Part 2

Career-Connected Learning

Successfully launch & sustain career-connected learning

"To find out what one is fitted to do, and to secure an opportunity to do it, is the key to happiness."

— John Dewey

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WHO

Dr. Joseph Goins, CEO & Founder

Dr. Jamisa Williams, Executive Director Early College and Leadership

WHAT

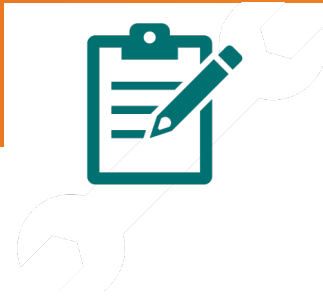We create career-connected learning solutions for high-value results.

WHY

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

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In today's world, twenty-first-century skill demands are steadily increasing.
Most high-paying jobs require additional education and training beyond a high school diploma.
We must make sure that our children, **particularly those who are traditionally underserved**, are prepared for and have access to postsecondary education.

——

Gov. Bob Wise,
Alliance for Excellent Education

Gaps in Career Readiness

How well are we preparing students?

The Gap Between Education and Industry
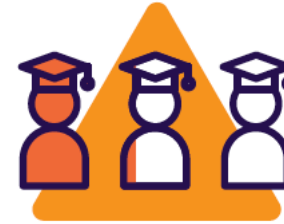
43%
Of students starting postsecondary programs do NOT earn a degree in 6 years.

13%
Of students from the lowest income quartile earn a bachelor's degree in 6 years.
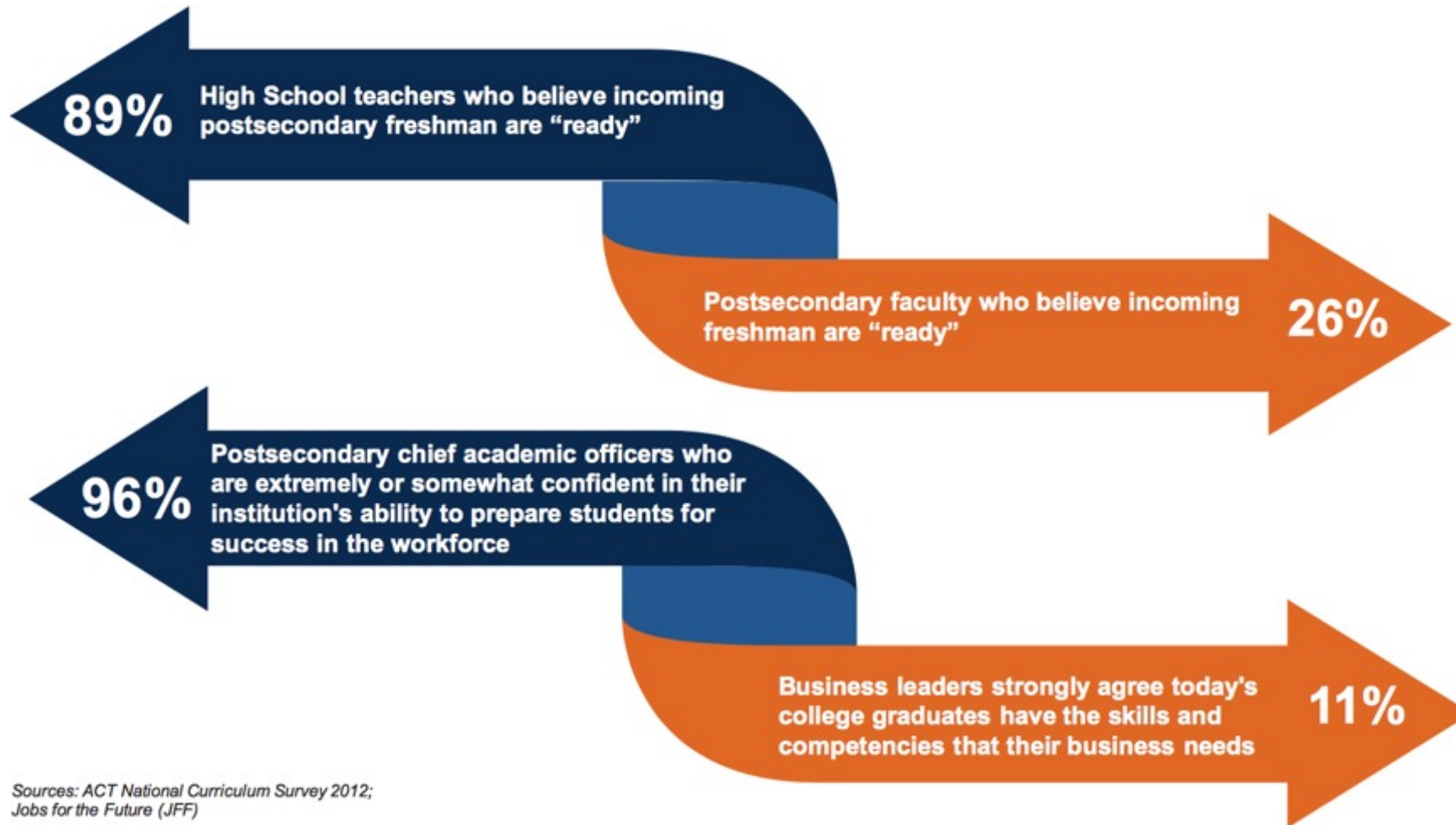
41%
Of recent grads are **underemployed** or working jobs that do not require a college degree.

74%
Of hiring managers agree that a **'skills gap'** persists in the current US labor and hiring economy.

Mismatch in "Readiness"

89% High School teachers who believe incoming postsecondary freshman are "ready"

Postsecondary faculty who believe incoming freshman are "ready" **26%**

96% Postsecondary chief academic officers who are extremely or somewhat confident in their institution's ability to prepare students for success in the workforce

Business leaders strongly agree today's college graduates have the skills and competencies that their business needs **11%**

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

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Long Term Impact of Not Getting It Right

Perkins V

Perkins V represents an important opportunity to **expand opportunities for every student** to explore, choose, and follow career and technical education programs of study and career pathways to earn credentials of value.

