

STEM Career Pathways

Science, Technology, Engineering and Math (STEM) related career pathways are receiving increased focus nationally, because these are areas that are growing in terms of opportunity and because each pathway includes suggested areas of focus in building skills and knowledge that prepare candidates to step into these pathways. These pathways often include apprenticeship as a strategy for businesses in establishing their skilled workforce.

Often, young people with disabilities are either not exposed to opportunities in STEM careers, or they do not see these opportunities as options that are available to them. This is where increased knowledge and awareness, along with established pathway supports in local communities can make a difference in how young people with disabilities are prepared and included in these pathways.

Opportunities for STEM careers are not the same in every community, but the following are examples of STEM careers for exploration and consideration:

- 1.Information Technology
- 2.Technical Trades
- 3.Healthcare
- 4.Environmental/Clean Energy
- 5.Advanced Manufacturing
- 6.Transportation Technology

Information Technology (IT)

This pathway is a fit for people interested in solving problems, working with computers, and staying ahead of technology trends. The IT field offers diverse career opportunities with strong job growth and earning potential! Careers in IT include:

- **Software Developer** – Designs and builds applications for various industries
- **Cybersecurity Analyst** – Protects organizations from cyber threats
- **Network Administrator** – Maintains computer networks and systems
- **Data Analyst** – Interprets data to help businesses make informed decisions

IT jobs exist in nearly every industry, from healthcare to finance to government.

Training opportunities include:

- **IT apprenticeships** offer hands-on experience while earning a paycheck
- Industry-recognized certifications such as **CompTIA, Cisco, AWS, or Microsoft** boost job opportunities
- Many employers provide **on-the-job training and tuition assistance**

Individuals who enjoy the following might be interested in IT careers:

- Problem-solving and logical thinking
- Working with computers and technology
- Learning new software and programming languages
- Analyzing data and finding patterns

Key skills for this pathway include:

- **Technical Skills:** Coding, networking, cybersecurity, cloud computing
- **Soft Skills:** Problem-solving, critical thinking, communication
- **Certifications or Degrees:** IT certifications, associate or bachelor's degree in computer science

How to get started:

- Take **computer science or coding courses** in high school or college
- Earn industry certifications like **CompTIA A+, AWS, or Cisco Certified Network Associate (CCNA)**
- Apply for IT **apprenticeships or internships**
- Connect with local **training programs and workforce development boards**

Technical Trades

This pathway appeals to people who enjoy working with their hands, solving technical problems, and seeing the results of their work. Careers in technical trades offer job security, great pay, and opportunities for advancement in a variety of industries. These careers include:

- **Electrician** – Installs and repairs electrical systems in homes, businesses, and factories
- **HVAC Technician** – Installs and maintains heating, ventilation, and air conditioning systems
- **Welder** – Uses specialized equipment to join metal parts for construction and manufacturing
- **Plumber** – Installs and repairs pipes, water systems, and drainage systems

Skilled trades are in high demand, and many jobs offer strong wages without requiring a four-year degree. Training opportunities include:

- Most **technical trades offer paid apprenticeships**, combining classroom instruction with hands-on training
- Certifications such as **OSHA safety training, Journeyman Licenses**, and **industry-specific credentials** improve job prospects

Individuals who enjoy the following might be interested in Technical Trades careers:

- Working with your hands and tools
- Problem-solving and troubleshooting
- Building and fixing things
- Working in different environments (indoors, outdoors, on-site)

Key skills for this pathway include:

- **Technical Skills:** Electrical wiring, blueprint reading, mechanical knowledge, welding techniques
- **Soft Skills:** Critical thinking, teamwork, adaptability, time management
- **Certifications or Degrees:** Apprenticeship programs, OSHA certifications, state licensing

How to get started:

- Take **shop, engineering, or construction courses** in high school
- Apply for **apprenticeships with unions or trade organizations**
- Enroll in **technical school or workforce training programs**
- Earn industry certifications such as **OSHA 10, Journeyman Licenses, or HVAC Certification**

Healthcare

This pathway appeals to people who are passionate about helping others and interested in science. The healthcare industry offers a wide range of career opportunities with strong job growth and high demand for skilled professionals.

These careers include:

- **Registered Nurse (RN)** – Provides direct patient care and treatment
- **Medical Laboratory Technician** – Conducts lab tests to assist in diagnosing diseases
- **Emergency Medical Technician (EMT)** – Responds to medical emergencies and provides life-saving care
- **Pharmacy Technician** – Assists pharmacists in preparing and dispensing medications

Healthcare careers offer job security and opportunities for advancement in hospitals, clinics, and research labs. Training opportunities include:

- Some healthcare careers, like **EMTs and medical assistants**, offer **on-the-job training and apprenticeships**
- Certifications such as **Certified Nursing Assistant (CNA), Licensed Practical Nurse (LPN), and Medical Assistant (CMA)** are great starting points
- Many healthcare careers require **degrees in nursing, medical sciences, or healthcare administration**

Individuals who enjoy the following might be interested in Healthcare careers:

- Helping people and making a difference in their lives
- Working in a fast-paced environment
- Science, anatomy, and medical research
- Problem-solving and teamwork

Key skills for this pathway include:

- **Technical Skills:** Patient care, medical terminology, clinical procedures, lab techniques
- **Soft Skills:** Compassion, communication, attention to detail, teamwork
- **Certifications or Degrees:** CNA, LPN, RN, EMT, or bachelor's degree in health sciences

