

NS4ed Update

Demonstrate Results of
Career-Connected Learning
and Maintain Momentum



WHO

Dr. Joseph Goins, CEO & Founder

Tracey Bryan, Director of State Workforce Partnerships

WHAT

We create career-connected learning solutions for high-value results.

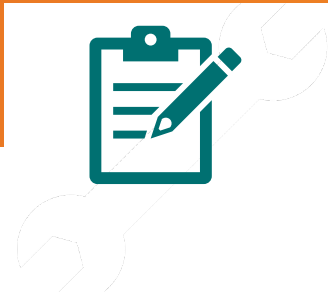
WHY

When a student can see it. They can be it.



RESEARCH

Supporting education initiatives and priorities with **actionable research**



POLICY

Validating policy issues in K-12, Post Secondary and Business



PRACTICE

Data-informed and evidence-based practices to create a **robust career readiness model**

Bridging the Great Divide



Where do we see the disconnects between education and employment?

The Gap Between Education and Industry



43%

Of students starting postsecondary programs do NOT earn a degree in 6 years.



13%

Of students from the lowest income quartile earn a bachelor's degree in 6 years.



41%

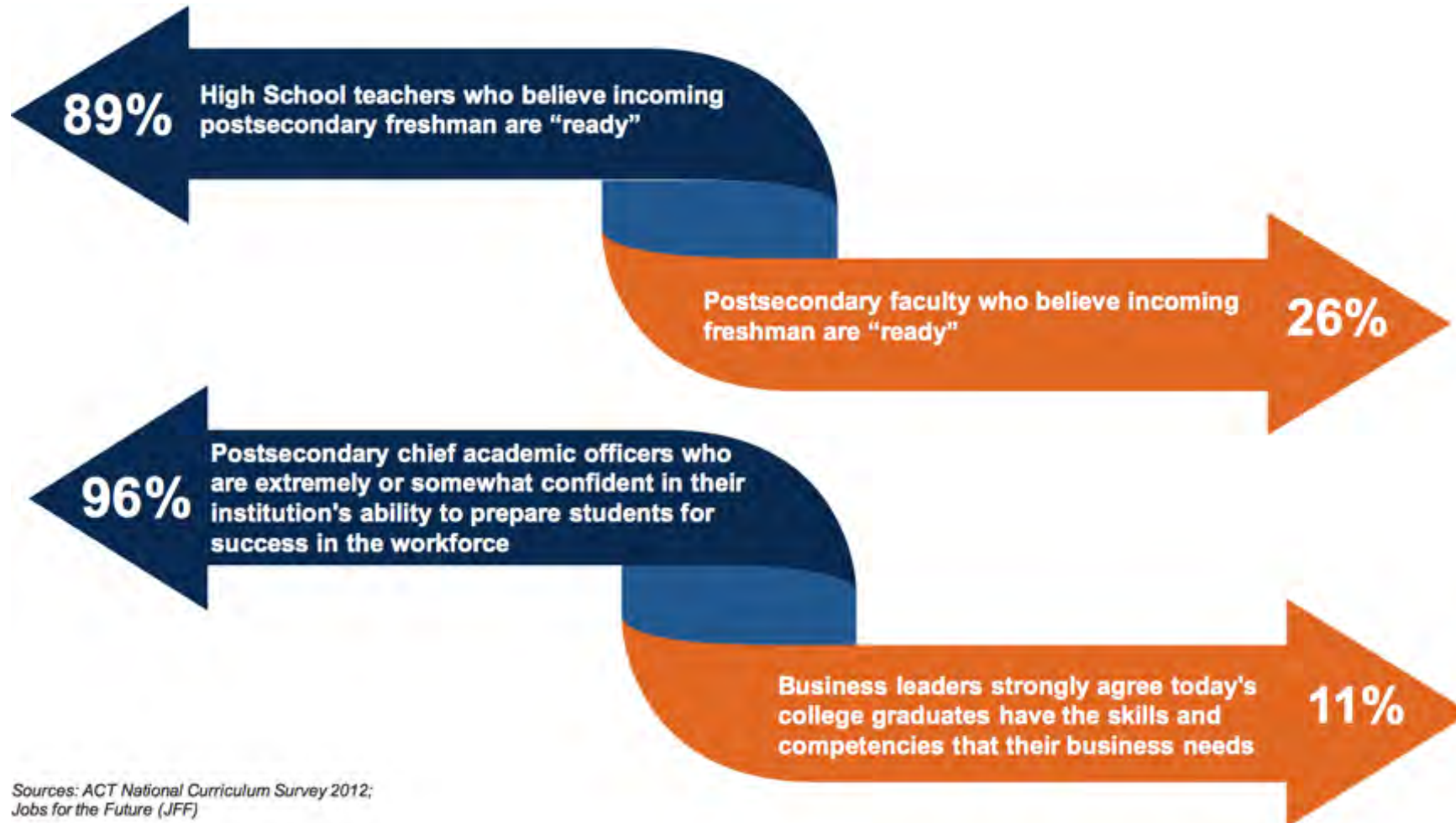
Of recent grads are **underemployed** or working jobs that do not require a college degree.



74%

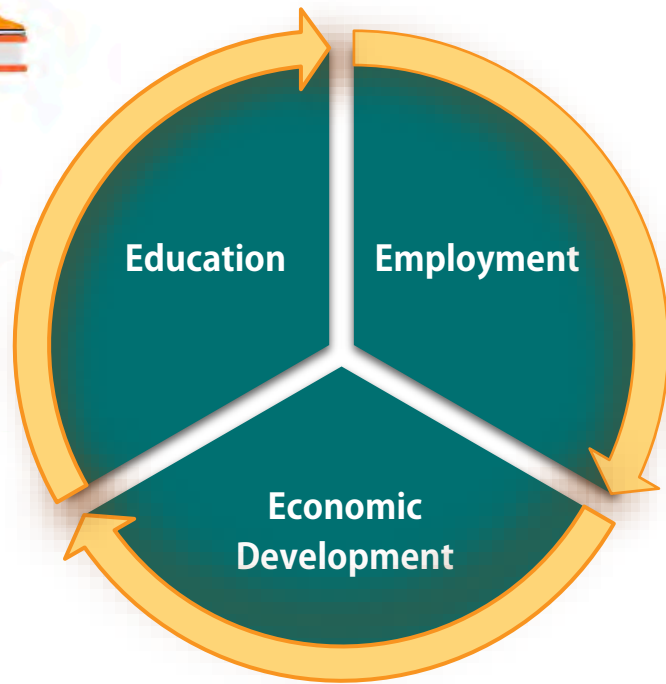
Of hiring managers agree that a '**skills gap**' persists in the current US labor and hiring economy.

Mismatch in “Readiness”



Sources: ACT National Curriculum Survey 2012;
Jobs for the Future (JFF)

Create Connections



To facilitate growth and development among individuals and communities, **change is needed both within and between these areas.**



Workforce Development is a Team Sport

Where do schools fit in the big picture?



