

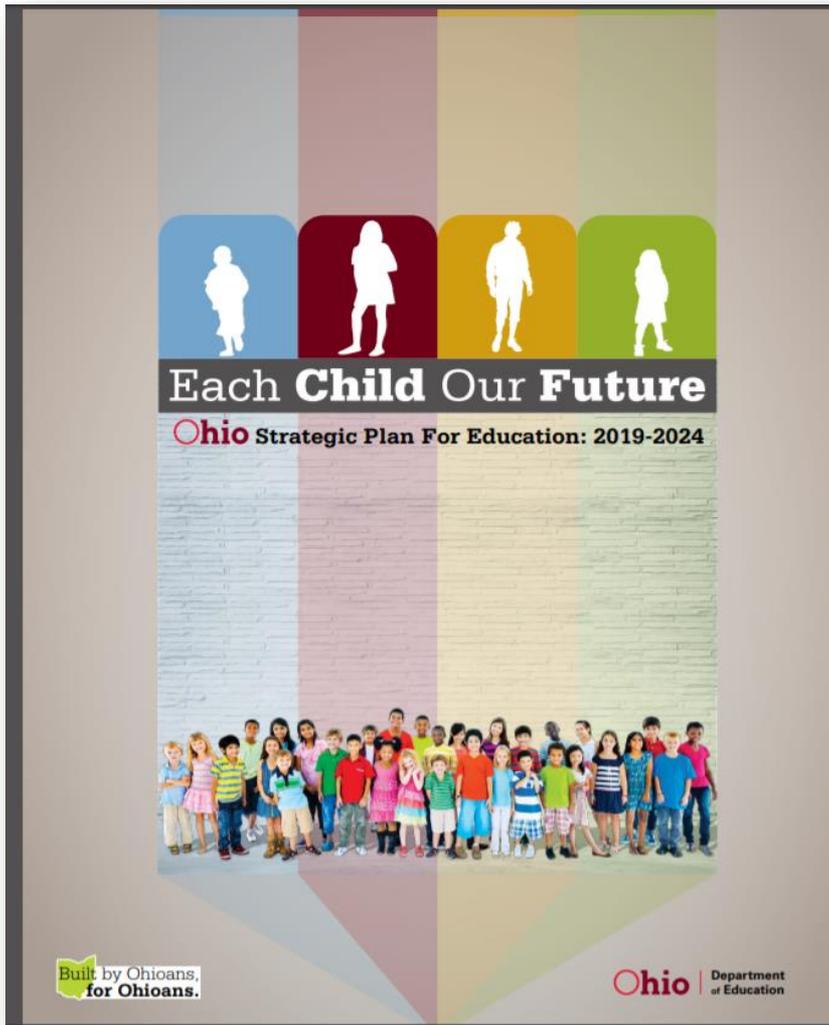
High School Transition Course: Mathematical Modeling and Reasoning



November 1, 2019

Each Child, Our Future

Ohio's Strategic Plan for Education



education.ohio.gov/StrategicPlan

#EachChildOurFuture

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

WHOLE CHILD

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



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One Goal



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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.



