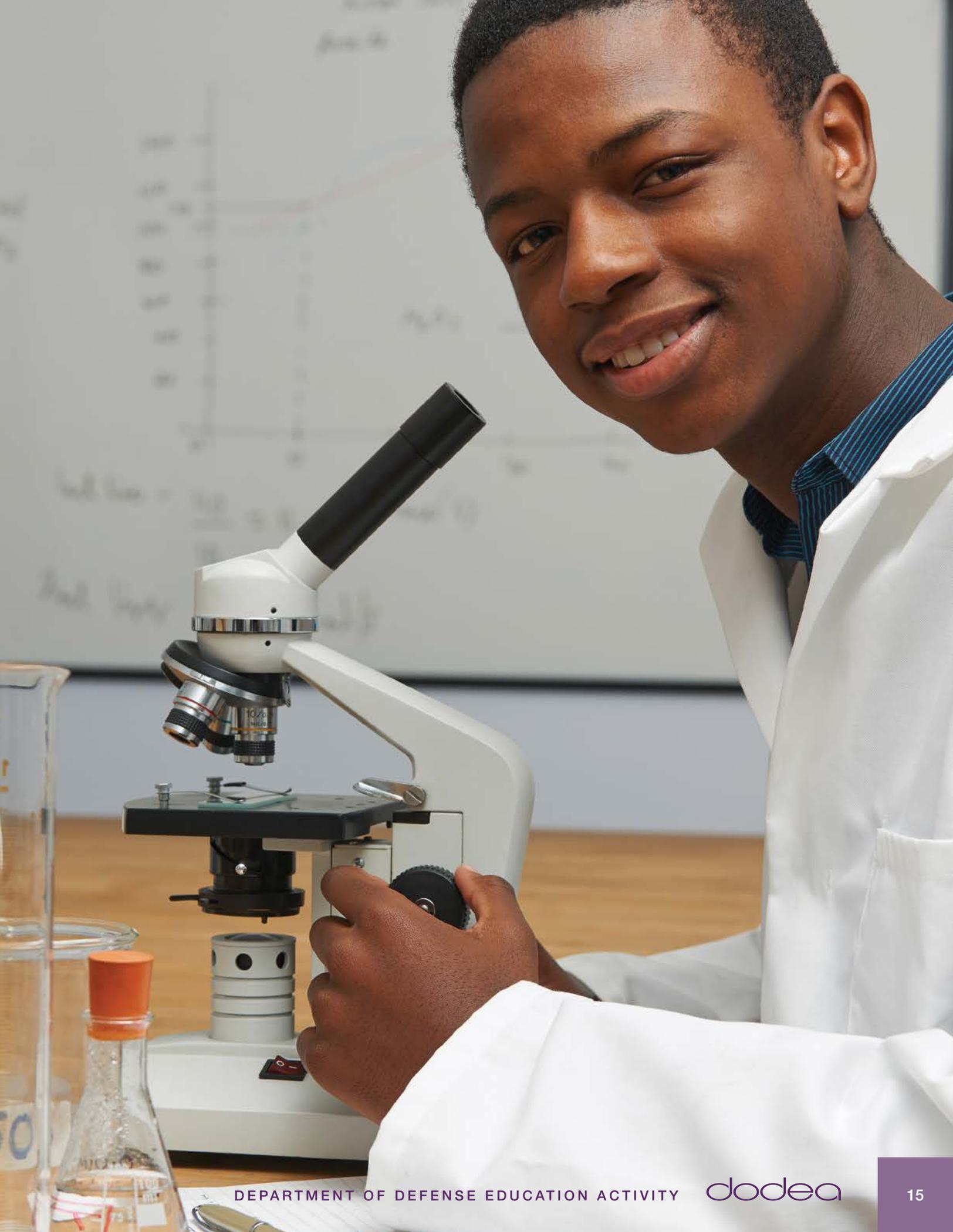
The 4-6 Year Plan helps students to identify the courses and plan of study required to graduate from high school and be on track to meet their postsecondary and career goals. Students work with DoDEA school counselors to draft and refine their 4-6 Year Plans. Here is an example of a 4-Year Plan developed for a 9th grader interested in pursuing a career in Health Science.

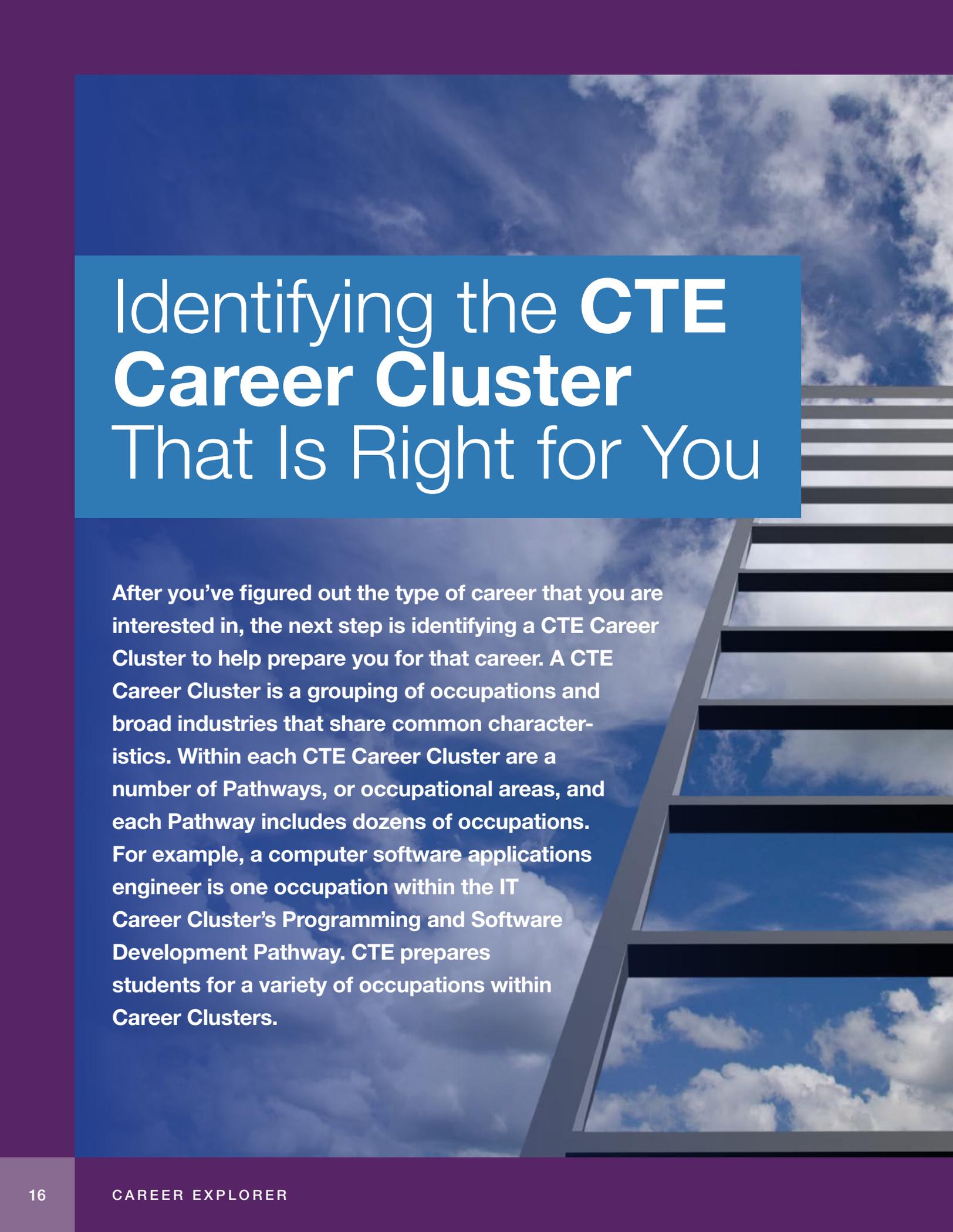
Sample 4-Year Plan					
Content Area	Credits Required for Graduation	9 th Grade	10 th Grade	11 th Grade	12 th Grade
English Language Arts	4	World Literature 9	Honors World Literature 10	American Literature	British Literature
Social Studies	3	Global Studies 9	Global Studies 10	United States History	United States Government
Mathematics	4	Algebra I	Geometry	Algebra II	Pre Calculus
Science	3	Biology	Chemistry	Physics	Human Anatomy
World Language	2	Spanish I	Spanish II		
Career and Technical Education	1.5		Health Science I	Health Science II	
Computer Technology-CTE	0.5	Video Communications I			
Physical Education	1.5	Personal Fitness & Lifetime Sports	Physical Activity and Nutrition		
Fine Arts	1			Fundamentals of Art	
Health Education	0.5		Health Education		

DoDEA

DoDEA has compiled many resources to help you navigate life after high school. Whether you stay local or move to a state or county thousands of miles away, set up an appointment with your school counselor to find out about postsecondary education and training, military, and financial aid opportunities.







Identifying the **CTE** **Career Cluster** That Is Right for You

After you've figured out the type of career that you are interested in, the next step is identifying a CTE Career Cluster to help prepare you for that career. A CTE Career Cluster is a grouping of occupations and broad industries that share common characteristics. Within each CTE Career Cluster are a number of Pathways, or occupational areas, and each Pathway includes dozens of occupations. For example, a computer software applications engineer is one occupation within the IT Career Cluster's Programming and Software Development Pathway. CTE prepares students for a variety of occupations within Career Clusters.

DoDEA CTE Career Clusters, Pathways, and Example Occupations



There are 16 nationally recognized CTE Career Clusters

1. Agriculture, Food, & Natural Resources
2. Architecture & Construction
3. **Audio Video Technology & Communications***
4. **Business Management & Administration***
5. **Education & Training***
6. Finance
7. **Government & Public Administration***
8. **Health Science***
9. **Hospitality & Tourism***
10. Human Services
11. **Information Technology***
12. Law, Public Safety, Corrections, & Security
13. Manufacturing
14. Marketing
15. **Science, Technology, Engineering, & Mathematics***
16. Transportation, Distribution, & Logistics

* Indicates CTE Career Cluster program offered by DoDEA

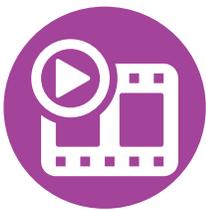
DoDEA Programs to Get You on Your Desired Career Path

As a DoDEA student, you can take courses, participate in extracurricular activities, and receive counseling to prepare you to pursue a variety of career and postsecondary education and training options upon graduation. Students who complete a DoDEA Pathway curriculum, which is a sequence of prescribed courses, receive a Career Pathway Endorsement on their transcripts. This guide provides helpful information about the eight different DoDEA CTE Career Clusters and the Pathways for which DoDEA prepares students, the fastest-growing and highest-paying jobs,* and the most valuable skills required for these exciting careers.

* U.S. Bureau of Labor Statistics (BLS) employment estimates in 2016 and projections for 2026.



Audio Video Technology & Communications Career Cluster



Audio video technology and communications professions attract creative individuals who enjoy designing, producing, exhibiting, performing, writing, or publishing multimedia content. There are several Pathways within the Audio Video Technology & Communications Career Cluster, each offering exciting job opportunities. The Video Communication Pathway, for example, includes occupations that manufacture, sell, rent, design, install, integrate, operate, and repair audio visual communications equipment. This can include the presentation of sound, video, and data in offices, convention centers, classrooms, theme parks, and stadiums or film and video editing.



