



**Illinois Math  
Badging Initiative**

**SVCC College & Career  
Readiness Summit**



**EdSystems**

EDUCATION SYSTEMS CENTER *at*  
NORTHERN ILLINOIS UNIVERSITY



# What are Math Badges?

## An Alternative Credentialing Mechanism

- Aligned to:
  - Illinois Learning Standards (incorporating CCSS)
  - Transitional Math competencies
- Stackable
- Translate into credit for:
  - Transitional Math
  - High school math courses
  - Early college credit





# How do Math Badges work?

Students can certify learning from a broad range of sources:

- Coursework
- Independent study
- Summer school
- Work-based learning, etc.





# Why Math Badges?

Improve math outcomes and advance racial equity through:

- Stronger **alignment** to math needed for secondary, postsecondary, and career success
- Students **demonstrate knowledge** not captured by grades
- Opportunities to **develop and reinforce** math knowledge and skills
- **Validate learning** outside of the classroom through work-based and other applied learning.
- **Customization** engages students with math directly related to college and career interests



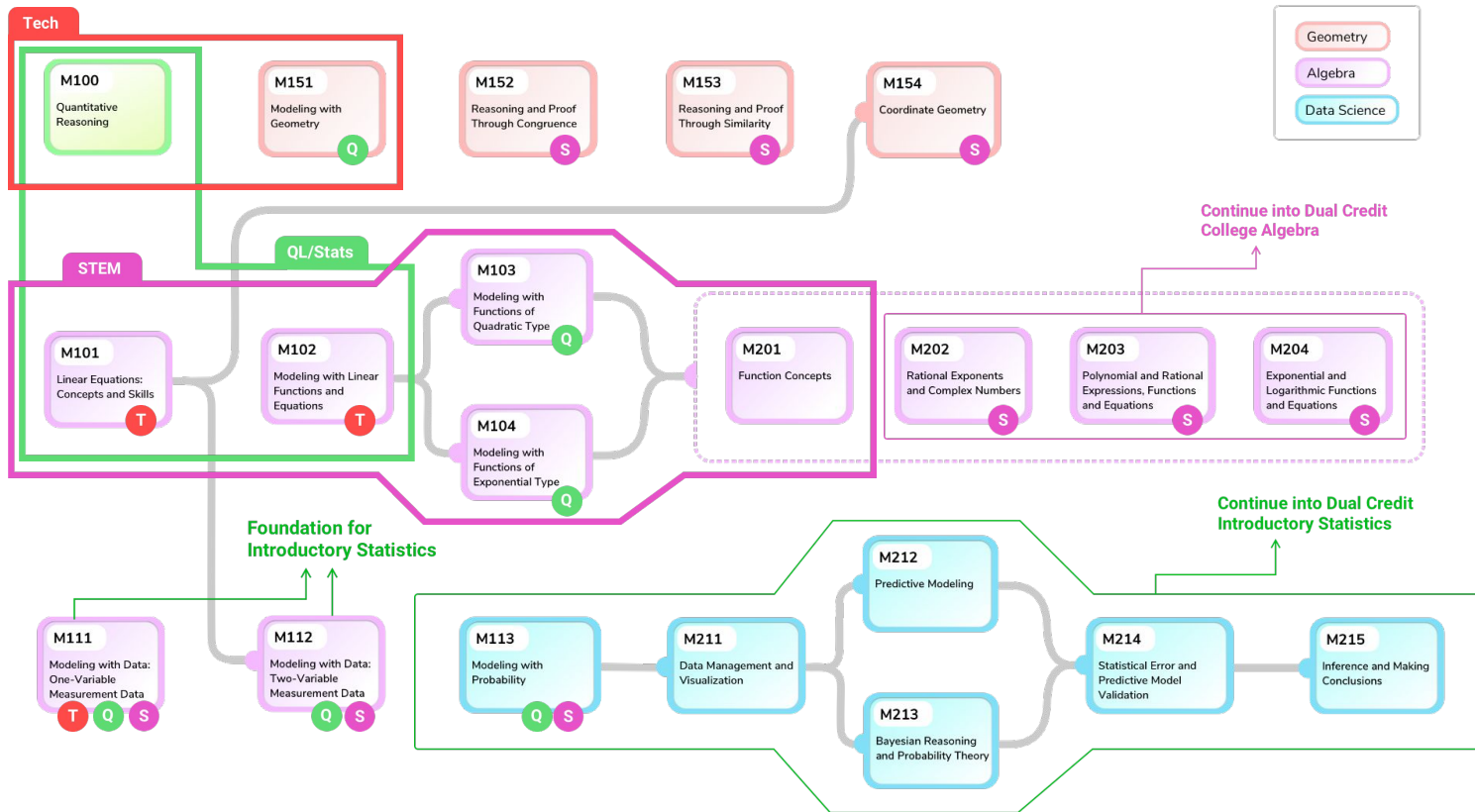


# It's not just about badges!

Badges are a **tool** to:

- Solve a problem
- Rework a system
- Change a structure
- Transform teaching
- Focus on learning