Structure of Course

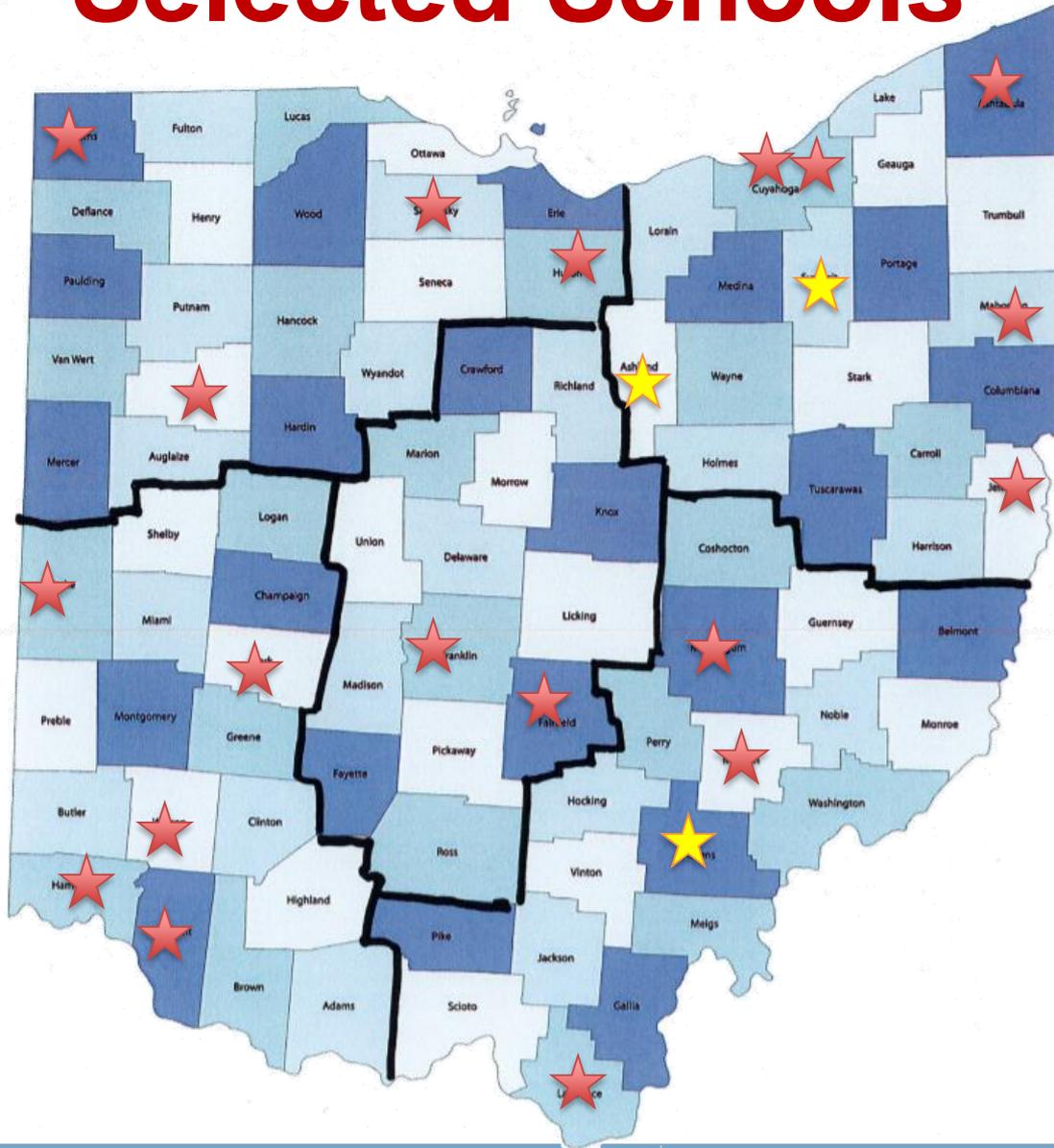
Year-long course

Focused on quantitative reasoning,
problem-solving and modeling

Taught using student-centered
pedagogy

- <https://www.youtube.com/watch?v=C9NIb4vSwNo>
- ~6 min

Selected Schools



Timeline

Spring/Summer
2018

Begin Development of the Course

2018-2019
School Year

Implement Developmental Pre-Pilot

2019-2020
School Year

Implement Pilot

2020-2021
School Year

Launch Phase 1

2021-2022
School Year

Launch Phase 2

Research

Discovery Center from Miami University for
Evaluation, Research and Professional Learning



Research

Accuplacer NextGen QAS pre- and post-tests

Quantitative Literacy and Reasoning Assessment (QLRA) created by the National Science Foundation (NSF) pre- and post-tests

