

CAREERS *in* TRADE



NATIONAL INSTITUTE FOR
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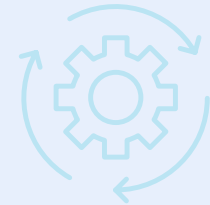
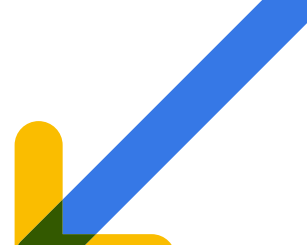
CAREERS *in* TRADE



In the dynamic landscape of today's workforce, trade industries offer a wealth of opportunities for individuals seeking hands-on, practical careers, that play a vital role in society.

The Careers in Trade eBook is an interactive tool that will guide you through numerous trade-related career pathways. Throughout the contents of this book, you will be provided the opportunity to explore careers in trade, various certification options, an insight into the roles and responsibilities of multiple careers in trade, and connection activities bridging academics and trades. The goal of this resource is to introduce you to non-traditional educational pathways that have the potential to lead to a lucrative, impactful, and fulfilling career.

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CHAPTER 1

INTRODUCTION *to* TRADE



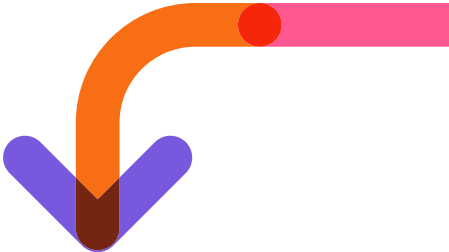
WHAT IS A TRADE JOB?

A skilled trade is a hands-on profession that calls for specific abilities and knowledge in a specialized sector.

When “the trades” are discussed, many people immediately think of the construction industry – including electricians, plumbers, and ventilation technicians – but there are several other occupations that fall under this umbrella, such as cosmetologists, massage therapists, flight attendants, ultrasonographers, computer specialists, and dental hygienists.

While higher education presents one potential path to a secure, lucrative, and fulfilling career, trade jobs can also provide the opportunity to develop in-demand skills, earn a comfortable salary, and better the lives of others. Trade jobs may also avoid the financial burden of student loans and the time commitment of lengthy educational programs.

Finding a fulfilling profession is a unique journey for everyone and should depend on your individual career goals, interests, and abilities. Most tradespeople learn their specialized skillset through apprenticeships, on-the-job training, trade or vocational schools, or specialized education programs. Many of the occupations listed above even pay participants to take part! Pursuing a career in trade can quickly open a whole new world of exciting opportunities and lead you down a path to an incredibly fulfilling career. Selecting a career in the trade industry reduces the time required to master a subject and enables you to begin earning a paycheck immediately by taking a more practical approach to education and training.




Most tradespeople learn their specialized skillset through apprenticeships, on-the-job training, trade or vocational schools, or specialized education programs.



FAST FACTS



CHAPTER 2

TRADE 
EDUCATION
OPPORTUNITIES



TRADE EDUCATION OPPORTUNITIES

Investigating High School, Trade School, Community College, and Apprenticeship Opportunities

In this section, you can explore the various steps and training programs available to you to begin your career in trade.



High School

Most vocational schools (or “vo-tech” schools), apprenticeships, and community colleges require a high school diploma or High School Equivalency certificate for enrollment. Although trade schools do not require standardized tests like the SAT or ACT, some do require placement exams. Scoring well on the SAT or ACT could help trade school candidates bypass the placement exams. If you are interested in pursuing a career in the trade industry after graduating, consider enrolling in Career and Technical Education (CTE) programs, joining Career and Technical Student Organizations (CTSOs), or investigating vo-tech schools while still in high school. Continue reading to learn more about these opportunities.

1 Enroll in CTE courses/programs

It’s beneficial to begin the career exploration process early so you can narrow your focus and align your skills and interests with an engaging career path. CTE programs are sequences of courses that provide learners with rigorous, career-specific content. These programs allow you to sample a variety of career fields throughout high school to get a better understanding of careers that match your interests, thus saving a lot of time and money in the future. Some CTE programs include opportunities for “work-based learning,” so you can gain valuable, on-the-job training before graduation.

Employers also recognize the importance of filling the skill gaps among current employees and those just entering the workforce. Consequently, many CTE schools encourage learners to pursue industry certifications as a means of demonstrating their competence in relation to established standards. Certifications are typically issued in collaboration with a company, trade association, or other industry group upon completion of a skills evaluation and validation process. These certifications show that you have attained the skills needed to be successful in the industry during high school and are employable right after graduation. Earning industry certifications through the completion of CTE courses could give you an advantage over other applicants while looking for trade school acceptance, internships, apprenticeships, or jobs.



“More than 40 states engage employers in the development or review of CTE programs and/or industry-recognized certifications.”

The National Association of State
Directors of Career Technical
Education Consortium

2 Join Career and Technical Student Organizations (CTSOs)

In addition to gaining the foundational skills taught in a traditional classroom environment, consider joining Career and Technical Student Organizations (CTSOs) in trade specialties that interest you the most. In addition to local and regional CTSOs, there are eight national CTSOs authorized by the National Coordinating Council for Career and Technical Student Organizations. These groups have almost 2 million student members, collectively. In addition to student members, CTSOs may also include educators, industry professionals, and community members who serve as advisors, mentors, judges, and sponsors for the organizations' activities and initiatives. CTSOs can be a great source of support for young people starting out in trades. Below are some of the most common CTSOs to explore.

- » Business Professionals of America (business & management administration, finance, information technology)
- » DECA (hospitality & tourism, marketing, business & management administration, finance)
- » Family, Career and Community Leaders of America (education & training, hospitality & tourism, human services)
- » Future Business Leaders of America (business & management administration, finance, information technology, marketing)
- » HOSA, Future Health Professionals (health science)
- » National Future Farmers of America (FFA) Organization (agriculture, food, and natural resources)
- » SkillsUSA, formerly vocational industrial clubs of America (trade, industrial, and technical education programs)
- » Technology Student Association (science, technology, engineering, and mathematics)

**See appendix A for links to the national Career and Technical Student Organizations listed above.*

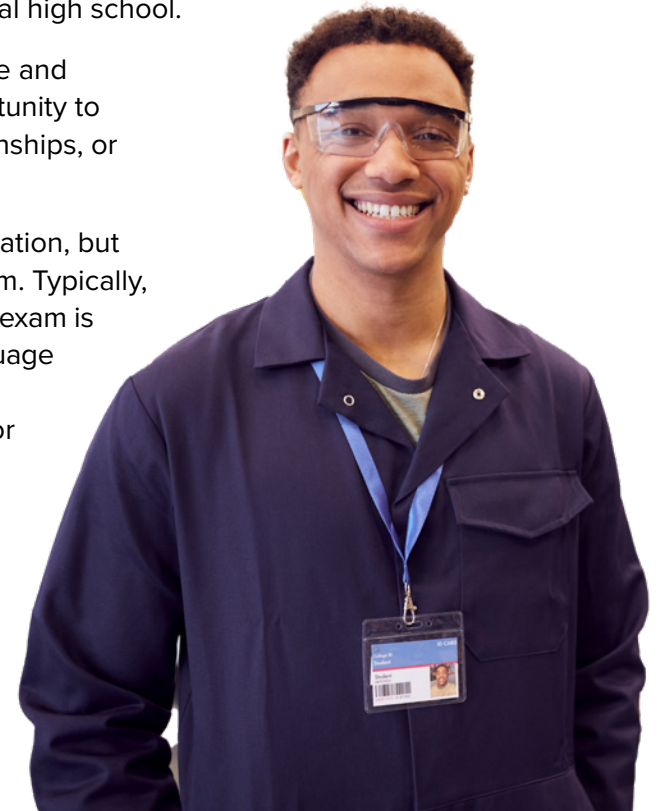
3 Vocational Technology (Vo-Tech) High School

Vo-tech high schools teach specific skills related to a trade in order to prepare learners for the workforce upon graduation, in addition to the general knowledge that learners receive in a typical high school setting.

Some vo-tech high schools are completely separate high schools where you can earn your high school diplomas directly from the vo-tech school you graduate from. Alternatively, you can attend a vo-tech school part-time by splitting your day between specialized vo-tech classes and regular core classes. In some cases, classes can be broken up by semesters with learners attending core classes at a traditional high school during the first semester, and vo-tech high school classes during the second semester. Under these circumstances, you would most likely receive your high school diploma from your traditional high school.

In addition to earning your high school diploma, you will graduate with valuable experience and often receive a certification in your specialized field of study, providing you with the opportunity to enter the workforce right after graduation. You might also be able to begin paid jobs, internships, or apprenticeships while you're still in school, depending on the institution.

