Students said...

“This is the first time—
...math isn’t my problem class.”
...I understand.”
...math makes sense.”
...I like math.”
A student said...

“I have been able to use my debate skills and have had a better improvement in my chemistry grade because of learning the same problems in this class.”
A coworker said…

“What’s DY* doing at the board? He’s actually doing work for you! He always sleeps in my class. Any class that makes DY* work must be good, so I need to be in this class.”
Pilot Teacher said…

“The class is more rigorous and engaging and thought-provoking than my pre-calculus class.”
Pilot Teacher said...

“Although I always knew this was the way I was supposed to teach, I didn’t realize that it would make such a huge difference. My students are now excited and eager to try new things and remembering things that they try.”
Pilot Teacher said…

“My kids can read the problem or task now, know what questions they want to answer and know what information they need to find and are able to work independently.”
Mental Math
Collaboration
Critical Thinking
Real-life stuff
Strategizing
Sampling (Fun!)
Regression lines
Look at data differently
Break down word problems
Ask relevant questions
Interpreting and or understanding y = mx + b
Graphing calculator
Technology
Science Concepts
Math Concepts
Excel
Formulas
Collaboration
Graphs
Geometry
Excel
Box and Whiskers
Scatterplots
Learning not to give up
Interpreting Data
Applying Knowledge
Each Child, Our Future

Ohio’s Strategic Plan for Education

education.ohio.gov/StrategicPlan
In Ohio, each child is **challenged**, **prepared** and **empowered**.

**Vision**
In Ohio, each child is **challenged** to discover and learn, **prepared** to pursue a fulfilling post-high school path and **empowered** to become a resilient, lifelong learner who contributes to society.

**Four Learning Domains**
- **Foundational Knowledge & Skills**
  - Literacy, numeracy and technology
- **Well-Rounded Content**
  - Social studies, sciences, languages, health, arts, physical education, etc.
- **Leadership & Reasoning**
  - Problem-solving, design thinking, creativity, information analytics
- **Social-Emotional Learning**
  - Self-awareness & management, social awareness, relationship skills, responsible decision-making

**One Goal**
Ohio will increase annually the percentage of its high school graduates who, one year after graduation, are:
- Enrolled and succeeding in a post-high school learning experience, including an adult career-technical education program, an apprenticeship and/or a two-year or four-year college program;
- Serving in a military branch;
- Earning a living wage; or
- Engaged in a meaningful, self-sustaining vocation.

**Three Core Principles**
- **Equity**
- **Partnerships**
- **Quality Schools**

**10 Priority Strategies**
1. Highly effective teachers & leaders
2. Principal support
3. Teacher & instructional support
4. Standards reflect all learning domains
5. Assessments gauge all learning domains
6. Accountability system honors all learning domains
7. Meet needs of whole child
8. Expand quality early learning
9. Develop literacy skills
10. Transform high school/provide more paths to graduation
One Goal

Ohio will increase annually the percentage of its high school graduates who, one year after graduation, are:

• Enrolled and succeeding in a post-high school learning experience, including an adult career-technical education program, an apprenticeship and/or a two-year or four-year college program;
• Serving in a military branch;
• Earning a living wage; or
• Engaged in a meaningful, self-sustaining vocation.
Strategy 10

Ensure high school inspires students to identify paths to future success, and give students **multiple ways** to demonstrate the knowledge, skills and dispositions necessary for high school graduation and beyond.
High School

College Math Pathway

- College Algebra to Calculus
- Quantitative Reasoning
- Statistics

Future Career

- Business
- Chemistry
- Engineering
- Communication
- Criminal Justice
- Fine Arts
- Nursing
- Nutrition
- Social Work

QR Transition Course with Remediation-Free Goal
Theme 0

- Growth Mindset
- Learn Like a Tiger
- Marshmallow Challenge
- Problem Solving Strategies
Themes

Number and Quantity → Linear Functions → Exponential & Power Functions & Geom Seq

Application of NQ and Stats ← Probability ← Statistics
Reinforcements
### Selected Schools