PERKINS V TIMELINE

ADVANCE >> CTE
State Leaders Connecting Learning to Work

TRANSITION *Plan* (Optional)

1st 4 YEAR STATE *Plan*

2nd 4 YEAR STATE *Plan* or annual revisions

PY 2

PY 4

JULY 2020– JUNE **2021**

JULY 2022– JUNE **2023**

JULY 2019– JUNE **2020**

JULY 2021– JUNE **2022**

JULY 2023– JUNE **2024**

AFTER JUNE 2024

PY 1

PY 3
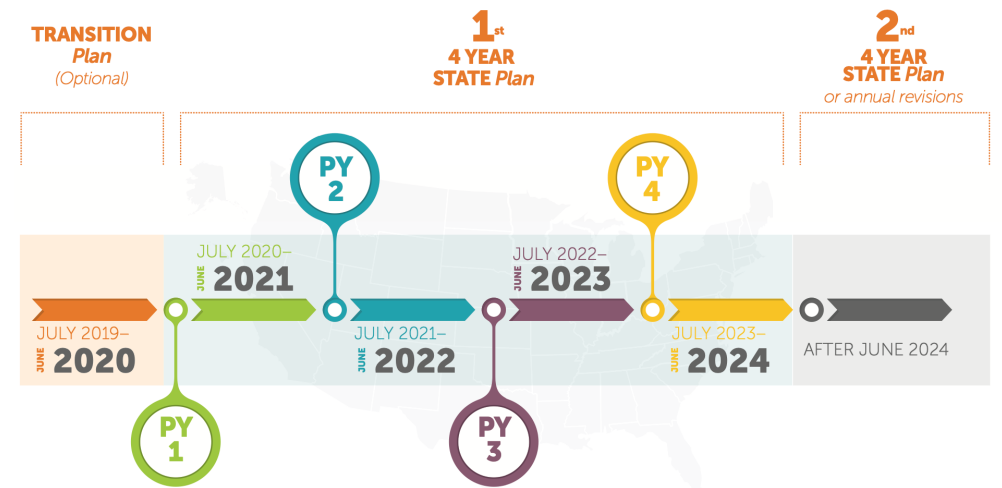
Early College High School (ECHS)

An effective way to increase college-going and college-completion

College-Going

84%
Early College Students

77%
Control Students

College-Completion
Within 4 years of high-school graduation

21%
Early College Students

11%
Control Students

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ECHS Design Principles

Equitable Access

Targeting underrepresented students in higher education

Academic Pathways

That are well integrated and aligned with college and career

Robust Student Support

In both academics and advising

Connections to Career

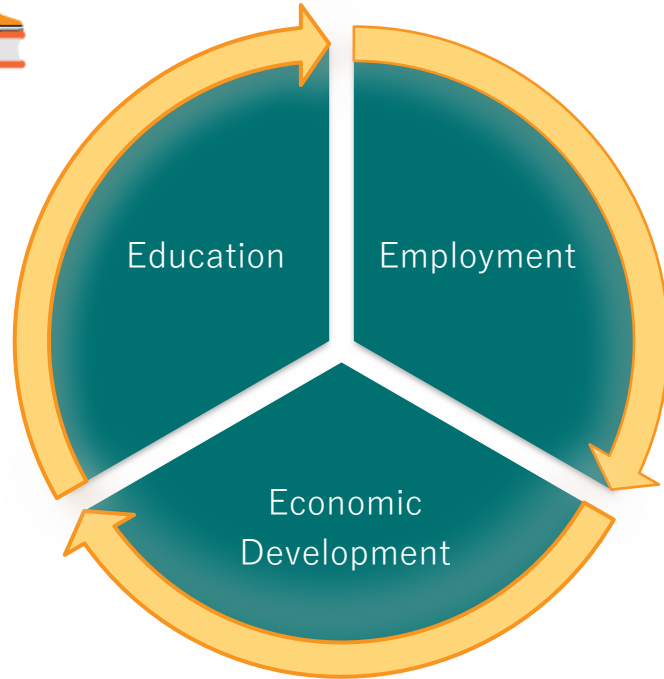Through workplace and experiential learning experiences

High-Quality & Deep Partnerships

Between high schools and colleges

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Create Connections

Education

Employment

Economic Development

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

From Plans to Practice

Launching Career-Connected Learning Solutions

Program Alignment

Aligning Career-Connected Learning

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

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

Maintain Momentum

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

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Region-Specific, Data-Driven Plans

- Use labor market data to **understand career destinations** for students in their local areas.

- **Identify occupations** expected to be high in demand and wage.

- **Align education practices** with critical skills.

- **Prioritize learning opportunities** that prepare students for good jobs in their communities.

High Demand **+** High Wage **→** High Value
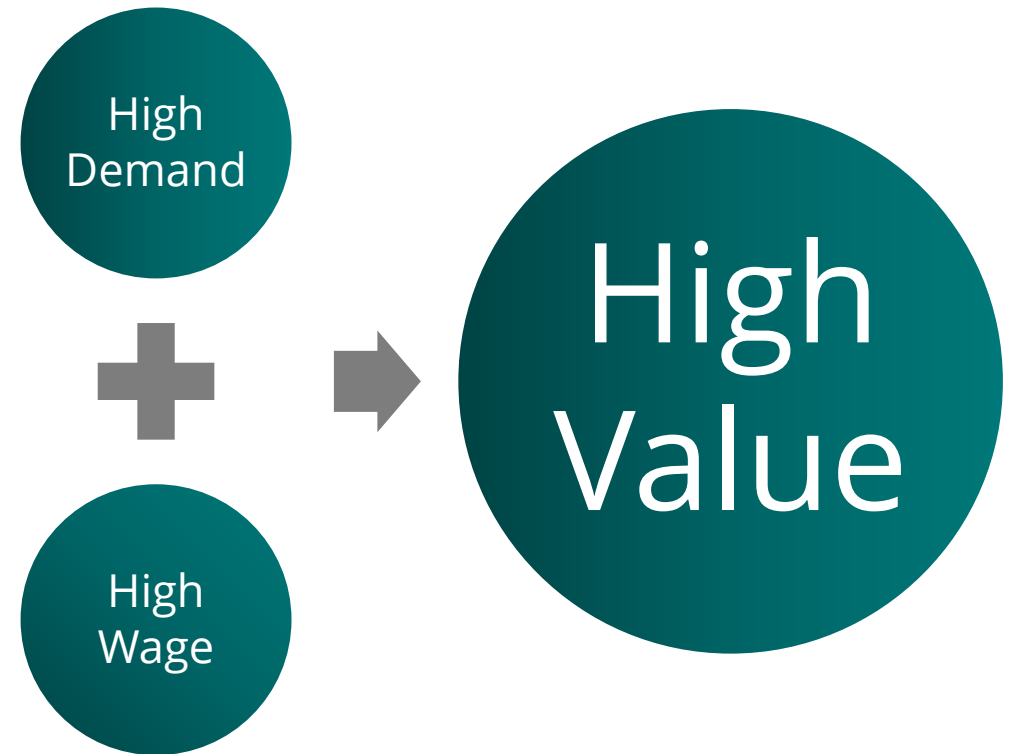
Realizing Motivation

Table 4
Strategy effect sizes from meta-regression model.

Strategy	Effect size
Career Development/Job Training	0.81
Family Engagement	0.67
Mentoring	0.63
Behavioral Intervention	0.46
Literacy Development	0.42
Work-Based Learning	0.26
School/Classroom Environment	0.25
Service-Learning	0.21
Health and Wellness	0.18
Academic Support	0.11

http://www.dropoutprevention.org/meta-analysis-dropout-prevention-outcome-strategies/

Establish **purpose** in student learning...