If you are interested in receiving a certification verifying you have a high school level education, but are unable to complete your high school classes, you should consider taking the GED exam. Typically, entrance into a trade school requires a high school diploma or an equivalent GED. The GED exam is a high school equivalency test that covers four content areas: mathematical reasoning, language arts reasoning, science, and social studies. Each of the four tests lasts at least an hour and requires a minimum score to pass. You have the option of scheduling one exam at a time or all at once when registering.





Trade School

Many training options are available to anyone interested in pursuing a career in trades. One of the most impactful options is to enroll in a technical or vocational school. Employers and businesses work with trade schools to develop streamlined curriculums that ensure you learn what you need for your trade career as quickly as possible.

Trade schools are a great alternative to the typical four-year college experience as most programs can be completed in about half the time. You can apply to online trade schools, or attend an in-person or hybrid program. Applications for trade schools often have different requirements and are typically less rigorous than those of colleges. While some trade schools accept learners without a high school diploma, most require applicants have a high school diploma or GED equivalent. Depending on the trade school, you may be required to submit an application, pay a fee, take an entrance exam or interview, or have prior relevant experience.

Technical vs. Vocational Schools

Technical and vocational schools are both types of trade school, but there are a few key differences.

A technical school, also known as a technical college or an institute of technology, focuses primarily on teaching practical skills related to a specific field like engineering, computer science, or healthcare. These schools emphasize both academic and theory-based curricula, in addition to hands-on training to meet the demands of industry.

Vocational schools, on the other hand, train and educate learners in a variety of trades. Instead of focusing on academic degrees, vocational schools put an emphasis on skill development in specialized fields. The fundamental goals of vocational programs are to 1) teach skills that can be used in entry-level and middle-skilled jobs requiring specific applied knowledge and 2) prepare learners to enter the



CAREERS IN TRADE

workforce immediately after graduation. Vocational schools combine applied classroom instruction with learning by doing. A wide variety of occupations, including electrician, plumber, hairstylist, chef, and many more, are typically included in vocational programs.

The table below provides a quick glance at some of the main differences between technical and vocational schools.

TECHNICAL	VOCATIONAL
Prepares learners for entry into professional careers, most often engineering or technology	Equips learners with practical skills required to enter a specific profession, such as electrician or hairstylist
Usually completed in 1 to 4 years	Usually completed in a few months to 2 years
More academic and theory-based courses, but still provides hands-on courses	More hands-on and practical application courses with few theory-based courses
Offers more technical training for learners with less work experience	Trains individuals who already have work experience and fewer technical skills
Designed for learners with a high level of knowledge and expertise in a particular field and prepares learners for specific jobs that require these skills	Designed for learners with entry-level or intermediate-level skills in mind, so the focus is to develop the skills needed for that particular field
Fewer connections with business and industry	Strong connections with business and industry

Although there are some differences between the two options, both technical and vocational schools have financial aid options available; result in certificates, diplomas, or associate degrees; and do a tremendous job helping you acquire the necessary skillset and confidence to begin your career in trade upon graduating.

Apprenticeships

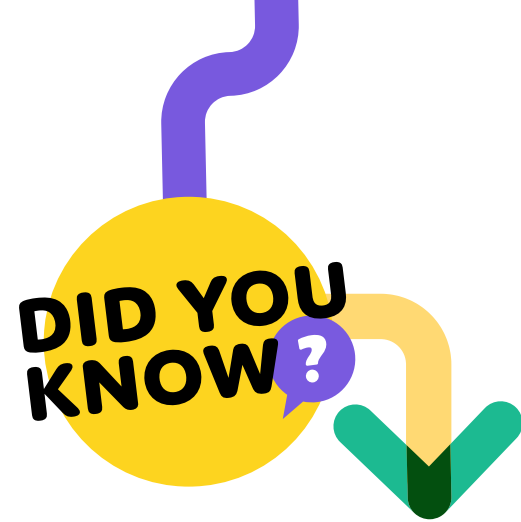
Keep in mind that a vocational degree is not always necessary for entry into every trade. Many countries, including the U.S., have started apprenticeship programs to address skill gaps, enhance workforce development, and provide practical training.

Apprenticeships and other on-the-job training opportunities offer additional ways to gain valuable skills and experience in a trade career. It's not uncommon for employers to provide training programs where apprentices work closely with seasoned professionals to gain hands-on experience while earning an income at the same time. It depends on the company and trade industry, but most apprenticeships last between one and four years and you may be awarded a certificate upon successfully completing an apprenticeship program.

**See appendix A if you are interested in learning more about Apprenticeship programs.*

Certificates, Licenses and Continuing Education

To ensure that you possess the necessary knowledge and abilities to perform your job in a manner that is both safe and successful, most trade jobs require you to obtain certifications or licenses in your respective trade. Depending on the trade industry and program, obtaining a certification or license typically requires passing a content-specific exam and/or work experience requirements. Additionally, to maintain your certification or license, you may be required to participate in continuing education to ensure you stay up to date on the latest industry standards and best practices.



DID YOU KNOW?

“Registered Apprenticeship Programs have an average of 92% employment retention rate after apprentices complete the program.”

(My One Flow)

“Between 2011 and 2021, the number of active apprenticeships in the United States increased from 357,692 to 593,690, a 66 percent increase.”

(U.S. Department of Labor, 2021)

ABOUT CERTIFICATES AND LICENSES

- » A **certificate** confirms that you have completed specific courses of study or training in a particular area. Certificates serve as evidence that you have acquired certain knowledge, skills, and expertise in a particular field, but they do not grant legal authority to perform a particular task or offer specific services.
- » Obtaining a **license** grants you the legal right to do a certain job or provide certain services within a regulated field. Federal, state, or local government agencies typically award licenses, which are mandatory for certain occupations. Without a valid license, individuals may not legally practice certain trades.



CHAPTER 3

ADVANTAGES *to* CHOOSING A CAREER IN TRADE

1 Job Security

In light of the current skill gap in the American workforce, **trade jobs are in very high demand**. Plumbing; automobile repair; Heating, Ventilation, and Air Conditioning (HVAC); and maintenance are just a few of the many trades that we rely on daily. Additionally, the U.S. Bureau of Labor Statistics has identified several trade jobs that are likely to grow faster than non-trade jobs over the next ten years, including wind turbine service technicians, makeup artists, solar panel installers, and carpenters.

2 Income

A widespread perception is that a career in trade results in a maximum income that is typically lower than white-collar jobs, making those occupations more desirable. However, trade careers have undergone a huge transition in recent years. **Wages in the skilled trades have been on the rise** due to the severe labor shortage, leading to higher compensation. While in the past white-collar workers tended to out-earn tradespeople, today their salaries are comparable. Although your salary will vary based on your experience and location, the value you provide to your employer as a specialized tradesperson will be immeasurable!

3 Opportunity to Enter the Working World Faster

Most trade job training programs last less than two years, and many can be completed in as short as six months. Many higher education options, such as community college or a four-year university, take at least twice as long to complete. By enrolling in a trade school, you can **complete your education at a lower cost and in a shorter amount of time**, expediting your career by joining the workforce earlier, leading you to accomplish long-term financial goals quicker.



4 Less Student Debt

The cost of attending trade school is substantially lower than that of a four-year university. By investing in learning a skilled trade, **learners typically accrue less debt** and work toward accomplishing their career goals quicker. Obtaining trade certifications via apprenticeships, vocational institutions, or on-the-job training allows you to earn while you learn, resulting in less debt and more work experience.

5 Entrepreneurship Capability

One thing that makes a trade job so special is that it **gives you the chance to be your own boss** and gives you a strong sense of independence. As an aspiring entrepreneur in the trades industry, you can develop your own individual brand, handpick tasks that truly pique your interest, and enjoy the freedom to design your own work schedule. Having a high amount of independence allows you to design your work environment according to your own tastes. It also provides a great opportunity for personal growth and development.

6 Hands-on Learning

Trade careers, as opposed to typical degree programs, emphasize practical, hands-on learning through real-world application. This not only enhances the educational experience but also provides you with transferable skills applicable to a variety of fields. If you don't excel in traditional classroom instruction, **gaining hands-on experience in a real-world environment** could potentially be your key to success!

WHY IS IT EASIER TO START YOUR OWN BUSINESS AS A SKILLED TRADESPERSON?

- » Trade workers possess a valuable skillset that can be directly translated into a business.
- » Trade workers can generate income quickly by offering services directly to clients.
- » Many trade businesses operate locally. This localized service can streamline marketing efforts and help establish clients within the community.
- » Tradespeople deal directly with customers, suppliers, and other local professionals. Building a good reputation through connections, recommendations, and personal relationships will lead to stronger networking opportunities and will likely help the business flourish.
- » Some trade businesses have lower overhead costs, making it financially more feasible to start and sustain a business.
- » Trade workers may have control over their schedules, pricing, and most business decision-making processes.

