

K12 ACADEMICS — A FIELD GUIDE FOR FAMILIES

# The Complete Guide to Career Pathways

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5 guides to career & technical education — CTE, career clusters, apprenticeships & work-based learning.



**Find Your Community**

2026 EDITION

## ABOUT K12 ACADEMICS

# The world's largest education resource.

Online since 2004, K12 Academics has helped millions of families, students and educators **find the right school, college, camp, business and program in their community** — a search engine, a community, and a resource in one.

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Years online, since 2004

**200+**

Directories, national & global

**30M+**

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**185**

Countries reached monthly

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# CTE Basics

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# What Is CTE?

## WHAT IT IS

Career & Technical Education (CTE) is hands-on, career-focused learning that gives students real-world skills alongside academics — preparing them for a career, further education, or both . It's one of the fastest-growing priorities in American schools, and it's no longer "shop class": today's CTE spans health care, IT, engineering...

## HOW IT WORKS

CTE programs are organized into career clusters and pathways — sequences of courses in a field that build from introductory to advanced, often with industry certifications, work-based learning, and hands-on projects . Students may take CTE at their own school, a shared career/technical center , or a community college. Federal Perkins...

## WHO IT'S FOR

CTE is for any student — those headed straight to a career, those going to college (many CTE students do both), and those still exploring. It's especially valuable for students who learn best by doing , who want to explore careers before committing, or who want to graduate with a credential or head start on college.



## AT A GLANCE

|              |                                   |
|--------------|-----------------------------------|
| What         | Hands-on, career-focused learn... |
| Where        | Middle & high schools, tech ce... |
| Organized by | Career clusters & pathways        |
| Leads to     | Careers, college, or both         |
| Includes     | Certifications, work experienc... |
| Federal law  | The Perkins Act funds it          |

## WHY IT MATTERS

- ✓ **Real, marketable skills** — Learn by doing, in a real field
- ✓ **Industry certifications** — Graduate with credentials employers recognize
- ✓ **College credit** — Many pathways offer dual enrollment
- ✓ **Career exploration** — Try a field before committing years or tuition to it
- ✓ **Work experience** — Internships, apprenticeships, and job shadowing
- ✓ **Strong outcomes** — CTE is linked to higher graduation rates and clear next steps

## EXAMPLES

- ✓ **Health science** — Nursing assisting, EMT, medical careers
- ✓ **Information technology** — Cybersecurity, coding, networking (e.g., CompTIA)
- ✓ **Skilled trades** — Construction, welding, automotive, HVAC, electrical
- ✓ **Business & marketing** — Finance, entrepreneurship, marketing
- ✓ **Agriculture & natural resources** — Ag science, veterinary, environmental
- ✓ **Arts, media & more** — Culinary, cosmetology, education, public safety

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# Career Clusters

## WHAT IT IS

CTE is organized around 16 National Career Clusters — a framework that groups careers and the courses that lead to them. Each cluster contains several pathways (more specific tracks), so students can explore broadly, then focus. Here's the map, in plain English.

## HOW IT WORKS

Within each cluster are pathways — for example, the Health Science cluster includes therapeutic, diagnostic, health-informatics, and support pathways. Students pick a cluster that fits their interests, then follow a course sequence (often introductory → specialized → capstone), frequently earning a certification or college credit along...

## TYPES & OPTIONS

- ✓ **Health Science** — Nursing, EMT, dental, therapy, medical support
- ✓ **Information Technology** — Cybersecurity, programming, networking, support
- ✓ **Manufacturing** — Production, machining, quality, maintenance
- ✓ **Architecture & Construction** — Carpentry, electrical, HVAC, design, project management
- ✓ **Transportation, Distribution & Logistics** — Automotive, aviation, logistics, diesel
- ✓ **Agriculture, Food & Natural Resources** — Ag science, veterinary, environmental, food systems

## AT A GLANCE

|          |                              |
|----------|------------------------------|
| What     | The framework organizing CTE |
| How many | 16 clusters                  |
| Each has | Multiple pathways            |
| Covers   | Nearly every career field    |
| Used for | Planning a course sequence   |
| Explore  | By interest & demand         |