Motivation to Learn

(Frymier & Shulman, 1995; Jang, 2008)

Interest and Engagement

(Assor, Kaplan, & Roth, 2002; Hulleman, Godes, Hendricks, & Harackiewicz, 2010; Hulleman & Harackiewicz, 2009)

Effort and Persistence

(Trautwein & Ludtke, 2007; Yeager et al., 2014)

Education

Career

Task/Course Completion

(Fortenberry, Sullivan, Jordan, & Knight, 2007; Zusho, Pintrich, & Coppola, 2003)

Performance

(Hulleman et al., 2010; Hulleman & Harackiewicz, 2009; Malka & Covington, 2005)

Retention of New Information

(Perin, 2001; Yeager et al., 2014)

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Engage Stakeholders

Operationalize

- **Identify all areas** to support career-connected learning

- **Engage stakeholders** in launch plan(s)

- **Enhance academic programs** to support career-connected learning

- **Address** professional learning opportunities

- **Frequent check-ins** to support implementation

CCL Programs Should Include

- ✓ Meaningful **learning experiences**

- ✓ Clear and **accurate information** about local career opportunities

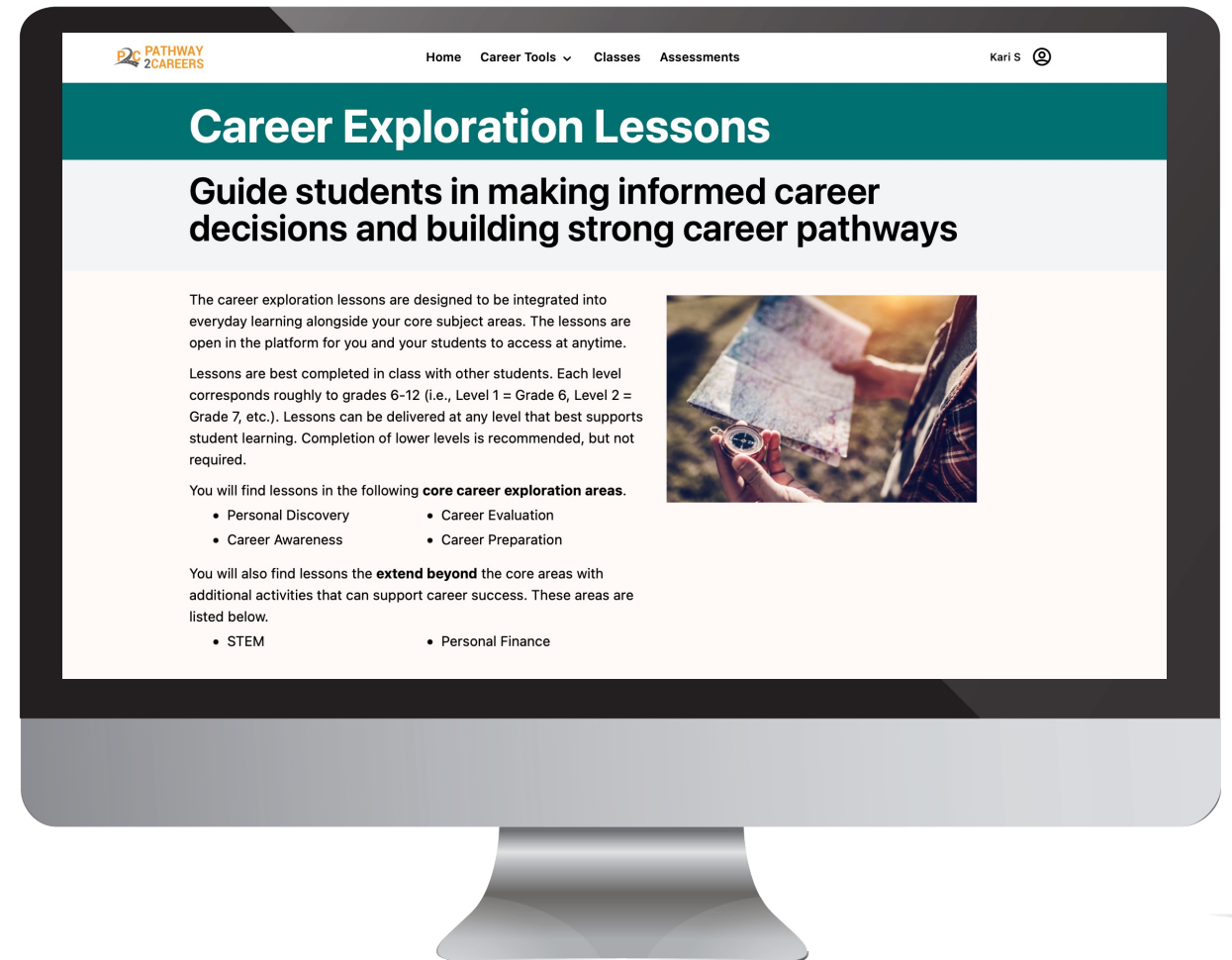- ✓ Upscale learning efforts to teach **valued skills**

P2C
PATHWAY 2 CAREERS
Education with Destination

Because connecting students to their interests and **career paths** matter

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Career Exploration

- Guided **career exploration** and pathway development system for grades 6-12

Career Exploration Lessons

Guide students in making informed career decisions and building strong career pathways

The career exploration lessons are designed to be integrated into everyday learning alongside your core subject areas. The lessons are open in the platform for you and your students to access at anytime.

Lessons are best completed in class with other students. Each level corresponds roughly to grades 6-12 (i.e., Level 1 = Grade 6, Level 2 = Grade 7, etc.). Lessons can be delivered at any level that best supports student learning. Completion of lower levels is recommended, but not required.

You will find lessons in the following **core career exploration areas**.
- Personal Discovery
- Career Awareness
- Career Evaluation
- Career Preparation

You will also find lessons the **extend beyond** the core areas with additional activities that can support career success. These areas are listed below.
- STEM
- Personal Finance

Engage Students

Informed Career Decision

Personal Factors
- Work Interests
- Work Values
- Lifestyle Aspirations

External Factors
- Job Market Trends
- High-Value Careers
- Local Job Opportunities

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Pathway2Careers
Career Exploration Curriculum