7 Job Satisfaction

Tradespeople who spend their entire day working with their hands may **feel more connected to their jobs**. As a tradesperson, you are constantly moving by building things, helping people, creating things, and seeing the product of your labor. For some, it's considerably more exciting than spending eight hours sitting at a desk. Tradespeople build strong relationships and have a long-lasting impact on people's lives, whether you are working directly with businesses, homeowners, or other people in need of your skills. Tradespeople are dependable partners, turning ideas into reality by getting to know your clients' particular needs and goals and working together with them every step of the way. In the end, having a fulfilling working environment can result in greater advancements, a better return on investment, and an overall higher quality of life.

8 Career Diversity

There are many trade jobs that can **fit people with different skills and hobbies**. People who work in construction and similar trades can become experts in areas like HVAC, carpentry, electrical work, plumbing, masonry, or electrical work. If you're interested in working with cars and trucks, you can become an auto mechanic, a diesel mechanic, a flight mechanic, or a marine mechanic. Dental hygienists, medical assistants, massage therapists, and paramedics are all jobs in the healthcare trades. People who are good with technology and skilled manufacturing trades, like Computer Numerical Control (CNC) machinists, welders, industrial maintenance technicians, and IT support experts can take on a variety of roles in many different fields. You can pursue a wide variety of trade careers based on your interests and career aspirations!





CHAPTER 4

TRADE CAREER PATHWAYS



CATEGORIES



CATEGORY

TECHNOLOGY

People who specialize in tech may design, maintain, install, support, or use important systems and software. If you enjoy working with computers, electronics, and other types of tech tools, a job in this industry might be right for you.

To find out more about each job pathway, click the buttons below.





Telecommunications Equipment Technician

The term “telecommunications” describes the long-distance exchange of information using devices like radios, televisions, phones, and the internet. Telecommunications technicians are trained professionals **who set up, manage, and repair telecommunications systems and equipment.** Telecommunications experts are indispensable when it comes to the smooth operation of systems such as the internet or office networks.



Median Pay

\$60,190 (experience, education, and location affect pay range)



Recommended Skills

- >> Ability to read and interpret technical plans and circuit diagrams
- >> Strong technical skills
- >> Good color vision to be able to differentiate between wires
- >> Manual dexterity to work with small parts
- >> Problem-solving ability to troubleshoot customer issues
- >> Clear communication skills to connect with customers
- >> Attention to detail



Training

Telecommunications technicians typically need at least a high school education or the equivalent. Some employers may prefer to hire people with a certificate or associate degree, which can be completed at a local or online community college or technical school. Both classroom instruction and hands-on work with a skilled technician are parts of a telecommunications technician’s training. For most telecommunications techs, training on the job lasts between a few months to several years.



Computer Support Specialist

A computer support specialist helps people and businesses with problems relating to their **computers' hardware, software, and networks**. Ensuring that users know how to use the technology at their disposal and that computer systems work smoothly is the primary responsibility of a computer support specialist. There are generally two main types of computer support specialists: help desk technician and technical support specialist.

- » **Help Desk Technicians** assist computer users with limited Information Technology (IT) experience and serve as the point of contact for customers who have questions or need help with general issues.
- » **Technical Support Specialists** help users solve complex technical problems related to hardware, software, and other more complicated computer-related issues.



Median Pay

\$59,660 (experience, education, and location affect pay range)



Recommended Skills

- » Understand fundamental networking concepts, IP addressing, and connectivity issues
- » Familiarity with computer hardware components, peripherals, and their functionalities
- » Familiarity with ticketing systems that manage help requests
- » Problem-solving skills to find creative solutions to problems and leverage available resources
- » Articulate technical concepts clearly and understandably, especially when assisting non-technical users
- » Collaborate effectively with other IT professionals and departments to resolve complex issues
- » Understand and empathize with users' frustrations while providing support



Training

Different computer support specialists have different entry criteria. Technical support specialists typically need an associate degree, while help desk technicians typically must complete some college courses to obtain the required knowledge to troubleshoot customer issues. However, a high school graduation and any applicable IT qualifications could be enough to qualify for either type of job. Training for these jobs often takes a year or two and includes formal classroom instruction and on-the-job training with seasoned computer specialists. Often, these jobs are linked to an official apprenticeship program.

CATEGORY

HEALTHCARE

At its core, healthcare is about caring for and helping people. Knowing that your efforts have a real impact on patients and their families makes a career in healthcare incredibly rewarding and desirable!

To find out more about each job pathway, click the buttons below.





Sonographer

Diagnostic medical sonographers, also known as ultrasound techs or ultrasonographers, **generate images or perform tests using specialized instruments.** Sonographers who perform diagnostic medical imaging are experts in producing ultrasounds and sonograms that depict the organs and tissues of the body. They collaborate closely with physicians and surgeons, who evaluate and diagnose medical conditions by analyzing the images and test results.



Median Pay

\$78,210 (*experience, education, and location affect pay range*)



Recommended Skills

- » Familiarity with medical knowledge and medical terminology
- » Knowledgeable about the anatomy of the human body
- » Precise attention to imaging protocols
- » Sharp eye for small changes in image results
- » Excellent hand-eye coordination
- » Strong communication skills for relaying imaging results clearly
- » Exceptional people skills for working with a wide range of patients and health professionals
- » Motivation to get patients the medical care they need



Training

Aspiring sonographers can become certified in several ways, but the most common approach is to complete a two-year degree program at an approved sonography training program. Some colleges and hospitals offer a one-year certificate program. However, to become certified, all diagnostic medical sonographers must pass their sonography exam. The prerequisites for taking the certification exam vary but may include graduating from an accredited program or a combination of experience and education. Specialized certifications within the diagnostic imaging field include breast, abdominal, or pediatric sonography.



Radiation Therapist

Radiation therapists are healthcare workers who specialize in **administering radiation therapy to patients**. High doses of radiation are often used as part of cancer treatment plans to kill harmful cells or decrease the size of malignant tumors. Beyond cancer, radiation therapy can also be used to treat a wide range of illnesses, such as benign tumors, blood disorders, and ailments affecting the thyroid, vascular system, and eyes. Although radiation therapists work with high-energy radiation, such as X-rays and gamma rays, radiation therapy is generally considered a safe profession as long as they adhere to safety protocols, regularly maintain the equipment, and participate in ongoing professional development throughout their career.



Median Pay

\$89,530 (*experience, education, and location affect pay range*)



Recommended Skills

- » Excellent technical skills / comfortable with technology
- » Knowledge of necessary machines and tools, including their designs, uses, repair, and maintenance
- » Strong problem-solving and critical thinking skills to work in a highly complex and rapidly evolving field
- » Ability to maintain composure in very difficult situations
- » Empathetic to others' needs and feelings
- » High physical stamina to stand for long periods of time
- » Strong communication and collaboration skills to work closely with many people



Training

Employers typically prioritize candidates with an associate or bachelor's degree in a healthcare-related field like, biology, science technologies, or radiation treatment. However, candidates can become eligible to be a radiation therapist through the completion of an accredited certification program. The Joint Review Committee on Education in Radiologic Technology (JRCERT) provides a comprehensive list of radiation therapy programs that have been officially recognized and approved. Radiation treatment programs consist of courses that cover radiation therapy procedures and underlying scientific theories.



Dental Hygienist

Dental hygienists work alongside dentists to help patients maintain good oral health by performing various tasks related to **cleaning teeth, assessing oral health, and educating patients on proper oral hygiene practices**. These professionals work closely with dentists to promote healthy teeth and gums.



Median Pay

\$81,400 (*experience, education, and location affect pay range*)



Recommended Skills

- >> Knowledge of dental conditions
- >> Strong motor functions to master tiny movements and become skilled at using small, sharp instruments with both hands
- >> Ability to observe visual details and abnormalities, through X-ray imagery or directly inside a patient's mouth
- >> Detail-oriented to complete patient evaluations and treatments
- >> Strong communication skills to communicate with patients about their dental routine, medical history, and to teach them about proper oral care
- >> Collaboration skills as dental hygienists will work with dentists, dental assistants, office administrators, and other dental hygienists
- >> Empathy and compassion to make sure every patient feels welcomed and comfortable during their visit



Training

Technical schools, community colleges, and universities offer dental hygiene programs. The Commission on Dental Accreditation, a division of the American Dental Association, grants accreditation to over 300 dental hygiene programs. The duration of programs is typically three years, during which learners receive instruction in various teaching environments, including classrooms, clinical settings, and laboratories.



Nuclear Medicine Technologist

Nuclear medicine technologists **work with radiopharmaceuticals**, which are radioactive medications, to assist doctors and surgeons with patient diagnoses. An example of this would be using specialized scanning equipment to take pictures of the patient's arm after injecting radiopharmaceuticals into their bloodstream. A radiologist would then analyze the scan results according to the amount of radioactivity in the image to determine where the patient's pain originated.