It's easy

to get lost

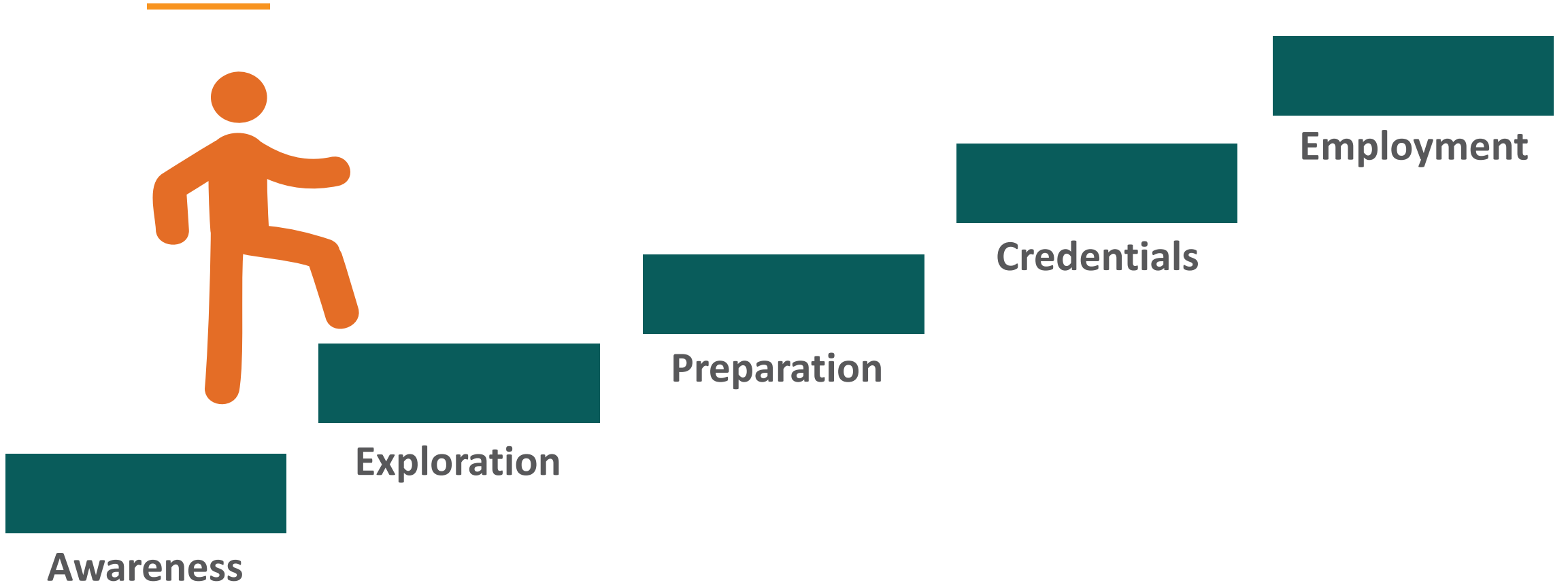
in translation



adult ed
associations
schools
employers
university
TANF
chambers
economic developers
WIOA
college
nonprofits

Career Pathways

From the Educator/Student Perspective



Talent Pipelines

From the Employer's Perspective



High School

Basic Skills
Soft Skills



Community College

Skill-Based Credentials
AA/AS Degrees



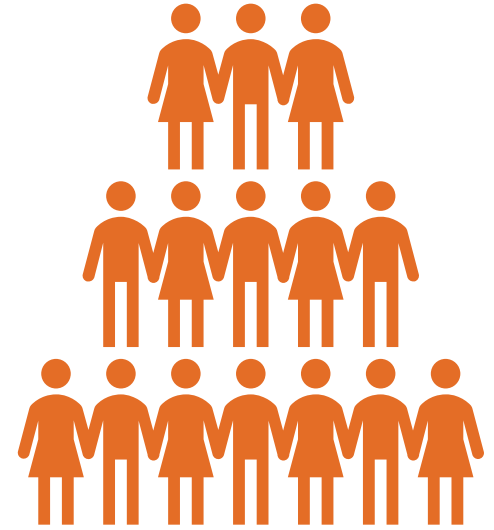
University

BA/BS
Masters
PhD



Workforce System

Experience
Short-Term Skill-Based
Credentials



Qualified Pool of Candidates



Building the Talent Pipeline: An Implementation Guide



U.S. CHAMBER OF COMMERCE FOUNDATION
Center for Education and Workforce



STRATEGY 1: ORGANIZE EMPLOYER COLLABORATIVES



STRATEGY 2: ENGAGE IN DEMAND PLANNING



STRATEGY 3: COMMUNICATE COMPETENCY & CREDENTIAL REQUIREMENTS



STRATEGY 4: ANALYZE TALENT FLOWS



STRATEGY 5: BUILD TALENT SUPPLY CHAINS



STRATEGY 6: CONTINUOUS IMPROVEMENT

Sector Strategies: Workforce Innovation and Opportunity Act (WIOA)



Building Successful Communities



Education builds
local talent.



Talent attracts economic
development.



Economic development
grows local high-value
job opportunities.



High-value jobs grow
regional prosperity for all.

Strengthening Community Partnerships



Lasting community partnerships for growth

Comprehensive Local Needs Assessment

Identify and prioritize funding decisions based on high-demand, high-value industries

- Labor Market Information
- Local business needs

Engage community/region stakeholders

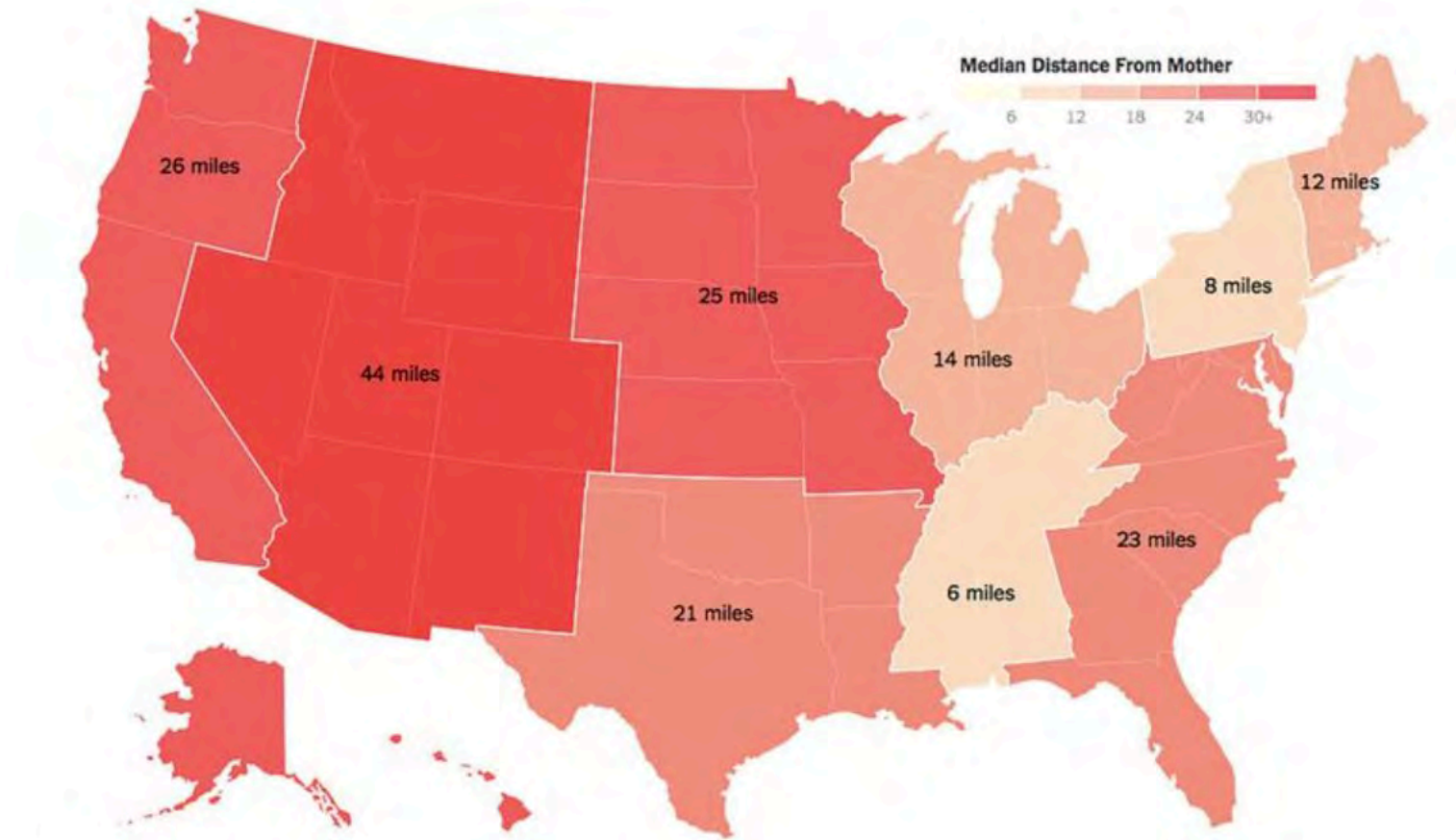
- Business groups/associations
- Economic developers
- Representatives of special populations
- Out-of-school, homeless, and at-risk youth groups
- Tribal communities
- Individuals with disabilities
- Students/families

The Average American Only Lives 18 Miles From Mom

The trend is due to both job opportunities and leaning on family for support.