## HOW TO CHOOSE

- ✓ **Start with interests** — Which fields genuinely engage your student?
- ✓ **Check local demand** — Which clusters lead to jobs in your region?
- ✓ **Look at the pathway sequence** — What courses build toward the goal?
- ✓ **Note credentials** — Which certifications or credits the pathway offers
- ✓ **Keep options open** — Many clusters lead to both careers and college

## FREQUENTLY ASKED QUESTIONS

- ✓ **What is a career cluster?** — One of 16 groupings of related careers and the courses that lead to them.
- ✓ **What's a pathway?** — A more specific track within a cluster.
- ✓ **How do I pick one?** — Start with interests, then weigh local demand and the course sequence.
- ✓ **Do clusters lead to college?** — Yes — many pathways include dual enrollment and lead to college.
- ✓ **Are the 16 clusters the same everywhere?** — The framework is national; the specific programs offered vary by school/state.

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# Pathways & Experiences

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# Apprenticeships

## WHAT IT IS

An apprenticeship is an "earn while you learn" program that combines paid on-the-job training with related classroom instruction, leading to a nationally recognized credential . Apprenticeships are booming — a top state and federal priority — and they now span far beyond the trades into IT, health care, finance, and more.

## HOW IT WORKS

- ✓ **Paid work** — You earn wages from day one, with raises as you progress
- ✓ **Mentorship** — You learn from experienced professionals on the job
- ✓ **Related instruction** — Classroom or online learning alongside the work
- ✓ **A credential** — You finish with a recognized, portable credential (and often college credit)
- ✓ **A clear path** — Many apprentices are hired on permanently

## TYPES & OPTIONS

- ✓ **Registered Apprenticeship** — A formal, government-registered program with paid work, mentorship, instruction, and a credential — meeting national standards.
- ✓ **Youth Apprenticeship** — For high-school students — combines school, paid work experience, and training while earning a diploma.
- ✓ **Pre-Apprenticeship** — A prep program that builds the skills and readiness to enter a registered apprenticeship.

## AT A GLANCE

|           |                                   |
|-----------|-----------------------------------|
| What      | Paid work + training toward a...  |
| Model     | "Earn while you learn"            |
| Types     | Registered · Youth · Pre-appre... |
| Cost      | You're paid; often little/no t... |
| Ends with | A recognized credential           |
| Growing   | A top state & federal priority    |

## WHO IT'S FOR

Apprenticeships suit students and adults who want to start a career with little or no debt , learn by doing, and earn while training. Youth apprenticeships are ideal for high-schoolers exploring a field; registered apprenticeships serve those ready to commit to a trade or profession.

## STEPS TO TAKE

- ✓ **Explore fields & programs** — Ask your school and check your state's apprenticeship office
- ✓ **Look at youth apprenticeships** — If you're still in high school
- ✓ **Consider a pre-apprenticeship** — To build readiness first
- ✓ **Apply** — Programs have their own applications and requirements
- ✓ **Search the national finder** — Apprenticeship.gov lists registered programs

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# Work-Based Learning

## WHAT IT IS

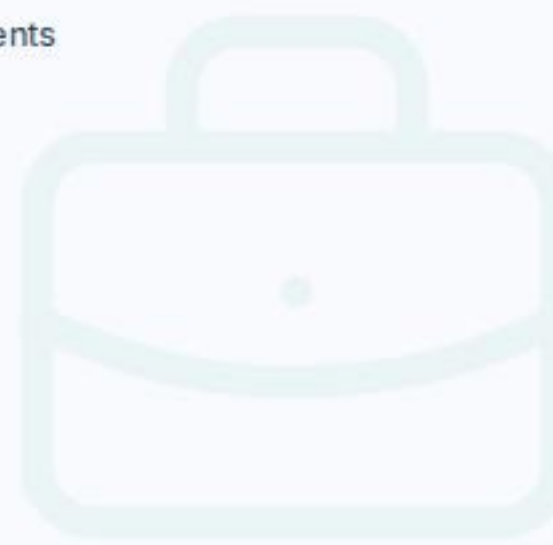
Work-based learning (WBL) gives students real experience in an actual workplace while they're still in school — from a single job-shadow day to a semester-long paid internship. It turns classroom learning into practice, builds a résumé and professional network, and helps students confirm (or rule out) a career before committing to it.