Fastest-growing audio video technology, & communications occupations

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Producers and Directors	16,100	12%	\$93,840	Bachelor's degree	Produce or direct stage, television, radio, video, or motion picture productions for entertainment, information, or instruction. Responsible for creative decisions, such as interpretation of script, choice of actors or guests, set design, sound, special effects, and choreography.
Graphic Designers	12,500	5%	\$52,290	Bachelor's degree	Design or create graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. May use a variety of mediums to achieve artistic or decorative effects.
Musicians and Singers	11,300	7%	—	No formal educational credential	Play one or more musical instruments or sing. May perform on stage, for on-air broadcasting, or for sound or video recording.
Writers and Authors	11,000	8%	\$71,920	Bachelor's degree	Originate and prepare written material, such as scripts, stories, advertisements, and other materials.
Audio and Video Equipment Technicians	10,700	13%	\$47,450	Postsecondary nondegree award	Set up, or set up and operate audio and video equipment, including microphones, sound speakers, video screens, projectors, video monitors, recording equipment, connecting wires and cables, sound and mixing boards, and related electronic equipment for concerts, sports events, meetings and conventions, presentations, and news conferences. Also may set up and operate associated spotlights and other custom lighting systems.
Multimedia Artists and Animators	7,700	10%	\$72,200	Bachelor's degree	Create special effects, animation, or other visual images using film, video, computers, or other electronic tools and media for use in products or creations, such as computer games, movies, music videos, or commercials.

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Actors	7,500	12%	—	Some college, no degree	Play parts in stage, television, radio, video, motion picture productions, or other settings for entertainment, information, or instruction. Interpret serious or comic role by speech, gesture, and body movement to entertain or inform audience. May dance and sing.
Art Directors	6,700	7%	\$101,170	Bachelor's degree	Formulate design concepts and presentation approaches for visual communications media, such as print, broadcasting, and advertising. Direct workers engaged in artwork or layout design.
Technical Writers	5,700	11%	\$73,160	Bachelor's degree	Write technical materials, such as equipment manuals, appendices, or operating and maintenance instructions. May assist in layout work.
Film and Video Editors	5,600	16%	\$82,190	Bachelor's degree	Edit moving images on film, video, or other media. May edit or synchronize soundtracks with images.

— indicates a wage estimate is not available from the U.S. Bureau of Labor Statistics

Source: U.S. Bureau of Labor Statistics

BENEFIT OF CAREER TECHNICAL EDUCATION

“The purpose of career education, both now and then, is to prepare students for the workplace in which they will emerge. The workplace in which our students will emerge is substantially different from the one I stepped into after high school. The use of 10-key adding machines, typewriters, and t-squares has given way to robots on the manufacturing floor, green roofs on office buildings, and driverless cars. Our students must be able to compete for the jobs of their tomorrow.”

—Krista Hurley, CTE Instructional Systems Specialist (Pacific South)



Highest-paying audio video technology, & communications occupations

Occupation	Annual Average Salary	Most Common Degree Required	Description
Art Directors	\$101,170	Bachelor's degree	Formulate design concepts and presentation approaches for visual communications media, such as print, broadcasting, and advertising. Direct workers engaged in artwork or layout design.
Producers and Directors	\$93,840	Bachelor's degree	Produce or direct stage, television, radio, video, or motion picture productions for entertainment, information, or instruction. Responsible for creative decisions, such as interpretation of script, choice of actors or guests, set design, sound, special effects, and choreography.
Agents and Business Managers of Artists, Performers, and Athletes	\$86,560	Bachelor's degree	Represent and promote artists, performers, and athletes in dealings with current or prospective employers. May handle contract negotiation and other business matters for clients.
Film and Video Editors	\$82,190	Bachelor's degree	Edit moving images on film, video, or other media. May edit or synchronize soundtracks with images.
Broadcast News Analysts	\$78,200	Bachelor's degree	Analyze, interpret, and broadcast news received from various sources.
Media and Communication Equipment Workers, All Other	\$76,500	High school diploma or equivalent	All media and communication equipment workers not listed separately.
Technical Writers	\$73,160	Bachelor's degree	Write technical materials, such as equipment manuals, appendices, or operating and maintenance instructions. May assist in layout work.
Multimedia Artists and Animators	\$72,200	Bachelor's degree	Create special effects, animation, or other visual images using film, video, computers, or other electronic tools and media for use in products or creations, such as computer games, movies, music videos, and commercials.
Writers and Authors	\$71,920	Bachelor's degree	Originate and prepare written material, such as scripts, stories, advertisements, and other materials.
Makeup Artists, Theatrical and Performance	\$71,590	Postsecondary nondegree award	Apply makeup to performers to reflect period, setting, and situation of their roles.

Source: U.S. Bureau of Labor Statistics

SAMPLE OCCUPATIONS WITHIN THE AUDIO VIDEO TECHNOLOGY & COMMUNICATIONS CAREER CLUSTER

- Audio and video equipment technicians
- Radio and television announcers
- Writers and authors
- Musicians and singers
- Telecommunication equipment installers and repairers



DODEA VIDEO COMMUNICATIONS PATHWAY

Employees in video communications design and operate communication, transmissions, and broadcasting equipment to present digital information to a particular audience. DoDEA's Video Communications Pathway prepares students for careers in the audio video technology industry by introducing students to the concepts and equipment related to video production. Through a hands-on, project-oriented approach, students apply knowledge to filming, editing and production, lighting, audio, and computer graphics and effects to communicate effectively using the video communication medium.

- Related courses
 - Sociology
 - Psychology
 - AP Psychology
 - Video Art
 - Digital Photography
 - Computer Music
 - Commercial Art

Try these extracurricular activities!

Extracurricular activities that support career readiness

- Join your school yearbook or newspaper
- Participate in the production of a school play, band, orchestra, or choir





Business Management & Administration Career Cluster



There are a variety of opportunities—in a variety of industries—available to those who study business management and administration. You could start your own business, lead a team, or even develop strategies to market goods and services to the public. The Business Management Pathway includes occupations through which people plan, organize, direct, and evaluate all or part of a business organization through the allocation and use of financial, human, and material resources. Workers in human resources management plan, recruit, select, and train, as well as support the performance appraisal, compensation, and safety of an organization's employees.

Fastest-growing business management & administration occupations

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
General and Operations Managers	205,900	9%	\$122,090	Bachelor's degree	Plan, direct, or coordinate the operations of public or private sector organizations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services.
Customer Service Representatives	136,000	5%	\$35,170	High school diploma or equivalent	Interact with customers to provide information in response to inquiries about products and services and to handle and resolve complaints.
Stock Clerks and Order Fillers	101,300	5%	\$26,670	High school diploma or equivalent	Receive, store, and issue sales floor merchandise, materials, equipment, and other items from stockroom, warehouse, or storage yard to fill shelves, racks, tables, or customers' orders. May mark prices on merchandise and set up sales displays.
Management Analysts	96,500	12%	\$91,910	Bachelor's degree	Conduct organizational studies and evaluations, design systems and procedures, conduct work simplification and measurement studies, and prepare operations and procedures manuals to assist management in operating more efficiently and effectively. Includes program analysts and management consultants.
Receptionists and Information Clerks	95,700	9%	\$29,120	High school diploma or equivalent	Answer inquiries and provide information to the general public, customers, visitors, and other interested parties regarding activities conducted at establishment and location of departments, offices, and employees within the organization.



Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Business Operations Specialists, All Other	90,200	9%	\$74,870	Bachelor's degree	All business operations specialists not listed separately.
Managers, All Other	75,800	8%	\$112,150	Bachelor's degree	All managers not listed separately.
First-line Supervisors of Office and Administrative Support Workers	51,200	3%	\$57,890	High school diploma or equivalent	Directly supervise and coordinate the activities of clerical and administrative support workers.
Computer and Information Systems Managers	43,800	12%	\$145,740	Bachelor's degree	Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming.
Human Resources Specialists	38,700	7%	\$64,890	Bachelor's degree	Perform activities in the human resources area. Includes employment specialists who screen, recruit, interview, and place workers.

Source: U.S. Bureau of Labor Statistics

Highest-paying business management & administration occupations

Occupation	Annual Average Salary	Most Common Degree Required	Description
Chief Executives	\$194,350	Bachelor's degree	Determine and formulate policies and provide overall direction of companies or private- and public-sector organizations within guidelines set up by a board of directors or similar governing body. Plan, direct, or coordinate operational activities at the highest level of management with the help of subordinate executives and staff managers.
Computer and Information Systems Managers	\$145,740	Bachelor's degree	Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming.

Occupation	Annual Average Salary	Most Common Degree Required	Description
Compensation and Benefits Managers	\$126,900	Bachelor's degree	Plan, direct, or coordinate compensation and benefits activities of an organization.
General and Operations Managers	\$122,090	Bachelor's degree	Plan, direct, or coordinate the operations of public- or private-sector organizations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services.
Human Resources Managers	\$120,210	Bachelor's degree	Plan, direct, or coordinate human resources activities and staff of an organization.
Purchasing Managers	\$117,720	Bachelor's degree	Plan, direct, or coordinate the activities of buyers, purchasing officers, and related workers involved in purchasing materials, products, and services. Includes wholesale or retail trade merchandising managers and procurement managers.
Training and Development Managers	\$115,180	Bachelor's degree	Plan, direct, or coordinate the training and development activities and staff of an organization.
Managers, All Other	\$112,150	Bachelor's degree	All managers not listed separately.
Industrial Production Managers	\$107,060	Bachelor's degree	Plan, direct, or coordinate the work activities and resources necessary for manufacturing products in accordance with cost, quality, and quantity specifications.
Administrative Services Managers	\$98,930	Bachelor's degree	Plan, direct, or coordinate one or more administrative services of an organization, such as records and information management, mail distribution, facilities planning and maintenance, custodial operations, and other office support services.

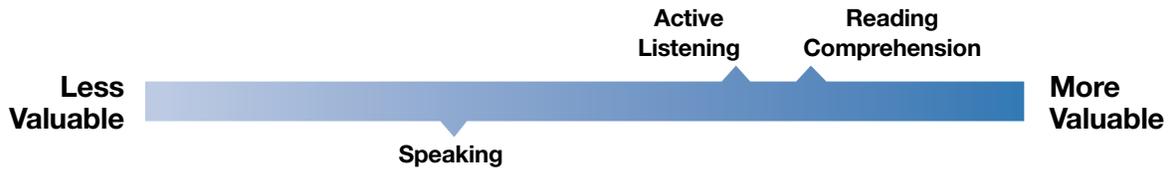
Source: U.S. Bureau of Labor Statistics

SAMPLE OCCUPATIONS WITHIN THE BUSINESS MANAGEMENT & ADMINISTRATION CAREER CLUSTER

- Budget analysts
- Customer service representatives
- Industrial production managers



MOST VALUABLE SKILLS WITHIN THE BUSINESS MANAGEMENT & ADMINISTRATION CAREER CLUSTER



DODEA BUSINESS MANAGEMENT PATHWAY

Employees in the field of business management plan, direct, or coordinate the operations of public- or private-sector organizations. Responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources. DoDEA's Business Management Pathway prepares students by introducing them to laws and regulations affecting business operations and transactions; teaching them how to plan, monitor, and manage day-to-day business activities, human capital, and financial resources; and creating strategic plans used to manage business growth, profit, and goals.