BY ASHER FOGLE Dec 24, 2015

















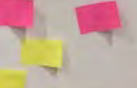
Collective Input for Collective Impact

Key Questions for the CLNA Meetings

- In light of the Labor Market Analysis, what does our region's talent need to look like?
- How would you describe the education programs (CTE, ECHS, etc.) that would produce this kind of talent?
- In light of the Labor Market Analysis, which industries should we prioritize for our investments?
- What's our vision for CTE for our region?
- Who are the partners we need to achieve our vision?

CLNA Meetings

 <p>Manufacturing</p>	<ul style="list-style-type: none"> • Health, Safety & Environmental Assurance • Logistics & Inventory Control • Maintenance, Installation & Repair • Manufacturing Production Process Development • Production • Quality Assurance 	
 <p>Marketing, Sales and Service</p>	<ul style="list-style-type: none"> • Marketing Communications • Marketing Management • Marketing Research • Merchandising • Professional Sales 	
 <p>Science Technology, Engineering and Mathematics</p>	<ul style="list-style-type: none"> • Engineering & Technology • Science & Mathematics 	
 <p>Transportation, Distribution and Logistics</p>	<ul style="list-style-type: none"> • Facility & Mobile Equipment Maintenance • Health, Safety & Environmental Management • Logistics Planning & Management Services • Sales & Service • Transportation Operations • Transportation Systems/Infrastructure Planning, Management & Regulation • Warehousing & Distribution Center Operations 	

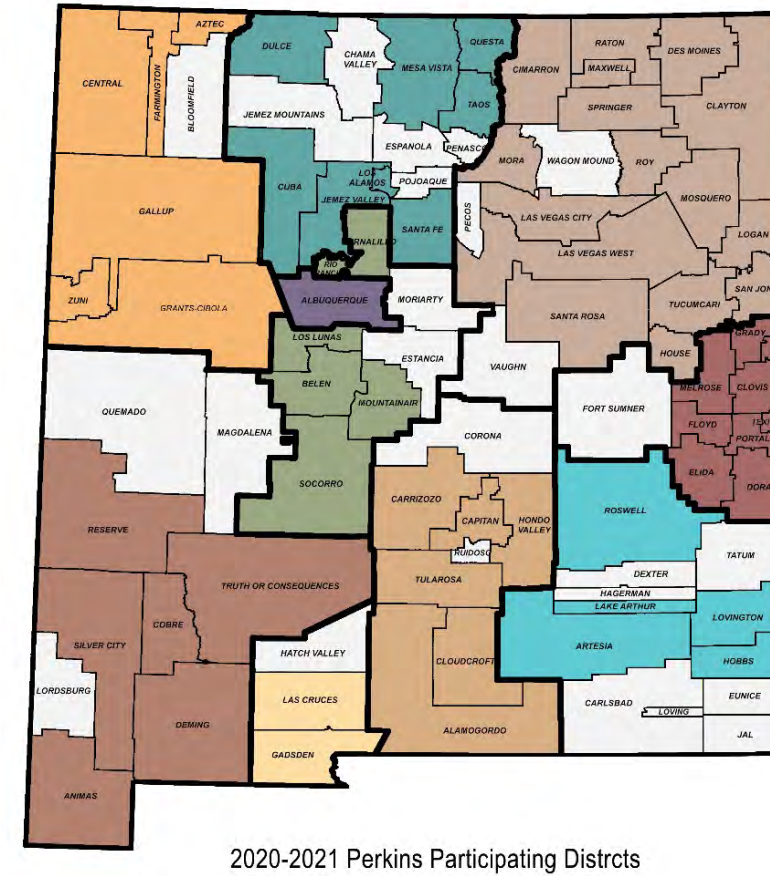
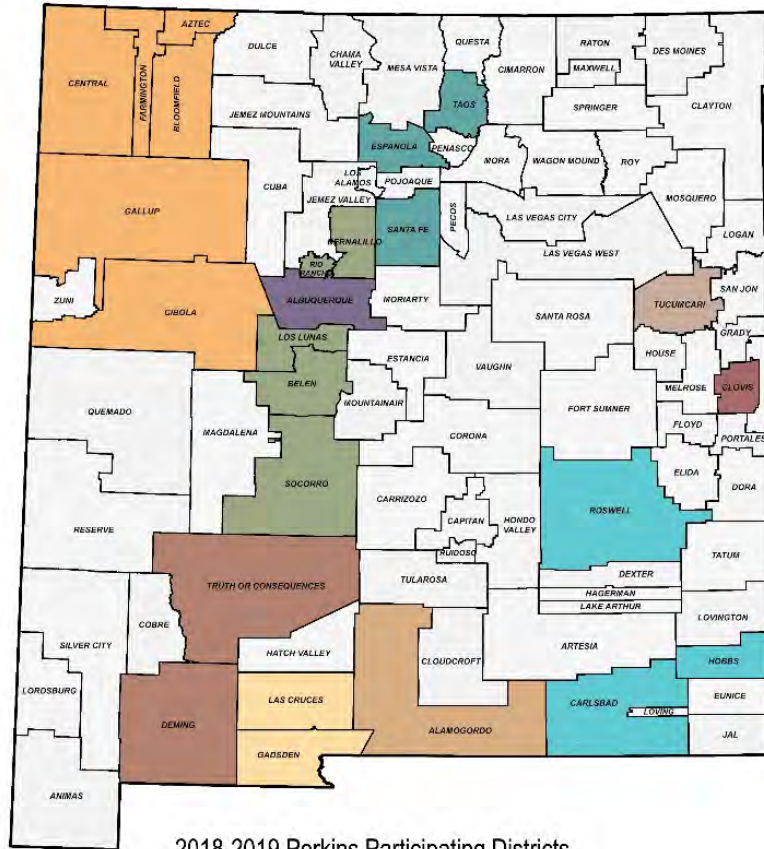
 <p>Hospitality and Tourism</p>	<ul style="list-style-type: none"> • Lodging • Recreation, Amusements & Attractions • Restaurants & Food/Beverage Services • Travel & Tourism 	
 <p>Human Services</p>	<ul style="list-style-type: none"> • Consumer Services • Counseling & Mental Health Services • Early Childhood Development & Services • Family & Community Services • Personal Care Services 	
 <p>Information Technology</p>	<ul style="list-style-type: none"> • Information Support & Services • Network Systems • Programming & Software Development • Web & Digital Communications 	
 <p>Law, Public Safety, Corrections and Security</p>	<ul style="list-style-type: none"> • Correction Services • Emergency & Fire Management Services • Law Enforcement Services • Legal Services • Security & Protective Services 	



Results: Actionable Intelligence

- Highest Value Industries
- Highest Value Occupations
- Characteristics of Successful Talent
- Clear communication for educators
- Over/under production of well-aligned talent (skills/credentials/degrees)
- Breaks in the talent pipeline
- New relationships outside the school
- Stronger partnership with higher ed
- Opportunity for new partnerships
- Redoubled community commitment to the future of youth

