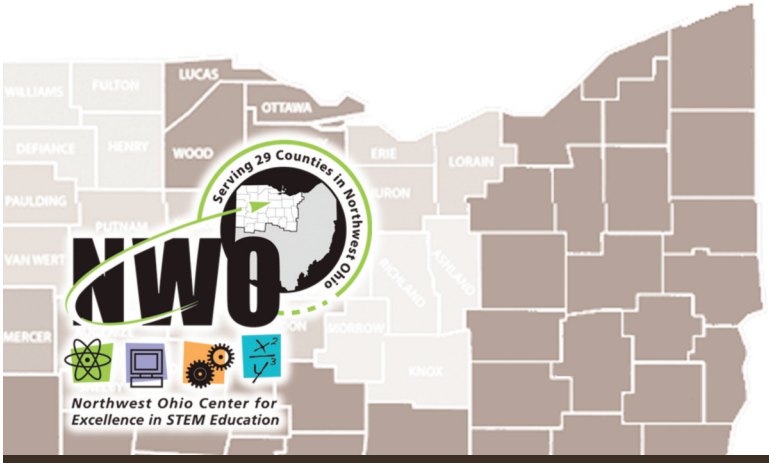
2013
NWO Symposium

on Science, Technology, Engineering, and Mathematics Teaching

November 2, 2013

Olscamp Hall @
Bowling Green State University

Keynote Speaker
Alfie Kohn



www.nwocenter.org/nwoSymposium

Sponsored in part by BGSU's College of Education and Human Development and the Center of Excellence for 21st Century Educator Preparation

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Welcome

We are delighted to welcome you to the Northwest Ohio Symposium on Science, Technology, Engineering, and Mathematics Teaching. The Symposium is organized and sponsored by the Northwest Ohio Center for Excellence in STEM Education (NWO) with support from The Andersons, BGSU's College of Education and Human Development and the Center of Excellence for 21st Century Educator Preparation, BP – Husky, LLC, and PNC Bank.

This event offers a valuable opportunity for PreK –16 educators to share and learn from one another in our common effort to advance science, technology, engineering, and mathematics (STEM) education for people of all ages.

Last year, over 400 people attended this event, including in-service and pre-service teachers, higher education faculty, graduate and undergraduate students, and business and community partners participating in more than 50 sessions. This year, vendors will again participate so as to keep educators abreast of new and exciting classroom materials and opportunities.

We hope you find the 2013 Northwest Ohio Symposium on Science, Technology, Engineering, and Mathematics Teaching to be a beneficial experience, especially those of you here for the first time. With your help, we will continue to make this symposium the premier STEM professional development opportunity for educators in northwest Ohio. Thank you for joining us!

W. Robert Midden
Director
NWO

Jessica Belcher
Assistant Director
NWO

Susan Stearns
Assistant Director
NWO

NWO
Northwest Ohio Center for Excellence in STEM Education

COSMOS
Center Of excellence in Science and Mathematics education: Opportunities for Success

BGSU

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Let's get trending!
Include #NWOsymposium
on all of your posts!

Conference Agenda

7:30 – 8:30 AM . . . . . Registration (Outside Olscamp Hall: Room 101)

8:00 – 9:45 AM . . . . . Breakfast (Olscamp Hall: Room 101)

8:30 – 9:45 AM . . . . . Welcome and Keynote Address

10:00 – 10:50 AM . . . . . Block A

11:00 – 11:50 AM . . . . . Block B

11:50 AM – 12:40 PM . . . Lunch

12:50 – 1:40 PM . . . . . Block C

1:50 – 2:40 PM . . . . . Block D

2:50 – 3:40 PM . . . . . Block E

Vendor Area Open from 8:00 AM – 12:40 PM

OLSC = Olscamp Hall ***BA = Business Administration Building***

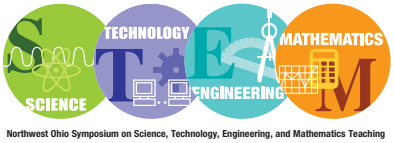
EVALUATION of Symposium

Please complete the online evaluation for the 2013 Symposium. All who complete the survey will be entered into a drawing for a $25 Amazon.com certificate.

Please go to the following website to complete the online evaluation:

www.nwocenter.org/nwoSymposium

Additional, all who complete the individual session evaluations will be entered into a separate drawing for a $25 Amazon.com certificate.