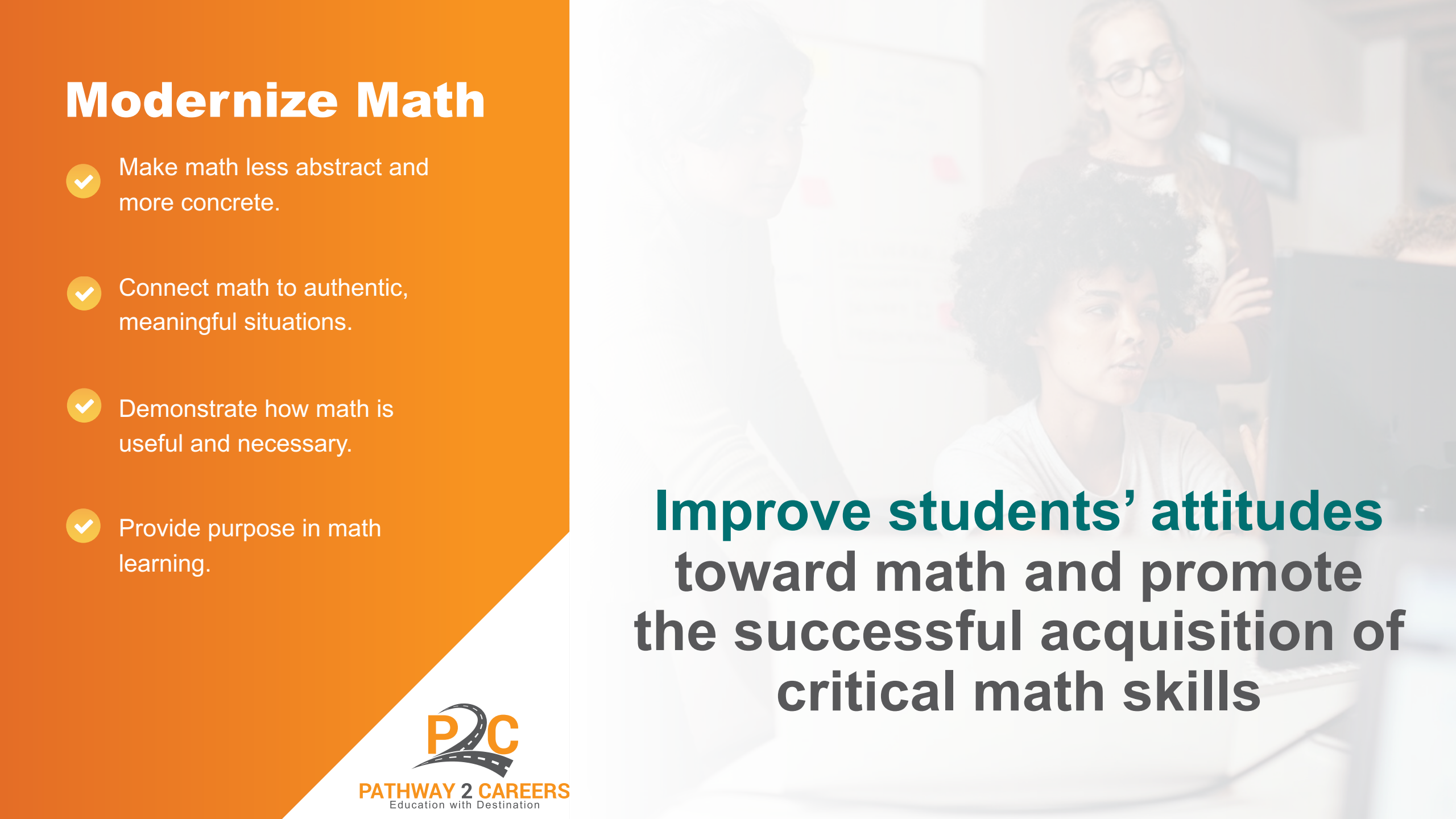| Suggested Grade	Level & Number	Career Exploration Area	Title	Description	Core Subjects				
					ELA	Math	Science	Social Studies	Technology
GR 6	1.1	Personal Discovery	That's Very Interesting	In this lesson, students will develop knowledge of personal interests and the ways in which these interests change over time. Students will explore ways in which interests can be utilized to develop a language based on interests terms used in career exploration research through self-definition and discussion.	ELA				
GR 6	1.2	Personal Discovery	When We Say Values, We Mean	In this lesson, students will engage in a modified card sort activity based on the work importance categories (such as achievement, independence, and conditions of work) and based on characteristics of school and home values they have experienced and/or are prompted to reflect on throughout the lesson.	ELA				
GR 6	1.3	Career Evaluation	Cruising Clusters and Paving Pathways	In this lesson, students build an awareness of career clusters and how various careers are classified. Students initially identify and compare career pathways aligned to their interests. They will then analyze specific labor market data categories to consider how this information may help them to make informed career decisions. The intent of this lesson is for students to build an understanding of returns on investments and high-value careers.		Math			
GR 6	1.4	Career Evaluation	High-Value Careers: Is it What You Love, the Money, or More?	In this lesson, students will define high-value careers with a card sort activity in multiple layers. First, students will sort by personal and external factors, then by specific labor market information that builds towards an understanding of high-value careers. Lastly, students will utilize the P2C Career Data tool to research and fill in missing data on career cards to search for high-value careers in their region.		Math			
GR 6	1.5	STEM	What is Engineering? What is Design?	In this lesson, students will explore and define engineering and design by looking for regional high-value occupations and industries related to the STEM career cluster, specifically in the Engineering and Technology pathway.			Science		
GR 6	1.6	STEM	Math and Science Movers and Shakers	Students will explore occupational opportunities in the STEM cluster by looking at the tasks, skills, and requirements of these career choices. Students will explore the Science and Mathematics pathway to broaden their understanding of the opportunities in the STEM cluster.			Science		
GR 6	1.7	Financial Literacy	Understanding Taxes	In this lesson, students will explore taxes. They will recognize that their net income is not the same as their gross income and learn how to calculate and identify the difference. The goal of this lesson is to help students recognize the purpose of taxes and consider how taxes affect their income.		Math		Social Studies	
GR 6	1.8	Financial Literacy	Dress for Success	In this lesson, students explore a career of interest and determine what is appropriate to wear on the job. Students create an infographic that showcases professional dress for their selected career along with a cost comparison chart. The intent of this lesson is to better understand value and opportunity costs in prospective purchases geared towards developing career readiness.	ELA	Math			Technology
GR 6	1.9	Financial Literacy	Message to Your Future Self	In this lesson, students will explore the concept of interest and determine how it relates to savings. The goal of this lesson is to help students determine that one way to save money is to research different savings accounts and their interest rates.	ELA	Math			