CTE in New Mexico – Expanding Access



CTE in New Mexico – Shifting Investments

2018-19

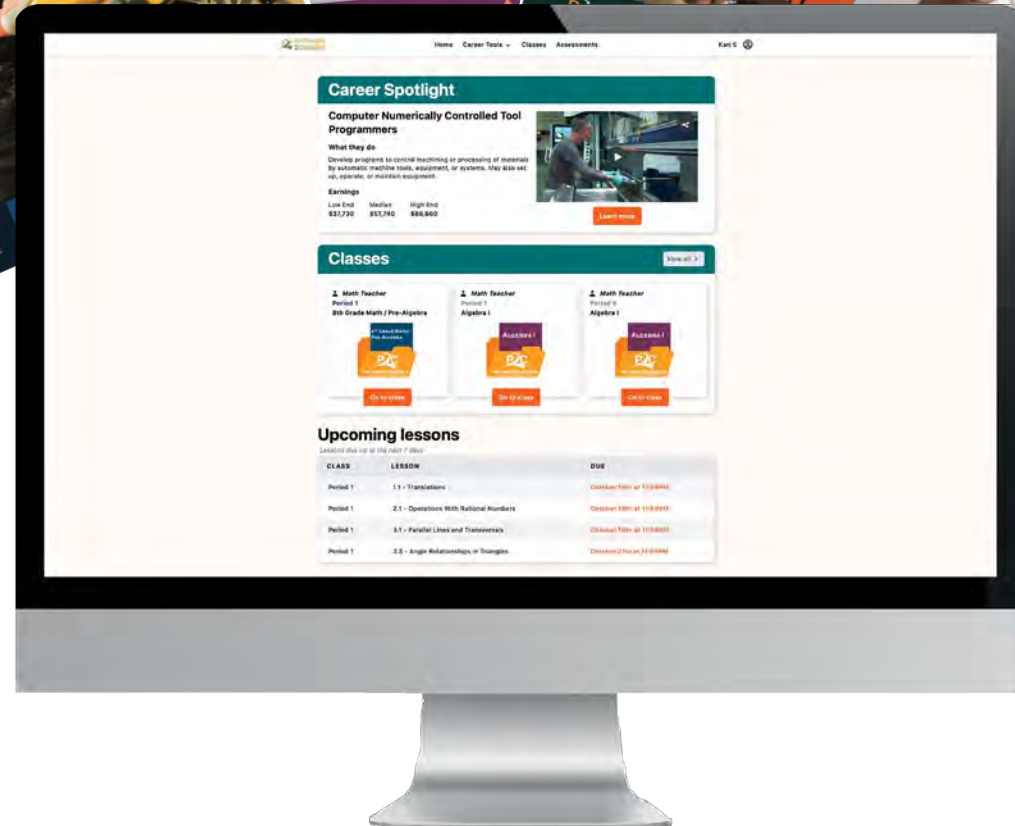
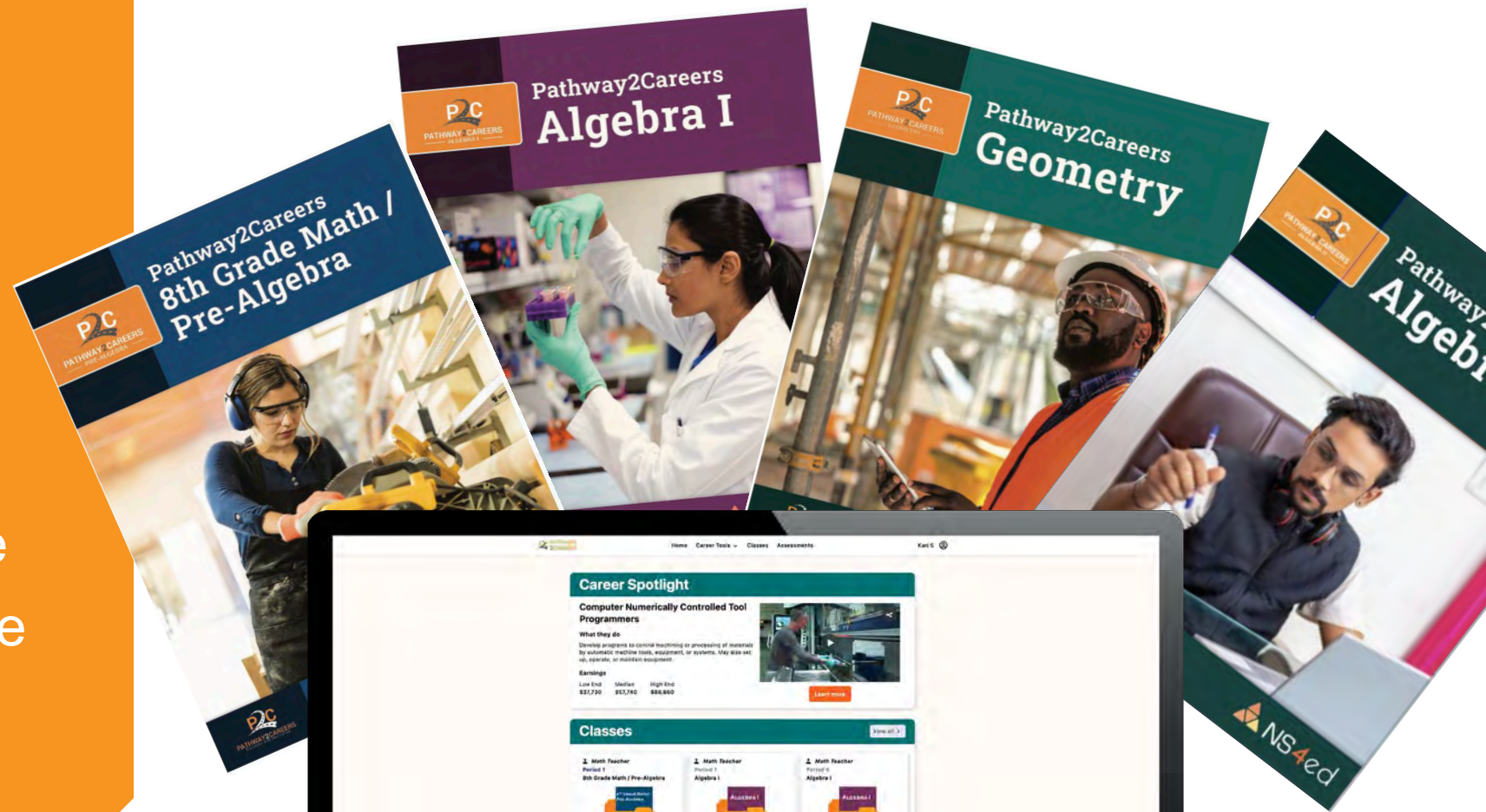
Audio-Video Technology and Communications	11.76%
Health Science	7.91%
Hospitality and Tourism	16.54%
Information Technology	2.35%
Manufacturing	7.98%
Other	53.46%

2021-22

Audio-Video Technology and Communications	8.48%
Health Science	32.76%
Hospitality and Tourism	8.41%
Information Technology	10.45%
Manufacturing	14.00%
Other	39.90%

Career-Connected Math

- Students understand the value of math skills in the high-value careers
- Broaden career exposure
- Students develop purpose in learning



650+ authentic careers with region-specific career data

LESSON 4.8

Apply Graphs of Proportional Relationships



CAREER SPOTLIGHT: Manufacturing Engineers

Occupation Description

Industrial engineers find ways to eliminate wastefulness in production processes. They devise efficient systems that integrate workers, machines, materials, information, and energy to make a product or provide a service.

Some industrial engineers, called manufacturing engineers, focus entirely on the automated aspects of manufacturing processes. They design manufacturing systems to optimize the use of computer networks, robots, and materials.

Education

Industrial engineers typically need a bachelor's degree in industrial engineering or industrial engineering technologies. However, many industrial engineers have degrees in mechanical engineering, electrical engineering, manufacturing engineering, or general engineering. Students interested in studying should take high school courses in mathematics, such as algebra, trigonometry, and calculus; computer science; and sciences such as chemistry and physics.

Potential Employers

The largest employers of industrial engineers are as follows:

Transportation equipment manufacturing	18%
Computer and electronic product manufacturing	13%
Professional, scientific, and technical services	12%
Machinery manufacturing	8%
Fabricated metal product manufacturing	6%

Watch a Video about industrial engineers:

<https://cdn.careeronestop.org/OccVids/OccupationVideos/17-2112.00.mp4>

Career Cluster

Science, Technology, Engineering & Mathematics

Career Pathway

Engineering and Technology

Career Outlook

- Salary Projections:
Low-End Salary, \$57,950
Median Salary, \$88,950
High-End Salary, \$136,930
- Jobs in 2019:
- Job Projections for 2029:

Algebra Concepts

- Make and use graphs of proportional relationships.
- Interpret graphs of proportional relationships.