Growth Mindset Assessment pre- and post-tests

Surveys of program successes and challenges from teachers and students



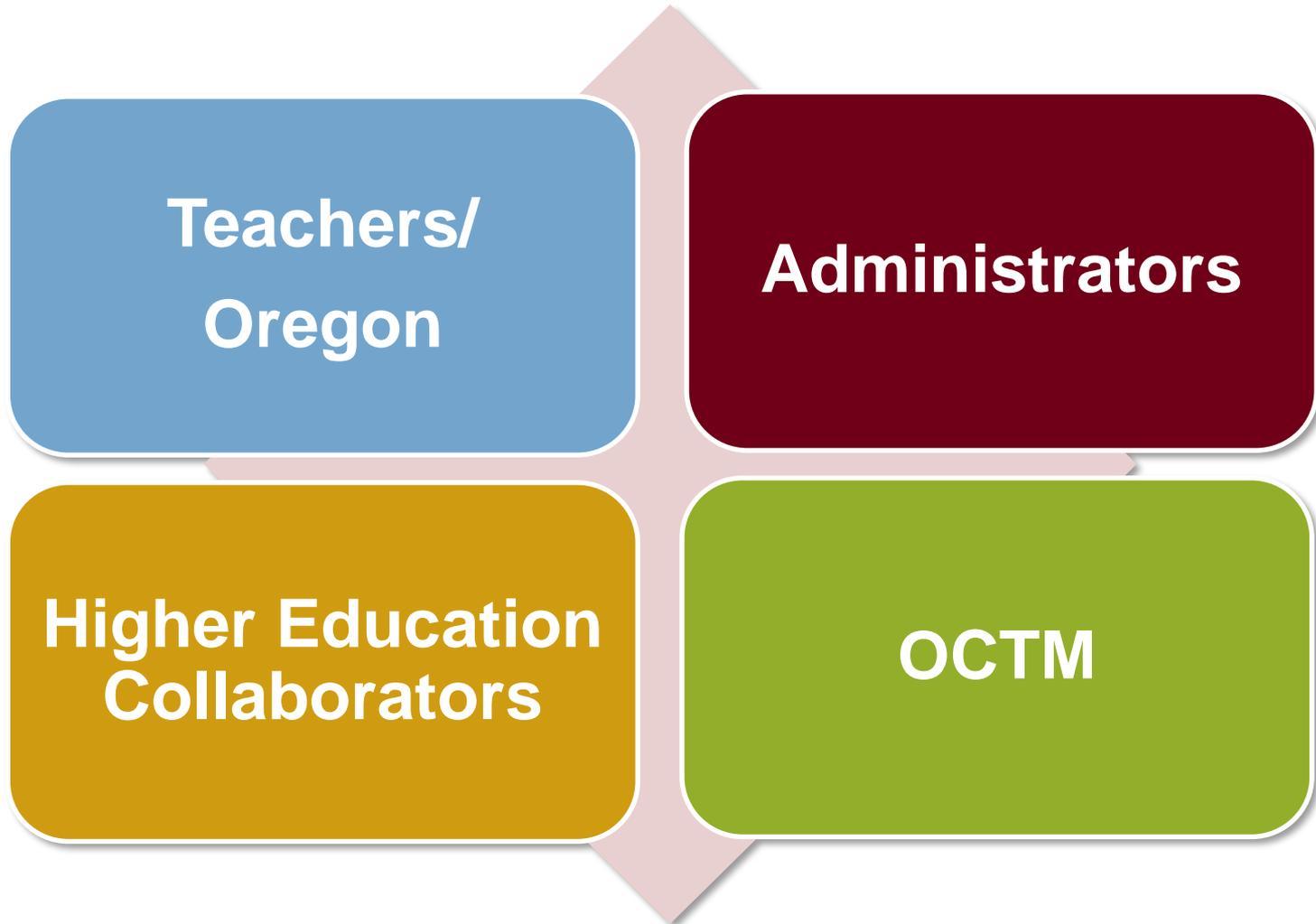
Strategy 3

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

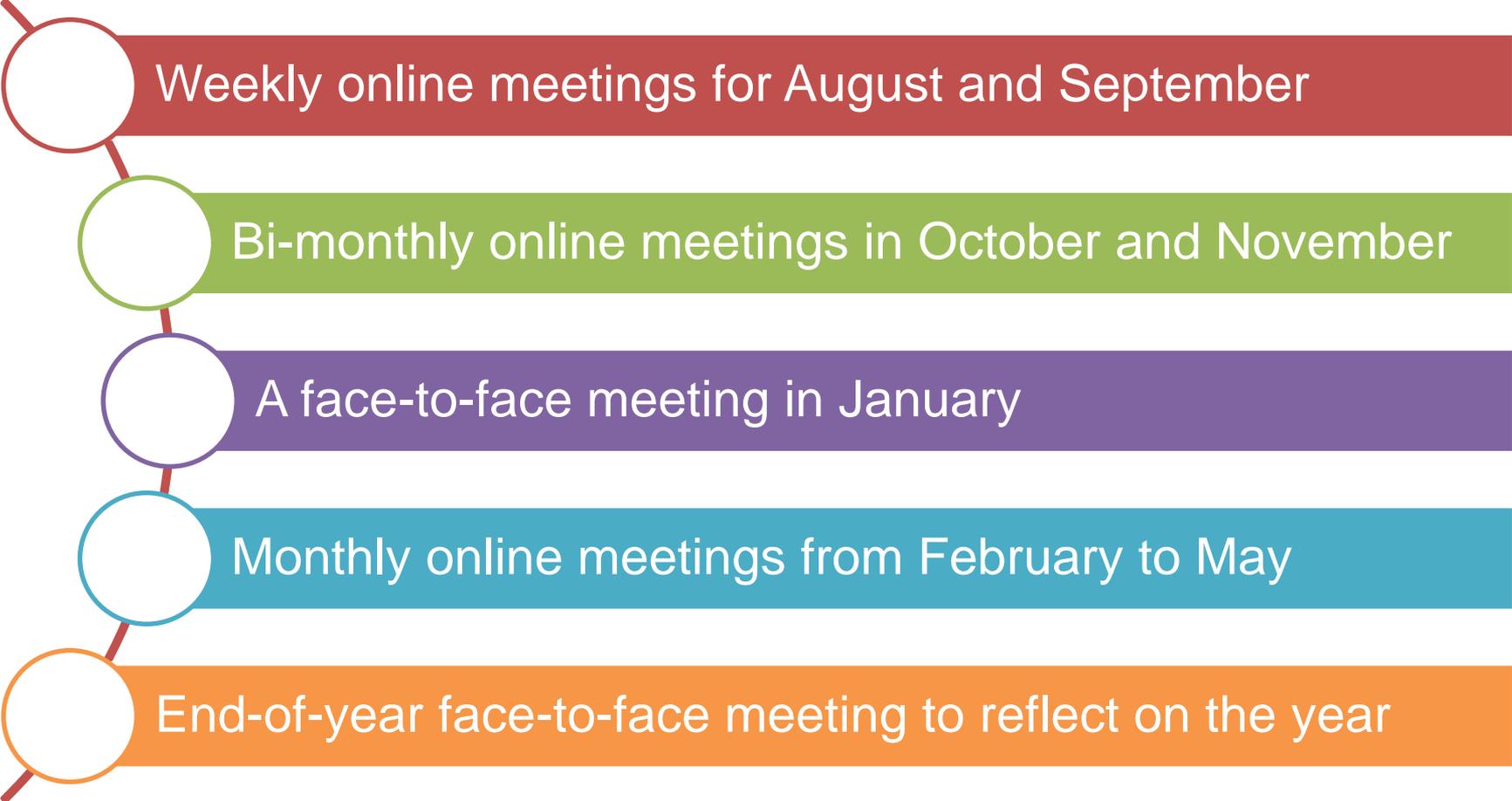
Summer Workshop

- **One day** for administrators and higher education collaborators
- **Four days** for teachers
- Steve Miller did pedagogy pieces
- Pre-pilot teachers presented context
- Researchers spoke

Summer Workshop



Ongoing Professional Development



Weekly online meetings for August and September

Bi-monthly online meetings in October and November

A face-to-face meeting in January

Monthly online meetings from February to May

End-of-year face-to-face meeting to reflect on the year

<https://www.youtube.com/watch?v=ObTHk8KnTBI>

- ~5 minutes

Higher Education Collaboration Expectations



Visit classrooms periodically to endorse the transition from high school to college.

