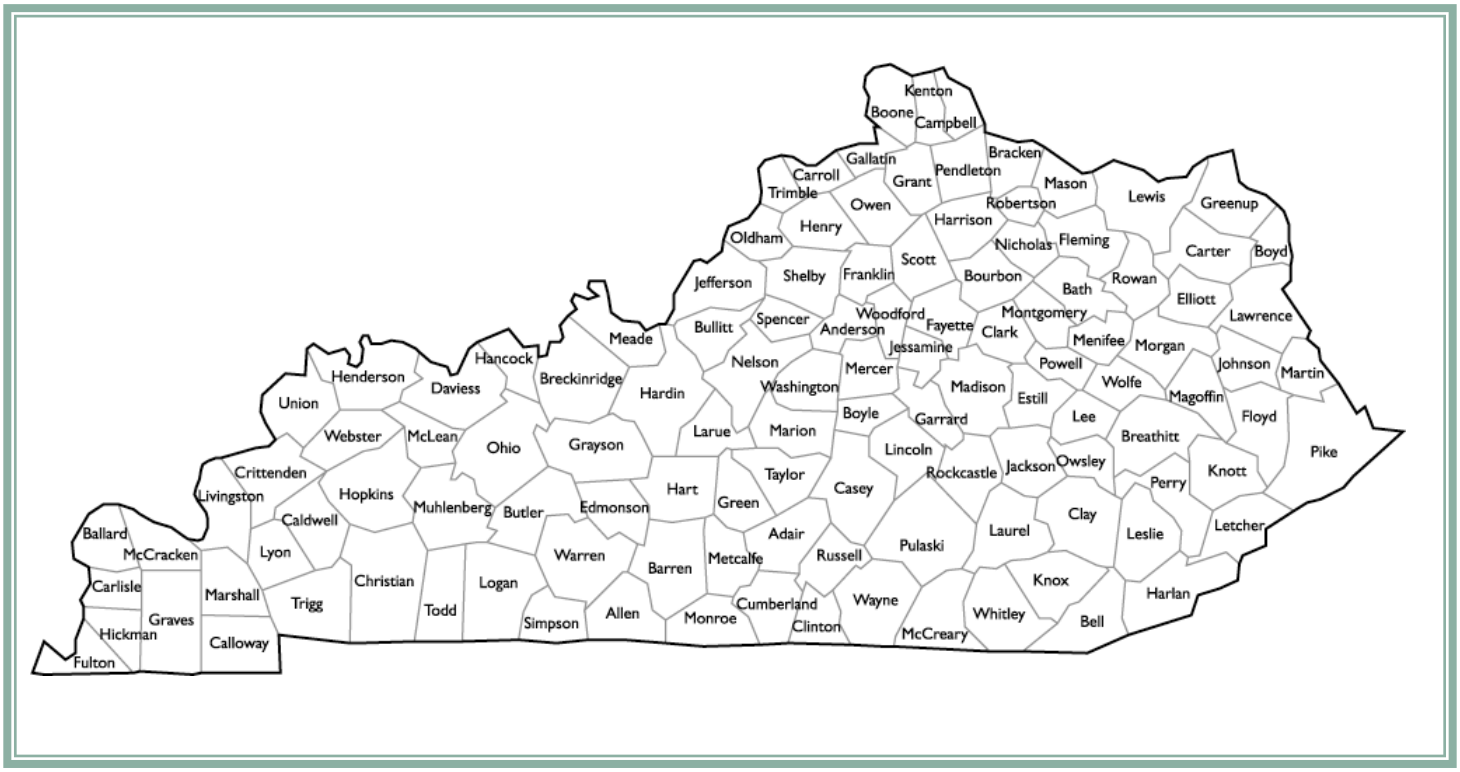
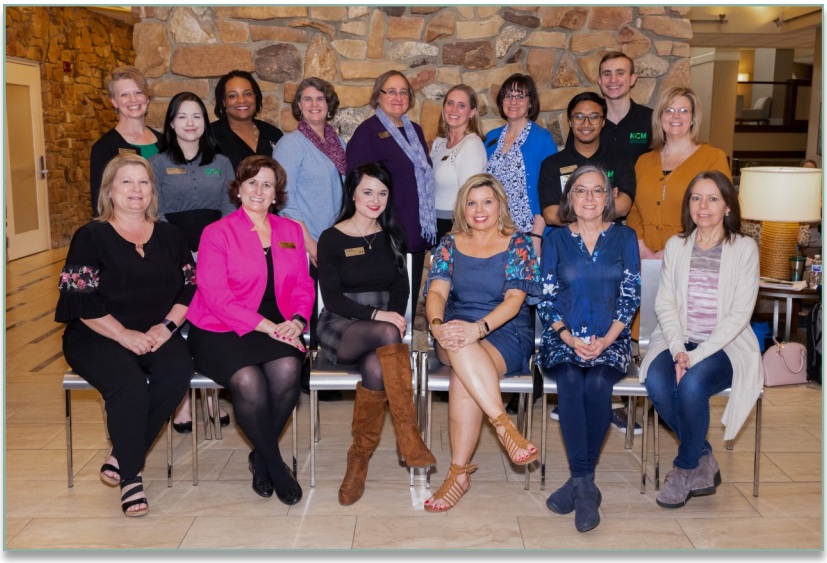
KENTUCKY CENTER FOR MATHEMATICS