Median Pay

\$85,300 (*experience, education, and location affect pay range*)



Recommended Skills

- » Interested, capable, and comfortable using technology and large pieces of electronic equipment
- » Strong understanding of anatomy, physiology, and other sciences to assess whether dosage is accurate
- » Empathetic and compassionate to patients who may be nervous or concerned about their condition
- » Detail-oriented and able to follow instructions to ensure correct dosage and prevent overexposure to radiation
- » Strong communication skills to interact with patients and physicians
- » High physical stamina to stand for long periods and move patients who need assistance



Training

To get certified, Nuclear Medicine Technologists generally need to graduate from an approved nuclear medicine technology program. However, this can change from state to state and employer to employer. Usually, technologists need at least a two-year associate degree in nuclear medicine technology to become a certified technologist. Most Nuclear Medicine Technologists obtain a certificate to demonstrate to employers their expertise in the industry, even if their state does not require it. The Nuclear Medicine Technology Certification Board (NMTCB) recognizes the Joint Review Committee on Education Programs in Nuclear Medicine Technology (JRCNMT) as a programmatic accreditation agency.



Hearing Aid Specialist

Licensed Hearing Aid Specialists can **test a patient's hearing and help them get fitted for a hearing aid** that suits their customized needs. In addition to this, they not only make certain that the hearing aids are functioning appropriately after the fitting, but they also instruct patients on how to use them. Hearing evaluations are performed and interpreted by a hearing aid specialist directly or with a referral from a doctor. Hearing aid specialists work closely with audiologists in evaluating and tracking hearing problems.



Median Pay

\$59,960 (*experience, education, and location affect pay range*)



Recommended Skills

- >> Strong background knowledge of medical terminology
- >> Collaboration and teamwork skills to work with a team of professionals to provide the best care for patients
- >> Problem-solving skills to address issues that arise with a patient's hearing aid
- >> Technical proficiency to manually fix hearing aids and other communicative devices
- >> Strong communication skills to work with doctors, other medical staff, and patients
- >> Proficient in American Sign Language (although not a requirement, being fluent in ASL may provide an advantage in the job application process)



Training

A career as a hearing aid specialist requires at least a high school diploma, although some employers might prefer individuals with a certificate or an associate degree. Enrolling in a hearing aid specialist training program offered by vocational schools, community colleges, or specialized training institutions is the first step to becoming a hearing aid specialist. The training typically includes both classroom instruction and real-world practice. Hands-on experience is crucial for developing the skills to work with individuals with hearing loss, fit hearing aids, and provide ongoing care.



Licensed Practical Nurse (LPN) or Licensed Vocational Nurse (LVN)

An LPN (or LVN in Texas and California) is a certified healthcare professional who **assists registered nurses or physicians** with a variety of Typical Responsibilities. An LPN/LVN's responsibilities differ depending on the facilities in which they work and the states in which they are licensed. Some LPN/LVNs may have basic clinical responsibilities or be assigned supervisory responsibilities depending on the setting.



Median Pay

\$54,620 (*experience, education, and location affect pay range*)



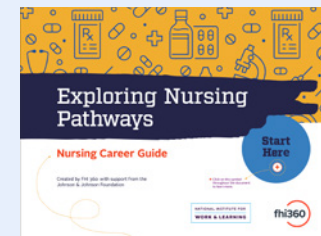
Recommended Skills

- » Strong background in medical terminology, math, and science
- » Comfortable working with digital platforms to deliver patient care and maintain records
- » Collaboration and teamwork skills to work with a team of professionals to provide the best care for patients
- » Empathy and compassion to make sure every patient feels comfortable
- » Quick decision-making skills
- » Problem-solving skills to address issues that arise
- » Strong communication skills to work with doctors, other medical staff, and patients



Training

A career as an LPN/LVN requires at least a high school diploma and the completion of an approved educational program. Community colleges, technical schools, and vocational schools offer these programs and typically take one to two years to complete depending on the structure of the program. LPN and LVN graduates need to pass the National Council Licensure Examination for Practical Nurses (NCLEX-PN) and apply for their professional LPN/LVN certification.



For more information on Nursing Pathways and Careers, visit the [Exploring Nursing Pathways eBook](#) linked [here](#).

CATEGORY

CONSTRUCTION

Do you enjoy physical labor, working with tools, and being exposed to a variety of working environments? If so, you might want to investigate careers in the construction industry!

To find out more about each job pathway, click the buttons below.





Heavy Equipment Operator

Drivers and operators of heavy equipment construct roads, bridges, buildings, and other structures. The machinery used by heavy equipment operators varies, but it may be used to move dirt, pave roads, lay foundation, and lift heavy objects at construction sites. Heavy equipment operators can specialize in various areas including operating engineers, paving and surface equipment operators, and pile driver operators.



Median Pay

\$51,050 *(experience, education, and location affect pay range)*



Recommended Skills

- » Ability to read, understand, follow, and enforce safety procedures
- » Knowledge of light and heavy equipment operation and maintenance
- » Knowledge of hand and power tools applicable to trade
- » Steady hands and strong hand-foot coordination are crucial requirements to control heavy equipment precisely and accurately
- » Knowledge of basic vehicle maintenance, including tire pressure, checking oil, and water levels



Training

After earning a high school diploma or equivalent, vocational training or participation in an apprenticeship program is strongly encouraged. Advances in technology have allowed vocational schools to include simulator training in their courses, so learners can gain experience working with the equipment in a virtual setting before operating real machines. Apprentices must complete a certain number of hours of instruction and paid on-the-job training during each year of their apprenticeship, which typically lasts three to four years. Apprentices learn about first aid, safety precautions, how to operate equipment, and grading plans during technical instruction.



Electrician

An electrician is a skilled tradesperson who specializes in **electrical system installation, maintenance, and repair**. Electricians work with various electrical components and systems, from basic household wiring to complicated industrial machinery. Their work is critical in ensuring that buildings, equipment, and appliances are powered safely and reliably. Electrical systems are necessary for practically every area of modern life; hence, the demand for electricians is generally steady across industries.



Median Pay

\$60,240 (*experience, education, and location affect pay range*)



Recommended Skills

- » Problem-solving skills to troubleshoot and identify electrical issues
- » Knowledge of basic electrical theory, electrical systems, circuits, and components
- » Able to read and interpret blueprints, schematics, and technical diagrams
- » Knowledge of safety measures
- » Good communication skills to effectively communicate and educate clients
- » Strong time management skills to efficiently complete tasks within deadlines
- » Ability to work in physically demanding environments, climb ladders, and lift heavy equipment
- » Manual dexterity and precision in handling power tools, small components, and wiring



Training

Most electricians train through apprenticeship. However, some may begin their training by attending a technical school or community college. Courses on circuitry, safety procedures, blueprint reading, residential wiring, and fundamental electrical information are some of the technical areas training programs will focus on. Graduates of these programs usually receive credit toward their apprenticeship. A typical electrician apprenticeship program can be completed in four or five years. Apprentices typically receive 2,000 hours of paid on-the-job training (equivalent to working full time) and some technical instruction each year of the program. Most states require electricians to be licensed; check with each specific state's relevant licensing board or authority to learn more about the requirements for obtaining an electrician license.



Plumber

A plumber is someone who **installs, repairs, and maintains plumbing systems**. Plumbing systems are made up of pipes, fixtures, and appliances that help distribute water, gas, and waste in residential, commercial, and industrial environments. Plumbers are responsible for ensuring that these systems perform properly and efficiently, allowing for clean water supply, appropriate drainage, and residents' overall health and safety. Plumbers have the option to specialize in various fields: residential, commercial, service and repair, water supply, sanitary, and construction plumbers are all types of plumbing specialties.



Median Pay

\$60,090 (*experience, education, and location affect pay range*)



Recommended Skills

- » Ability to read and interpret technical blueprints and circuit diagrams
- » Knowledge of plumbing installation, troubleshooting, and repair
- » Knowledge relating to new plumbing trends and technology
- » Ability to perform basic math
- » Able to use a wide range of hand and power tools
- » Clear vision, good coordination, and fine motor skills
- » Knowledge of plumbing code rules and regulations
- » Strong communication and customer service skills
- » Ability to work in physically demanding environments, including lifting and carrying heavy materials, crawling and maneuvering in tight spaces, and working for long hours standing, walking, and performing various tasks



Training

A high school diploma or equivalent is typically required to become a plumber, pipefitter, or steamfitter. Apprenticeships are the primary method by which plumbers, pipefitters, and steamfitters acquire their skills and knowledge. These apprenticeships typically span four or five years where learners receive both paid on-the-job training as well as technical instruction. Technical instruction, either through an apprenticeship program, vocational school, or a combination of the two, includes courses on safety, local plumbing codes and regulations, pipe system design, and the proper utilization of on-the-job tools.