Career-Connected Learning
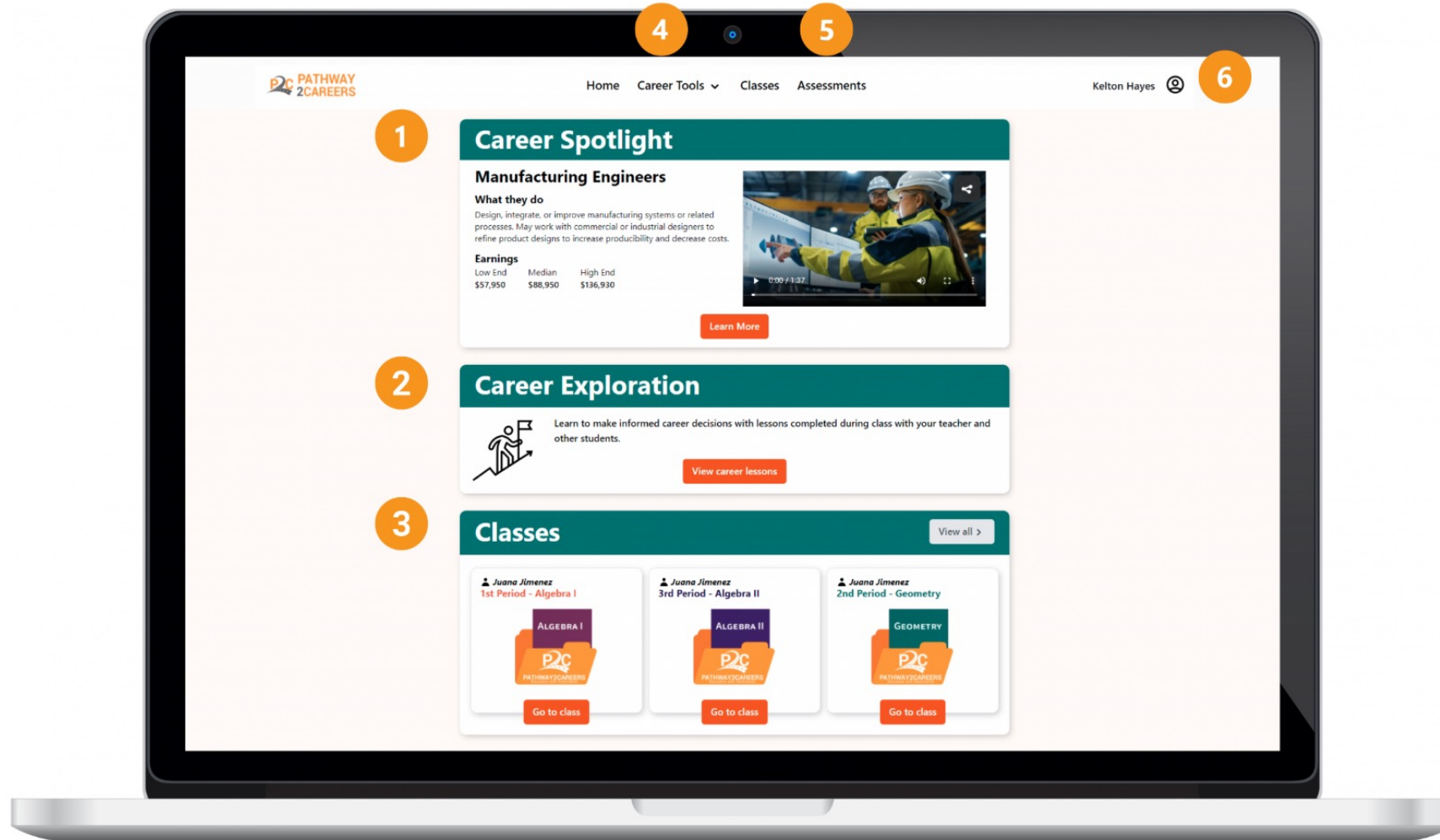
Career-Connected Curriculum

- Connect math to authentic **career situations** and provide purpose in math learning.

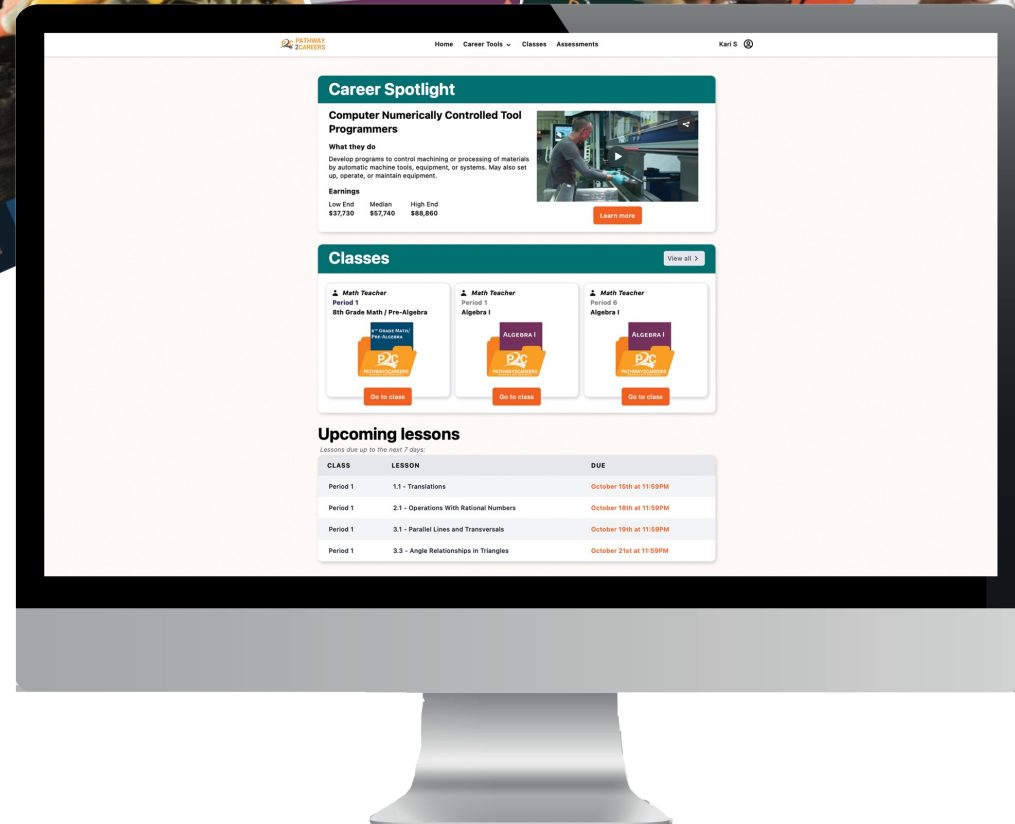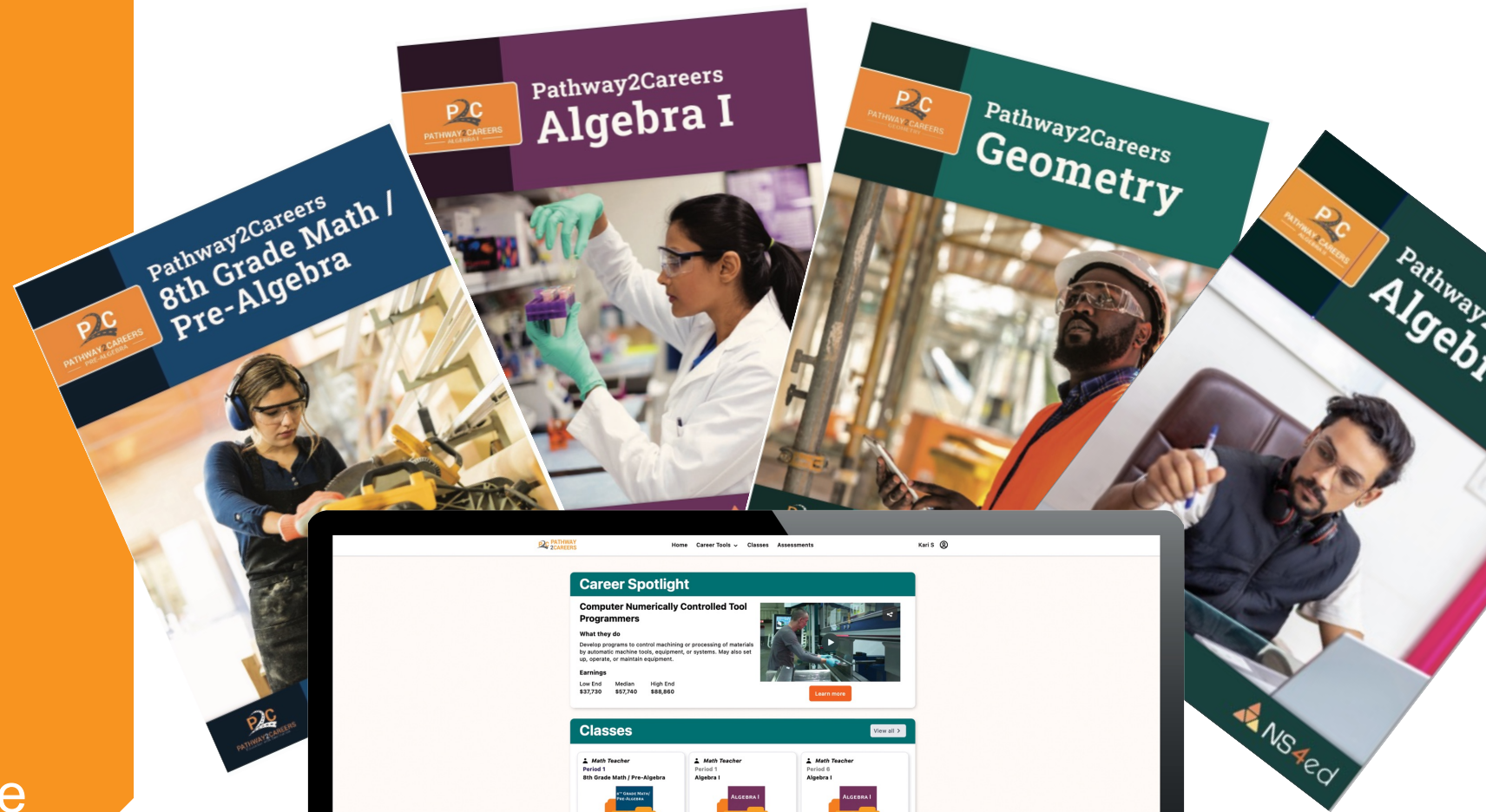- Over **650 careers introduced** in math curricula