2021-2022 Catalog
KCM Course Offerings

Virtual and In-person Options

We are pleased to be able to offer a range of professional learning for teachers from pre-K through high school this academic year!





Contact Dee Crescitelli (cresciteld1@nku.edu) with questions about course options.

Looking for MAF courses? Info HERE.

May edition

GENERAL INTEREST

KCM Math Circle for Teachers

Description: Sign-up for our math circle community and you can join us in the joy of mathematics--observing, exploring, conjecturing, tinkering, questioning, generalizing, sharing… expanding our own mathematical knowledge and reflecting on the ways we approach mathematics. This is for anyone who wants to spend some quality mathematical thinking time in collaboration with others.

Cost: **FREE**

Duration: 4 two-hour evening sessions

Session Dates (click to register):

Sept 3, 2021; 4:30-6:30pm Eastern Time
Oct. 7, 2021; 4:30-6:30pm Eastern Time
Nov. 12, 2021; 4:30-6:30pm Eastern Time
Dec. 2, 2021; 4:30-6:30pm Eastern Time

Deep Dive in Equity within the Mathematics Classroom-VIRTUAL

Description: Learning to notice and respond to students' mathematical activity in the moment is a powerful way to enhance both learning and equity in the elementary classroom. In these sessions, participants will learn key aspects of responsive and equitable mathematics teaching in the elementary grades as they learn strategies to empower students. Specifically, participants will engage in rich, video-based discussions around key areas of number/operations and how to create math experiences that meaningfully connect to students and provide ways to broaden engagement.

Cost: **FREE**

Duration: 7 one-hour sessions

Session Dates: (Click to Register):

Sept. 2, 2021; 3:30-4:30pm Eastern Time
Sept. 9, 2021; 3:30-4:30pm Eastern Time
Sept. 16, 2021; 3:30-4:30pm Eastern Time
Sept. 23, 2021; 3:30-4:30pm Eastern Time
Sept. 30, 2021; 3:30-4:30pm Eastern Time
Oct. 14, 2021; 3:30-4:30pm Eastern Time

KCM

GENERAL INTEREST

Family Math-VIRTUAL

Description: During our virtual sessions, we will explore research on family engagement and how to educate parents concerning math fluency and the current standards. Participants will explore family math resources and how to conduct a family math night event.

Participants will be given materials to conduct 2 family math nights one per semester. We will meet together after hosting their math night to share our successes and takeaways.

Cost: **FREE**

Duration: 8 virtual two-hour sessions, Family Math Night implementations

Schedule: (Click to Register):

Sept. 10, 2021; 9:30-11:30am Eastern Time
Sept. 24, 2021; 9:30-11:30am Eastern Time
Oct. 15, 2021; 9:30-11:30am Eastern Time

Implementation of Math Night to occur before the end of the year.