- Related courses
 - Financial Algebra A
 - Financial Algebra B
 - Economics
 - AP Economics Micro
 - AP Economics Macro
 - Sociology
 - Psychology
 - AP Psychology
 - AP Micro
 - AP Statistics



Try these extracurricular activities!

Extracurricular activities that support career readiness

- Join student council
- Help organize a fundraiser or plan an event
- Serve as an officer of a student club

Education & Training Career Cluster



Education is the key to success, and educators play an important role in our society, from imparting knowledge to serving as mentors to students of all ages. Educators work in a variety of learning environments, including traditional classrooms, libraries, and workshops. Teachers are responsible for developing and delivering in-person or online lesson plans and instructional materials to individual students or groups.



Fastest-growing education & training occupations

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Teacher Assistants	109,500	8%	\$27,120	Some college, no degree	Perform duties that are instructional in nature or deliver direct services to students or parents. Serve in a position for which a teacher has ultimate responsibility for the design and implementation of educational programs and services.
Elementary School Teachers, Except Special Education	104,100	7%	\$59,020	Bachelor's degree	Teach students basic academic, social, and other formative skills in public or private schools at the elementary level.
Teachers and Instructors, All Other	92,500	9%	—	Bachelor's degree	All teachers and instructors not listed separately.
Secondary School Teachers, Except Special and Career/Technical Education	76,800	8%	\$61,420	Bachelor's degree	Teach students in one or more subjects, such as English, mathematics, or social studies, at the secondary level in public or private schools. May be designated according to subject matter specialty.
Health Specialties Teachers, Postsecondary	60,500	26%	\$125,430	Doctoral or professional degree	Teach courses in health specialties, in fields such as dentistry, laboratory technology, medicine, pharmacy, public health, therapy, and veterinary medicine.
Self-enrichment Education Teachers	52,700	15%	\$43,150	High school diploma or equivalent	Teach or instruct courses other than those that normally lead to an occupational objective or degree. Courses may include self-improvement, nonvocational, and nonacademic subjects. Teaching may or may not take place in a traditional educational institution.
Preschool Teachers, Except Special Education	50,100	11%	\$33,300	Associate's degree	Instruct preschool-aged children in activities designed to promote social, physical, and intellectual growth needed for primary school in preschool, day care center, or other child development facility. May be required to hold State certification.



Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Middle School Teachers, Except Special and Career/Technical Education	47,300	8%	\$59,800	Bachelor's degree	Teach students in one or more subjects in public or private schools at the middle, intermediate, or junior high level, which falls between elementary and senior high school as defined by applicable laws and regulations.
Coaches and Scouts	35,100	13%	\$41,000	Bachelor's degree	Instruct or coach groups or individuals in the fundamentals of sports. Demonstrate techniques and methods of participation. May evaluate athletes' strengths and weaknesses as possible recruits or to improve the athletes' technique to prepare them for competition. Those required to hold teaching degrees should be reported in the appropriate teaching category.
Educational, Guidance, School, and Vocational Counselors	33,000	11%	\$57,620	Master's degree	Counsel individuals and provide group educational and vocational guidance services.

— indicates a wage estimate is not available from U.S. Bureau of Labor Statistics

Source: U.S. Bureau of Labor Statistics



Highest-paying education & training occupations

Occupation	Annual Average Salary	Most Common Degree Required	Description
Law Teachers, Postsecondary	\$134,530	Doctoral or professional degree	Teach courses in law. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.
Health Specialties Teachers, Postsecondary	\$125,430	Doctoral or professional degree	Teach courses in health specialties, in fields such as dentistry, laboratory technology, medicine, pharmacy, public health, therapy, and veterinary medicine.
Economics Teachers, Postsecondary	\$111,520	Doctoral or professional degree	Teach courses in economics. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.
Engineering Teachers, Postsecondary	\$107,490	Doctoral or professional degree	Teach courses pertaining to the application of physical laws and principles of engineering for the development of machines, materials, instruments, processes, and services. Includes teachers of subjects such as chemical, civil, electrical, industrial, mechanical, mineral, and petroleum engineering. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.
Education Administrators, Postsecondary	\$105,770	Master's degree	Plan, direct, or coordinate research, instructional, student administration and services, and other educational activities at postsecondary institutions, including universities, colleges, and junior and community colleges.
Physics Teachers, Postsecondary	\$97,520	Doctoral or professional degree	Teach courses pertaining to the laws of matter and energy. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.
Business Teachers, Postsecondary	\$96,770	Doctoral or professional degree	Teach courses in business administration and management, such as accounting, finance, human resources, labor and industrial relations, marketing, and operations research. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.
Agricultural Sciences Teachers, Postsecondary	\$96,630	Doctoral or professional degree	Teach courses in the agricultural sciences. Includes teachers of agronomy, dairy sciences, fisheries management, horticultural sciences, poultry sciences, range management, and agricultural soil conservation. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Occupation	Annual Average Salary	Most Common Degree Required	Description
Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	\$95,900	Doctoral or professional degree	Teach courses in the physical sciences, except chemistry and physics. Includes both teachers primarily engaged in teaching, and those who do a combination of teaching and research.
Education Administrators, Elementary and Secondary School	\$95,390	Master's degree	Plan, direct, or coordinate the academic, administrative, or auxiliary activities of public or private elementary or secondary level schools.

Source: U.S. Bureau of Labor Statistics

SAMPLE OCCUPATIONS WITHIN THE EDUCATION & TRAINING CAREER CLUSTER

- Fitness and wellness coordinators
- Interpreters and translators
- Library technicians



DODEA TEACHING AS A PROFESSION PATHWAY

Individuals in this career field provide support services to a variety of learners and provide education and training. Employees in this field work in a variety of educational organizations that offer academic, vocational, or career and technical education and training. DoDEA's Teaching as a Profession Pathway prepares students to use subject matter knowledge to plan and prepare effective instruction and courses and identify materials and resources needed to support instructional plans. Through hands-on tasks and projects, students learn to apply knowledge and skills in real-world settings across multiple education settings.





- Related courses
 - Sociology
 - Psychology
 - AP Psychology
 - AVID Tutor



Try these extracurricular activities!

Extracurricular activities that support career readiness

- Volunteer at youth center
- Join Educators Rising



Health Science Career Cluster



People in the health science field promote the health and wellness of others, whether by developing cures for diseases or caring for patients with injuries or illnesses. Health science occupations are found at a variety of different sites, including hospitals, rehabilitation centers, sports facilities, laboratories, and schools. If you are interested in working with patients, you might consider pursuing a career in the Therapeutic Services-Patient Care Pathway. Occupations in this Pathway involve interacting with patients or the public to provide a therapeutic environment for the delivery of health care. Occupations in the Therapeutic Services-Patient Care Pathway also involve a lot of patient interaction, since workers focus on changing the health status of patients over time through direct care, treatment, counseling, or health education information.



Fastest-growing health science occupations

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Registered Nurses	437,000	15%	\$72,180	Bachelor's degree	Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maintenance and disease prevention or provide case management. Licensing or registration required.
Home Health Aides	425,600	47%	\$23,600	High school diploma or equivalent	Provide routine individualized healthcare, such as changing bandages and dressing wounds, and applying topical medications to the elderly, convalescents, or persons with disabilities at the patient's home or in a care facility. Monitor or report changes in health status. Also may provide personal care, such as bathing, dressing, and grooming of patient.
Medical Assistants	184,600	29%	\$32,850	Postsecondary nondegree award	Perform administrative and certain clinical duties under the direction of a physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding information for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by physician.
Nursing Assistants	164,000	11%	\$27,650	Postsecondary nondegree award	Provide basic patient care under direction of nursing staff. Perform duties such as feed, bathe, dress, groom, or move patients, or change linens. May transfer or transport patients. Includes nursing care attendants, nursing aides, and nursing attendants.

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Medical Secretaries	129,100	23%	\$35,060	High school diploma or equivalent	Perform secretarial duties using specific knowledge of medical terminology and hospital, clinic, or laboratory procedures. Duties may include scheduling appointments, billing patients, and compiling and recording medical charts, reports, and correspondence.
Licensed Practical and Licensed Vocational Nurses	88,600	12%	\$44,840	Postsecondary nondegree award	Care for ill, injured, or convalescing patients or persons with disabilities in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions. May work under the supervision of a registered nurse. Licensing required.
Medical and Health Services Managers	69,800	20%	\$109,370	Bachelor's degree	Plan, direct, or coordinate medical and health services in hospitals, clinics, managed care organizations, public health agencies, or similar organizations.
Dental Assistants	64,600	20%	\$37,890	Postsecondary nondegree award	Assist dentist, set up equipment, prepare patient for treatment, and keep records.
Physical Therapists	60,000	25%	\$87,220	Doctoral or professional degree	Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and improve or correct disabling conditions resulting from disease or injury.
Nurse Practitioners	56,000	36%	\$104,610	Master's degree	Diagnose and treat acute, episodic, or chronic illness, independently or as part of a healthcare team. May focus on health promotion and disease prevention. May order, perform, or interpret diagnostic tests, such as lab work and x rays. May prescribe medication. Must be registered nurses who have specialized graduate education.

Source: U.S. Bureau of Labor Statistics



Highest-paying health science occupations

Occupation	Annual Average Salary	Most Common Degree Required	Description
Anesthesiologists	\$269,600	Doctoral or professional degree	Physicians who administer anesthetics prior to, during, or after surgery or other medical procedures.
Surgeons	\$252,910	Doctoral or professional degree	Physicians who treat diseases, injuries, and deformities by invasive, minimally-invasive, or non-invasive surgical methods, such as using instruments, appliances, or by manual manipulation.
Obstetricians and Gynecologists	\$234,310	Doctoral or professional degree	Physicians who provide medical care related to pregnancy or childbirth and those who diagnose, treat, and help prevent diseases of women, particularly those affecting the reproductive system. Also may provide general medical care to women.
Oral and Maxillofacial Surgeons	\$232,870	Doctoral or professional degree	Perform surgery and related procedures on the hard and soft tissues of the oral and maxillofacial regions to treat diseases, injuries, or defects. May diagnose problems of the oral and maxillofacial regions. May perform surgery to improve function or appearance.
Orthodontists	\$228,780	Doctoral or professional degree	Examine, diagnose, and treat dental malocclusions and oral cavity anomalies. Design and fabricate appliances to realign teeth and jaws to produce and maintain normal function and to improve appearance.
Physicians and Surgeons, All Other	\$205,560	Doctoral or professional degree	All physicians and surgeons not listed separately.
Internists, General	\$201,840	Doctoral or professional degree	Physicians who diagnose and provide non-surgical treatment of diseases and injuries of internal organ systems. Provide care mainly for adults who have a wide range of problems associated with the internal organs.
Family and General Practitioners	\$200,810	Doctoral or professional degree	Physicians who diagnose, treat, and help to prevent diseases and injuries that commonly occur in the general population. May refer patients to specialists when needed for further diagnosis or treatment.
Psychiatrists	\$200,220	Doctoral or professional degree	Physicians who diagnose, treat, and help to prevent disorders of the mind.
Pediatricians, General	\$184,240	Doctoral or professional degree	Physicians who diagnose, treat, and help to prevent children's diseases and injuries.