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Sessions At A Glance by Block

Block A: 10:00 – 10:50 am

A1 Screencasts and Video Tutorials for Online and Face-to-Face Classes (LIMIT 20)

Presented by: Kate Dellenbusch, Bowling Green State University
Peter Blass, Bowling Green State University

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 1002

Strand: Integrating Technology in the Classroom

A2 & B2 A Smorgasbord of Active Learning Tools: Appetizers, Entrees, & Desserts

(Double Session – Block A & B: 10:00 – 11:50 AM)

Presented by: Chris Boudrie, Lourdes University

Grade Levels: College ***Room:*** BA 1000

Strand: Inquiry in the College Classroom: Enhancing the Undergraduate Experience

A3 Helping Students Construct Models: Modeling Instruction in Physical Science

Presented by: Mary Kate Hafemann, Ottawa Hills High School

Grade Level: 9 - 12 ***Room:*** BA 117

Strand: Teaching and Learning in SCIENCE

A4 & B4 Using Augmented Reality to Teach Forces and Motion (Double Session – Blocks A & B: 10:00 – 11:50 am)

Presented by: Rick Worch, Bowling Green State University
Lan Li, Bowling Green State University

Grade Levels: 5 - 8 ***Room:*** BA 115

Strand: Integrating Technology in the Classroom

A5 & B5 Explore! Plate Tectonics (Double Session – Blocks A & B: 10:00 – 11:50 am)

Presented by: Davida Buehler, The Geological Society of America

Grade Levels: 5 - 8 ***Room:*** BA 114

Strand: Teaching and Learning in SCIENCE

A6 & B6 Get the "Scoop on Soils"! Free Lesson Plans and More for K-4 Soil Study

(Double Session – Blocks A & B: 10:00 – 11:50 am)

Presented by: Jodi Haney, Bowling Green State University

Grade Levels: PreK - 4 ***Room:*** BA 110

Strand: Teaching and Learning in SCIENCE

Block A: 10:00 – 10:50 am continued

A7 Zoo Animals Helping STEM Learning

Presented by: Josh Minor, Toledo Zoo
Nicole Syrek, Toledo Zoo
Jerran Orwig, Toledo Zoo

Grade Levels: PreK - 4, 5 - 8 ***Room:*** BA 103

Strand: STEM in the Community: Thinking Outside the Classroom

A8 G3: Game Design in the Classroom

Presented by: Dean Goon, Mount Vernon Nazarene University/Makeadent Educational Consulting

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 101

Strand: Putting Creativity to Work: Teaching STEM With Innovation

A9 & B9 Apps for Science Content, Creation, Connecting, and Collaborating

(Double Session – Block A & B: 10:00 – 11:50 AM)

Presented by: Leah LaCrosse, Huron City Schools

Grade Levels: PreK - 4, 5 - 8, 9 - 12 ***Room:*** BA 1007

Strand: Integrating Technology in the Classroom

A10 Empowered by Google: Statistics in Real Time

Presented by: Stephanie Buckenmeyer, Anthony Wayne Local Schools
Lori Williams, Anthony Wayne Local Schools

Grade Level: 5 - 8, 9 - 12 ***Room:*** BA 2001

Strand: Integrating Technology in the Classroom

A11 CJ STEMM - An Innovative Multifaceted Approach to K-12 STEM Education in the Classroom and Beyond

Presented by: Meg Draeger, Chaminade Julienne Catholic High School
Christine Evans, St. Albert the Great School

Grade Levels: 5 - 8, 9 - 12 ***Room:*** OLSC 117

Strand: Putting Creativity to Work: Teaching STEM With Innovation

A12 Examining Model Curriculum in Mathematics: 8th Grade

Presented by: $(CO)^2$RES Teacher Participants

Grade Level: 8 ***Room:*** OLSC 119

Strand: Teaching and Learning in MATHEMATICS

A13 Examining Model Curriculum in Mathematics: 5th Grade & Special Education

Presented by: $(CO)^2$RES Teacher Participants

Grade Level: 5 & Special Education ***Room:*** OLSC 120

Strand: Teaching and Learning in MATHEMATICS

Block B: 11:00 – 11:50 am

B1 Weaving STEM, Standards, & Inquiry Based Learning for the Real Pre-K Class: Connecting STEM & Ohio's Preschool Standards Through Inquiry Based Learning for Today's Preschooler (LIMIT 20)