Jan. 21, 2022; 9:30-11:30am Eastern Time (Reflection session to celebrate and share.)
Feb. 4, 2022 ; 9:30-11:30am Eastern Time
Feb.18, 2022 ; 9:30-11:30am Eastern Time
March 4, 2022; 9:30-11:30am Eastern Time

Implementation of Math Night to occur before the end of April.

May 6th, 2022; 9:30-11:30am Eastern Time (Reflection session to celebrate and share.)

Figuring Out Fluency Book Study

Description: *Figuring Out Fluency in Mathematics Teaching and Learning* offers educators the inspiration to develop a deeper understanding of procedural fluency, along with a plethora of pragmatic tools for shifting classrooms toward a fluency approach. This hands-on guide empowers educators to support students in acquiring the repertoire of reasoning strategies necessary for becoming versatile and nimble mathematical thinkers. Join us online via Zoom each Thursday in February and March for a deep dive into this book.

Cost: **FREE**

Duration: 9 one-hour virtual sessions

Schedule (Click to Register):

Feb. 3, 2022; 3:30-4:30pm Central Time/ 4:30-5:30pm Eastern Time
Feb 10, 2022; 3:30-4:30pm Central Time/ 4:30-5:30pm Eastern Time
Feb. 17, 2022; 3:30-4:30pm Central Time/ 4:30-5:30pm Eastern Time
Feb. 24, 2022; 3:30-4:30pm Central Time/ 4:30-5:30pm Eastern Time
March 3, 2022; 3:30-4:30pm Central Time/ 4:30-5:30pm Eastern Time
March 10, 2022; 3:30-4:30pm Central Time/ 4:30-5:30pm Eastern Time
March 17, 2022; 3:30-4:30pm Central Time/ 4:30-5:30pm Eastern Time
March 24, 2022; 3:30-4:30pm Central Time/ 4:30-5:30pm Eastern Time
March 31, 2022; 3:30-4:30pm Central Time/ 4:30-5:30pm Eastern Time

KCM

PRIMARY GRADES (K-2)

AVMR 1-VIRTUAL

Description: This course is built around Add+Vantage Math Recovery and is designed for elementary grades teachers to learn and practice assessments and teaching strategies for advancing students' foundational knowledge of whole number topics such as number words and numerals, structuring numbers, addition and subtraction, and topics that affect the development of future mathematical understanding. The topics and domains covered often appear later on as holes in understanding for older struggling students.
This course is for Elementary Teachers who teach in the state of Kentucky only.

Cost: $750/participant
Duration: 8 two-hour sessions

Session Dates (click to register):

June 7, 2021; 8:00-10:00am Central Time/ 9:00-11:00am Eastern Time (two-hour session)
June 8, 2021; 8:00-10:00am Central Time/ 9:00-11:00am Eastern Time (two-hour session)
June 14, 2021; 8:00-10:00am Central Time/ 9:00-11:00am Eastern Time (two-hour session)
June 15, 2021; 8:00-10:00am Central Time/ 9:00-11:00am Eastern Time (two-hour session)
June 23, 2021; 8:00-10:00am Central Time/ 9:00-11:00am Eastern Time (two-hour session)
June 24, 2021; 8:00-10:00am Central Time/ 9:00-11:00am Eastern Time (two-hour session)
June 30, 2021; 8:00-10:00am Central Time/ 9:00-11:00am Eastern Time (two-hour session)
July 1, 2021; 8:00-10:00am Central Time/ 9:00-11:00am Eastern Time (two-hour session)

Foundations for Early Childhood (Pre-K)

Description: The EEMC (Erikson Early Math Collaborative) Preschool professional development features content developed by the Erikson Institute, leaders in early childhood education. Participants will learn how to spark children's mathematical learning through developmentally appropriate exploration, discussion and activity using high-impact, evidence-based strategies and children's literature which support the teaching and learning of early mathematics.