Welder, Cutter, Solderer, and Brazer

These professionals are critical in many fields, such as manufacturing, construction, and repair. Welders, cutters, solderers, and brazers need to know how to use a range of tools and equipment, understand technical models, and follow the rules for quality and safety. **Welders, cutters, solderers, and brazers use remotely controlled or hand-held equipment, to heat and join, fill, or cut metal products.**

- » **Welders** join metals using a variety of techniques and processes. • [MORE INFO](#)
- » **Cutters** use heat produced by an electric arc or burning gases to cut and trim metal objects to specific dimensions. • [MORE INFO](#)
- » **Solderers and brazers** use equipment to create molten metal and join two or more metal objects. • [MORE INFO](#)



Median Pay

\$47,540 (experience, education, and location affect pay range)



Recommended Skills

- » Knowledge of raw materials, specific material make-up, and melting points
- » Strong spatial orientation skills to read and interpret two- and three-dimensional diagrams to fit metal products correctly
- » Knowledge of machines and tools, including their designs, uses, repair, and maintenance
- » Manual dexterity and stability to hold a position for an extended period of time
- » Sharp vision for seeing things up close
- » Ability to make precisely coordinated movements with fingers to grasp, manipulate, or assemble tiny objects
- » Strong attention to detail
- » Physical stamina to endure long periods in awkward positions while bending, stooping, or standing
- » Physical strength to lift heavy pieces of metal and equipment



Training

A high school diploma and completion of technical training are often required to enter this field. Depending on location, this type of training may be available through high school career and technical education (CTE) programs. If interested in pursuing a career in this field upon graduating from high school, additional training is available through local vocational institutes, community colleges, and commercial welding, soldering, and brazing schools. It's also possible to enter this field through an employer-based apprenticeship program. Regardless of experience and training, there is still a period of on-the-job training for anyone interested in pursuing this type of career.



Carpenter

Carpenters **build, install, and fix a wide variety of structures and objects made of wood, such as buildings, furniture, and cabinets.** Carpenters are involved with various projects, from building and framing structures to crafting furniture and other wooden objects. Their work is very important in the construction business and requires many skills. A carpenter can work for themselves, with construction companies, or in the manufacturing and fabrication industry. Many carpenters also work with other materials, such as metal, plastic, or concrete, depending on the specific job requirements.



Median Pay

\$51,390 (*experience, education, and location affect pay range*)



Recommended Skills

- » Basic math skills to calculate accurate measurements
- » Physical strength to lift and move heavy materials and tools
- » Strong communication and collaboration skills as carpenters often work as part of a team to complete a project
- » Extreme precision to make safe, permanent structures
- » Strong problem-solving skills so that the structures they work on are complete in form and function
- » Knowledge of a variety of machines and tools, such as power saws, cranes, and drills
- » Acute physical dexterity with nimble fingers



Training

Most employers in this field require applicants to have a high school diploma or equivalent. While certain trade colleges do offer associate degrees in carpentry, most people who work as carpenters learn the trade through apprenticeships or on-the-job training. Throughout training, apprentices learn carpentry basics, math applications, building code requirements, blueprint reading, and safety and first aid practices. Apprentices learn the fundamentals of carpentry by helping more experienced carpenters or other construction professionals with basic duties like measuring and cutting wood. They then progress to more complex tasks, like reading blueprints and building structures. In a standard apprenticeship program, trainees must log 7,000 hours in paid on-the-job training and 640 hours of technical instruction each year.



Heating, Ventilation, and Air Conditioning (HVAC) Technician

HVAC systems are essential to houses, supermarkets, office buildings, factories, airports, hotels, or any other indoor space. To maintain healthy indoor air quality and efficient heating and cooling, every building, whether commercial or residential, needs a reliable HVAC system. HVAC technicians are professionals that **install, maintain, and repair systems for heating, ventilation, air conditioning, and refrigeration (HVACR)**. These technicians play a vital role in keeping homes, businesses, and other facilities at the appropriate temperature for the well-being of their goods and occupants.



Median Pay

\$51,390 (*experience, education, and location affect pay range*)



Recommended Skills

- » Knowledgeable about electrical systems, refrigerants, airflow principles, and safety protocols to perform their tasks effectively
- » Basic math skills are essential for calculating measurements, determining load requirements, and adjusting HVAC systems
- » Physical fitness to move and lift heavy equipment, work in confined spaces, and spend extended periods standing or kneeling
- » Strong analytical thinking, problem-solving skills, and the ability to work independently or as part of a team
- » Strong foundation in the principles of heating, ventilation, and air conditioning systems
- » Attention to detail is crucial in ensuring that all components are correctly installed and functioning
- » Good communication and interpersonal skills are essential for dealing with clients
- » Effective time management is vital to ensure that appointments are met, and projects are completed on schedule



Training

Formal education and training through vocational schools, community colleges, or apprenticeship programs are common paths to becoming an HVAC technician. An apprenticeship in the HVAC industry is an excellent way to gain practical experience and secure rewarding employment. Certification from an appropriate industry organization can boost credibility and job prospects. HVAC apprenticeship programs are provided by various regional organizations, including the Associated Builders and Contractors and the Air Conditioning Contractors of America. The duration of these programs can range from three to five years.

CATEGORY

ENVIRONMENTAL

If you are interested in pursuing a career that empowers you to create a greener future for generations to come, consider exploring careers in the environmental sustainability pathway.

To find out more about each job pathway, click the buttons below.





Wind Turbine Technician

A wind turbine technician, also known as a wind tech or wind turbine service technician, is responsible for the **maintenance and repair of the various components of wind turbines**. These turbines are massive mechanical structures designed to convert wind energy into electricity. By ensuring that wind turbines harness wind energy to produce electricity efficiently and dependably, these technicians fulfill an essential function within the renewable energy sector. The growing wind energy sector and the movement to use more renewable energy sources rely heavily on wind turbine technicians.



Median Pay

\$57,320 (experience, education, and location affect pay range)



Recommended Skills

- >> Strong mechanical skills
- >> Acute physical dexterity with nimble fingers
- >> Comfortable with heights and working in confined spaces
- >> Physical strength and stamina to climb ladders at heights greater than 260 feet with tools and equipment
- >> Strong critical thinking skills for troubleshooting issues
- >> Detail-oriented



Training

Wind turbine technicians commonly enroll in technical institutes or community colleges, where they can obtain a certificate in wind energy technology or opt for an associate degree. Wind tech education encompasses practical learning and comprehensive instruction on the maintenance of brake and mechanical systems, electrical and hydraulic systems, and logic control systems. Wind turbine technicians often attend specialized training or apprenticeship programs to learn the details of the industry. Once complete, apprentices must pass the American Society of Mechanical Engineers (ASME) certificate exam to become licensed wind turbine technicians.



Solar Panel Installer

Solar panel installers are responsible for **installing solar panels on rooftops and structures** to harness solar energy and transform it into sustainable, renewable power. Installers are also responsible for performing routine maintenance on solar panels and ensuring the wiring systems are efficient and safe. Solar panel installers are essential in the expanding renewable energy sector as they promote solar technology and contribute to a more sustainable and eco-friendly energy environment.



Median Pay

\$45,230 (experience, education, and location affect pay range)



Recommended Skills

- >> Comfortable working on roofs, ladders, or lifts that are far above the ground
- >> Strong communication and collaboration skills
- >> Basic math skills to calculate angles, measurements, and areas
- >> Strong electrical and mechanical skills
- >> Detail-oriented and can carefully follow instructions
- >> Physical strength to lift heavy equipment and materials weighing up to 60 pounds



Training

There are multiple paths to becoming a solar panel or solar photovoltaic (PV) installer. These workers typically need a high school diploma and additional training at technical schools, community colleges, or through apprenticeship programs. When working through an apprenticeship program alongside more experienced installers, most PV installers quickly pick up the required skills! Typically, on-the-job training lasts one month to one year. During training, PV installers learn how to install solar panels in addition to learning about safety protocols, the different types of tools that are used on the job, and various PV system installation techniques.



Water Treatment Plant Operator

Water treatment plant operators **ensure the safety and purity of drinking water for households and businesses.** They operate and maintain various water treatment plant equipment and procedures such as sedimentation, filtration, and disinfection. Water treatment plant operators oversee and assess water quality indicators such as pH, turbidity, and chlorine levels to guarantee the safety of drinking water. They play an essential role in protecting public health by ensuring drinking water is safe. They can work in both public and private water treatment plants and frequently work in groups alongside other operators, supervisors, and managers.