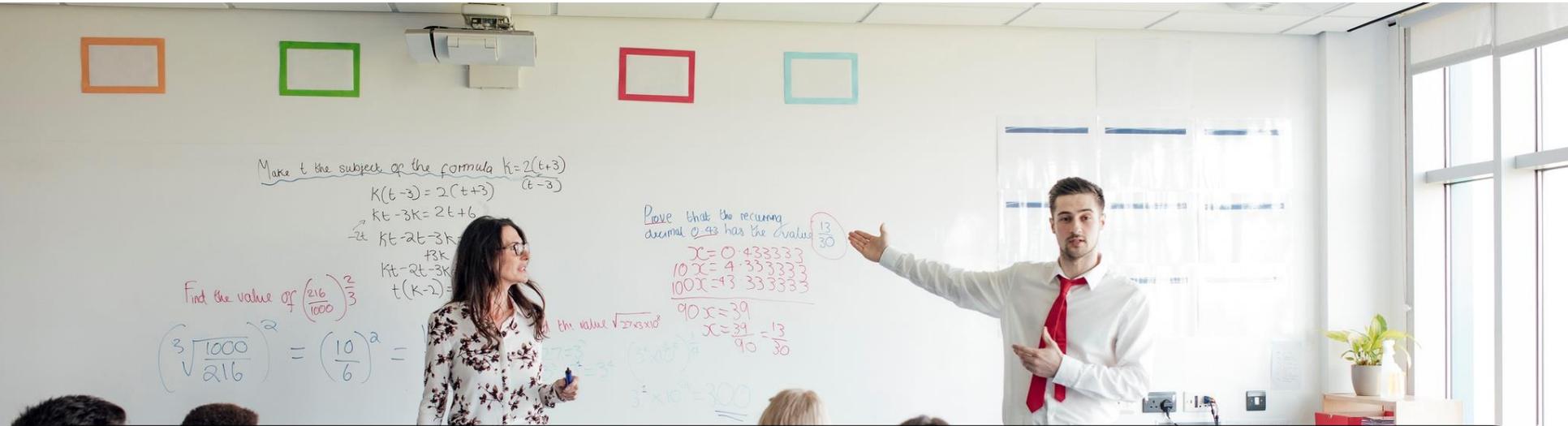


Collaboration Expectations



Higher education collaborators will conduct a class period introduction to college mathematics; explaining the multiple pathways and expectations of college mathematics.

Collaboration Expectations



Co-teach a lesson in the fall
and again in the spring

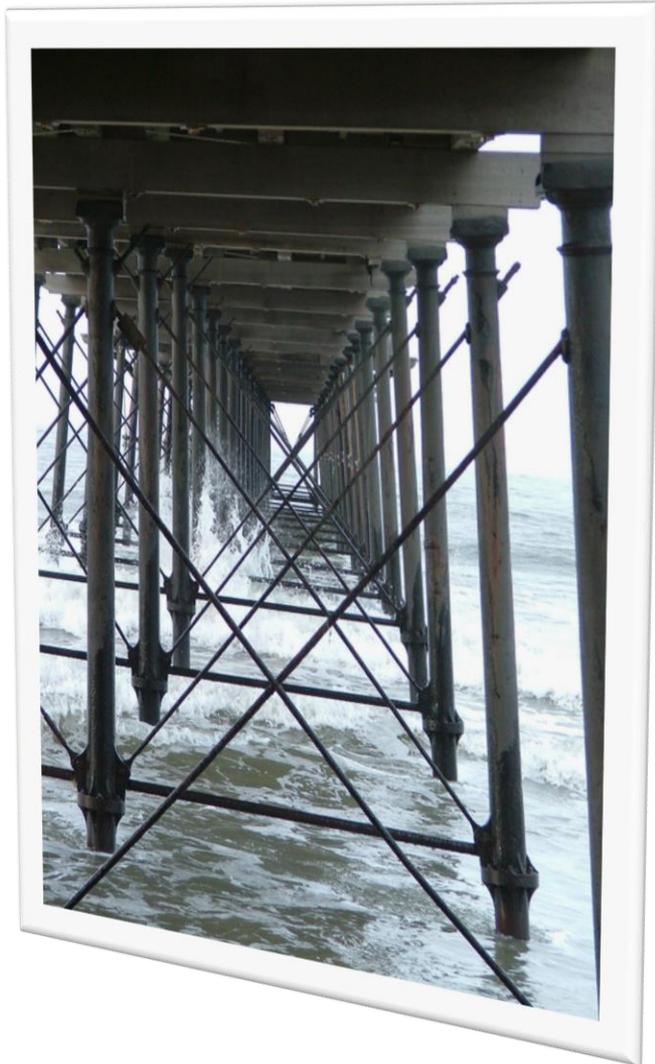
Support the Pilot Teacher



Review context lessons and discuss suggestions for enhancement.