Cost: **FREE**
Duration: 8 half-day in-person sessions

Lexington Cohort (Click to Register):

- Session 1: Sept. 10, 2021; 8:30am-11:30am Eastern Time
- Session 2: Oct. 8, 2021; 8:30am-11:30am Eastern Time
- Session 3: Nov. 5, 2021; 8:30am-11:30am Eastern Time
- Session 4: Dec. 3, 2021; 8:30am-11:30am Eastern Time
- Session 5: Jan. 14, 2022; 8:30am-11:30am Eastern Time
- Session 6: Feb. 11, 2022; 8:30am-11:30am Eastern Time
- Session 7: March 4, 2022; 8:30am-11:30am Eastern Time
- Session 8: April 1, 2022; 8:30am-11:30am Eastern Time

KCM

PRIMARY GRADES (K-2)

KNPI (Kentucky Numeracy Project Intensive) Course— Virtual

Description: This course is built around Add+Vantage Math Recovery and is designed for elementary grades teachers to learn and practice assessments and teaching strategies for advancing students' foundational number knowledge, including addition, subtraction, multiplication and division.

Cost: $2,000/participant
Duration: 10 days (delivered in 18 two-hour virtual sessions)

Session Dates (click to register):

Day 1: August 24 & August 26, 2021; noon-2:00pm Eastern Time (2 two-hour sessions)
Day 2: August 30 & 31, 2021; noon-2:00pm Eastern Time (2 two-hour sessions)
Day 3: September 7 & 9, 2021; noon-2:00pm Eastern Time (2 two-hour sessions)
Day 4: September 21 & 23, 2021 noon-2:00pm Eastern Time (2 two-hour sessions)
Day 5: October 6, 2021; noon-2:00pm Eastern Time (single two-hour session)
Day 6: November 9 & 11, 2021; noon-2:00pm Eastern Time (2 two-hour sessions)
Day 7: December 7 & 9, 2021; noon-2:00pm Eastern Time (2 two-hour sessions)
Day 8: January 11 & 13, 2022; noon-2:00pm Eastern Time (2 two-hour sessions)
Day 9: January 25 & 27, 2022; noon-2:00pm Eastern Time (2 two-hour sessions)
Day 10: February 25, 2022; noon-2:00pm Eastern Time (single two-hour session)

SNAP (Student Numeracy Assessment Progressions)

Description: The Student Numeracy Assessment Progressions (SNAP) course for K-2 teachers is an introduction to the assessment and advancement of early learning of number and arithmetic. SNAP includes 2 days of in-person training.

Cost: $250
Louisville (click to register):
Schedule:
Day 1: Aug. 24, 2021; 9:00am– 4:00pm Eastern Time
Day 2: Aug. 31, 2021; 9:00am - 4:00pm Eastern Time

KCM

PRIMARY GRADES (K-2)

Explorations in the SEAL (Stages of Early Arithmetic Learning) for Kindergarten Teachers– VIRTUAL

Description: The Stages of Early Arithmetical Learning (SEAL) describes a progression through which young children make sense of quantity, addition and subtraction.

In PART A, participants will be introduced to the SEAL through the use of video exemplars and discussion.
In PART B, participants will connect the SEAL to the Kentucky Academic Standards-Mathematics for Kindergarten and explore instructional experiences that will support students in meeting those standards.

Cost: **FREE**

Morning Cohort (click to register):

Schedule:

Part A: Tuesday, June 8, 2021; 9:00am - noon Eastern Time
Part B: Thursday, June 10, 2021; 9:00am - noon Eastern Time

Afternoon Cohort (click to register):

Schedule:

Part A: Wednesday, June 9, 2021; 1:00 - 4:00pm Eastern Time
Part B: Thursday, June 10, 2021; 1:00 - 4:00pm Eastern Time

Explorations in the SEAL (Stages of Early Arithmetic Learning) for First Grade Teachers– VIRTUAL

Description: The Stages of Early Arithmetical Learning (SEAL) describes a progression through which young children make sense of quantity, addition and subtraction.