Presented by: Melissa Romero, Lourdes University
Christine Knaggs, Lourdes University

Grade Levels: PreK - 4 ***Room:*** BA 1002

Strand: Putting Creativity to Work: Teaching STEM With Innovation

B2 & A2 A Smorgasbord of Active Learning Tools: Appetizers, Entrees, & Desserts (Double Session – Block A & B: 10:00 – 11:50 AM)

Presented by: Chris Boudrie, Lourdes University

Grade Levels: College ***Room:*** BA 1000

Strand: Inquiry in the College Classroom: Enhancing the Undergraduate Experience

B3 Teaching Simple Machines and Force and Motion using LEGO

Presented by: Ivery Toussant, Jr., LEGO Education

Grade Level: PreK - 4, 5 - 8, 9 - 12 ***Room:*** BA 117

Strand: Putting Creativity to Work: Teaching STEM With Innovation

B4 & A4 Using Augmented Reality to Teach Forces and Motion (Double Session – Blocks A & B: 10:00 – 11:50 am)

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Lan Li, Bowling Green State University

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B6 & A6 Get the "Scoop on Soils"! Free Lesson Plans and More for K-4 Soil Study (Double Session – Blocks A & B: 10:00 – 11:50 am)

Presented by: Jodi Haney, Bowling Green State University

Grade Levels: PreK - 4 ***Room:*** BA 110

Strand: Teaching and Learning in SCIENCE

Block B: 11:00 – 11:50 am continued

B7 The University of Toledo ACS STEMM Summer Camp

Presented by: Christina Onyskiw, The University of Toledo
Edith Kippenhan, The University of Toledo

Grade Levels: 9 - 12 ***Room:*** BA 103

Strand: STEM in the Community: Thinking Outside the Classroom

B8 "The Man Who Counted: A Collection of Integrated Adventures"

Presented by: Sandra Wilder, Bio-Med Science Academy

Grade Levels: 9 - 12 ***Room:*** BA 101

Strand: Teaching and Learning in MATHEMATICS

B9 & A9 Apps for Science Content, Creation, Connecting, and Collaborating

(Double Session – Block A & B: 10:00 – 11:50 AM)

Presented by: Leah LaCrosse, Huron City Schools

Grade Levels: PreK - 4, 5 - 8, 9 - 12 ***Room:*** BA 1007

Strand: Integrating Technology in the Classroom

B10 Complexity Made Simple: Creating Dynamic Systems to Model Diversity, Thresholds, and Feedback Loops.

Presented by: Jon Darkow, Seneca East Local Schools

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 2001

Strand: Putting Creativity to Work: Teaching STEM With Innovation

B11 What incorporates STEM, gets students excited, students like it because it is fun and hands-on, and it allows students to think outside the box? ROBOTICS!!!!

Presented by: Rob Smith, DEPCO, LLC

Grade Level: PreK - 4, 5 - 8, 9 - 12 ***Room:*** OLSC 117

Strand: Putting Creativity to Work: Teaching STEM With Innovation

B12 Examining Model Curriculum in Mathematics: 3rd & 4th Grade

Presented by: $(CO)^2$RES Teacher Participants

Grade Level: 3 - 4 ***Room:*** OLSC 119

Strand: Teaching and Learning in MATHEMATICS

B13 Examining Model Curriculum in Mathematics: 7th Grade

Presented by: $(CO)^2$RES Teacher Participants

Grade Level: 7 ***Room:*** OLSC 120

Strand: Teaching and Learning in MATHEMATICS

Block C: 12:50 – 1:40 pm

C1 The Chemistry of Art (LIMIT 15)

Presented by: Elizabeth Wise, Lourdes University

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 1002

Strand: STEM in the Community: Thinking Outside the Classroom

C2 Meeting The Challenges of Beginning STEM Majors - It's All About Engagement

Presented by: Andy Jorgensen, The University of Toledo

Grade Levels: College ***Room:*** BA 1000

Strand: Inquiry in the College Classroom: Enhancing the Undergraduate Experience

C3 Explicit Enhancement Tools to Facilitate STEM Content Acquisition (LIMIT 20)

Presented by: Sekahr Pindiprolu, The University of Toledo

Grade Levels: PreK - 4, 5 - 8, 9 - 12 ***Room:*** BA 117

Strand: Putting Creativity to Work: Teaching STEM With Innovation

C4 Population Comparisons in Aphid Resistant and Non-Aphid Resistant Soybeans

Presented by: Heather Bryan, Education Projects & Partnerships
Jane Hunt, Education Projects & Partnerships