How to get started:

- Take **biology, chemistry, and anatomy courses** in high school
- Enroll in **healthcare training programs or apprenticeships**
- Earn industry certifications such as **CNA, EMT, or Phlebotomy Technician**
- Pursue further education through **community colleges or universities**

Environmental/Clean Energy

This pathway appeals to people who have a passion for nature, conservation, and sustainability. Careers in environmental science focus on protecting our planet and solving environmental challenges. These careers include:

- **Environmental Scientist** – Studies ecosystems and develops solutions to pollution and conservation issues
- **Renewable Energy Technician** – Works with solar, wind, or geothermal energy systems
- **Water Quality Specialist** – Tests and monitors water sources to ensure safety and sustainability
- **Sustainability Coordinator** – Helps organizations implement eco-friendly policies and practices

Green careers are growing as the world shifts toward sustainable energy and environmental protection. Training opportunities include:

- Some roles, like **renewable energy technicians and conservation workers**, offer apprenticeships and hands-on training
- Certifications such as **LEED (Leadership in Energy and Environmental Design)** can enhance job prospects
- Many careers require **degrees in environmental science, biology, or sustainability**

Key skills for this pathway include:

- **Technical Skills:** Environmental testing, GIS mapping, renewable energy systems, data analysis
- **Soft Skills:** Critical thinking, research skills, communication, teamwork

- **Certifications or Degrees:** LEED certification, OSHA environmental training, degrees in science fields

How to get started:

- Take **biology, earth science, or environmental studies** courses in high school
- Volunteer with **conservation programs or sustainability projects**
- Earn certifications like **LEED or OSHA environmental training**
- Pursue a **degree in environmental science or a related field**

Advanced Manufacturing

This pathway appeals to people who like working with technology, robotics, or machinery. Advanced Manufacturing careers offer exciting, hands-on opportunities in high-tech environments. These careers include:

- **CNC Machinist** – Operates computer-controlled machines to create precision parts
- **Industrial Engineer** – Designs systems to improve manufacturing processes
- **Automation Technician** – Works with robotics and automated systems
- **Quality Control Inspector** – Ensures products meet industry standards

Manufacturing today is high-tech, requiring skilled workers to operate and maintain sophisticated equipment. Training opportunities include:

- **Manufacturing apprenticeships** provide paid, hands-on training
- Certifications such as **NIMS (National Institute for Metalworking Skills)** or **OSHA safety training** can help you stand out
- Many community colleges offer **advanced manufacturing programs**

Individuals who enjoy the following might be interested in Advanced Manufacturing careers:

- Working with your hands and technology
- Solving mechanical and technical problems
- Learning how machines and automation work
- Following detailed blueprints and instructions

Key skills for this pathway include:

- **Technical Skills:** Blueprint reading, CNC machining, robotics, troubleshooting
- **Soft Skills:** Attention to detail, teamwork, time management
- **Certifications or Degrees:** NIMS certification, associate degree in manufacturing technology

How to get started:

- Take **shop, engineering, or robotics courses** in high school
- Enroll in **apprenticeships or hands-on training programs**
- Earn certifications like **NIMS or Lean Manufacturing**
- Explore opportunities at local **manufacturing and technology companies**

Transportation Technology

This pathway appeals to people who are interested in how vehicles, airplanes, and supply chains work. The transportation industry offers exciting career opportunities in logistics, engineering, and vehicle maintenance. These careers include:

- **Automotive Technician** – Diagnoses and repairs vehicles
- **Diesel Mechanic** – Maintains and repairs heavy-duty trucks and machinery
- **Aviation Technician** – Services and repairs aircraft systems
- **Logistics Coordinator** – Manages supply chains and transportation networks

From cars to planes to shipping, transportation careers keep the world moving.

Training opportunities include:

- Many trade schools and technical colleges offer **apprenticeships for mechanics and technicians**
- Certifications such as **ASE (Automotive Service Excellence) or FAA Aircraft Technician Licenses** are required for some jobs
- Logistics careers often require business or supply chain degrees

Individuals who enjoy the following might be interested in Transportation careers:

- Fixing cars, trucks, or airplanes
- Problem-solving and working with technology
- Learning about logistics and supply chains
- Working in a hands-on, fast-paced environment

Suggested Resources:

US National Science Foundation: [Creating a STEM Workforce | NSF - National Science Foundation](#)

National Alliance for Partnerships in Equity (NAPE): [STEM Careers: Just for Students | National Alliance for Partnerships in Equity](#)

National STEM Society: [National STEM Society – Educate | Initiate | Innovate](#)

US Department of Education: [YOU Belong in STEM | U.S. Department of Education](#)

Parents' Guide to STEM: [STEMx-Parents-Guide-to-STEM-2020.pdf](#)

Study Work Grow: [The future of STEM careers: A guide for parents – Study Work Grow](#)

LinkedIn Group: [\(11\) The Intersection of STEM Careers and Parenthood: Finding Harmony | LinkedIn](#)

The Boys and Girls Club and YMCA have STEM programs:

[STEM Programs and Activities for Kids | YMCA](#)

[Preparing Youth for Tomorrow's Workforce: Cultivating a STEM Career – Boys & Girls Clubs of America](#)