In PART A, participants will be introduced to the SEAL through the use of video exemplars and discussion.
In PART B, participants will connect the SEAL to the Kentucky Academic Standards-Mathematics for Kindergarten and explore instructional experiences that will support students in meeting those standards.

Cost: **FREE**

Duration: 2 half-day sessions

Session Dates (click to register):

Schedule:

Part A: Tuesday, June 8, 2021; 9:00 - noon Eastern Time
Part B: Thursday, June 11, 2021; 9:00 - noon Eastern Time

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PRIMARY GRADES (K-2)

Foundations for Primary 2nd and 3rd Grades

Description: Foundations for Primary Grades Mathematics
Foundations for Primary Grades Mathematics cohorts are professional learning communities that grow second and third grade teachers' understanding of effective ways to scaffold and differentiate instruction to better accommodate student needs via a learning climate that welcomes questions, opinions and participation of all students. Members will focus on how to select instructional tasks that encourage mathematical discourse and help students conceptually understand place value, addition/subtraction, multiplication/division and fractions. Participants receive specialized training from an experienced facilitator featuring evidence-based strategies and materials from experts in early numeracy development. Community members provide support to each educator as new strategies and methods are utilized in the classroom.

Cost: FREE

Duration: Four days **(both virtual and hybrid options available)**:

Options (Click to Register):

Eastern Kentucky (Pikeville Hybrid):

- Day 1: Sept. 14-15, 2021; 1:00-4:00pm Eastern Time (2 half-day sessions)
- Day 2: Oct. 11-12, 2021; 1:00-4:00pm Eastern Time (2 half-day sessions)
- Day 3: Nov. 12, 2021; 8:30am-3:30pm Eastern Time (in-person)
- Day 4: Dec. 10, 2021; 8:30am-3:30pm Eastern Time (in-person)

Western Kentucky (Hopkinsville Hybrid):

- Day 1: Sept. 14-15, 2021; noon-3:00pm Central Time (2 half-day sessions)
- Day 2: Oct. 11-12; noon-3:00pm Central Time (2 half-day sessions)
- Day 3: Nov. 9; 9 am-4:00pm Central Time (in-person)
- Day 4: Dec. 7; 9-4:00pm Central Time (in-person)

Statewide (Virtual):

- Day 1: Dec. 7-8, 2021; noon-3pm Eastern Time (2 half-day sessions)
- Day 2: Jan. 20-21, 2022; noon-3pm Eastern Time (2 half-day sessions)
- Day 3: Feb. 8-9, 2022; noon-3pm Eastern Time (2 half-day sessions)
- Day 4: March 1-2, 2022; noon-3pm Eastern Time (2 half-day sessions)

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PRIMARY GRADES (K-2)

Explorations in Geometry (K-5)-VIRTUAL

Description: Geometry is a critical area spanning all elementary grade levels with connections to measurement, operations and algebraic thinking, and fractions. Participants will:

- attend 2 half-day synchronous virtual sessions.
- receive the book "Teaching Student-Centered Mathematics" for grades K-2 or 3-5 (choose a grade band during registration) and hands-on materials.
- deepen their understanding of the Van Hiele Model of geometric reasoning and the Kentucky Academic Standards for Mathematics Geometry standards.
- explore both virtual and hands-on instructional tasks for developing geometric reasoning.

Cost: **FREE**

Duration: 2 half-day sessions

Session Dates: (Click to Register):

July 26, 2021; 9:00am - noon Eastern Time
July 27, 2021; 9:00am - noon Eastern Time

Statistics as a Progression– VIRTUAL

Description: Statistics is gaining recognition as an important component of mathematics education, from the primary grades to middle and high school continuing to post-secondary. During this course, participants will deepen their understanding of statistics and see the standards and skills of their grade level as part of a progression starting in primary and continuing into middle and high school. Essential statistics standards in the Kentucky Academic Standards for Mathematics begin in first grade and continue through all grade levels with the goal of developing student ability to comprehend and deal with variability and statistical information in the world around them and participate effectively in an information-laden society. The KCAS- Mathematics also position students as doers of statistics as they take part in the production, interpretation, and communication of data. Participants will explore instructional strategies for developing statistical understanding and receive virtual resources for use with students.