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 115

Strand: Teaching and Learning in SCIENCE

C5 & D5 Explore! Rocks Using Inquiry-Based Learning (Double Session – Blocks C & D: 12:50 – 2:40 pm)

Presented by: Davida Buehler, The Geological Society of America

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 114

Strand: Teaching and Learning in SCIENCE

C6 Using Fossils to Engage Students in Science Learning

Presented by: Peg Yacobucci, Bowling Green State University/Paleontological Society

Grade Levels: PreK - 4, 5 - 8 ***Room:*** BA 112

Strand: Teaching and Learning in SCIENCE

C7 Comparing Years 1, 2, and 3 of Strategies Modeling and Reading Together Through Integrating Science (SMARTTIS)

Presented by: Andrea Milner, Adrian College
Vanessa Morrison, Adrian College

Grade Levels: PreK - 4 ***Room:*** BA 110

Strand: Putting Creativity to Work: Teaching STEM With Innovation

Block C: 12:50 – 1:40 pm continued

C8 I Really Do Study and Now I'm Starting To Get It

Presented by: Debra Bercher, Lourdes University

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 103

Strand: Teaching and Learning in SCIENCE

C9 Teach Your Students to Think Using Programming

Presented by: Amy Contos, St. Kateri Catholic Academy

Grade Levels: 2 & up ***Room:*** BA 101

Strand: Integrating Technology in the Classroom

C10 Watershed Dynamics for 21st Century Learners

Presented by: Jon Darkow, Seneca East Local Schools
Kathy Mohr, North Central Ohio Educational Service Center
Beth Diesch, Seneca Soil & Water Conservation District

Grade Level: 5 - 8, 9 - 12 ***Room:*** BA 1007

Strand: STEM in the Community: Thinking Outside the Classroom

C11 Help Needed for Building Student Research Skills: NOW!

Presented by: Judith Tucker, NWOET

Grade Level: 5 - 8, 9 - 12, College ***Room:*** BA 2001

Strand: Integrating Technology in the Classroom

C12 & D12 Moving into the New Ohio Learning Standards: Let's Talk About Motion!

(Double Session – Blocks C & D: 12:50 – 2:40 pm)

Presented by: Mikell Lynne Hedley, ODE Network Leader
Elizabeth Buckholtz, Toledo Public Schools
Janet Struble, ODE Network Leader

Grade Levels: 5 - 8 ***Room:*** BA 2003

Strand: Teaching and Learning in SCIENCE

C13 A Forensics Approach to STEM

Presented by: Cynthia Molitor, Lourdes University

Grade Levels: 3 - 12, College ***Room:*** OLSC 117

Strand: Putting Creativity to Work: Teaching STEM With Innovation

Block C: 12:50 – 1:40 pm continued

C14 Examining Model Curriculum in Mathematics: Kindergarten

Presented by: (CO)^{2}RES Teacher Participants
Grade Level: Kindergarten
Strand: Teaching and Learning in MATHEMATICS
Room: OLSC 106

C15 Model Curriculum in Mathematics: 3rd Grade

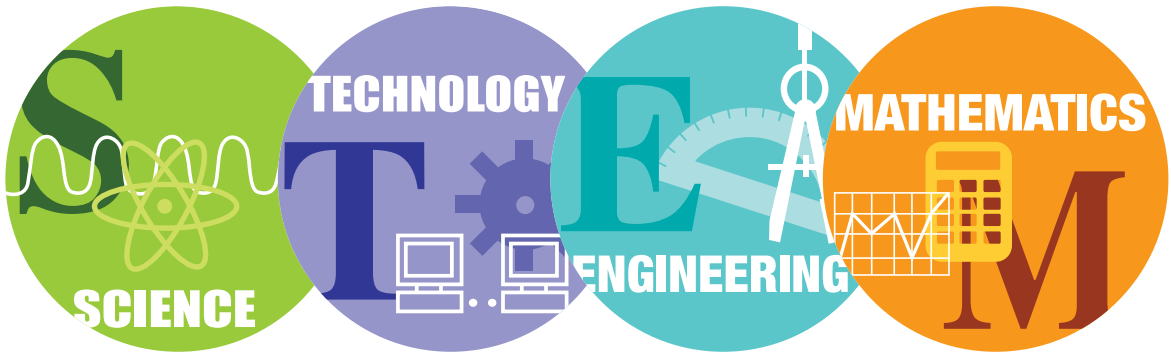
Presented by: (CO)^{2}RES Teacher Participants
Grade Level: 3
Strand: Teaching and Learning in MATHEMATICS
Room: OLSC 121