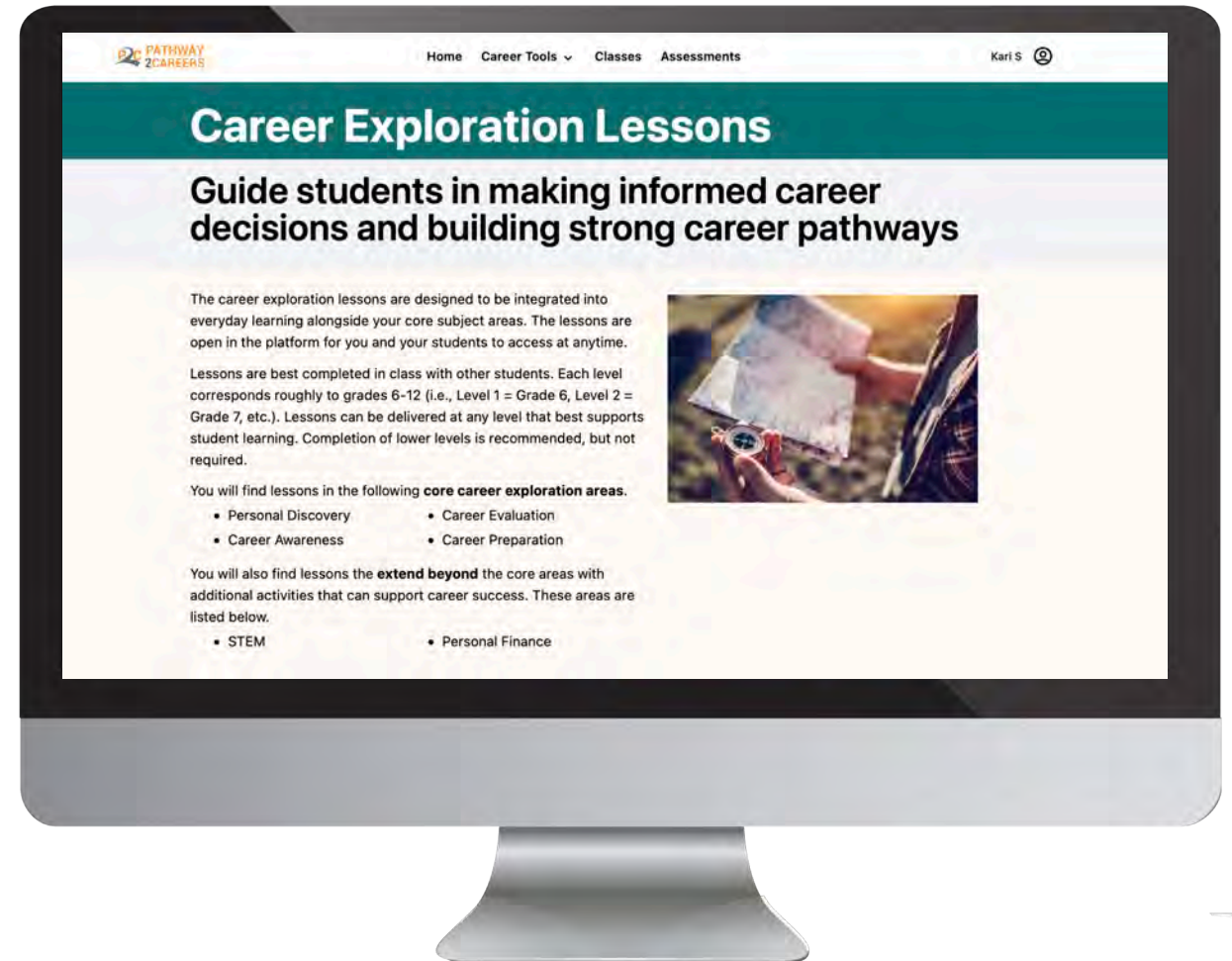
Is this a good career for me?

Manufacturing engineers:

- Analyze operational data to evaluate operations, processes or products.
- Resolve operational performance problems.
- Develop technical methods or processes.
- Implement design or process improvements.
- Determine operational methods.

Pathway2Careers Career Exploration

- Guided **career exploration** and pathway development system for grades 6-12
- Engage community stakeholders with Career Exploration resources



Career Exploration

Integrated Across Subject Areas

Lessons Span Seven Grades

Grades 6-12

10 Lessons Per Grade

70 Total Lessons

Multiple Subject Integration

English Language Arts

Mathematics

Science

Social Studies

Physical Education

Dual Learning Objectives

Career Exploration Objectives

Subject-Specific Objectives

Maintaining Momentum

Building a “Career-Connected” Community

Program Alignment

Aligned Career-Connected Learning in Your Community



Assess Needs **Part 1**

Use valuable data to **diagnose needs** and **establish policies** for effective career resources

Plan **Part 1**

Develop and **prioritize strategies** that align to your vision and ensure students have the skills needed for **workplace success**

Operationalize **Part 2**

Extend plans to reach and **engage stakeholders** including teachers and students

Maintain Momentum

Support ongoing success through community communications and **stakeholder involvement**

What's the Goal?



Requirement

OR



Relationship

How can we work
together to
accomplish our
shared goals?

*“What’s in it
for me?”*

Engaging in Authentic Relationships



Example of Authentic Relationships

The Bridge of Southern New Mexico

Business-Led, Education Focused

County-level Leaders
in:

- Business
- Education
- Economic
Development
- Government



Two Goals of The Bridge



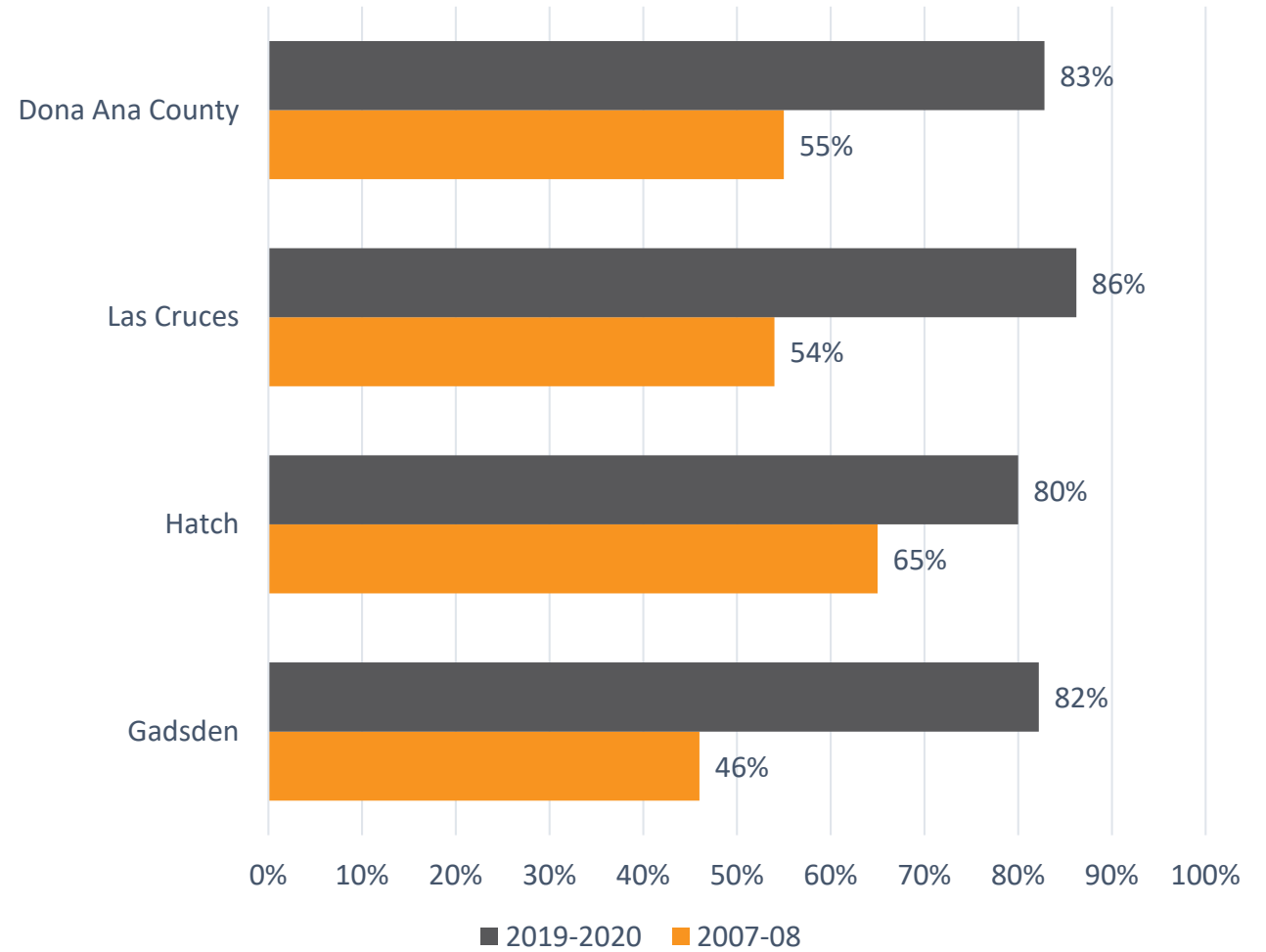
Increase completion rates for high school, community college, and university students