The intended audience for this course is 2nd through 6th Grade teachers.

Cost: **FREE**

Duration: two half-day sessions

Cohort 1 Western Kentucky (click to register):

Part A: Wednesday, Feb. 16, 2022; noon - 3:00pm Central Time
Part B: Wednesday, March 16, 2022; noon - 3:00pm Central Time

Cohort 2 Eastern Kentucky (click to register):

Part A: Wednesday, February 23, 2022; noon - 3:00pm Eastern Time
Part B: Wednesday, March 23, 2022; noon - 3:00pm Eastern Time

KCM

INTERMEDIATE GRADES (3-5)

Explorations in Geometry (K-5)-VIRTUAL

Description: Geometry is a critical area spanning all elementary grade levels with connections to measurement, operations and algebraic thinking, and fractions. Participants will:

- attend 2 half-day synchronous virtual sessions.
- receive the book "Teaching Student-Centered Mathematics" for grades K-2 or 3-5 (choose a grade band during registration) and hands-on materials.
- deepen their understanding of the Van Hiele Model of geometric reasoning and the Kentucky Academic Standards for Mathematics Geometry standards.
- explore both virtual and hands-on instructional tasks for developing geometric reasoning.

Cost: **FREE**

Duration: 2 half-day sessions

Session Dates: (Click to Register):

July 26, 2021; 9:00am - noon Eastern Time
July 27, 2021; 9:00am - noon Eastern Time

Statistics as a Progression– VIRTUAL

Description: Statistics is gaining recognition as an important component of mathematics education, from the primary grades to middle and high school continuing to post-secondary. During this course, participants will deepen their understanding of statistics and see the standards and skills of their grade level as part of a progression starting in primary and continuing into middle and high school. Essential statistics standards in the Kentucky Academic Standards for Mathematics begin in first grade and continue through all grade levels with the goal of developing student ability to comprehend and deal with variability and statistical information in the world around them and participate effectively in an information-laden society. The KCAS- Mathematics also position students as doers of statistics as they take part in the production, interpretation, and communication of data. Participants will explore instructional strategies for developing statistical understanding and receive virtual resources for use with students.

The intended audience for this course is 2nd through 6th Grade teachers.

Cost: **FREE**

Duration: two half-day sessions

Cohort 1 Western Kentucky (click to register):

Part A: Wednesday, Feb. 16, 2022; noon - 3:00pm Central Time
Part B: Wednesday, March 16, 2022; noon - 3:00pm Central Time

Cohort 2 Eastern Kentucky (click to register):

Part A: Wednesday, February 23, 2022; noon - 3:00pm Eastern Time
Part B: Wednesday, March 23, 2022; noon - 3:00pm Eastern Time

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MIDDLE GRADES (6-8)

Routines for Reasoning– Middle Grades (5-8)

Description: This course provides an opportunity for classroom teachers of students in Grades 5 through 8 to learn strategies and acquire tools to advance students' mathematical reasoning. Aligned to research-based teaching practices and the Kentucky Academic Standards, this course will use instructional routines to give participants specific and repeatable designs for learning that support both the teacher and students in the classroom. Reasoning routines for the middle grades are designed to improve student problem-solving, build crucial mathematical thinking habits, and improve classroom discourse.

Cost: **FREE**
Duration: 2 in-person days

Lexington Cohort (Click to Register):

Oct. 21, 2021; 9:00am - 4:00pm Eastern Time
Nov. 18, 2021; 9:00am - 4:00pm Eastern Time

Building Numeracy with Middle Grades Students (5-8)

Description: We know that students develop their mathematical reasoning skills over time and at different rates- and that the past year has created instructional gaps due to the time available for math instruction in different pandemic teaching situations. This year-long, in-depth course provides teachers with information and materials to enable them to strengthen mathematics instruction by building from students' current funds of knowledge. Participants will learn teaching strategies for helping students develop the more sophisticated reasoning needed for middle grades mathematics with the goal of improving student access to grade-level content.