C16 Examining Model Curriculum in Mathematics: 6th Grade

Presented by: (CO)^{2}RES Teacher Participants
Grade Level: 6
Strand: Teaching and Learning in MATHEMATICS
Room: OLSC 119

C17 Examining Model Curriculum in Mathematics: 9th – 12th Grade

Presented by: (CO)^{2}RES Teacher Participants
Grade Level: 9 - 12
Strand: Teaching and Learning in MATHEMATICS
Room: OLSC 120



Block D: 1:50 – 2:40 pm

D1 STEM Approach to Blended Learning

Presented by: Marcy Raymond, Reynoldsburg City Schools

Grade Levels: 9 - 12, College ***Room:*** BA 1002

Strand: Putting Creativity to Work: Teaching STEM With Innovation

D2 Did You See/Hear What I Saw/Heard?!

Presented by: Raymond Heitger, Bowling Green State University
Andrea Milner, Adrian College

Grade Levels: College ***Room:*** BA 1000

Strand: Inquiry in the College Classroom: Enhancing the Undergraduate Experience

D3 Macroinvertebrates: Water Quality Indicators

Presented by: Dennis Clement, Ohio EPA, OEE

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 117

Strand: STEM in the Community: Thinking Outside the Classroom

D4 COSI Interactive Video Conferencing - Science Delivered at the Speed of Light!

Presented by: Kurt Huffman, COSI (Center of Science and Industry)
Jessica Teng, COSI (Center of Science and Industry)
Jordan Rader, COSI (Center of Science and Industry)

Grade Levels: PreK - 4, 5 - 8, 9 - 12 ***Room:*** BA 115

Strand: Integrating Technology in the Classroom

D5 & C5 Explore! Rocks Using Inquiry-Based Learning (Double Session – Blocks C & D: 12:50 – 2:40 pm)

Presented by: Davida Buehler, The Geological Society of America

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 114

Strand: Teaching and Learning in SCIENCE

D6 & E6 What's Different in the New Learning Standards for Mathematics (Double Session – Block D & E: 1:50 – 3:40 PM)

Presented by: Annika Moore, Ohio Department of Education

Grade Levels: 5 - 8 ***Room:*** BA 112

Strand: Teaching and Learning in MATHEMATICS

D7 Who is that Lady, and What Does She Want?

Presented by: Jennifer Elsworth, Metroparks of the Toledo Area

Grade Levels: PreK - 4, 5 - 8 ***Room:*** BA 110

Strand: Teaching and Learning in SCIENCE

Block D: 1:50 – 2:40 pm continued

D8 Science for Upper Elementary Kids with Fun and Purpose!

Presented by: Heather Janes, Lake Middle School

Grade Levels: 5 - 8 ***Room:*** BA 103

Strand: Teaching and Learning in SCIENCE

D9 A Tail of Two Homework Programs: Advanced Technologies Utilized at The University of Toledo

Presented by: Kristi Mock, The University of Toledo

Grade Levels: 9 - 12, College ***Room:*** BA 101

Strand: Integrating Technology in the Classroom

D10 Stone Laboratory - OSU's Lake Erie Island Campus for Education and Outreach

Presented by: Susan Bixler, Franz Theodore Stone Laboratory
Angela Greene, Franz Theodore Stone Laboratory

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 1007

Strand: STEM in the Community: Thinking Outside the Classroom

D11 Awesome FREE INFOhio Science Resources — One Returns, Two New

Presented by: Judith Tucker, NWOET

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 2001

Strand: Teaching and Learning in SCIENCE

D12 & E12 Moving into the New Ohio Learning Standards: Let's Talk About Motion!