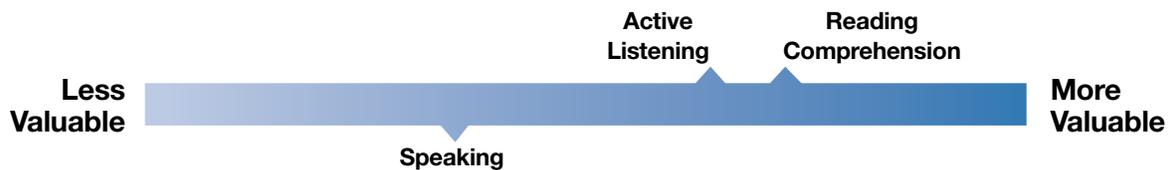
Source: U.S. Bureau of Labor Statistics



SAMPLE OCCUPATIONS WITHIN THE HEALTH SCIENCE CAREER CLUSTER

- Athletic trainers
- Pharmacy technicians
- Phlebotomists
- Registered nurses
- Speech-language pathologists

MOST VALUABLE SKILLS WITHIN THE HEALTH SCIENCE CAREER CLUSTER



DODEA THERAPEUTIC SERVICES – PATIENT CARE PATHWAY

Employees in this field work directly with patients; provide treatment and counseling; and promote health education information. There are variety of different occupations in this field, including those such as home health, nursing, rehabilitation and therapy, care management, and emergency services. Occupations are abundant and involve different types of roles and responsibilities but all involve high levels of patient interaction. DoDEA students in the Therapeutic Services-Patient Care Pathway learn health and safety policies; learn how to utilize emergency procedures and protocols; employ communication strategies used in the delivery of healthcare; and are introduced to cultural, social, and ethnic diversity as it applies to health care delivery.

■ Related courses

- Advanced Quantitative Reasoning
- AP Statistics
- Sociology
- Psychology
- AP Psychology
- Human Anatomy & Physiology
- AP Biology
- AP Chemistry
- AP Biology+
- AP Chemistry+
- AP Physics Part 1+
- AP Physics Part 2+



Try these extracurricular activities!

Extracurricular activities that support career readiness

- Volunteer at nursing or retirement home
- Volunteer at hospital
- Volunteer at clinic



Hospitality & Tourism Career Cluster



Can you imagine yourself managing a restaurant in France? A career in hospitality and tourism gives you the opportunity to do just that, and more. Hospitality and tourism professionals use their skills and abilities to manage, market, and operate restaurants, hotels and motels, museums, and other food- and travel-related services. Occupations in this Career Cluster encompass food and drink, travel and vacations, hotels and resorts, cruise ships, tours and attractions, and sports and recreation. You can choose an occupation working directly with people (e.g., tour guide or flight attendant) or working behind the scenes (e.g., special events coordinator or groundskeeper). The field is often fast paced and dynamic and requires highly-skilled workers. The Culinary Arts Pathway prepares students for a variety of occupations, including chefs, bakers, and other food preparation professionals who prepare a wide range of foods from salads to entrees, side dishes, soups, appetizers, and desserts. Culinary arts professionals work in a variety of restaurants, cafes, bakeries, and other food services establishments.

As the nation's population grows, resources will continually be put toward the food and beverage, lodging, recreation, and travel and tourism industries. This will produce more occupations requiring workers, managers, and supervisors.



Fastest-growing hospitality & tourism occupations

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Combined Food Preparation and Serving Workers, Including Fast Food	579,900	17%	\$20,460	No formal educational credential	Perform duties that combine preparing and serving food and nonalcoholic beverages.
Janitors and Cleaners, except Maids and Housekeeping Cleaners	233,000	10%	\$27,030	No formal educational credential	Keep buildings in clean and orderly condition. Perform heavy cleaning duties, such as cleaning floors, shampooing rugs, washing walls and glass, and removing rubbish. Duties may include tending furnace and boiler, performing routine maintenance activities, notifying management of need for repairs, and cleaning snow or debris from sidewalk.
Waiters and Waitresses	182,500	7%	\$24,410	No formal educational credential	Take orders and serve food and beverages to patrons at tables in dining establishment.
Cooks, Restaurant	145,300	12%	\$25,430	No formal educational credential	Prepare, season, and cook dishes, such as soups, meats, vegetables, or desserts, in restaurants. May order supplies, keep records and accounts, price items on menu, or plan menu.
First-line Supervisors of Food Preparation and Serving Workers	87,500	9%	\$34,700	High school diploma or equivalent	Directly supervise and coordinate activities of workers engaged in preparing and serving food.
Maids and Housekeeping Cleaners	80,400	6%	\$23,830	No formal educational credential	Perform any combination of light cleaning duties to maintain private households or commercial establishments, such as hotels and hospitals, in a clean and orderly manner. Duties may include making beds, replenishing linens, cleaning rooms and halls, and vacuuming.

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Food Preparation Workers	68,700	8%	\$22,920	No formal educational credential	Perform a variety of food preparation duties other than cooking, such as preparing cold foods and shellfish, slicing meat, and brewing coffee or tea.
Recreation Workers	33,300	9%	\$27,230	High school diploma or equivalent	Conduct recreation activities with groups in public, private, or volunteer agencies or recreation facilities. Organize and promote activities, such as arts and crafts, sports, games, music, dramatics, social recreation, camping, and hobbies, taking into account the needs and interests of individual members.
Cooks, Institution and Cafeteria	32,600	8%	\$26,370	No formal educational credential	Prepare and cook large quantities of food for institutions, such as schools, hospitals, or cafeterias.
Dining Room and Cafeteria Attendants and Bartender Helpers	30,500	7%	\$22,340	No formal educational credential	Facilitate food service. Clean tables, remove dirty dishes, replace soiled table linens; set tables; replenish supply of clean linens, silverware, glassware, and dishes; supply service bar with food; and serve items, such as water, condiments, and coffee, to patrons.

Source: U.S. Bureau of Labor Statistics



Highest-paying hospitality & tourism occupations

Occupation	Annual Average Salary	Most Common Degree Required	Description
Lodging Managers	\$59,410	High school diploma or equivalent	Plan, direct, or coordinate activities of an organization or department that provides lodging and other accommodations.
Food Service Managers	\$56,010	High school diploma or equivalent	Plan, direct, or coordinate activities of an organization or department that serves food and beverages.
Chefs	\$47,390	High school diploma or equivalent	Direct and may participate in the preparation, seasoning, and cooking of salads, soups, fish, meats, vegetables, desserts, or other foods. May plan and price menu items, order supplies, and keep records and accounts.
Cooks, Private Household	\$42,220	Postsecondary nondegree award	Prepare meals in private homes. Includes personal chefs.
First-Line Supervisors of Housekeeping and Janitorial Workers	\$41,240	High school diploma or equivalent	Directly supervise and coordinate work activities of cleaning personnel in hotels, hospitals, offices, and other establishments.
Travel Agents	\$39,900	High school diploma or equivalent	Plan and sell transportation and accommodations for travel agency customers. Determine destination, modes of transportation, travel dates, costs, and accommodations required. Also may describe, plan, and arrange itineraries and sell tour packages. May assist in resolving clients' travel problems.
Reservation and Transportation Ticket Agents and Travel Clerks	\$38,050	High school diploma or equivalent	Make and confirm reservations for transportation or lodging, or sell transportation tickets. May check baggage and direct passengers to designated concourse, pier, or track; deliver tickets; contact individuals and groups to inform them of package tours; or provide tourists with travel or transportation information.
Travel Guides	\$35,930	High school diploma or equivalent	Plan, organize, and conduct long distance travel, tours, and expeditions for individuals and groups.

Occupation	Annual Average Salary	Most Common Degree Required	Description
Umpires, Referees, and Other Sports Officials	\$35,540	High school diploma or equivalent	Officiate at competitive athletic or sporting events. Detect infractions of rules and decide penalties according to established regulations. Includes all sporting officials, referees, and competition judges.
First-Line Supervisors of Food Preparation and Serving Workers	\$34,700	High school diploma or equivalent	Directly supervise and coordinate activities of workers engaged in preparing and serving food.

Source: U.S. Bureau of Labor Statistics

SAMPLE OCCUPATIONS WITHIN THE HOSPITALITY & TOURISM CAREER CLUSTER

- Baker
- Chef
- Caterer
- Restaurant manager
- Tour guide
- Travel agent



DODEA CULINARY ARTS PATHWAY

Professionals in the Culinary Arts field are involved in many cooking and baking tasks, as well as in managing kitchens and planning menus. Individuals in this field gain knowledge in diet, nutrition, food preparation, cost and budgets, and the science of food. Through classroom instruction and hands-on lab experiences, DoDEA's Culinary Arts Pathway equips students with the skills needed to manage



projects and meet deadlines, multi-task, and work effectively with coworkers. Students are exposed to a variety of cooking methods and techniques from basics to advanced skills including: stocks, sauces, and soups; meat, poultry, and seafood cookery; vegetable and starch cookery; baking and pastry production; catering; nutrition; menu and facility planning; cold food preparation; and food service management.

- Related courses
 - AP Chemistry
 - AP Chemistry+

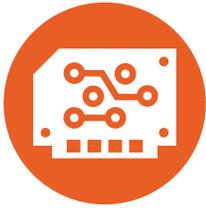


Try these extracurricular activities!

Extracurricular activities that support career readiness

- Prepare meals at a food bank
- Join a student marketing club or association
- Work in a restaurant or fast food establishment

Information Technology Career Cluster



Do you want to get paid to design computer games? Would you like to help design a new mobile device? With a background in information technology (IT), you can work in almost any type of company or industry doing just that and much more. There is hardly a business, industry, or person that does not depend on IT in some way. IT occupations require professionals to engage with hardware, software, network systems, or multimedia to create, design, and produce interactive products; design, develop, implement, and repair computer systems and software; and work with coding language. There are several Pathways within the Information Technology Career Cluster, each offering exciting occupations. The Digital Design Pathway, for example, includes occupations through which people create, design, and produce multimedia products and services, including the development of digitally-generated or computer-enhanced media used in a variety of businesses and industries. The Programming Pathway includes occupations such as software engineers, computer programmers, and computer network architects. Professionals in this pathway often create code for software applications and operating systems; and design computer programs and networks. Those in the Cybersecurity Pathway perform threat analysis strategies, examine cyber threats and protective measures, and simulate risk management protocols. This pathway includes occupations such as security analyst, cryptanalyst, and security engineer.



Fastest-growing information technology occupations

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Software Developers, Applications	253,400	31%	\$104,300	Bachelor's degree	Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. May analyze and design databases within an application area, working individually or coordinating database development as part of a team. May supervise computer programmers.
Computer User Support Specialists	71,100	11%	\$53,100	Some college, no degree	Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, or via telephone or electronically. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems.
Computer Systems Analysts	53,000	9%	\$91,620	Bachelor's degree	Analyze science, engineering, business, and other data processing problems to implement and improve computer systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software.
Software Developers, Systems Software	46,100	11%	\$110,590	Bachelor's degree	Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Set operational specifications and formulate and analyze software requirements. May design embedded systems software. Apply principles and techniques of computer science, engineering, and mathematical analysis.

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Information Security Analysts	28,400	28%	\$96,040	Bachelor's degree	Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.
Computer Occupations, All Other	25,900	9%	\$88,880	Bachelor's degree	All computer occupations not listed separately.
Network and Computer Systems Administrators	23,900	6%	\$84,500	Bachelor's degree	Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and internet systems or a segment of a network system. Monitor network to ensure network availability to all system users and may perform necessary maintenance to support network availability. May monitor and test website performance to ensure websites operate correctly and without interruption. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software. May supervise computer user support specialists and computer network support specialists. May administer network security measures.
Web Developers	21,300	13%	\$72,150	Associate's degree	Design, create, and modify websites. Analyze user needs to implement website content, graphics, performance, and capacity. May integrate websites with other computer applications. May convert written, graphic, audio, and video components to compatible web formats by using software designed to facilitate the creation of web and multimedia content.
Computer Network Support Specialists	16,100	8%	\$67,770	Associate's degree	Analyze, test, troubleshoot, and evaluate existing network systems, such as local area network (LAN), wide area network (WAN), and internet systems or a segment of a network system. Perform network maintenance to ensure networks operate correctly with minimal interruption.





Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Database Administrators	13,700	12%	\$87,130	Bachelor's degree	Administer, test, and implement computer databases, applying knowledge of database management systems. Coordinate changes to computer databases. May plan, coordinate, and implement security measures to safeguard computer databases.

Source: U.S. Bureau of Labor Statistics

Highest-paying information technology occupations

Occupation	Annual Average Salary	Most Common Degree Required	Description
Software Developers, Systems Software	\$110,590	Bachelor's degree	Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Set operational specifications and formulate and analyze software requirements. May design embedded systems software. Apply principles and techniques of computer science, engineering, and mathematical analysis.
Software Developers, Applications	\$104,300	Bachelor's degree	Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. May analyze and design databases within an application area, working individually or coordinating database development as part of a team. May supervise computer programmers.
Computer Network Architects	\$104,240	Bachelor's degree	Design and implement computer and information networks, such as local area networks (LAN), wide area networks (WAN), intranets, extranets, and other data communications networks. Perform network modeling, analysis, and planning. Also may design network and computer security measures. May research and recommend network and data communications hardware and software.
Information Security Analysts	\$96,040	Bachelor's degree	Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.
Computer Systems Analysts	\$91,620	Bachelor's degree	Analyze science, engineering, business, and other data processing problems to implement and improve computer systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software.
Computer Occupations, All Other	\$88,880	Bachelor's degree	All computer occupations not listed separately.



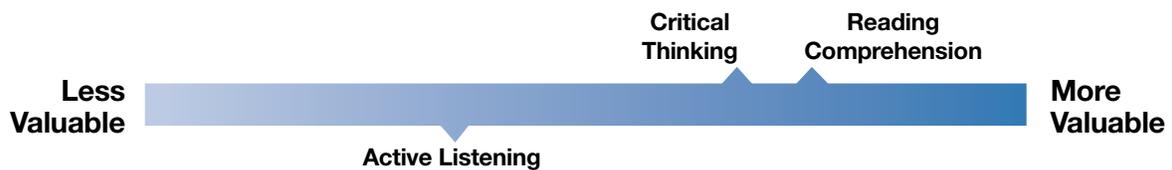
Occupation	Annual Average Salary	Most Common Degree Required	Description
Database Administrators	\$87,130	Bachelor's degree	Administer, test, and implement computer databases, applying knowledge of database management systems. Coordinate changes to computer databases. May plan, coordinate, and implement security measures to safeguard computer databases.
Computer Programmers	\$85,180	Bachelor's degree	Create, modify, and test the code, forms, and script that allow computer applications to run. Work from specifications drawn up by software developers or other individuals. May assist software developers by analyzing user needs and designing software solutions. May develop and write computer programs to store, locate, and retrieve specific documents, data, and information.
Network and Computer Systems Administrators	\$84,500	Bachelor's degree	Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and internet systems or a segment of a network system. Monitor network to ensure network availability to all system users and may perform necessary maintenance to support network availability. May monitor and test website performance to ensure websites operate correctly and without interruption. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software. May supervise computer user support specialists and computer network support specialists. May administer network security measures.
Web Developers	\$72,150	Associate's degree	Design, create, and modify websites. Analyze user needs to implement website content, graphics, performance, and capacity. May integrate websites with other computer applications. May convert written, graphic, audio, and video components to compatible web formats by using software designed to facilitate the creation of web and multimedia content.

Source: U.S. Bureau of Labor Statistics

SAMPLE OCCUPATIONS WITHIN THE INFORMATION TECHNOLOGY CAREER CLUSTER

- Animator
- Computer systems analyst
- Multimedia artist
- Security analyst
- Video game designer

MOST VALUABLE SKILLS WITHIN THE INFORMATION TECHNOLOGY CAREER CLUSTER



Try these extracurricular activities!

There are many extracurricular activities you could explore to learn more about information technology. For example, try one or more of these activities:

- Participate in Skills USA
- Use multimedia for school projects
- Create your own webpage or blog
- Join the AV club



DODEA CYBERSECURITY PATHWAY

Cybersecurity professionals plan, monitor, implement, and upgrade security measures for the protection of computer networks and information; as well as design and regulate firewalls, security controls, digital files, and vital electronic infrastructure. In addition, cybersecurity employees respond and mitigate computer security breaches and viruses.

- Related courses
 - Discrete Math I
 - Discrete Math II
 - AP U.S. Government and Politics
 - AP Comparative & Political Systems
 - Contemporary Issues
 - Model United Nations
 - AP Research

DODEA DIGITAL DESIGN AND COMMUNICATION PATHWAY

Digital design and communication professionals create, design, and produce a vast array of interactive multimedia products and services to be used in business, training, entertainment, communications, and marketing.

- Related courses
 - Sociology
 - Psychology
 - AP Psychology
 - Video Art
 - Digital Photography
 - Computer Music
 - Commercial Art

DODEA PROGRAMMING PATHWAY

Professionals in the Programming Pathway use their knowledge and skills to design, develop, implement, and maintain computer systems and software. While many occupations in this area are in software companies, other large organization industries, such as financial and business services, also offer vast opportunities. Students enrolled in DoDEA's Programming Pathway gain advanced knowledge of computer operating systems, programming languages, and software development necessary to design, develop, implement, and maintain computer systems and software.

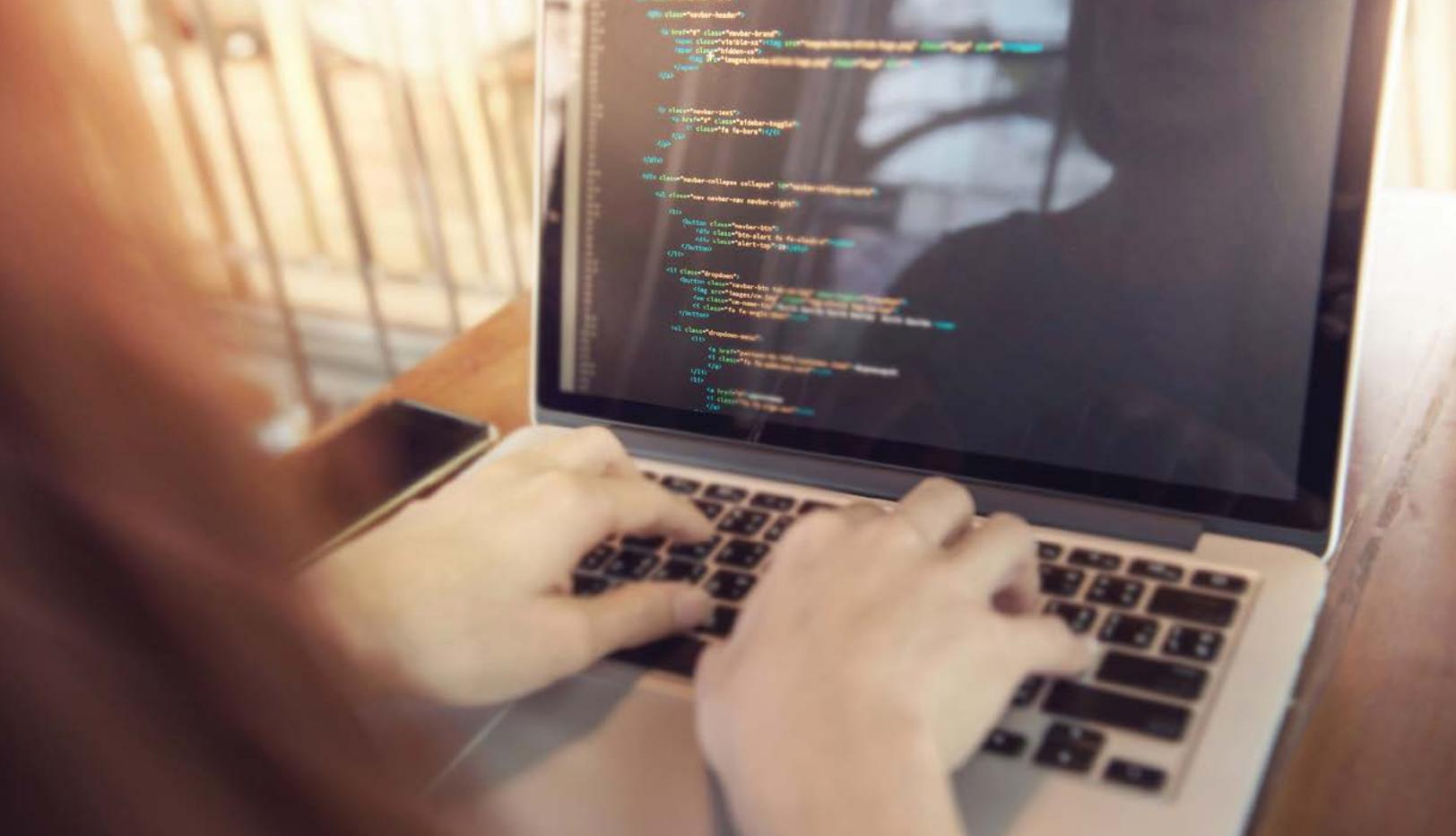
- Related courses
 - Discrete Math I
 - Discrete Math II
 - Fundamentals of Art
 - Studio Art

Sample IT Career Pathway

The IT sector, much like other fields, includes Career Pathways or clearly articulated and sequenced education and training opportunities that enable students to obtain the industry-recognized credentials required for in-demand jobs. Often times these credentials are considered “stackable,” meaning they are part of a sequence of credentials that can be accumulated over time to build up an individual's qualifications and help him/her to move along a Career Pathway or up a career ladder to different and potentially higher-paying jobs. Check out this sample IT Career Pathway that shows how someone can work his/her way up from an entry-level web developer to an in-demand and highly paid information security analyst.

Occupation	Responsibilities	Most Common Degree Required	Average Salary	Projected Growth in Employment (2016-2026)
Web Developers	<ul style="list-style-type: none"> • Design websites or web applications • Write computer programming code • Update website content • Create electronic data backup to prevent loss of information • Collaborate with others to resolve information technology issues 	<p>17% have a post-secondary certificate</p> <p>17% have an Associate's degree</p> <p>46% have a Bachelor's degree</p>	Web Developers earn \$31.79 an hour or \$66,130 a year	10% to 14%
Web Administrators	<ul style="list-style-type: none"> • Modify software programs to improve performance • Create electronic data backup to prevent loss of information • Resolve computer software problems • Update website content • Collaborate with others to resolve IT issues 	<p>13% have some college, no degree</p> <p>26% have a post-secondary certificate</p> <p>39% have a Bachelor's degree</p>	Web Administrators earn \$41.59 an hour or \$86,510 a year	5% to 9%



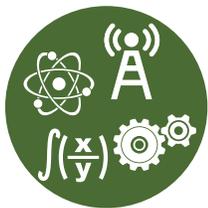


Occupation	Responsibilities	Most Common Degree Required	Average Salary	Projected Growth in Employment (2016-2026)
Information Security Analysts	<ul style="list-style-type: none"> • Implement security measures for computer or information systems • Develop computer or information security policies or procedures • Monitor the security of digital information • Update knowledge about emerging industry or technology trends • Collaborate with others to resolve IT issues 	<p>10% have a post-secondary certificate</p> <p>65% have a Bachelor's degree</p> <p>19% have a Post-baccalaureate certificate</p>	Administrators earn \$44.52 an hour or \$92,600 a year	15% or higher

Source: O*NET



Science, Technology, Engineering, & Mathematics (STEM) Career Cluster



Have you ever wanted to know how things work? Do you like creating things? Careers in STEM give you the opportunity to understand how things work and devise clever ways to make them work better. People with STEM careers help to create the cars we drive, the weapons used to defend our country, the tools that surgeons use to save lives, and the equipment used to explore outer space. STEM professionals use their abilities in problem solving, planning, and management to provide solutions to scientific and technical problems; and provide scientific research, professional, and technical services. The Engineering and Technology Pathway prepares professionals to design, produce, operate, and maintain a variety of technical services, equipment, products, and systems. Professionals in this field may work in design and development, testing, production, or maintenance. This Pathway offers a variety of occupations, including a wide range of engineering (e.g., mechanical, civil, structural) and engineering technology jobs. Occupations within this pathway require an understanding of principles and processes and the application of skills related to advanced math and science.