Collaborate at least twice in the fall, twice in the winter and twice in the spring.

Support the Pilot Teacher



Suggest reinforcement activities.

Collaborate at least twice in the fall, twice in the winter and twice in the spring.

Support the Pilot Teacher

Participate in online
professional
learning sessions.

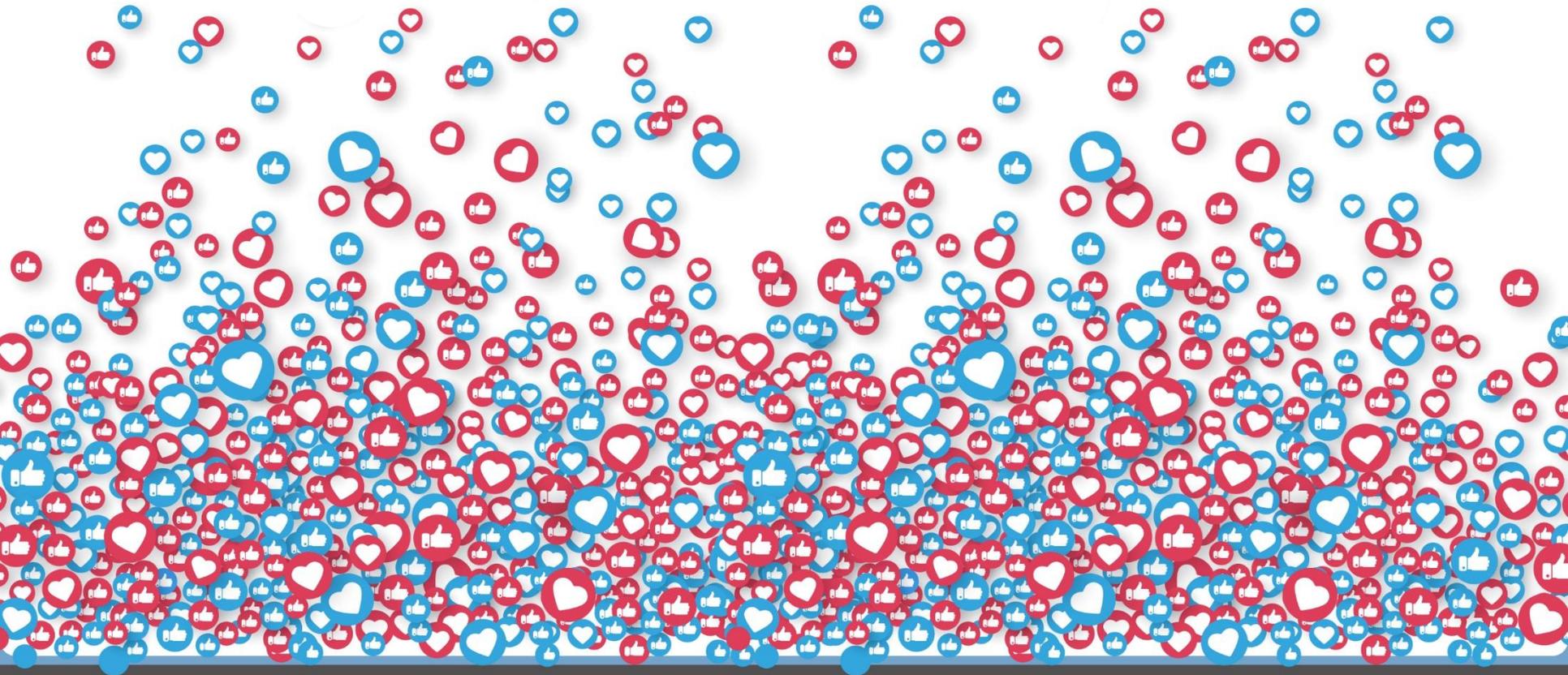


Scale





@OHEducation



**Share your learning
community with us!**

#MyOhioClassroom



Celebrate educators!

#OhioLovesTeachers