Modernize Math

- ✓ Make math less abstract and more concrete.

- ✓ Connect math to authentic, meaningful situations.

- ✓ Demonstrate how math is useful and necessary.

- ✓ Provide purpose in math learning.

Improve students' attitudes toward math and promote the successful acquisition of critical math skills

P2C
PATHWAY 2 CAREERS
Education with Destination

Objectives

- Students understand the value of math skills in the workplace

- Students benefit from career exposure

- Students develop purpose in learning

Sample Lesson

Pre-Algebra,
Lesson 4.8: Apply
Graphs of
Proportional
Relationships

62% COMPLETE

OCCUPATION OVERVIEW

Manufacturing Engineers

Salary Projections and Career
Outlook

Connecting Manufacturing
Engineers and Pre-Algebra

Industrial engineers find ways to
eliminate wastefulness in
production processes.

Refresh Lesson

• They devise efficient systems that integrate workers,
machines, materials, information, and energy to make
a product or provide a service.

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

Photo credit: Monkey Business Images/Shutterstock.com

Career Cluster
Science, Technology, Engineering & Mathematicss

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.
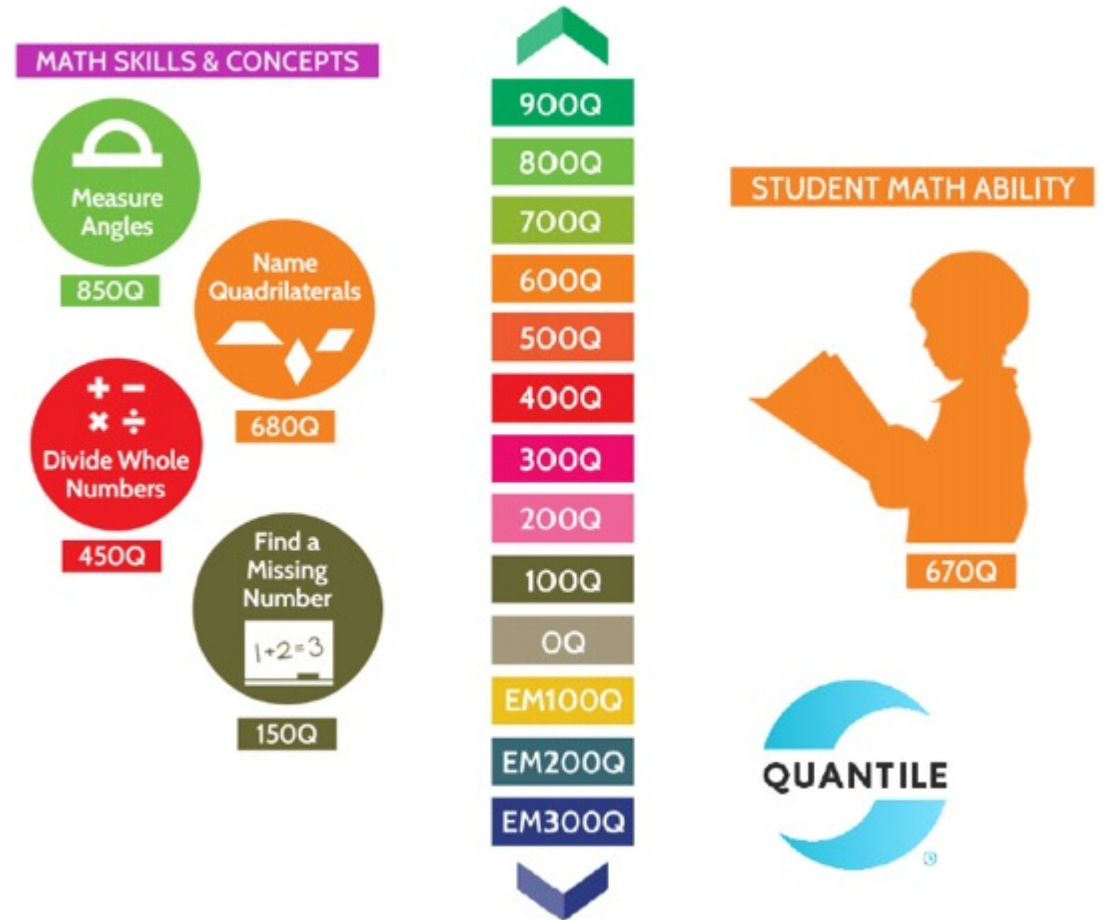
Is this a good career for me?
Manufacturing engineers:
• Analyze operational data to evaluate operations, processes or products.
• Resolve operational performance problems.
• Develop technical methods or processes.
• Implement design or process improvements.
• Determine operational methods.

353

PATHWAY 2 CAREERS
Education with Destination

Math Skills and Career Preparedness

Pathway2Careers Math Assessments

✔ Created in partnership with **MetaMetrics** (developer of the widely adopted Quantile® Framework for Mathematics)

✔ Beginning-, middle-, and end-of-year assessments provide students with a Quantile measure that **represents students' mathematical achievement level** and indicates the skills and concepts they are ready to learn.