Cost: **FREE**
Duration: 2 in-person days and 8 half-day virtual sessions

Louisville Cohort (Click to Register):

Oct.19-20, 2021; 9:00am -4:00 pm Eastern Time (2 in-person days)
Nov. 16, 2021; noon-3:00pm Eastern Time (half-day virtual)
Dec. 7, 2021; noon-3:00pm Eastern Time (half-day virtual)
Jan. 11, 2022; noon-3:00pm Eastern Time (half-day virtual)
Jan. 25, 2022; noon-3:00pm Eastern Time (half-day virtual)
Feb. 8, 2022; noon-3:00pm Eastern Time (half-day virtual)
Feb. 22, 2022; noon-3:00pm Eastern Time (half-day virtual)
March 15, 2022; noon-3:00pm Eastern Time (half-day virtual)
March 29, 2022; noon-3:00pm Eastern Time (half-day virtual)

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MIDDLE GRADES (6-8)

Modeling WITH Mathematics (6-8)

Description: Modeling with mathematics is one of the most misunderstood Standards for Mathematical Practice, yet it is essential for ALL students to master. Participants will

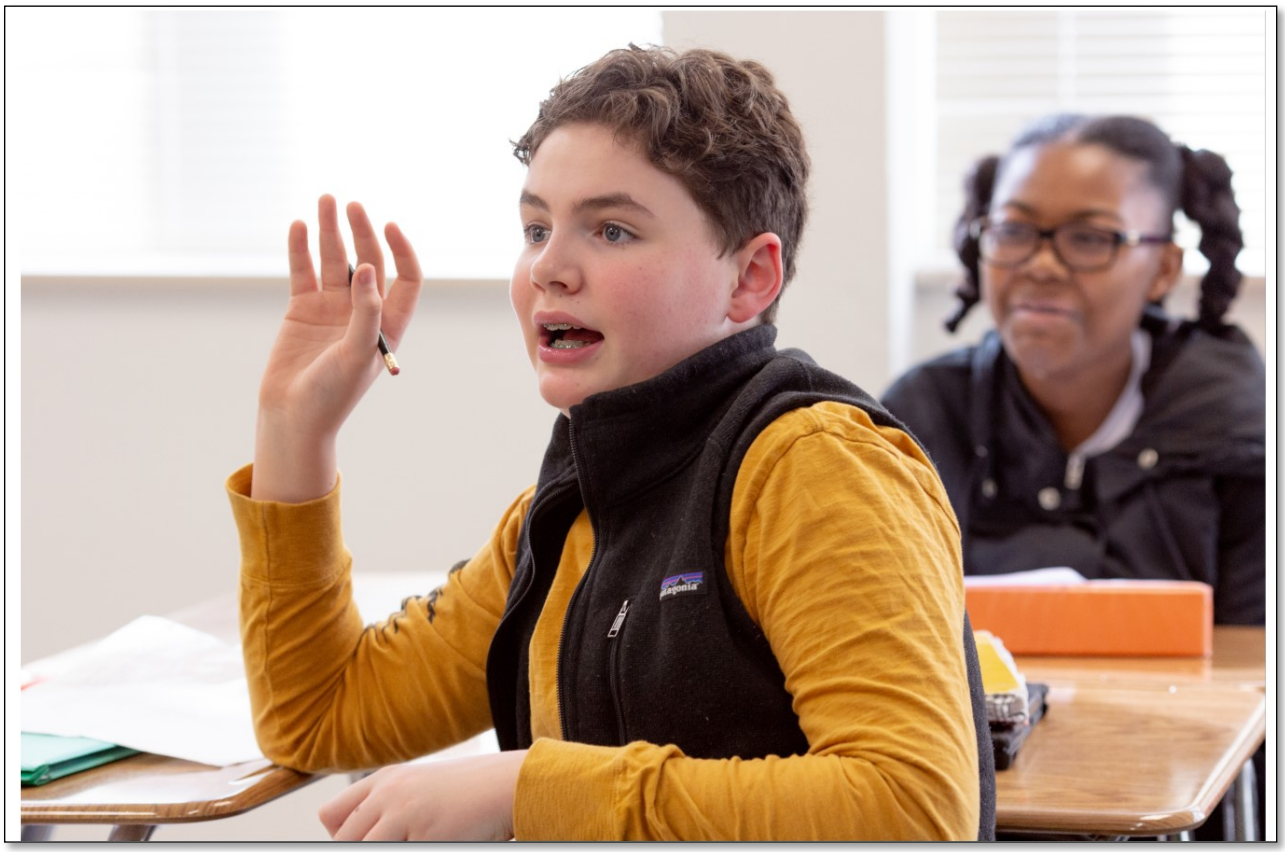
- experience an instructional routine that builds students' capacity to make sense of models and to develop questions to ask themselves when modeling.
- learn about designs for interaction that build opportunities for students to develop mathematical language and process the ideas and concepts of modeling.