Build a diverse, highly-skilled workforce that meets the needs of business and fuels future economic development

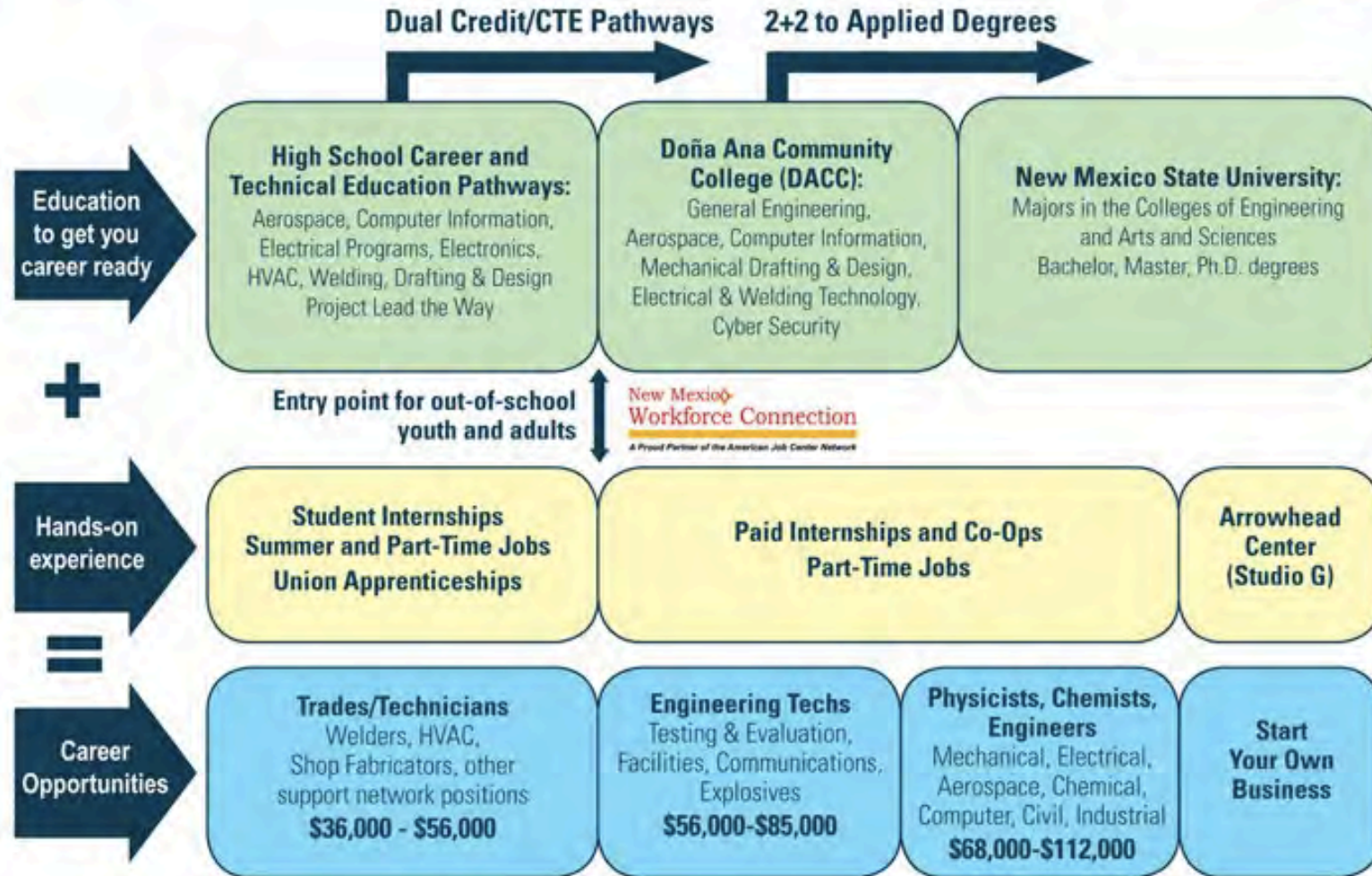
Goal 1

Increase High School Graduation Rates

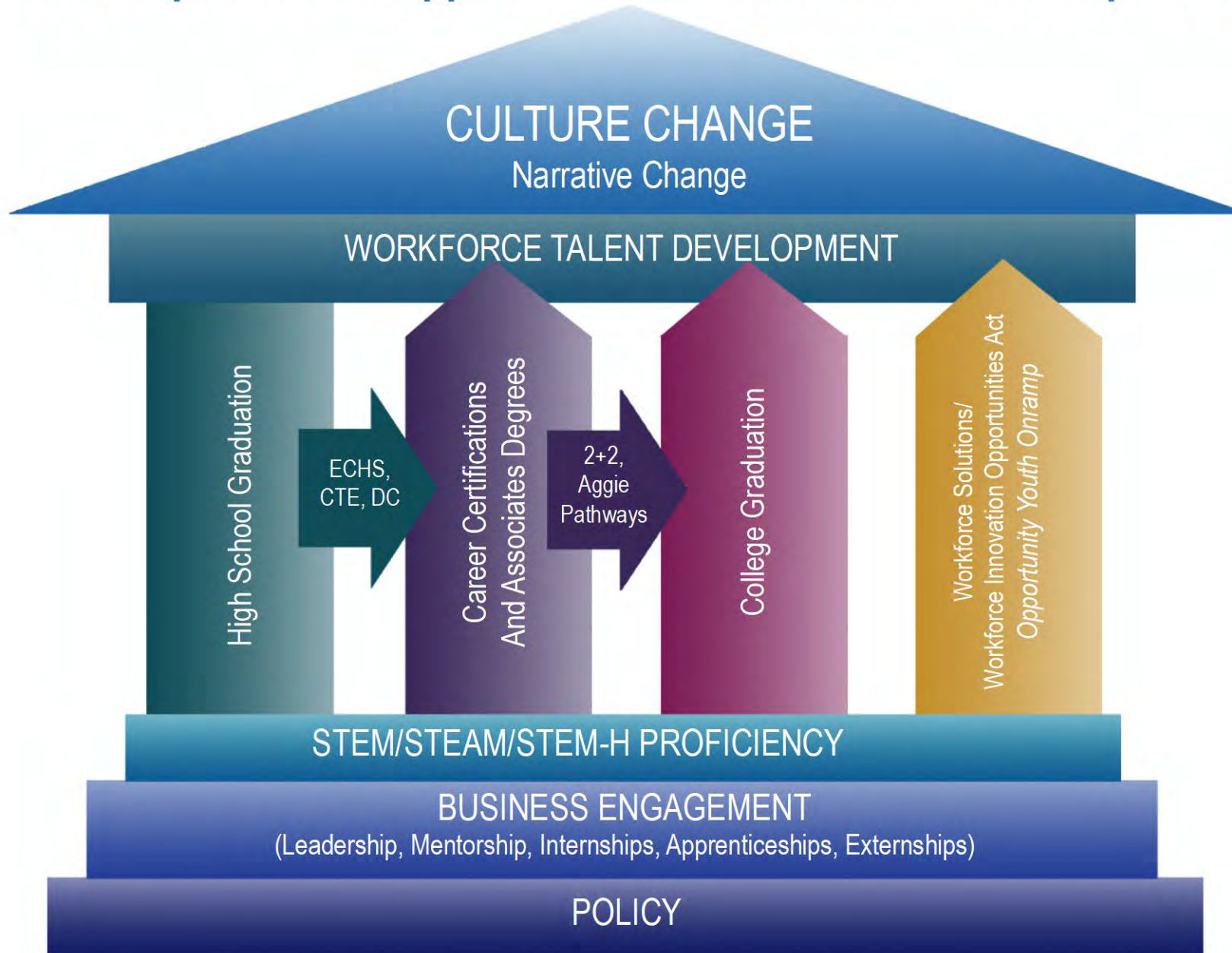


Aerospace, Space, and Defense Industries

Pathways, Partners, and Positions



A Comprehensive Approach to Workforce Talent Development



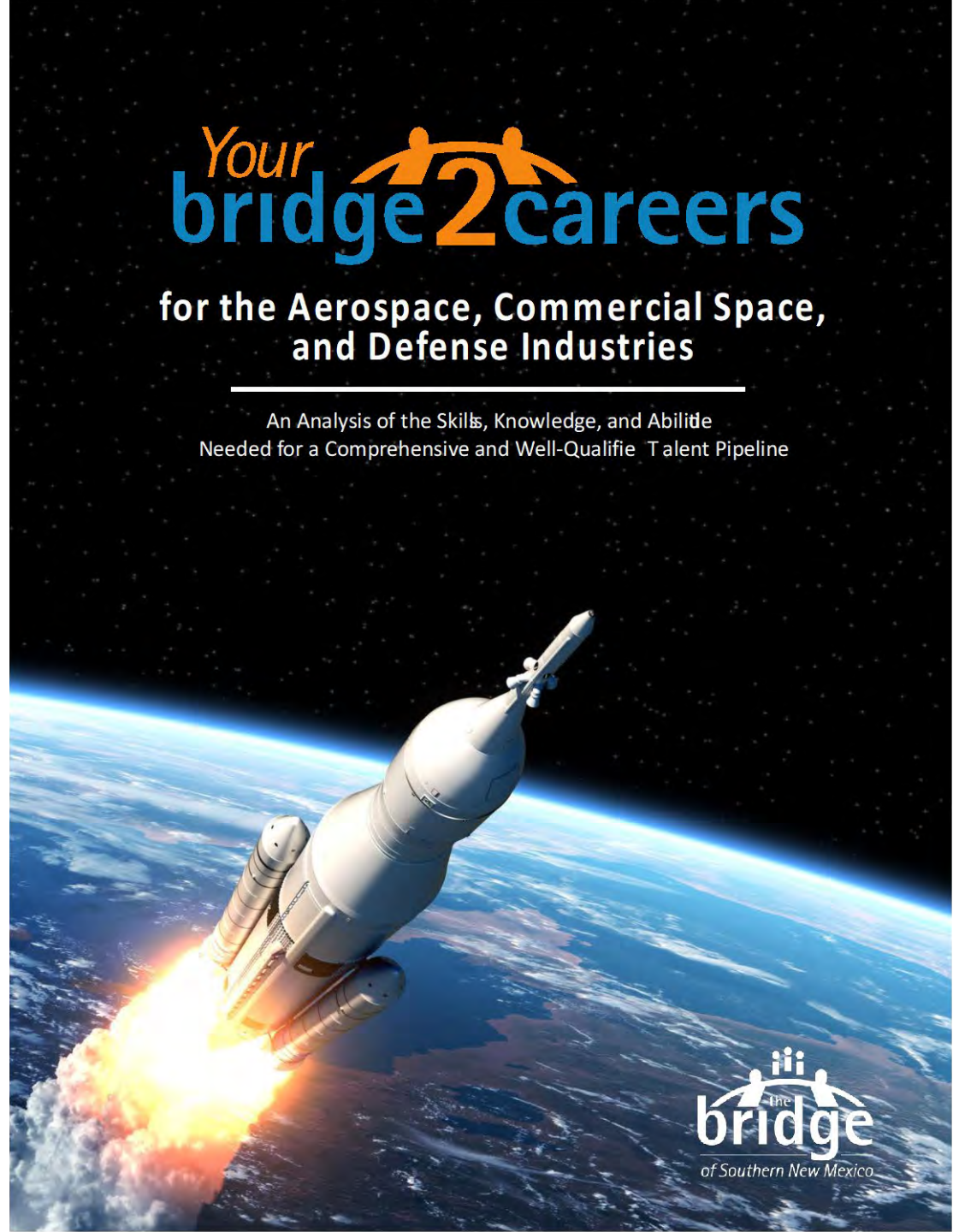
5 “Ships” of Work-Based Learning

- Leadership
- Mentorship
- Internships
- Apprenticeship
- Externships for Teachers



An Example of Leadership

Industry Roundtables



Profile of the Ideal Graduate

- Math
- Reading, Writing, Language Arts
- Employability
- Technology
- Digital Literacy

AT-A-GLANCE ELEGIBILITY REQUIREMENTS

Aerospace, Commercial Space, and Defense

Based on 80%-100% of employers' responses, here is a comprehensive picture of what New Mexico's True Talent needs to know, and be able to demonstrate, in order to enter the aerospace, commercial space, or defense industries.

Math:

- Adding and subtracting
- Multiplying and dividing
- Using fractions, decimals, and percentages
- Solving real-world math problems
- Interpreting negative numbers
- Calculating or using basic statistics
- Reading graphs or charts with numerical information
- Taking or interpreting measurements

Reading, Writing, and Language:

- Reading at a reasonable speed
- Applying information that is read
- Production of clear writing
- Correct spelling and grammar in writing and speaking
- Identifying main points from written content
- Assessing credibility of written content
- Generation of original content that is not plagiarized
- Editing self-written content