<table>
<thead>
<tr>
<th>Typology</th>
<th>Rural</th>
<th>Small Town</th>
<th>Suburban</th>
<th>Urban</th>
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<tr>
<td>Pre-Pilot</td>
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<td>3</td>
<td>4</td>
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<td></td>
<td>1</td>
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<td>2</td>
<td>(1)</td>
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<td></td>
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<td></td>
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<td>SW</td>
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<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td>4</td>
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<tr>
<td>Total</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>22</td>
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</table>

**Total Schools**: 22 Schools-3 pre-pilots and 19 others

*(1) are the pre-pilot schools*
How did participating in the pilot impact your instructional practices?

Participating in the pilot impacted my instruction practice tremendously. Teaching this course required me to use less direct instruction and more of a "supporting" role. Typically, when we started a new lesson, the kids wanted a lot of help getting started. I had to force them to rely on themselves and their groups to make sense of the problem and use their own resources to tackle the problem.
How did participating in the pilot impact your instructional practices?

This course also required me to really evaluate what mathematics my students needed reinforced and what concepts they had mastered. I believe this practice helped individualize the class to help prepare them for college mathematics.
How did participating in the pilot impact your instructional practices?

Another amazing effect of this is that this mindset carried over to my other courses. I created more hands on, discovery lessons in my other courses because I saw the value of students becoming independent problem solvers. When students took ownership of the problem situation, they learned so much more than if the learning was a result of being told what to do.
Strategy 3

Improve targeted supports and **professional learning activities** so teachers can deliver excellent instruction today, tomorrow and throughout their careers.
Professional Development Plan

Year 1
- Pre-pilot Teacher
- Higher Ed Partner

Year 2
- NW Pilot Teachers
- NE Pilot Teachers
- SW Pilot Teachers
- SE Pilot Teachers
- C Pilot Teachers
- Higher Ed Partner

Year 3
- NW Phase 1
- NE Phase 1
- SW Phase 1
- SE Phase 1
- C Phase 1
- Higher Ed Partner

Year 4
- NW Phase 2
- NE Phase 2
- SW Phase 2
- SE Phase 2
- C Phase 2
- Higher Ed Partner
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tr>
<td>2018 Spring/Summer</td>
<td>Begin Development of the Course</td>
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<tr>
<td>2018/2019</td>
<td>Implement Developmental Pre-Pilot</td>
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<tr>
<td>2019/2020</td>
<td>Implement Pilot</td>
</tr>
<tr>
<td>2020/2021</td>
<td>Launch Phase 1</td>
</tr>
<tr>
<td>2021/2022</td>
<td>Launch Phase 2</td>
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Describe the growth of a specific student (or students) over the course of the year.

My students grew mathematically and socially over the year. At the beginning of the year, my students had difficulty working in groups and persevering in problem solving situations.
Describe the growth of a specific student (or students) over the course of the year.

For example, I had several students who did not talk to their group mates and the groups did not work together. I had to assign groups to allow kids to work with peers with whom they felt the most comfortable. By the middle of the year, groups were randomly assigned by drawing names out of hats. Everyone enjoyed the group settings and were able to work with anyone. This is an important skill they will need for their college and work careers.
Describe the growth of a specific student (or students) over the course of the year.

Mathematically, my students showed incredible growth. At the beginning of the year, they all reported that they were bad at math and it was their worst subject. By January, their comments became "math is no longer my worst subject" and "I understand what I'm doing in math for the first time."
Describe the growth of a specific student (or students) over the course of the year.

They are very persistent problem solvers and can explain how and why they reached the results of a problem. They are confident and their abilities in math have greatly improved. After just five weeks in the class, students who took the ACT a second time all improved 1, 2, or 3 points on their math score.
What were your biggest challenges this year?

The challenges I faced this year were how to wrap up the activity each day and how to create summative assessments. Since most lessons were two or more days in length, I found it difficult to wrap up the lesson each day. I also found it challenging to wrap up the activity effectively when groups were working at different paces. Writing quizzes for each theme was difficult at first but became easier as the year progressed.