Participants will receive a book of routines for fostering mathematical reasoning and other materials to support them in engaging students in mathematical modeling.

Cost: **FREE**
Duration: 4 half-day virtual sessions

Schedule (Click to Register):

January 13, 2022; 3:30-6:30pm (half-day virtual)
January 27, 2022; 3:30-6:30pm (half-day virtual)
February 24, 2022; 3:30-6:30pm (half-day virtual)
March 3, 2022; 3:30-6:30pm (half-day virtual)



HIGH SCHOOL

Culturally Responsive Teaching and High School Mathematics— VIRTUAL

Description: This course provides an opportunity for classroom teachers of students in Grades 9-12 to learn strategies and acquire Culturally Responsive Teaching tools to embed in their classrooms. Aligned to research-based teaching practices from Zaretta Hammond's Culturally Responsive Teaching and the Brain, NCTM's Catalyzing Change for High School, and KAS, participants will explore lesson tasks that include calculus, algebra, and geometry topics as well as, understand and create mathematics lessons for social justice. Participants will receive books, instructional materials, and will be expected to attend all 3 days of the course. Sessions will be fully virtual, after school, and start in September.

Cost: **FREE**
Duration: 6 half-day sessions

Schedule (click to register):

Sept. 9, 2021; 3:15-6:15pm Eastern Time (half-day virtual)
Sept. 10, 2021 3:15-6:15pm Eastern Time (half-day virtual)
Oct. 20, 2021; 3:15-6:15pm Eastern Time (half-day virtual)
Oct. 21, 2021; 3:15-6:15pm Eastern Time (half-day virtual)
Nov. 22, 2021; 3:15-6:15pm Eastern Time (half-day virtual)
Nov. 23, 2021; 3:15-6:15pm Eastern Time (half-day virtual)

High School Modeling— VIRTUAL

Description: This course provides an opportunity for classroom teachers of students in Grades 9-12 to learn, understand, apply the modeling process as well as the standards for mathematical practice for students. Participants will explore lesson tasks that include algebra and statistics topics as well as create high yield tasks that incorporate student mathematical practice for modeling. Participants will receive books, activities, and instructional materials and will be expected to attend all 3 days of the course.

Cost: **FREE**
Duration: 6 half-day sessions

Schedule (click to register):

Dec. 7, 2021; 3:15-6:15pm Eastern Time (half-day virtual)
Dec. 8, 2021 3:15-6:15pm Eastern Time (half-day virtual)
Jan. 11, 2022; 3:15-6:15pm Eastern Time (half-day virtual)
Jan. 12, 2022; 3:15-6:15pm Eastern Time (half-day virtual)
Jan 31, 2022; 3:15-6:15pm Eastern Time (half-day virtual)
Feb. 1, 2022; 3:15-6:15pm Eastern Time (half-day virtual)

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