Median Pay

\$51,600 (*experience, education, and location affect pay range*)



Recommended Skills

- >> Strong mathematical, mechanical, and science (especially chemistry) skills
- >> Excellent interpersonal, verbal, and written communication skills
- >> Strong collaboration skills to work effectively with other plant operators, technicians, and maintenance staff
- >> Knowledge of chemicals used in water treatment and the ability to handle and dose them accurately
- >> Knowledge of the principles and processes involved in water treatment, including coagulation, flocculation, sedimentation, filtration, disinfection, and distribution
- >> Ability to identify and address issues related to water quality, equipment malfunctions, and system failures



Training

A high school diploma and extensive on-the-job training are often required for water and wastewater treatment plant and system operators. Water and wastewater treatment is complicated; consequently, trainees must work under an experienced operator to gain the knowledge they need to perform their duties. Training includes reading meters, collecting wastewater and sludge samples, and repairing plant equipment. They also learn about environmental regulations, occupational safety, and the use of personal protective equipment (PPE). In bigger treatment plants, on-the-job training is often integrated with classroom or self-paced learning.

CATEGORY

MECHANICS

If you enjoy tinkering, working with your hands, and problem solving, working as a mechanic could provide you with the perfect balance of engagement and productivity.

To find out more about each job pathway, click the buttons below.





Auto Mechanic

Auto mechanics are **skilled tradespeople who work on a wide range of vehicles**. They evaluate and examine automobiles brought into a service or repair shop. They connect with clients to gather critical information about their troubles with their automobiles to diagnose problems and propose solutions. Auto mechanics also undertake routine maintenance according to the timetables set by the vehicle's manufacturer. Routine maintenance involves changing the engine oil, checking tire pressure, ensuring the brakes are reliable, and inspecting and replacing wires, spark plugs, and distributor caps.



Median Pay

\$46,970 (experience, education, and location affect pay range)



Recommended Skills

- >> Excellent customer service skills
- >> Detail-oriented to notice small details when inspecting or repairing vehicle systems because mechanical and electronic malfunctions are often due to misalignments and other easy-to-miss causes
- >> Steady hands and good hand-eye coordination
- >> Familiar with engine components and systems
- >> Physical strength to lift and maneuver heavy parts such as engines and body panels
- >> Familiar with control systems and repair techniques
- >> Proficiency with general shop tools and equipment
- >> Excellent active listening, problem-solving, and communication skills



Training

For entry-level positions, completion of a vocational or other post-high school education program in automotive service technology is considered the best way to prepare for a career as an auto mechanic. Programs typically last six to 12 months and provide career preparation through hands-on experience and classroom education. Short-term certificate programs exist in certain subjects, such as brake maintenance, suspension and steering, hybrid and electric vehicles, engine performance, and many others. Additionally, some auto mechanics choose to get their associate degree in automotive service technology. Those that do usually need little on-the-job training. On the other hand, auto mechanics who still need to complete high school or the equivalent typically begin as trainee technicians, technicians' assistants, or lubricant workers. Working with professional mechanics and technicians helps them gain the knowledge and expertise needed to transition into more complex roles.



Marine Mechanic

A marine mechanic, also known as a boat mechanic or marine service technician, is an expert that specializes in the **repair, maintenance, and troubleshooting of marine engines and equipment**. Their knowledge is critical for keeping boats and other watercraft in good working condition. They play an important part in guaranteeing boat safety and reliability, allowing boat owners to enjoy their time on the water while assuring the longevity of their watercraft. The marine industry includes both domestic and international services and provides several work opportunities for those interested in water transportation.



Median Pay

\$48,280 (experience, education, and location affect pay range)



Recommended Skills

- » Skillful hands to complete tasks, as marine mechanics primarily use hand tools such as wrenches, pliers, and screwdrivers
- » Knowledgeable about hydraulic components and systems
- » Ability to troubleshoot issues to discover what caused a technical issue
- » Effective communication to write maintenance reports for a supervisor to review
- » Computer literacy to perform diagnostic testing of equipment to find technical issues
- » Attention to detail
- » Although not required, knowing how to swim is a recommended skill



Training

While many entry-level marine mechanic jobs only require a high school diploma, it's possible to qualify for more opportunities by pursuing further education. Many marine mechanics attend a technical school or community college to learn the theoretical and practical aspects of marine technology, which could take up to two years to complete. Programs also teach maintenance and reliability courses, which are crucial to marine mechanics. After completing courses at a technical school or community college, participating in an apprenticeship program is typically the next career step for marine mechanics. Most marine mechanics take three to four years to complete an apprenticeship and at least one year to earn relevant certifications in marine technology.



Aircraft and Avionics Equipment Mechanic and Technician

Aircraft and avionics equipment mechanics and technicians are experts who **check, maintain, and repair airplanes and their avionics systems**. Aircraft mechanics and technicians play an important role in aviation safety by ensuring that the airplane's systems are functioning properly and meet regulatory requirements so that the aircraft is safe to fly. Their work is critical to properly operating all aircraft, from small general aviation planes to large commercial airliners.



Median Pay

\$70,740 (experience, education, and location affect pay range)



Recommended Skills

- » Interest in aircraft systems, electrical systems, mechanics, and avionics equipment
- » Ability to interpret wiring diagrams
- » Ability to identify and analyze issues through systematic troubleshooting and diagnostic procedures
- » Strong problem-solving skills to find effective solutions to complex mechanical and avionic problems
- » Perform tasks with precision and attention to detail
- » Effective communication and collaboration skills
- » Ability to adapt to changing situations, such as varying work schedules, unexpected issues, or evolving aviation technology
- » Good hand-eye coordination and manual dexterity
- » Endurance for tasks that may involve standing, bending, and lifting heavy components



Training

Some aircraft and avionics equipment mechanics and technicians train at a Federal Aviation Administration (FAA) approved aviation maintenance technician school. Others are trained on the job or through military training. Some aviation mechanics and service technicians get FAA certified after graduating high school and going through extensive on-the-job training. Maintenance workers work under supervision until they obtain the knowledge and experience needed to become certified. In total, the process of becoming a certified avionics mechanic can take anywhere from two to five years, depending on the chosen educational path, work experience, and the time taken to meet the FAA's practical experience requirements.



Machinist

Machinists are highly trained professionals who have a thorough understanding of materials, tools, and machine operations. Their primary responsibility is **setting up, programming, and running machine tools such as lathes, milling machines, grinders, or Computer Numerical Control (CNC) machines to manufacture precision components and parts** to specific requirements. Machinists play an important part in the manufacturing business, producing components needed in various industries such as automotive, aerospace, electronics, and others. Aerospace machinists, prototype machinists, maintenance machinists, production machinists, tools and die makers, CNC machinists, and manual machinists are examples of different machinists' roles.



Median Pay

\$49,560 (*experience, education, and location affect pay range*)



Recommended Skills

- » Able to read and interpret technical blueprints, models, and specifications for building parts
- » Manual dexterity, agility, and concentration to work with precision and accuracy, sometimes within 0.0001 of an inch
- » Mechanical skills to operate milling machines, lathes, grinders, laser and water jetting machines, wire electrical discharge machines, and other machine tools
- » Physical stamina to stand for long periods of time and perform repetitive actions
- » Technical skills to work with computer-aided design (CAD) and computer-aided manufacturing (CAM) technology, CNC machine tools, and computerized measuring machines



Training

Although machinists require a high school diploma to begin their career, most attend community colleges and technical schools that offer two-year degree programs or shorter non-degree certificate programs to prepare them for their role as a machinist. Trainees typically learn through technical training in a classroom or workshop and through on-the-job training, including first-hand experience. Trainees frequently begin as machine operators and progress to increasingly complex tasks. Some new employees enroll in apprenticeship programs, which are usually sponsored by their employer. Apprenticeship programs commonly extend years and consist of technical instruction and paid on-the-job training.



Elevator Technician

An elevator technician **installs, maintains, and repairs elevators, escalators, and other vertical transportation systems**. These systems are vital in many buildings, including residential complexes, offices, hospitals, shopping centers, and more. Elevator technicians are responsible for ensuring these systems' safe and efficient operation. Elevator technicians are classified into several types, each specialized in a distinct aspect of elevator installation, maintenance, and repair. Regardless of their specific role, they must have detailed knowledge of electrical wiring and operations and mechanics, as well as experience using a variety of tools needed to perform their required tasks.



Median Pay

\$99,000 (*experience, education, and location affect pay range*)



Recommended Skills

- >> Comfortable working with heights and in tight spaces (atop ladders, mechanical lifts, or in elevator shafts)
- >> Meticulous in keeping track of servicing schedules
- >> Proficient in reading and following blueprint directions
- >> Strong mechanical skills to use a variety of power and hand tools
- >> Physical strength to lift heavy equipment and parts weighing up to 200 pounds
- >> Strong problem-solving skills to diagnose problems during repairs



Training

Elevator and escalator technicians are generally required to have a high school education or the equivalent. A four-year apprenticeship program offered by a union, industry group, or company often precedes a career in elevator or escalator installation and repair. Apprentices must complete a defined number of hours of technical instruction and paid on-the-job training for each year of an apprentice program. Throughout their training, technicians will learn about electrical and digital theory, electronics, blueprint reading, mathematics, physics, elevator and escalator parts, and safety.