Fastest-growing science, technology, engineering, & mathematics occupations

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Mechanical Engineers	25,300	9%	\$89,800	Bachelor's degree	Perform engineering duties in planning and designing tools, engines, machines, and other mechanically functioning equipment. Oversee installation, operation, maintenance, and repair of equipment, such as centralized heat, gas, water, and steam systems.
Industrial Engineers	25,100	10%	\$88,530	Bachelor's degree	Design, develop, test, and evaluate integrated systems for managing industrial production processes, including human work factors, quality control, inventory control, logistics and material flow, cost analysis, and production coordination.
Electrical Engineers	16,200	9%	\$98,620	Bachelor's degree	Research, design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use.
Statisticians	12,400	33%	\$85,160	Master's degree	Develop or apply mathematical or statistical theory and methods to collect, organize, interpret, and summarize numerical data to provide usable information. May specialize in fields such as bio-statistics, agricultural statistics, business statistics, or economic statistics. Includes mathematical and survey statisticians.
Architectural and Engineering Managers	9,900	6%	\$143,870	Bachelor's degree	Plan, direct, or coordinate activities in fields such as, architecture and engineering, or research and development in these fields.

Occupation	Projected Number of Job Gains by 2026	Projected Percentage of Job Gains by 2026	Annual Average Salary	Most Common Degree Required	Description
Environmental Scientists and Specialists, Including Health	9,900	11%	\$75,360	Bachelor's degree	Conduct research or perform investigation for the purpose of identifying, abating, or eliminating sources of pollutants or hazards that affect either the environment or the health of the population. Using knowledge of various scientific disciplines, may collect, synthesize, study, report, and recommend action based on data derived from measurements or observations of air, food, soil, water, and other sources.
Engineers, All Other	8,200	6%	\$99,250	Bachelor's degree	All engineers not listed separately.
Life, Physical, and Social Science Technicians, All Other	7,300	10%	\$49,270	Associate's degree	All life, physical, and social science technicians not listed separately.
Chemists	5,700	7%	\$80,820	Bachelor's degree	Conduct qualitative and quantitative chemical analyses or experiments in laboratories for quality or process control or to develop new products or knowledge.
Computer and Information Research Scientists	5,400	19%	\$116,320	Master's degree	Conduct research into fundamental computer and information science as theorists, designers, or inventors. Develop solutions to problems in the field of computer hardware and software.

Source: U.S. Bureau of Labor Statistics



Highest-paying science, technology, engineering, & mathematics occupations

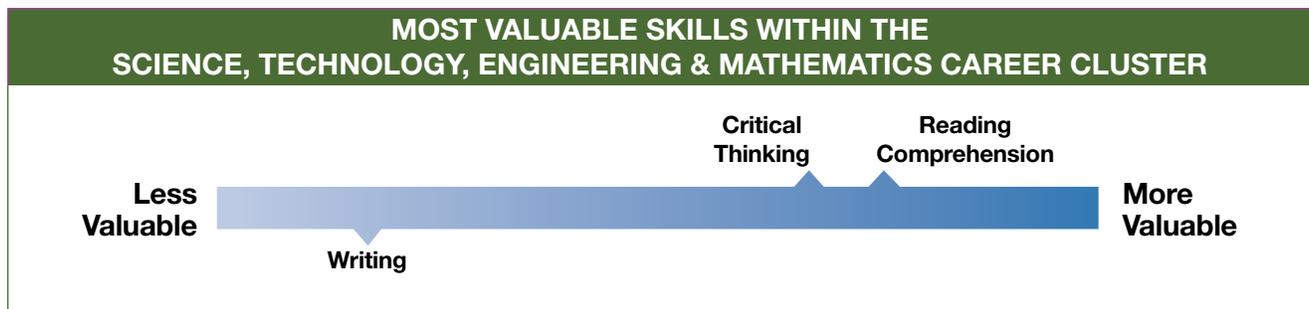
Occupation	Annual Average Salary	Most Common Degree Required	Description
Petroleum Engineers	\$147,030	Bachelor's degree	Devise methods to improve oil and gas extraction and production and determine the need for new or modified tool designs. Oversee drilling and offer technical advice.
Architectural and Engineering Managers	\$143,870	Bachelor's degree	Plan, direct, or coordinate activities in fields, such as architecture and engineering, or research and development in these fields.
Physicists	\$121,770	Doctoral or professional degree	Conduct research into physical phenomena, develop theories on the basis of observation and experiments, and devise methods to apply physical laws and theories.
Computer Hardware Engineers	\$118,700	Bachelor's degree	Research, design, develop, or test computer or computer-related equipment for commercial, industrial, military, or scientific use. May supervise the manufacturing and installation of computer or computer-related equipment and components.
Computer and Information Research Scientists	\$116,320	Doctoral or professional degree	Conduct research into fundamental computer and information science as theorists, designers, or inventors. Develop solutions to problems in the field of computer hardware and software.
Economists	\$112,860	Master's degree	Conduct research, prepare reports, or formulate plans to address economic problems related to the production and distribution of goods and services or monetary and fiscal policy. May collect and process economic and statistical data using sampling techniques and econometric methods.
Political Scientists	\$112,250	Master's degree	Study the origin, development, and operation of political systems. May study topics, such as public opinion, political decision-making, and ideology. May analyze the structure and operation of governments, as well as various political entities. May conduct public opinion surveys, analyze election results, or analyze public documents.
Aerospace Engineers	\$112,010	Bachelor's degree	Perform engineering duties in designing, constructing, and testing aircraft, missiles, and spacecraft. May conduct basic and applied research to evaluate adaptability of materials and equipment to aircraft design and manufacture. May recommend improvements in testing equipment and techniques.

Occupation	Annual Average Salary	Most Common Degree Required	Description
Astronomers	\$110,380	Doctoral or professional degree	Observe, research, and interpret astronomical phenomena to increase basic knowledge or apply such information to practical problems.
Geoscientists, Except Hydrologists and Geographers	\$106,390	Bachelor's degree	Study the composition, structure, and other physical aspects of the Earth. May use geological, physics, and mathematics knowledge in exploration for oil, gas, minerals, or underground water; or in waste disposal, land reclamation, or other environmental problems. May study the Earth's internal composition, atmospheres, oceans, and its magnetic, electrical, and gravitational forces. Includes mineralogists, crystallographers, paleontologists, stratigraphers, geodesists, and seismologists.

Source: U.S. Bureau of Labor Statistics

SAMPLE OCCUPATIONS WITHIN THE SCIENCE, TECHNOLOGY, ENGINEERING, & MATHEMATICS CAREER CLUSTER

- Aerospace engineers
- Marine architects
- Robotics engineers
- Archeologists
- Economists





DODEA ENGINEERING AND TECHNOLOGY PATHWAY

Professionals in the Engineering and Technology Pathway apply concepts of mathematics, science, and technology to solve problems and develop new processes, facilities, and devices to improve people's lives. Employees in this field apply principles from advanced mathematics, life sciences, physical science, earth and space science, and technology. DoDEA's Engineering and Technology Pathway combines hands-on projects with a rigorous curriculum to prepare students for the most challenging careers in engineering and technology. Students are equipped with the knowledge and skills (e.g., problem solving, critical thinking, and creativity) to successfully design, develop, and produce various technologies; as well as recognize the relationship between science, technology, engineering, and math.

■ Related courses

- AP Calculus AB(+)
- AP Calculus BC(+)
- AP Human Geography
- Economics
- AP Economics Micro
- AP Economics Macro
- Human Anatomy & Physiology
- Environmental Science
- Marine Biology
- AP Biology+
- AP Chemistry+
- AP Physics Part 1+
- AP Physics Part 2+
- AP Environmental Science
- AP Research
- Computer Music
- Commercial Art
- Fundamentals of Art
- Studio Art



Try these extracurricular activities!

Extracurricular activities that support career readiness

- Join the robotics club
- Participate in a science fair
- Sign up for science and math competitions





Government & Public Administration Career Cluster



Does helping shape or protect the future of your city, state, and country sound interesting? Then you may consider an occupation in the Government and Public Administration Career Cluster. Those in this Career Cluster are responsible for developing and implementing laws and policies that shape and protect society. Though many of the jobs in this Career Cluster are unique to the military, many are also found in government agencies, non-profit organizations, and businesses. If you are specifically interested in keeping our country's people, institutions, systems, technology, and economy safe then pursuing a career in the National Security-JROTC Pathway might be right for you. There is a diverse range of occupations to explore in this pathway including programming computers, operating nuclear reactors, repairing and maintaining a helicopter, consulting on diplomatic missions, and many more.