✔ A student's increasing Quantile measure is an **indication of his or her readiness to learn** progressively more complex mathematical concepts.

MATH SKILLS & CONCEPTS

Measure Angles — 850Q

Name Quadrilaterals — 680Q

Divide Whole Numbers — 450Q

Find a Missing Number — 150Q

900Q
800Q
700Q
600Q
500Q
400Q
300Q
200Q
100Q
0Q
EM100Q
EM200Q
EM300Q

STUDENT MATH ABILITY

670Q

QUANTILE

Math Skills and Career Preparedness

QUANTILE CAREER DATABASE

✓ Student Quantile measures provided by the P2C assessments can be compared to the math demands of different careers in the **Quantile Career Database.**

✓ The database lists hundreds of careers and their Quantile measures representing the math demand for entry into the career.

✓ The purpose of the database is to provide a critical point of connection for students, allowing them to **see how their learning applies to their current and future employment potential.**
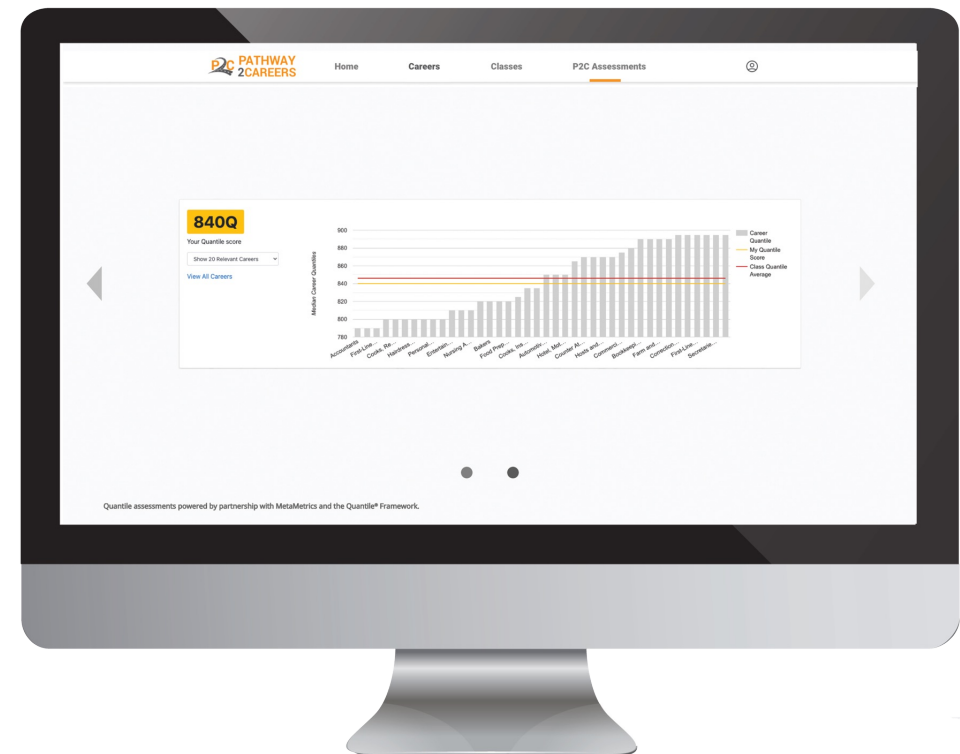
Sample Database Search for *Computer Systems Analysts*

Career Information

Bright Outlook ❓	Years of Education ❓	SOC Code ❓	Field(s)
No	16	15-1121.00	Information Technology

MetaMetrics®

Quantile Information ❓

Lower Quantile Measure	Typical Quantile Measure	Higher Quantile Measure	Highest Math Course Required
970Q	1120Q	1300Q	Calculus

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Connect Learning to Careers

Students can see…

- how math is applied in meaningful, everyday tasks.

- the relationship between math proficiency and successful job performance.

- the value in using math to reach job-related goals.

- how their interests align to possible career paths

- Connecting math to careers can be a **powerful approach** to incorporate purpose into math learning.

- Doing so will **improve students' attitudes** toward math and enhance motivation to acquire the critical math skills students will need for **employment success.**

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Sustain Success

Establish a culture of career-connected learning

"Effective education is not adding a program or a set of programs to a school. Rather, it is a transformation of the culture and life of the school."
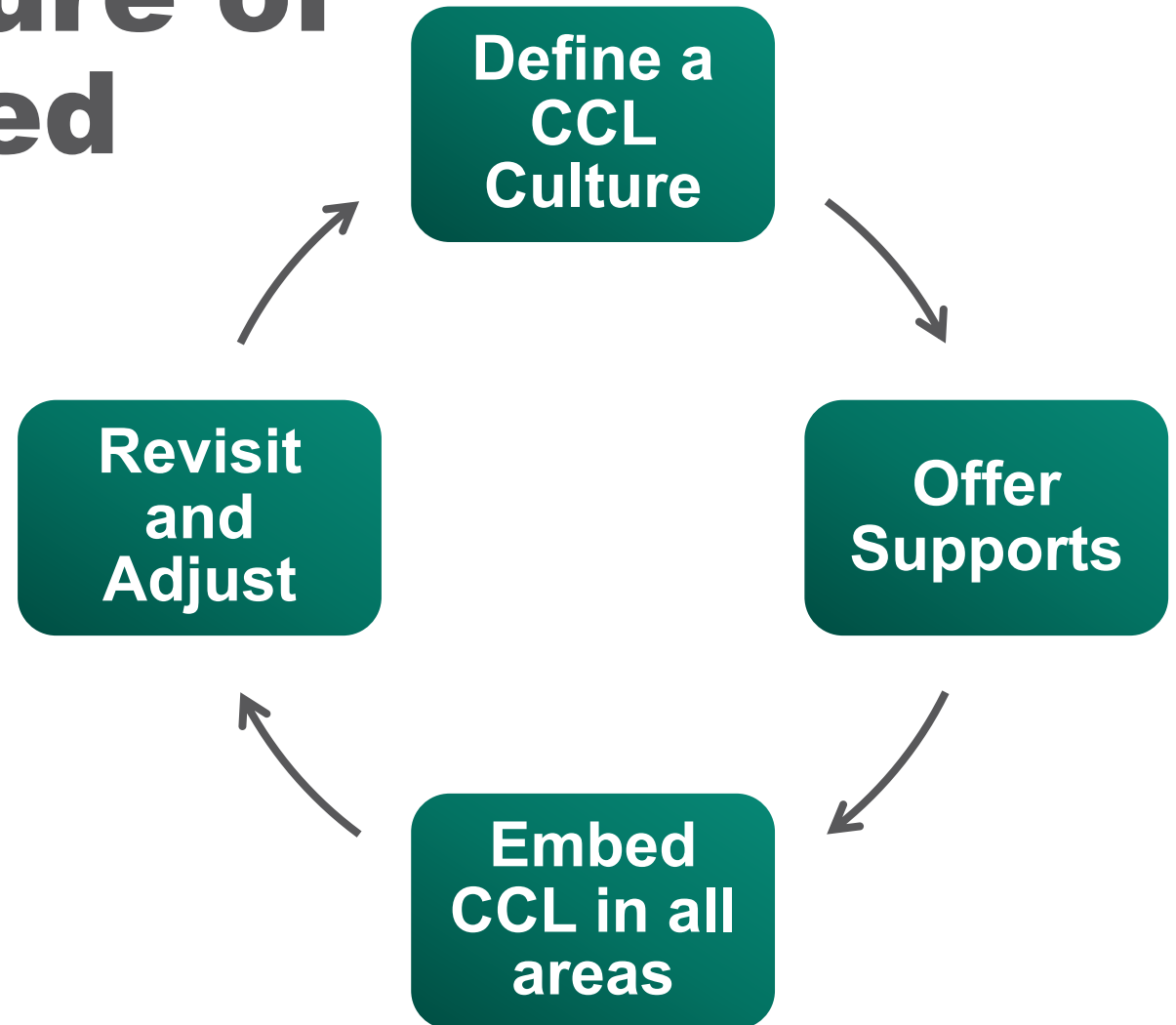
- David Berkowitz