CATEGORY

SERVICE & LOGISTICS

The service and logistics industries are incredibly diverse, covering a wide range of job sectors. Working in the service and logistics industries requires a combination of interpersonal communication and technical skills. If you have an easy time connecting and communicating with people, a career in service or logistics could be right for you!

To find out more about each job pathway, click the buttons below.





Cosmetologist

A cosmetologist is a beauty industry specialist focusing on **hair, skin, and nail treatments**. These professionals are trained and certified to provide a variety of cosmetic treatments and services to their clients to improve their physical appearance. The beauty industry is full of opportunities for cosmetologists, who can find employment in a wide variety of settings including sales, salons, spas, and other beauty establishments. Experienced, expert cosmetologists can work in the film, television, and theater industry, designing looks for actors and performers. Cosmetologists that also have an interest in sales can work as cosmetics sales representatives, makeup sales representatives, or beauty advisers.



Median Pay

\$33,400 (*experience, education, and location affect pay range*)



Recommended Skills

- » Excellent communication and customer service skills to interact with clients to build and retain clientele
- » Knowledgeable about the latest beauty trends and products
- » Attention to detail to create customized looks
- » Adhere to strict health and safety regulations to ensure that their services are provided in a clean and sanitary environment
- » Physical stamina to stand for long periods
- » Ability to keep a neat personal appearance so that clients feel comfortable and want to return
- » Strong time-management skills to keep appointments and services on schedule



Training

Barbers, hairstylists, and cosmetologists are typically required to graduate from a state-approved cosmetology or barber program. Admission requirements for these programs vary by state, with some needing a high school diploma or equivalent to enroll. Programs typically consist of a combination of classroom and hands-on instruction and lead to a certificate or other postsecondary non-degree award. In all states, barbers, hairstylists, and cosmetologists must be licensed.



Security Guard

A security guard is a trained professional hired to **protect people, property, and assets from potential threats** such as theft, vandalism, and unlawful entry. A security guard is in charge of keeping a safe and secure environment in a variety of contexts, including commercial premises, residential complexes, events, and public spaces. Their primary duties include patrolling and monitoring defined locations, enforcing rules and regulations, and responding to security problems in order to protect the safety of people and property. Security personnel must always be ready to respond to emergencies or deter violent acts while protecting people or property.



Median Pay

\$34,770 (*experience, education, and location affect pay range*)



Recommended Skills

- » Keen observation skills to detect unusual or suspicious activities and identify potential security threats
- » Effective communication to convey information clearly, concisely, and professionally
- » Physically fit to handle tasks such as patrolling, standing for long periods, or responding quickly to emergencies
- » Critical thinking skills to make sound decisions in high-pressure situations or emergencies
- » Strong customer service skills are valuable for providing assistance, answering questions, and maintaining a positive and professional demeanor
- » Ability to act ethically, with integrity, and have strong sense of responsibility
- » Basic understanding of the laws and regulations relevant to the role, including those related to the use of force, trespassing, and detainment



Training

Although most organizations provide their own training for newly hired security guards, the amount of training varies depending on the company and location. Many states require eight hours of pre-assignment training, eight to 16 hours of on-the-job training, and eight hours of annual training for security guards. Among the many specialized areas covered in security guard training are crisis prevention, public relations, report writing, first aid, and protection. If interested in working as an armed guard, it's important to note that because they are required to learn how to use firearms, armed guards undergo more extensive training and require special clearances.



Flight Attendant

A flight attendant is a member of an airline’s cabin crew who **ensures customers’ safety and comfort during flights**. Flight attendants assist passengers by greeting them, demonstrating safety protocols, offering food and drinks, and responding to passenger requests. They also play an important role in emergency situations by delivering first aid and directing passengers to safety. Passengers rely on flight attendants to provide exceptional customer service. As such, they must have excellent communication skills, a pleasant manner, and an ability to remain calm under duress. Despite challenges, many people are drawn to working as flight attendants because it allows them to travel, meet new people, and learn about different cultures.



Median Pay

\$63,760 (experience, education, and location affect pay range)



Recommended Skills

- » Patience, empathy, and the ability to handle challenging situations with professionalism
- » Clear and effective communication for conveying safety instructions, providing information to passengers, and coordinating with the flight crew
- » Ability to remain calm during emergency situations or unexpected events
- » Cultural sensitivity and awareness
- » Physical stamina to stand for extended periods, lift luggage, and move through the aircraft
- » Attention to detail when performing safety checks, serving meals, and ensuring the cleanliness and orderliness of the cabin
- » The Federal Aviation Administration (FAA) requires all flight attendants to pass a criminal background check
- » Many airlines require flight attendants to have current CPR and first aid certifications



Training

A high school degree or equivalent and one-to-two years of previous experience working in customer service are often required for employment as a flight attendant. Airlines often provide initial training for flight attendants that can take anywhere from a few weeks to a few months after being hired. The training is required for FAA certification and often takes place at a flight training center, which is owned and operated by the airline. During the training, participants are instructed in various emergency measures and are given detailed instructions on relevant flight regulations, company procedures, and work responsibilities. After successfully completing their initial training, newly hired flight attendants are awarded the FAA Certificate of Demonstrated Proficiency. Additionally, flight attendants are required to continue receiving extra on-the-job training as requested by their employer.



Commercial Truck Driver

A commercial truck driver **transports goods and supplies from one point to another** using big vehicles known as commercial trucks or tractor-trailers. These drivers are essential in the transportation and logistics industries, ensuring products are delivered efficiently and on time. Truck drivers are frequently in high demand since they play an essential part in transporting goods that support various economic activities.



Median Pay

\$49,920 (*experience, education, and location affect pay range*)



Recommended Skills

- » Excellent hand-eye coordination to react appropriately and quickly while driving
- » Ability to stay calm in stressful situations
- » Excellent hearing, as federal regulations require that a driver be able to hear a forced whisper in one ear at five feet away
- » Good physical health, as federal regulations prohibit individuals with medical conditions that could impair their ability to operate a vehicle from becoming truck drivers.
- » Excellent vision to see at least 20/40 vision with a 70-degree field of vision in each eye and the ability to distinguish the colors on a traffic light
- » Ability to sit for extended periods of time



Training

A high school graduate or equivalent can enroll in a private truck-driving school or a three- to six-month community college program. During these programs, they will learn about traffic laws and regulations, vehicle operation and safety, cargo handling, on-road driving practices, and customer service skills. Many weeks of on-the-job training are typically provided to drivers after they finish truck driving school and are employed by a company. During this time, they will be paired with an experienced mentor-driver until training is complete. All long-haul truck drivers must have commercial driver's license (CDL), which requires all applicants to pass both a writing and skills exam.



Chef & Head Cook

Any business that serves food has a chef or head cook on staff whose job is to **oversee all aspects of the kitchen**. This includes hotels, restaurants, and even cruise liners! Chefs are commonly thought to work primarily with food; however, they frequently spend many hours handling other elements of the business such as scheduling, placing supply orders, creating new menu items, and communicating directly with the people they serve. A few types of chefs include Executive Chef, Sous Chef, Saucier Chef, Grill Chef, and Vegetable Chef. Additional careers in the culinary industry with similar roles and responsibilities include Research and Development Chef, Personal Chef, Recipe Developer, Caterer, and Pastry Chef.



Median Pay

\$56,520 (experience, education, and location affect pay range)



Recommended Skills

- >> Excellent hand-eye coordination
- >> Able to work quickly and efficiently while still maintaining the highest quality standards
- >> Capable of functioning in a high stress environment
- >> Strong math and business skills for preparing budgets, setting prices, and managing employees
- >> Strong communication skills
- >> Creativity to develop and prepare interesting and innovative recipes
- >> Physical stamina to stand throughout the day for extended periods of time
- >> Strong sense of taste and smell



Training

To work as a chef or head cook, a high school diploma or GED and some job experience is typically required. Although postsecondary education is not always necessary, many learners enroll in programs at community colleges, technical schools, culinary arts schools, and four-year institutions. Learners in culinary programs spend the majority of their time in kitchens, enhancing their cooking skills and acquiring a variety of cooking techniques. Others learn through apprenticeship or mentorship programs, in which learners work closely with an experienced chef to gain the same abilities as those taught in a formal education program.



Massage Therapist

A massage therapist works with the body's muscles and soft tissues by using their hands to alleviate pain. Massage therapy aims to **help people relax, relieve stress, ease muscle tension, recover from injury, and improve their general health.**

Massage therapists use different hand methods, like kneading, stroking, compression, and stretching, to help with specific problems or to relax people in general.



