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
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

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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=C9Nlb4vSwNo

• ~6 min
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
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
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
Share your learning community with us!
#MyOhioClassroom

Celebrate educators!
#OhioLovesTeachers