National Security -JROTC Pathway Military Occupations by Career Path and Armed Service Branch

Military Occupation		Career Path	Armed Service Branch			
Occupation	Description	Enlisted / Officer	Air Force	Army	Marine Corps	Navy
Air Crew Officers	Perform and direct in-flight duties to ensure the successful completion of combat, reconnaissance, transport, and search and rescue missions. Duties include operating aircraft communications and radar equipment, such as establishing satellite linkages and jamming enemy communications capabilities; operating aircraft weapons and defensive systems; conducting pre-flight, in-flight, and post-flight inspections of onboard equipment; and directing cargo and personnel drops.	Officer	●	●	●	●
Aircraft Launch and Recovery Officers	Plan and direct the operation and maintenance of catapults, arresting gear, and associated mechanical, hydraulic, and control systems involved primarily in aircraft carrier takeoff and landing operations. Duties include supervision of readiness and safety of arresting gear, launching equipment, barricades, and visual landing aid systems; planning and coordinating the design, development, and testing of launch and recovery systems; preparing specifications for catapult and arresting gear installations; evaluating design proposals; determining handling equipment needed for new aircraft; preparing technical data and instructions for operation of landing aids; and training personnel in carrier takeoff and landing procedures.	Officer			●	●
Armored Assault Vehicle Officers	Direct the operation of tanks, light armor, and amphibious assault vehicle units during combat situations on land or in aquatic environments. Duties include directing crew members in the operation of targeting and firing systems; coordinating the operation of advanced onboard communications and navigation equipment; directing the transport of personnel and equipment during combat; formulating and implementing battle plans, including the tactical employment of armored vehicle units; and coordinating with infantry, artillery, and air support units.	Officer		●	●	
Artillery and Missile Officers	Manage personnel and weapons operations to destroy enemy positions, aircraft, and vessels. Duties include planning, targeting, and coordinating the tactical deployment of field artillery and air defense artillery missile systems units; directing the establishment and operation of fire control communications systems; targeting and launching intercontinental ballistic missiles; directing the storage and handling of nuclear munitions and components; overseeing security of weapons storage and launch facilities; and managing maintenance of weapons systems.	Officer	●	●	●	●



Military Occupation		Career Path	Armed Service Branch			
Occupation	Description	Enlisted / Officer	Air Force	Army	Marine Corps	Navy
Command and Control Center Officers	Manage the operation of communications, detection, and weapons systems essential for controlling air, ground, and naval operations. Duties include managing critical communication links between air, naval, and ground forces; formulating and implementing emergency plans for natural and wartime disasters; coordinating emergency response teams and agencies; evaluating command center information and need for high-level military and government reporting; managing the operation of surveillance and detection systems; providing technical information and advice on capabilities and operational readiness; and directing operation of weapons targeting, firing, and launching computer systems.	Officer	●	●	●	●
Infantry Officers	Direct, train, and lead infantry units in ground combat operations. Duties include directing deployment of infantry weapons, vehicles, and equipment; directing location, construction, and camouflage of infantry positions and equipment; managing field communications operations; coordinating with armor, artillery, and air support units; performing strategic and tactical planning, including battle plan development; and leading basic reconnaissance operations.	Officer		●	●	
Special Forces Officers	Lead elite teams that implement unconventional operations by air, land, or sea during combat or peacetime. These activities include offensive raids, demolitions, reconnaissance, search and rescue, and counterterrorism. In addition to their combat training, special forces officers often have specialized training in swimming, diving, parachuting, survival, emergency medicine, and foreign languages. Duties include directing advanced reconnaissance operations and evaluating intelligence information; recruiting, training, and equipping friendly forces; leading raids and invasions on enemy territories; training personnel to implement individual missions and contingency plans; performing strategic and tactical planning for politically sensitive missions; and operating sophisticated communications equipment.	Officer	●	●	●	●
Military Officer Special and Tactical Operations Leaders, All Other	All military officer special and tactical operations leaders not listed separately.	Officer	●	●	●	●
First-Line Supervisors of Air Crew Members	Supervise and coordinate the activities of air crew members. Supervisors may also perform the same activities as the workers they supervise.	Enlisted	●	●	●	●

Military Occupation		Career Path	Armed Service Branch			
Occupation	Description	Enlisted / Officer	Air Force	Army	Marine Corps	Navy
First-Line Supervisors of Weapons Specialists/ Crew Members	Supervise and coordinate the activities of weapons specialists/ crew members. Supervisors may also perform the same activities as the workers they supervise.	Enlisted	●	●	●	●
First-Line Supervisors of All Other Tactical Operations Specialists	Supervise and coordinate the activities of all other tactical operations specialists not classified separately above. Supervisors may also perform the same activities as the workers they supervise.	Enlisted	●	●	●	●
Air Crew Members	Perform in-flight duties to ensure the successful completion of combat, reconnaissance, transport, and search and rescue missions. Duties include operating aircraft communications and detection equipment, including establishing satellite linkages and jamming enemy communications capabilities; conducting pre-flight, in-flight, and post-flight inspections of onboard equipment; operating and maintaining aircraft weapons and defensive systems; operating and maintaining aircraft in-flight refueling systems; executing aircraft safety and emergency procedures; computing and verifying passenger, cargo, fuel, and emergency and special equipment weight and balance data; and conducting cargo and personnel drops.	Enlisted	●	●	●	●
Aircraft Launch and Recovery Specialists	Operate and maintain catapults, arresting gear, and associated mechanical, hydraulic, and control systems involved primarily in aircraft carrier takeoff and landing operations. Duties include installing and maintaining visual landing aids; testing and maintaining launch and recovery equipment using electric and mechanical test equipment and hand tools; activating airfield arresting systems, such as crash barriers and cables, during emergency landing situations; directing aircraft launch and recovery operations using hand or light signals; and maintaining logs of airplane launches, recoveries, and equipment maintenance.	Enlisted	●		●	●
Armored Assault Vehicle Crew Members	Operate tanks, light armor, and amphibious assault vehicles during combat situations on land or in aquatic environments. Duties include driving armored vehicles which require specialized training; operating and maintaining targeting and firing systems; operating and maintaining advanced onboard communications and navigation equipment; transporting personnel and equipment in a combat environment; and operating and maintaining auxiliary weapons, including machine guns and grenade launchers.	Enlisted		●	●	●



Military Occupation		Career Path	Armed Service Branch			
Occupation	Description	Enlisted / Officer	Air Force	Army	Marine Corps	Navy
Artillery and Missile Crew Members	Target, fire, and maintain weapons used to destroy enemy positions, aircraft, and vessels. Field artillery crew members predominantly use guns, cannons, and howitzers in ground combat operations, while air defense artillery crew members predominantly use missiles and rockets. Naval artillery crew members predominantly use torpedoes and missiles launched from a ship or submarine. Duties include testing, inspecting, and storing ammunition, missiles, and torpedoes; conducting preventive and routine maintenance on weapons and related equipment; establishing and maintaining radio and wire communications; and operating weapons targeting, firing, and launching computer systems.	Enlisted		●	●	●
Command and Control Center Specialists	Operate and monitor communications, detection, and weapons systems essential for controlling air, ground, and naval operations. Duties include maintaining and relaying critical communications between air, naval, and ground forces; implementing emergency plans for natural and wartime disasters; relaying command center information to high-level military and government decision makers; monitoring surveillance and detection systems, such as air defense; interpreting and evaluating tactical situations and making recommendations to superiors; and operating weapons targeting, firing, and launching computer systems.	Enlisted	●	●	●	●
Infantry	Operate weapons and equipment in ground combat operations. Duties include operating and maintaining weapons, such as rifles, machine guns, mortars, and hand grenades; locating, constructing, and camouflaging infantry positions and equipment; evaluating terrain and recording topographical information; operating and maintaining field communications equipment; assessing need for and directing supporting fire; placing explosives and performing minesweeping activities on land; and participating in basic reconnaissance operations.	Enlisted		●	●	●
Radar and Sonar Technicians	Operate equipment using radio or sound wave technology to identify, track, and analyze objects or natural phenomena of military interest. Includes airborne, shipboard, and terrestrial positions. May perform minor maintenance.	Enlisted	●	●	●	●
Special Forces	Implement unconventional operations by air, land, or sea during combat or peacetime as members of elite teams. These activities include offensive raids, demolitions, reconnaissance, search and rescue, and counterterrorism. In addition to their combat training, special forces members often have specialized training in swimming, diving, parachuting, survival, emergency medicine, and foreign languages. Duties include conducting advanced reconnaissance operations and collecting intelligence information; recruiting, training, and equipping friendly forces; conducting raids and invasions on enemy territories; laying and detonating explosives for demolition targets; locating, identifying, defusing, and disposing of ordnance; and operating and maintaining sophisticated communications equipment.	Enlisted	●	●	●	●



Military Occupation		Career Path	Armed Service Branch			
Occupation	Description	Enlisted / Officer	Air Force	Army	Marine Corps	Navy
Military Enlisted Tactical Operations and Air/ Weapons Specialists and Crew Members, All Other	All military enlisted tactical operations and air/weapons specialists and crew members not listed separately.	Enlisted	●	●	●	●

• Occupation is available within the specified Armed Service Branch

Officers act as managers to enlisted; they plan missions, give orders, and assign tasks to enlisted servicemen and servicewomen.

Source: O*NET, Defense Manpower Data Center

Note: This table does not represent all military occupations but rather just those specific to the National-Security–JROTC Pathway. There are hundreds of different occupations across the various armed service branches. Of the 20 occupations highlighted, many have comparable non-military occupations one can enter after being discharged from active duty. For example, the leadership skills that commissioned and warrant officers obtain through military service often make them a natural fit for management occupations within government agencies, non-profits, or businesses.





National Security-JROTC Pathway Military Occupations and Three Fastest Growing Related Civilian Occupations and Annual Average Salary

Can someone have a career after the military? Yes! There are many occupations available to serviceman and servicewoman following active duty. The skills one gains while on active duty are transferable to many occupations in the Career Clusters and Pathways. For example, those in the Special Forces are trained to provide medical care as first responders; these individuals are well-suited for occupations in the Health Science Career Cluster. In some cases, transitioning from a military occupation to a civilian occupation requires little-to-no additional training; however, that might not be the case in others.

Military Occupation	Civilian Occupations	Annual Average Salary of Civilian Occupations*
Air Crew Officers	General and Operations Managers; Purchasing Managers; Training and Development Managers	\$121,853
Aircraft Launch and Recovery Officers	Administrative Services Managers; Transportation, Storage, and Distribution Managers	\$98,552
Armored Assault Vehicle Officers	Managers, All Other; Administrative Services Managers; Transportation, Storage, and Distribution Manage	\$100,146
Artillery and Missile Officers	General and Operations Managers; Management Analysts; First-Line Supervisors of Office and Administrative Support Workers	\$95,637
Command and Control Center Officers	General and Operations Managers; Management Analysts; Business Operations Specialists, All Other	\$104,333
Infantry Officers	General and Operations Managers; Transportation, Storage, and Distribution Managers; Training and Development Manage	\$119,174
Special Forces Officers	General and Operations Managers; Business Operations Specialists, All Other; Managers, All Other	\$108,487
Military Officer Special and Tactical Operations Leaders, All Other	Interpreters and Translators; Electrical and Electronics Repairers, Commercial and Industrial Equipment; Electro-Mechanical Technicians	\$54,470
First-Line Supervisors of Air Crew Members	General and Operations Managers; Maintenance and Repair Workers, General; Stock Clerks and Order Fillers	\$67,714
First-Line Supervisors of Weapons Specialists/Crew Members	General and Operations Managers; Construction Laborers; Security Guards	\$77,295
First-Line Supervisors of All Other Tactical Operations Specialists	General and Operations Managers; Customer Service Representatives; Maintenance and Repair Workers, General	\$66,452
Air Crew Members	General and Operations Managers; Construction Laborers; Maintenance and Repair Workers, General	\$77,109
Aircraft Launch and Recovery Specialists	Maintenance and Repair Workers, General; First-Line Supervisors of Office and Administrative Support Workers; First-Line Supervisors of Mechanics, Installers, and Repairers	\$51,286
Armored Assault Vehicle Crew Members	Construction Laborers; Heavy and Tractor-Trailer Truck Drivers; Stock Clerks and Order Fillers	\$35,562
Artillery and Missile Crew Members	General and Operations Managers; Construction Laborers; Heavy and Tractor-Trailer Truck Drivers	\$75,491
Command and Control Center Specialists	Customer Service Representatives; Management Analysts; Business Operations Specialists, All Other	\$53,893
Infantry	General and Operations Managers; Construction Laborers; First-Line Supervisors of Construction Trades and Extraction Workers	\$89,018
Radar and Sonar Technicians	General and Operations Managers; Maintenance and Repair Workers, General; Teacher Assistants	\$73,577