Median Pay

\$49,860 (*experience, education, and location affect pay range*)



Recommended Skills

- » Physical strength and dexterity to exert pressure through a variety of movements when manipulating a client's muscles
- » Strong communication skills to listen carefully and convey information clearly
- » Decision-making skills to evaluate each client's needs and recommend treatment
- » Compassionate and sympathetic to their client's concerns
- » Trustworthy and protective of client confidentiality
- » Strong interpersonal skills to make clients feel comfortable
- » Physical stamina to stand throughout the day for massage appointments
- » Strong time-management skills to keep appointments on schedule



Training

Private independent schools, community colleges, or other public postsecondary institutions commonly offer massage therapy education programs. Applicants to massage therapy programs typically need at least a high school diploma or equivalent. The program typically encompasses a combination of theoretical instruction and practical use of massage techniques. The duration for receiving a diploma or certificate varies depending on the program. Depending on the state, programs range from 500 to 1,000 hours of in-class instruction and practical training. Depending on the structure of the curriculum, this could take anywhere from two months to two years to complete. Graduation from an approved massage therapy program, passing a certification exam, and registering with the state are all required to becoming a certified massage therapist.



CHAPTER 5

**BRIDGING
ACADEMICS**
and **TRADES**



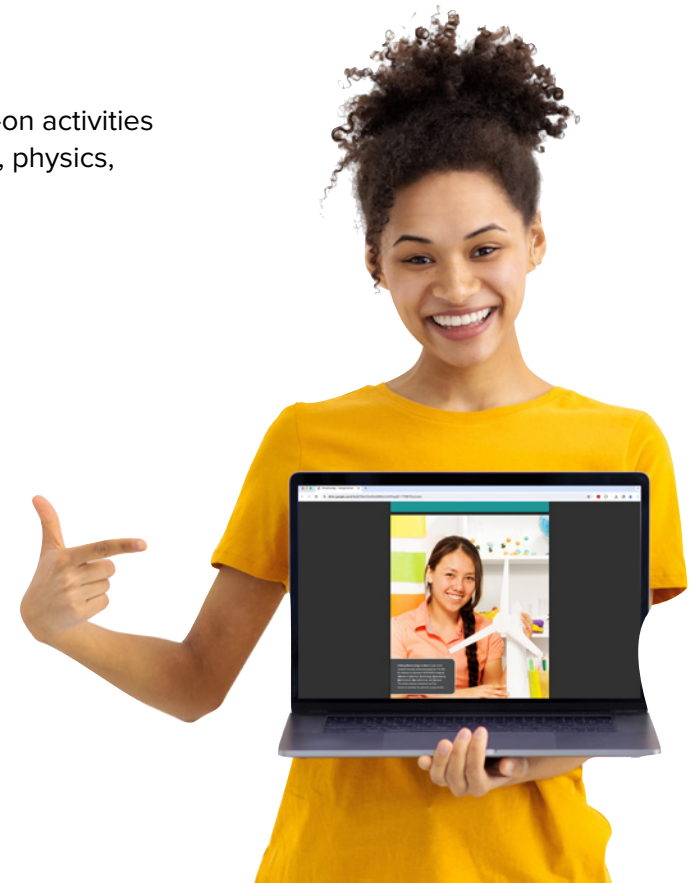
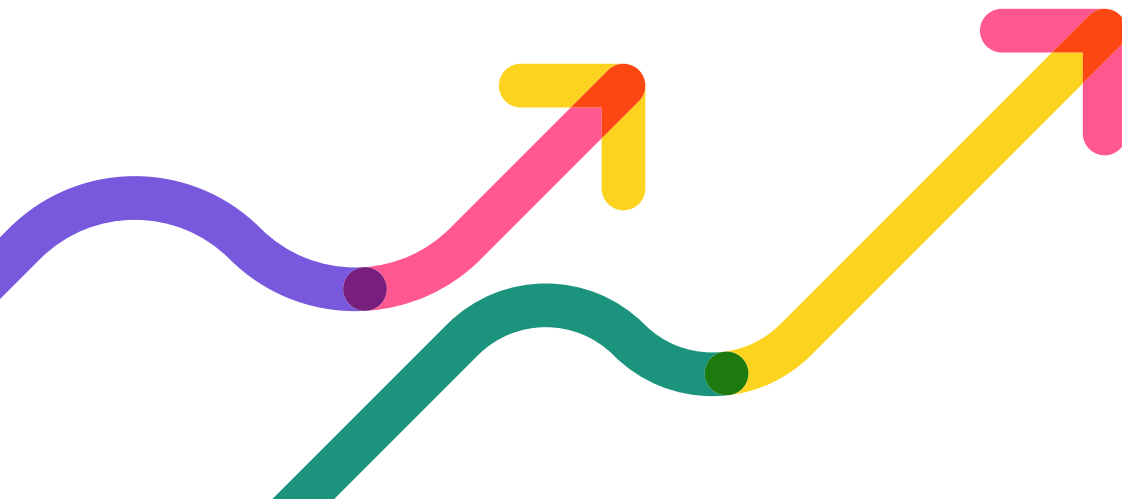


BRIDGING ACADEMICS AND TRADES

Are you interested in exploring the connections between what you are learning in school and specific trades?

In this chapter, you can investigate various trade careers through a variety of hands-on activities that connect trade careers to topics you've explored in the classroom like chemistry, physics, mathematics, and more!

If you are curious to learn more, keep exploring!





CATEGORY 1

Technology

Highlighting basic technology



People with technical skills can perform specialized tasks and are in high demand in today's workforce. In this activity, you will use circuits to design a hidden alarm, and like many improvements in technology, the smaller the better.

CATEGORY 2

Healthcare

Highlighting dental hygienists

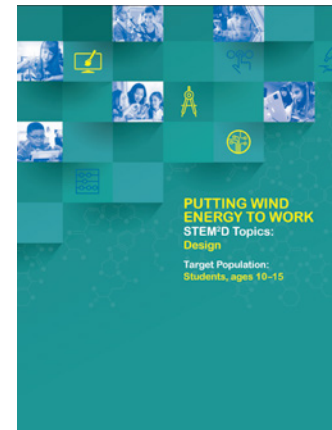


Did you know that the types of beverages you drink has an impact on the color of your teeth? This is due to the different levels of acidity that are found in certain beverages like coffee, soda, and juice. In this activity, you will learn about the effects different types of drinks have on teeth and the importance of brushing.

CATEGORY 3

Environmental

Highlighting wind turbine technicians



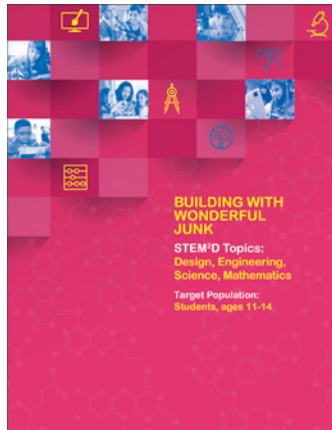
Wind energy is one of the fastest-growing energy sources in the world. Wind energy is a clean and renewable energy source that is cost effective and has zero greenhouse gas emissions. In this activity, you will learn how wind is used to generate energy by designing a wind turbine.



CATEGORY 4

Construction

Highlighting design & construction



Are you creative and enjoy building things with your hands? In this activity, you will plan and build a large, stand-alone building using recyclable materials like cereal boxes, egg cartons, plastic cups, foil, and plastic bottles. When designing your building, you must take into account your building's beauty in addition to its structure.

CATEGORY 5

Mechanics

Highlighting elevator mechanics



Would you prefer to climb to the top of a 50-story building or take an elevator to the top instead? Elevators revolutionized vertical transportation, increased accessibility, and improved efficiency. In this activity, you will use basic supplies to build a working model of a hydraulic elevator to move an object up and down.

CATEGORY 6

Customer Service

Highlighting cosmetologists



Are you fascinated by the fast-fizzing action of a bath bomb? Have you ever wondered what causes this type of chemical reaction? In this activity, you will make your own bath bomb and explore how changing the amounts of the different ingredients changes the fizziness of the bath bomb.



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APPENDIX A

Angie's List:

- » [Angi \(formerly Angie's List\): Home Service Pros & Reviews](#)

Apprenticeships:

- » [Homepage | Apprenticeship.gov](#)

Career and Technical Student Organizations:

- » Business Professionals of America: [Home - Business Professionals of America \(bpa.org\)](#)
- » DECA: [DECA Inc.](#)
- » Family, Career and Community Leaders of America: [Homepage | FCCLA \(fcclainc.org\)](#)
- » Future Business Leaders of America: [FBLA Home - Future Business Leaders of America](#)
- » HOSA, Future Health Professionals: [HOSA – Future Health Professionals](#)
- » National Future Farmers of America (FFA) Organization: [FFA - Preparing Members for Leadership and Career Success](#)
- » SkillsUSA: [Home | SkillsUSA](#)
- » Technology Student Association: [Technology Student Association \(tsaweb.org\)](#)

Free Application for Federal Student Aid (FAFSA):

- » [FAFSA® Application | Federal Student Aid](#)

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