Engage Stakeholders

■ **Operationalize**

- **Identify all areas** to support career-connected learning

- **Engage stakeholders** in launch plan(s)

- Enhance academic programs to support career-connected learning

- **Address** professional learning opportunities

- **Frequent check-ins** to support implementation

Establish a Culture of Career-Connected Learning

Define a CCL Culture → Offer Supports → Embed CCL in all areas → Revisit and Adjust → (cycle back to Define a CCL Culture)

Program Evaluation Worksheet

	Not Yet Started	Somewhat Complete	Complete	N/A
1. Measures established for a Career-Connected Learning Environment			X	
2. Professional Learning Outlined			X	
3. Programs selected for career-connected learning		X		
4. Professional Learning Scheduled		X		
5. Key Performance Indicators Captured	X			

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Pedagogy of Student Learning
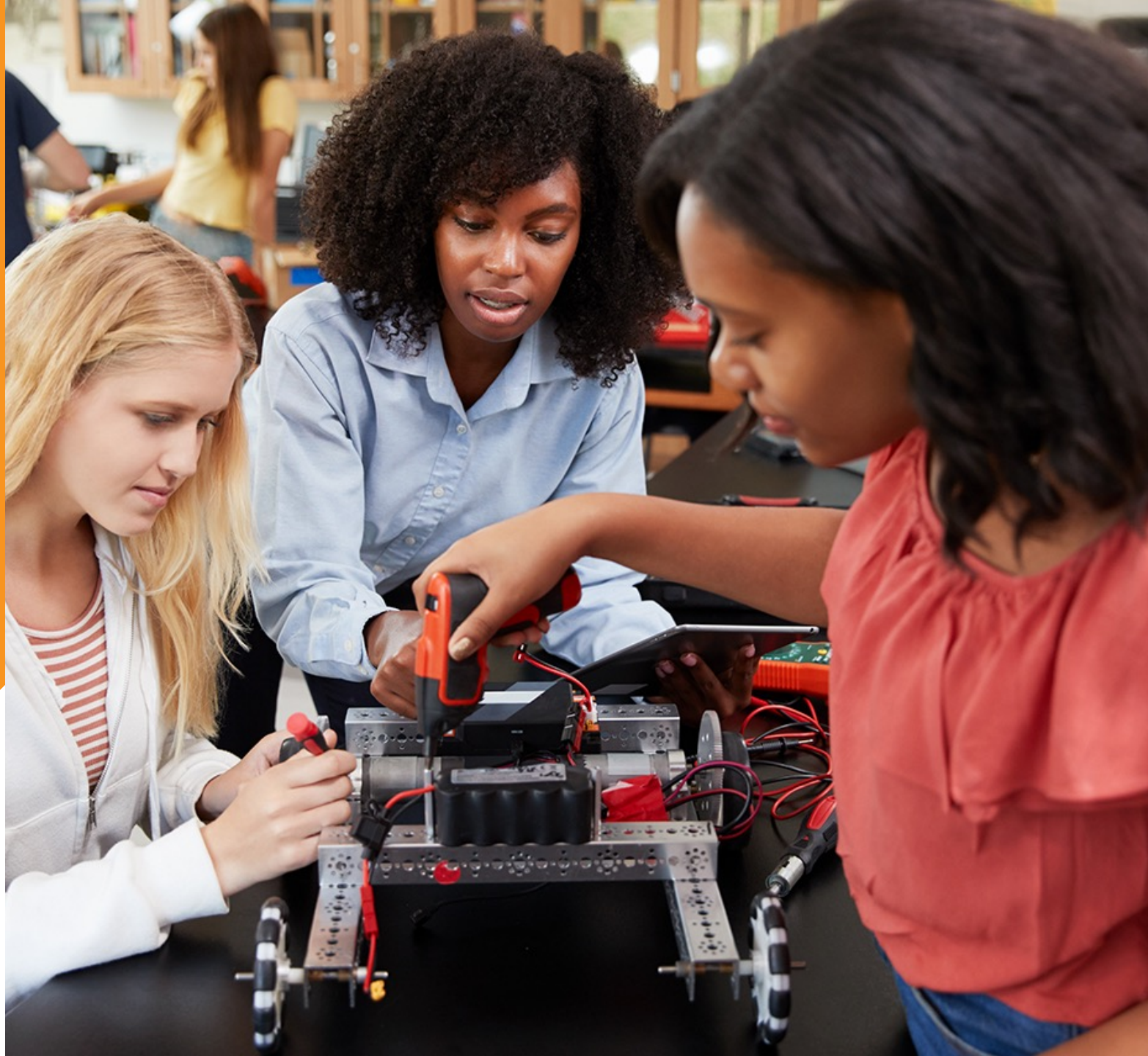
Need to Know

Self-Concept

Role of Experience

Readiness to Learn

Orientation to Learning

Motivation to Learn

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Revisiting the ECHS Design Principles

- Establish a culture of career-connected learning

Equitable Access

Targeting underrepresented students in higher education

Academic Pathways

That are well integrated and aligned with college and career

Robust Student Support

In both academics and advising

Connections to Career

Through workplace and experiential learning experiences

High-Quality & Deep Partnerships

Between high schools and colleges

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Support for teachers

"*Never in my 20 years* of educational experience have my students ever experience *such in-depth career focus math problems.*"

"*P2C curriculum is extremely unique;* it lifts the veil, and perfectly focuses the spotlight on the type of math used in any chosen profession."

"With the Pathways2Careers lessons, I saw **more of my students take risks and engage in conversation** during the lessons which helped our class build more community and self-confidence."

"Many of the teachers that I work with absolutely **love the way their students glow and marvel at grasping concepts** that otherwise they very well may not have understood."

Questions?

Career-Connected Learning Series

April 14 | Demonstrate results of career-connected learning and maintain momentum

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