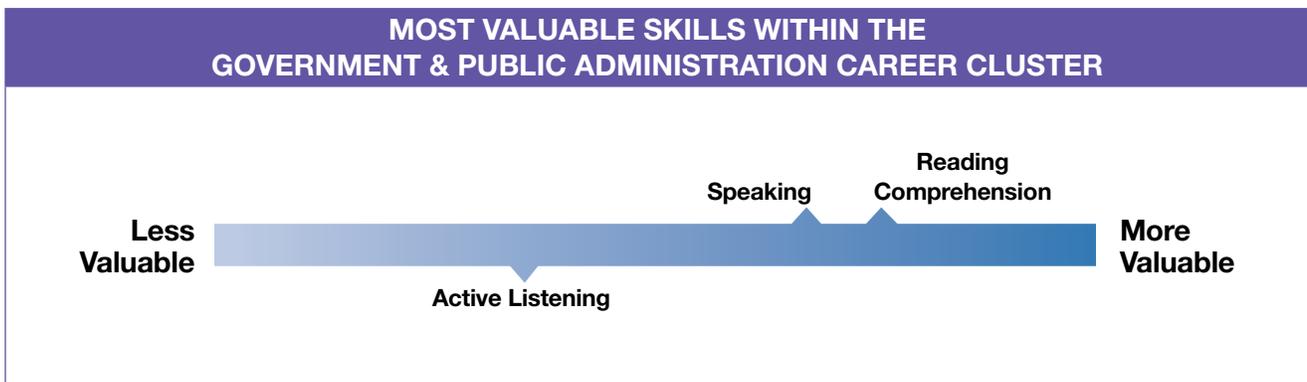
Military Occupation	Civilian Occupations	Annual Average Salary of Civilian Occupations*
Special Forces	Registered Nurses; General and Operations Managers; Medical Assistants	\$87,216
Military Enlisted Tactical Operations and Air/Weapons Specialists and Crew Members, All Other	General and Operations Managers; Laborers and Freight, Stock, and Material Movers, Hand; Stock Clerks and Order Fillers	\$58,747

*The weighted annual average salary of the top 3 fastest growing civilian occupations

Source: O*NET; Defense Manpower Data Center; My Next Move for Veterans

SAMPLE OCCUPATIONS WITHIN THE NATIONAL SECURITY-JROTC CAREER PATHWAY

- Aircraft launch and recovery officers
- Artillery and missile officers
- Command and control center officers



DODEA NATIONAL SECURITY- JROTC PATHWAY

Employees in the field of national security help to keep people, institutions, systems, technology, and the economy safe from attacks. Such employees can hold positions with the military or civilian agencies. DoDEA's National Security-JRTOC Pathway introduces students to the Junior Reserve Officer Training Corps (JROTC). JROTC is a program that focuses on character education, wellness, leadership, and diversity. Through active hands-on safe activities, the curriculum consists of education on citizenship, leadership, social and communication skills, physical fitness and wellness, geography, and civics.

- Related courses
 - United States Government
 - AP U.S. Government and Politics
 - AP Comparative & Political Systems
 - Contemporary Issues
 - Model United Nations



Try these extracurricular activities!

Extracurricular activities that support career readiness

- Join JROTC
- Join debate or a mock trial
- Join the student council or government



Resources

Check out these additional resources to help you plan for your future education and career path.

CAREER PLANNING TOOLS

- Choices360
- O*NET, a comprehensive database of worker attributes and job characteristics: <https://www.onetonline.org/>
- My Next Move, an interactive tool for job seekers and students to learn more about their career options: <https://www.mynextmove.org/>
- CareerOneStop, a resource to learn about careers, find career information, and locate career resources and advice: <https://www.careeronestop.org/>
- Occupational Outlook Handbook: <https://www.bls.gov/ooh/>

SCHOLARSHIP AND FINANCIAL AID INFORMATION

- U.S. Department of Defense Education Activity, Financial Aid: <http://www.dodea.edu/students/financialAid.cfm>
- U.S. Department of Education, Types of Aid: <https://studentaid.ed.gov/sa/types>
- Free Application for Federal Student Aid: <https://fafsa.ed.gov/>

POSTSECONDARY INFORMATION

- College Scorecard, data on college costs and graduation rates: <https://collegescorecard.ed.gov/>
- Campus Tours, resource offering interactive virtual college tours and campus maps: <https://www.campustours.com/>

Glossary

1. **Academic skills:** a set of basic reading, writing, mathematics, and science skills gained in early stages of learning and used to prepare for more advanced learning in subsequent grades, higher education, or in preparation for employment after high school.
2. **Armed Services Vocational Aptitude Battery (ASVAB):** an assessment given by the United States Armed Services. It is a test that measures a student's aptitude and is used to inform career paths.
3. **Assessment:** a test usually designed to document skills, interests, or values; assessments are used in career education to help students decide which careers might be best for them.
4. **Career Cluster:** a grouping of occupations and broad industries within the U.S. job market (e.g., business, information technology, manufacturing, health, and human services) that require similar skills and competencies for success in a particular career.
5. **Career Pathway:** a clear sequence of education coursework and/or training credentials aligned with employer-validated work readiness standards and competencies.
6. **Certificate:** a formal award certifying the satisfactory completion of a postsecondary education program, typically in two years or less.
7. **Certification:** an educational credential earned through a course of study and/or work-based learning that is designed to produce mastery of a particular skill.
8. **Credential:** an educational or work-related certificate, degree, certification, or government-issued license that verifies skill mastery, qualification, or competence in a particular field.
9. **Curriculum:** a set of coursework designed to lead to a particular educational goal.
10. **Degree:** an award conferred by a college, university, or other postsecondary education institution as official recognition of the successful completion of a program of study.
 - a. **Associate's:** a degree acquired after high school through completion of a two-year course of study, usually at a community, vocational, or technical college.
 - b. **Bachelor's:** a degree acquired after high school through completion of a four-year course of study, usually at a college or university.
 - c. **Master's:** a degree usually acquired after completion of additional study after graduation from a university and often after preparation of a long, written study called a thesis.



- d. **Doctorate of Philosophy (PhD):** a degree earned following additional study after graduation from a university (often after earning a master's degree) and usually after preparation of a long, written study called a dissertation.
11. **Employability skills:** a set of transferable skills necessary for successful employment. These skills also are referred to as soft skills, foundational skills, career-readiness skills, or work-readiness skills. These skills encompass a range of communication, interpersonal, problem solving, critical thinking, leadership, and teamwork skills.
 12. **Endorsement:** a notation on a high school transcript indicating that a student completed a focused course of study in a career field or industry.
 13. **Extended learning:** the practice of expanding academic learning through after-school, weekend, and summer activities. Usually voluntary, but often coordinated through a student's high school.
 14. **Free Application for Federal Student Aid (FAFSA):** the first step in the financial aid process. You use it to apply for federal student financial aid, such as grants, loans, and work-study. In addition, most states and schools use information from the FAFSA to award nonfederal aid.
 15. **High-growth occupation:** a career for which the projected rate of employment is expected to increase significantly relative to other careers.
 16. **High-wage occupation:** a career for which the average annual wage is higher relative to that of other careers.
 17. **Industry-recognized credential:** a certificate of completion of an apprenticeship, a license recognized by the state involved or federal government, or an Associate's or Bachelor's degree.
 18. **Labor market:** the availability of employment and labor, in terms of the supply (number of people available who want to work) and demand (the number of occupations available)
 19. **License:** also known as an occupational license, legal recognition of professional standards that is mandated by laws and regulations and granted by a federal, state, or local government agency.
 20. **Mentor:** an experienced peer or adult who provides guidance on how to perform a job or navigate a profession.
 21. **Pathway:** a variety of occupational fields or occupations associated with a Career Cluster.
 22. **Postsecondary nondegree award:** a certificate awarded by an educational institution as a result of completing formal postsecondary schooling.
 23. **4–6 Year plan:** an education tool for DoDEA middle and high school students. Students map out the courses, activities, and experience needed for graduation and beyond.
 24. **STEM:** acronym for science, technology, engineering, and mathematics. STEM classes often involve hands-on learning and use of problem-based activities.

25. **Stackable credential:** a part of a sequence of credentials that can be accumulated over time to build up an individual's qualifications. Stackable credentials help individuals to move up a career ladder or along a career Pathway to different and potentially higher-paying occupations.
26. **Sub-baccalaureate certificate:** earned through completion of a formal program of study below the baccalaureate level (four-year degree), which can range in length from a few months to more than 2 years. Subbaccalaureate certificates provide an opportunity to gain specific skills and knowledge readily transferred to the workforce.
27. **Technical skills:** the abilities and knowledge needed to perform specific tasks or duties. For example, tasks related to engineering, mechanics, science, cooking, or computers. These skills often are acquired through education and work experience.
28. **Work-based learning:**
- a. **Apprenticeship:** a learning experience in which a paid worker new to a job undergoes an organized program of classroom instruction and on-the-job training leading to certified mastery of the craft.
 - b. **Cooperative education (co-op):** a learning arrangement in which classroom career instruction is coordinated with work on the job.
 - c. **Externship:** an out-of-classroom learning arrangement in a workplace offered as part of a program of study. Through direct experience, students learn about trends, skill requirements, and opportunities in industries related to a specific occupation or field.
 - d. **Internship:** a working and learning arrangement in which students hold temporary jobs in their chosen career field, usually under the guidance of an on-the-job mentor.
 - e. **Job-shadowing:** an out-of-the-classroom learning experience in which students learn about particular occupations as they make their way through a day at work.
 - f. **Practicum:** a course or program that covers a specialized topic in depth. In some cases, this word refers to work-study arrangements that earn college credit.
 - g. **Pre-apprenticeship:** a preparatory program that grooms individuals who want to begin an apprenticeship for a certain industry and trade.



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Note: Reference to non-federal entities in this publication does not imply endorsement by DoD/DoDEA.

Who's On the Cover?

Three DoDEA students from Lejeune High School in Jacksonville, North Carolina, talked to us about their experiences in Career and Technical Education as well as their preparation for the future.



PHOTO BY CHARLES TEEGARDEN

Tyler Still



Grade

12

Cluster

Hospitality &
Tourism

Pathway

Culinary Arts Career

Reason for Pathway

“My career goal is to become a chef.”

Postsecondary Plans

“I plan to attend either Coastal Community College Hospitality and Culinary Arts or the Art Institute of Atlanta for Culinary Arts.”

Extracurricular or Extended Learning Activities

“I am captain of my school’s baseball team and I have an internship working at a local restaurant through my high school’s CTE Career Practicum course.”

Lynsey Ross



Grade

12

Cluster
Government and
Public Administration

Pathway
National Security
(JROTC)

Reason for Pathway
“I wanted to be able to experience and learn from good leadership so I too could be a good leader.”

Postsecondary Plans
“I want to study Nursing at Grand Canyon University or Arizona State University.”

Extracurricular or Extended Learning Activities
“I am the cadet Battalion Sergeant Major for my program and spend a majority of my time in the classroom getting things accomplished.”

Mahlik Francis



Grade

12

Cluster
Health Science

Pathway
Therapeutic Services-
Patient Care

Reason for Pathway
“I wanted to have the knowledge to help someone in a desperate time of need, no matter where and when the situation.”

Postsecondary Plans
“I plan to earn a Master’s in Nursing before joining the United States Navy to become a Navy Nurse.”

Extracurricular or Extended Learning Activities
“My Health Sciences 2 class is an advanced CTE course that requires me to complete a 40-hour nurse aide clinical rotation at my base hospital.”

Contact information

For more information, please visit
[https://www.dodea.edu/Curriculum/
CareerTechEd/index.cfm](https://www.dodea.edu/Curriculum/CareerTechEd/index.cfm)

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