## TYPES & OPTIONS

- ✓ **Job shadowing** — Following a professional for a day to see a career up close
- ✓ **Internships** — Working (paid or unpaid) at a company for a set period, learning the job
- ✓ **Cooperative education (co-op)** — Alternating school with related paid work
- ✓ **Mentorship** — Ongoing guidance from a professional in the field
- ✓ **Service & project-based work** — Real projects for real clients or the community
- ✓ **School-based enterprises** — Student-run businesses inside the school

## STEPS TO TAKE

- ✓ **Ask about WBL at your school** — Especially within CTE pathways
- ✓ **Talk to your counselor or CTE coordinator** — They connect students to placements
- ✓ **Look for internships** — Local employers, hospitals, and agencies often host
- ✓ **Be professional** — Treat it like a real job — it can become one
- ✓ **Reflect & document** — Capture what you learned for college/job applications



## AT A GLANCE

|                |                                   |
|----------------|-----------------------------------|
| What           | Real workplace experience in s... |
| Ranges from    | Job shadowing to paid internsh... |
| Builds         | Skills, résumé & connections      |
| Often part of  | A CTE pathway                     |
| Helps students | Explore & confirm careers         |
| Employers      | Partner with schools to host      |

## WHY IT MATTERS

- ✓ **Real skills & experience** — Practice in an actual workplace
- ✓ **Career clarity** — See if a field is truly a fit
- ✓ **A head start on a résumé** — And professional references
- ✓ **Professional network** — Connections that lead to jobs
- ✓ **Motivation** — Learning feels relevant and real

## FREQUENTLY ASKED QUESTIONS

- ✓ **What counts as work-based learning?** — Anything from job shadowing to internships, co-ops, and mentorships.
- ✓ **Are internships paid?** — Some are paid, some aren't — both build experience.
- ✓ **Is WBL part of CTE?** — Often yes — it's a core part of many CTE pathways.
- ✓ **How do I find a placement?** — Through your school's counselor or CTE coordinator, and local employers.
- ✓ **Why does it matter?** — It builds skills, clarifies careers, and creates connections and references.

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# Dual Enrollment

## WHAT IT IS

Dual enrollment lets high-school students take college courses and earn college credit early — often free or at reduced cost . It's a powerful way to get a head start on a degree, save tuition, and experience college-level work while still in high school. Early College High Schools take it further, letting students earn up to a full...

## TYPES & OPTIONS

- ✓ **Dual enrollment / dual credit** — Take college courses (at your school, a college, or online) that count for both high-school and college credit.
- ✓ **Early College High School** — A school model where students earn substantial college credit — sometimes an associate degree — along with their diploma.
- ✓ **Concurrent enrollment** — College courses taught at the high school by approved instructors.
- ✓ **Related: AP, IB & CLEP** — Other ways to earn college credit — through exams rather than enrollment (see our Test Prep guides).

## STEPS TO TAKE

- ✓ **Ask your counselor** — What dual-enrollment options your school offers
- ✓ **Check eligibility** — Grade level, GPA, or placement may apply
- ✓ **Confirm credit transfer** — Make sure credits will count where you plan to go
- ✓ **Balance the load** — College courses are rigorous — plan carefully
- ✓ **Explore Early College** — If you want to go further, faster



## AT A GLANCE

|               |                                   |
|---------------|-----------------------------------|
| What          | College credit earned in high...  |
| Models        | Dual enrollment · Early Colleg... |
| Credit counts | For high school AND college       |
| Cost          | Often free or reduced             |
| Saves         | Time & tuition later              |
| Also see      | AP, CLEP & IB for credit          |

## WHY IT MATTERS

- ✓ **Save time & tuition** — Credits earned early cost less (or nothing) and shorten the degree
- ✓ **A college head start** — Enter college with credits already banked
- ✓ **Real college experience** — Build confidence with college-level work
- ✓ **Stronger applications** — Shows rigor and readiness
- ✓ **Access & equity** — Opens college pathways for more students

## FREQUENTLY ASKED QUESTIONS

- ✓ **What is dual enrollment?** — Taking college courses in high school that count for both high-school and college credit.
- ✓ **Does it cost money?** — Often it's free or reduced — check your state and school.
- ✓ **Will the credits transfer?** — Usually to in-state public colleges; confirm with your target college.
- ✓ **What's an Early College High School?** — A model where students can earn up to an associate degree with their diploma.
- ✓ **How is it different from AP?** — Dual enrollment earns credit by taking college courses; AP earns it by exam.

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