- Writing about a topic using supporting facts

Employability:

- Communication
- Enthusiasm and Attitude
- Problem Solving & Critical Thinking
- Self-Management
- Interpersonal Skills
- Initiative
- Professionalism
- Teamwork
- Cultural Competence

Technology:

- Using computer and computer programs
- Entering data
- Writing and responding to emails
- Using word processing and presentation programs
- Adapting to and learning new technology

Digital Literacy:

- Understanding online security risks
- Accessing information to troubleshoot problems with technology



Most Valuable Degrees

Bachelor:

- Mechanical Engineering
- Electrical Engineering
- Computer Engineering
- Computer Scientist
- Business Management/Accounting
- Aerospace Engineer
- Cyber Security
- Physicist

Associate:

- Electrical Engineering/Electronics Technology
- Computer Information Technology
- Engineering Technology
- Mechanical Technology
- Manufacturing Technology
- Computer Assisted Design
- Chemical Technician
- Web Design
- Water Technician
- Applied Technology
- Welding Technician
- Hospitality

Most Valuable Skill-Based Credentials

Skilled Trades:

- Licensed electricians
- Welding
- Airframe and Powerplant
- Electricians
- Water System Operator
- Emergency Medical Technician
- Mechanic
- Drafting
- Heavy Equipment Operator/Commercial Driver's License
- Pilots for manned and unmanned aerial vehicles
- Hospitality

Career Clusters & Pathways

In our economy, there are 1000+ occupations and numerous ways of grouping them. The National Career Clusters Framework groups occupations into **sixteen different career clusters** based on similarities in foundational knowledge and skills.