# In partnership with XQ Institute



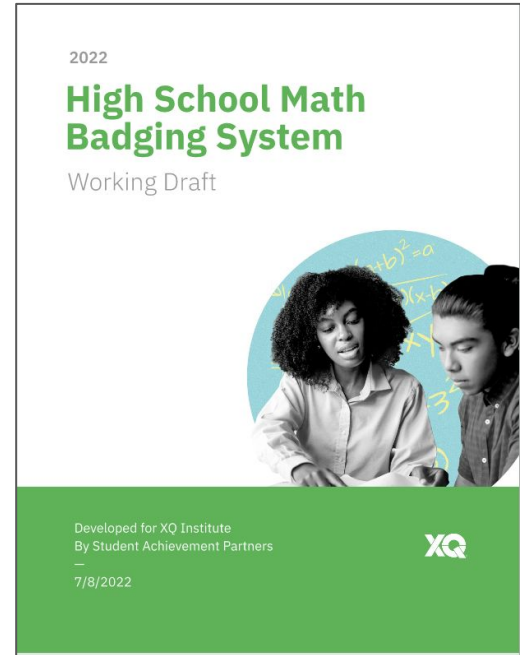


# Deep Dive

## *What's in a Badge?*

Each math badge includes these elements:

- Mathematical content and practice expectations
- Learning principles
- Examples of rich problems
- Evidence of learning (how badges can be assessed)







# Deep Dive

## *Learning Principles (Shared Across All Badges)*

Each badge framework employs learning principles students should engage in to support them in meeting the content and practice expectations for the badge.

1. Engage with cognitively demanding tasks in heterogeneous settings
2. Engage in social activities
3. Build conceptual understanding through reasoning
4. Have agency in their learning
5. View mathematics as a human endeavor across centuries
6. See mathematics as relevant
7. Employ technology as a tool for problem-solving and understanding



# Deep Dive

## *(Three types of) Evidence of Learning*

### **Portfolio of Evidence**

A set of artifacts collected throughout the students' work on a badge course of study.

### **Concept and Skills Assessment**

The Concepts and Skills Assessment provides evidence of the range of content and practice expectations for the badge.

### **Performance Assessment (Modeling Badges Only)**

Performance Assessments ask students to demonstrate their learning specific to the particulars of badges that center mathematical modeling and application



# Badge Development Timeline

January  
2022

June  
2022

January  
2023

August  
2023

Develop the Badge  
Framework

Develop Assessment Blueprints for  
Badges

December 2022: Blueprints for  
remaining badges completed

August 2023:  
Badge  
assessments  
completed

June 2022:  
Blueprints for 8  
badges completed

Develop Badge Assessments

# Pilot Site Use Cases

<b><i>IMSA</i></b>	<b><i>Ridgewood</i></b>	<b><i>Round Lake</i></b>	<b><i>PSMA</i></b>	<b><i>Charleston</i></b>
<p>Pipeline and Bridge programs</p> <p>Historically underrepresented 7th-9th grade students</p> <p>Interest and talent in math</p> <p>May come from a district that lacks opportunities for enrichment.</p>	<p><i>Transitional Math</i> Set Badges students must complete and optional Badges based on career pathway.</p> <p>Students can earn credit in multiple Transitional Math courses (stackable Badges)</p> <p><i>Core math</i> Set Badges students must complete and optional Badges based on career pathway.</p> <p>Students can earn Honors Credit</p>	<p>Prep Classes (double block)</p> <p>Possibly Foundations/single block</p> <p>Bringing math into the 21st century</p> <p>Meaningful interdisciplinary connections</p> <p>Math in context</p> <p>Portfolio options</p> <p>Students see themselves as mathematicians</p>	<p>Math badging will be integrated into:</p> <p>Aerospace &amp; Engineering (Rising 10th)</p> <p>Introduction to Engineering (Rising 9th)</p> <p>Robotics &amp; Computer Science (Rising 9th)</p>	<p>Geometry in Construction</p> <p>Solidify and demonstrate rigor</p> <p>Aligning to Algebra I and II</p>



# Why Math Badges

## Active Purpose

- Connected
- Engaged
- Relating
- Agency
- Inclusive
- Eager

## Static Purpose

- Disconnected
- Apathetic
- Dissociate
- Unconcerned
- Exclusive
- Grudgingly





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# Perfect Fit for Ridgewood

- Equity
- Inclusive
- Students Choice
- Promotes the skills students need
- Aligns with CBE
- Fits with Career Pathways





# Equity

- Students reflect on their own experiences
- Fair, Valid, and Accessible for all
- Connecting interactivity to academic rigor and cognitive capacity building (Zareta Hammond)
- Bridges between academic content and students' interests
- Performance Assessments - Reflect and Share their identities as learners



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# Dr. Gloria Ladson-Billing Framework

- Knowledge construction
- Sociocultural competence
- Critical consciousness
- Empowerment



GREEN R

# Math Badges, Rethinking our Approach to Math



*Evolving Education*

THE FREEDOM  
TO PERSONALIZE  
YOUR LEARNING

# For more information

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