Agriculture, Food & Natural Resources

- Agribusiness Systems
- Animal Systems
- Environmental Service Systems
- Food Products & Processing Systems
- Natural Resources Systems
- Plant Systems
- Power, Structural & Technical Systems



Government & Public Administration

- Foreign Service
- Governance
- National Security
- Planning
- Public Management & Administration
- Regulation
- Revenue & Taxation



Manufacturing

- Health, Safety & Environmental Assurance
- Logistics & Inventory Control
- Maintenance, Installation & Repair
- Manufacturing Production Process Development
- Production
- Quality Assurance



Architecture & Construction

- Construction
- Design/Pre-Construction
- Maintenance/Operations



Health Science

- Biotechnology Research & Development
- Diagnostic Services
- Health Informatics
- Support Services
- Therapeutic Services



Marketing

- Marketing Communications
- Marketing Management
- Marketing Research
- Merchandising
- Professional Sales



Arts, A/V Technology & Communication

- A/V Technology & Film
- Journalism & Broadcasting
- Performing Arts
- Printing Technology
- Telecommunications
- Visual Arts



Hospitality & Tourism

- Lodging
- Recreation, Amusements & Attractions
- Restaurants & Food/Beverage Services
- Travel & Tourism



Science, Technology, Engineering & Mathematics

- Engineering & Technology
- Science & Mathematics



Business, Management & Administration

- Administrative Support
- Business Information Management
- General Management
- Human Resources Management
- Operations Management



Human Services

- Consumer Services
- Counseling & Mental Health Services
- Early Childhood Development & Services
- Family & Community Services
- Personal Care Services



Transportation, Distribution & Logistics

- Facility & Mobile Equipment Maintenance
- Health, Safety & Environmental Management
- Logistics Planning & Management Services
- Sales & Service
- Transportation Operations
- Transportation Systems/Infrastructure Planning, Management & Regulation
- Warehousing & Distribution Center Operations



Education & Training

- Administration & Administrative Support
- Professional Support Services
- Teaching/Training



Information Technology

- Information Support & Services
- Network Systems
- Programming & Software Development
- Web & Digital Communications



Finance

- Accounting
- Banking Services
- Business Finance
- Insurance
- Securities & Investments



Law, Public Safety, Corrections & Security

- Correction Services
- Emergency & Fire Management Services
- Law Enforcement Services
- Legal Services
- Security & Protective Services



Return



Health Science



NATIONAL CAREER CLUSTERS PATHWAYS:

- Health Informatics
- Diagnostic Services
- Support Services
- Biotechnology Research & Development

Regional Career Opportunities (Listed by Highest Projected Demand)

JOB ZONE 1 High School Diploma or Less*	JOB ZONE 2 High School Diploma*	JOB ZONE 3 Certificate or Associate's Degree*	JOB ZONE 4 Bachelor's Degree	JOB ZONE 5 Master's or Doctorate Degree
<i>Few regional occupations in these pathways require education at this degree level.</i>	Medical Equipment Preparers Annual Openings 20 Median Wage \$29,071	Medical Secretaries Annual Openings 205 Median Wage \$30,038	<i>Bachelor's degrees in this pathway are often required for entry into graduate programs.</i>	Medical & Health Service Managers ★ Annual Openings 150 Median Wage \$84,831
	Orderlies Annual Openings 20 Median Wage \$28,980**	Veterinary Assistants & Laboratory Animal Caretakers Annual Openings 155 Median Wage \$22,618	Medical & Clinical Laboratory Technologists ★ Annual Openings 55 Median Wage \$53,120**	<i>Few regional occupations in these pathways require education at this degree level.</i>
	Pharmacy Aides Annual Openings 15 Median Wage \$24,933	Medical Records & Health Information Technicians ★ Annual Openings 90 Median Wage \$42,630**	Biomedical Engineers Annual Openings 5 Median Wage \$64,284*	

Return



Health Science



NATIONAL CAREER CLUSTERS PATHWAYS:

- Health Informatics
- Diagnostic Services
- Support Services
- Biotechnology Research & Development

Regional High School Requirements and Programs (Grades 9-12)

English Language Arts	Math	Science	Social Studies	Foreign Language	Physical Education	Fine Arts	Elective Focus
English I	Algebra I	Biology	World History and Geography	Foreign Language I	Lifetime Wellness	Fine Arts Selection	Minimum of Three Courses <i>See career programs and electives below.</i>
English II	Geometry	Chemistry	U.S. History	Foreign Language II	Physical Education (.5)	---	
English III	Algebra II	Physics	Economics / Government	---	---	---	
English IV	Higher Level Math	-----	Personal Finance (.5)	-----	-----	-----	

Career Programs	Career Program Courses and Related Courses	Additional Electives	Regional Postsecondary Schools				
<ul style="list-style-type: none"> □ Diagnostic Services <p><i>See other Health Science pathways for additional career programs and opportunities.</i></p> <p><i>*Note: Programs and courses may vary by high school.</i></p>	<ul style="list-style-type: none"> □ Career Exploration □ Health Science Education □ Anatomy and Physiology □ Medical Therapeutics □ Diagnostic Medicine □ Rehab Careers □ Exercise Science □ Emergency Medical Services □ Nursing Education I & II □ Nursing Services □ Practicum or Internship 	Math <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ Science <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ Other <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____	<table border="1"> <thead> <tr> <th>Certificates and Associate's Degrees</th> <th>Bachelor's and Advanced Degrees</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> ■ Mississippi State Community College ■ Tennessee College of Applied Technology ■ Roane State Community College </td> <td> <ul style="list-style-type: none"> ■ Maryville College ■ University of Tennessee ■ Lincoln Memorial University </td> </tr> </tbody> </table>	Certificates and Associate's Degrees	Bachelor's and Advanced Degrees	<ul style="list-style-type: none"> ■ Mississippi State Community College ■ Tennessee College of Applied Technology ■ Roane State Community College 	<ul style="list-style-type: none"> ■ Maryville College ■ University of Tennessee ■ Lincoln Memorial University
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Postsecondary Programs/Majors in this Pathway

Certificate or AA	Bachelor's Degree	Advanced Degree
Administrative Professional – Medical Office	Medical Laboratory Science	Medical Sciences
Health Information Management	Biological Sciences	Radiology
Radiologic Technology	***	Biomedical Engineering
Imaging Sciences	***	Epidemiology
Medical Insurance Coding	***	***

*** Limited program offerings at regional postsecondary schools.
 NS4ed™ Pathway2Careers™ 2018. Trademark NS4ed, LLC.



Return

Other Ground-Breaking Outcomes

Expanded Employer Partnerships for CTE

Early College High Schools

Pilot Blended Senior Year

First Teacher Externships

First Virtual Student Internships

Business-Voice for High Quality Dual Credit Funding

Telling Your Story

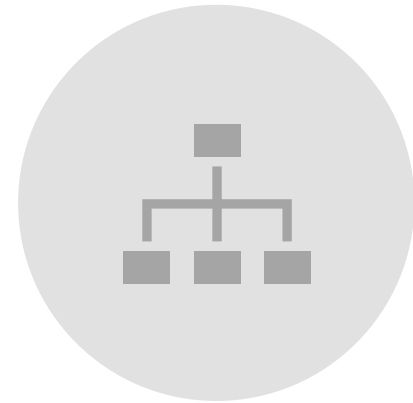
Measuring Success



EXPANSION OF WORK-BASED
LEARNING OPPORTUNITIES



INCREASE IN GRADUATES READY
FOR/PREPARING FOR HIGH-VALUE
CAREERS



QUANTIFIABLE AND MARKETABLE
POOLS OF WELL-QUALIFIED TALENT

Lessons Learned



Thought Leadership



Testimonials

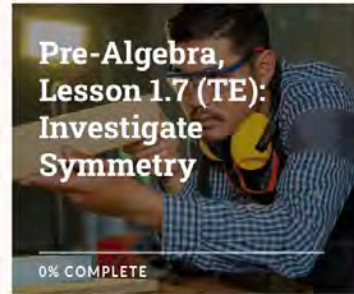


Policy Recommendations/
Advocacy



Building/Sustaining/
Growing Partnerships

Refresh Lesson



▼ OCCUPATION OVERVIEW

- Carpenters
- Salary Projections and Career Outlook

▣ Career Story

- Connecting Carpenters and Pre-Algebra

▼ KEY TERMINOLOGY

- Line Symmetry

▼ IDENTIFYING LINES OF SYMMETRY

- 1. Step Into the Career

*There is not one set path to take when choosing and finding a career.
Watch this individual's story about how they navigated their career journey.*



Make a Connection

As you work through the lesson, think about how the math concepts would be used in this person's job.



Building Culture and Community

New partnerships

New pathways

New programs

Thank you!

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Tracey Bryan – Tracey.Bryan@ns4ed.com