(Double Session – Block C & D: 12:50 – 2:40 PM)

Presented by: Mikell Lynne Hedley, ODE Network Leader
Elizabeth Buckholtz, Toledo Public Schools
Janet Struble, ODE Network Leader

Grade Levels: 5 - 8 ***Room:*** BA 2003

Strand: Teaching and Learning in SCIENCE

D13 Examining Model Curriculum in Mathematics: 1st Grade

Presented by: $(CO)^2$RES Teacher Participants

Grade Level: 1 ***Room:*** OLSC 106

Strand: Teaching and Learning in MATHEMATICS

D14 Examining Model Curriculum in Mathematics: 4th Grade

Presented by: $(CO)^2$RES Teacher Participants

Grade Level: 4 ***Room:*** OLSC 121

Strand: Teaching and Learning in MATHEMATICS

Block E: 2:50 – 3:40 pm

E1 Collaborative Action Research Project Part II: Visualization and Processing Speed Differences in STEM and Literacy Education: When Does Slow Become Good?

Presented by: Richard Oldrieve, Cleveland State University
Cynthia Bertelsen, Bowling Green State University

Grade Levels: PreK - 4 ***Room:*** BA 1002

Strand: Putting Creativity to Work: Teaching STEM With Innovation

E2 Growing Ohio

Presented by: Jane Hunt, Education Projects & Partnerships
Heather Bryan, Education Projects & Partnerships

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 117

Strand: Teaching and Learning in SCIENCE

E3 Immersion of Learning - Take a Field Trip That Immerses Students in STEM Education

Presented by: Kurt Huffman, COSI (Center of Science and Industry)
Robin Dungan, COSI (Center of Science and Industry)

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 115

Strand: STEM in the Community: Thinking Outside the Classroom

E4 Claim, Evidence, Reasoning

Presented by: Elizabeth Buckholtz, Toledo Public Schools

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 114

Strand: Teaching and Learning in SCIENCE

E5 Exercise Science: What does it take to be a world-class marathon runner?

Presented by: Frederick Andres, Bowling Green State University
Matt Laurent, Bowling Green State University

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 110

Strand: Teaching and Learning in SCIENCE

E6 & D6 What's Different in the New Learning Standards for Mathematics (Double Session – Block D & E: 1:50 – 3:40 PM)

Presented by: Annika Moore, Ohio Department of Education

Grade Levels: 5 - 8 ***Room:*** BA 112

Strand: Teaching and Learning in MATHEMATICS

Block E: 2:50 – 3:40 pm continued

E7 Engaging the Technologically Augmented Student

Presented by: Jerry Schnepp, Bowling Green State University
Paul Cesarini, Bowling Green State University

Grade Levels: 9 - 12, College **Room:** BA 103

Strand: Integrating Technology in the Classroom

E8 Differentiated Instruction in Lesson Planning

Presented by: Amy Biggs, Mount Vernon Nazarene University
Amanda Barrell, Mount Vernon Nazarene University

Grade Levels: 5 - 8 **Room:** BA 101

Strand: Putting Creativity to Work: Teaching STEM With Innovation

E9 Examining Model Curriculum in Mathematics: 2nd Grade

Presented by: (CO)^{2}RES Teacher Participants

Grade Level: 2 **Room:** OLSC 106

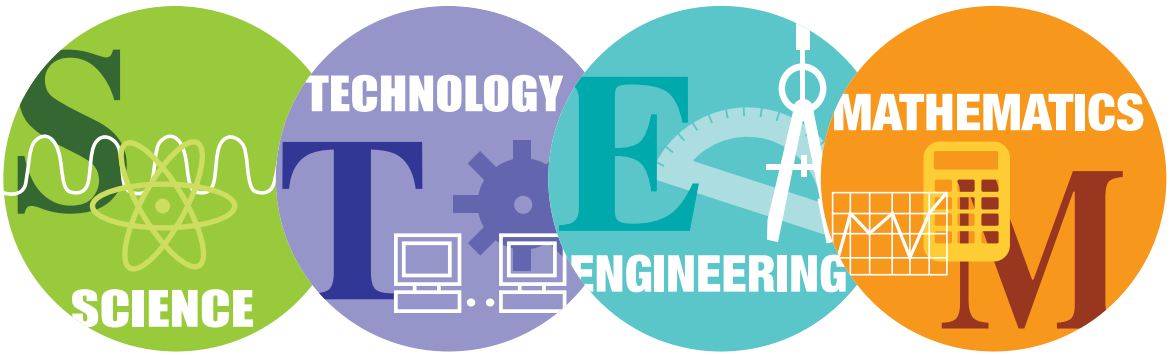
Strand: Teaching and Learning in MATHEMATICS

E10 Examining Model Curriculum in Mathematics: 5th Grade

Presented by: (CO)^{2}RES Teacher Participants

Grade Level: 5 **Room:** OLSC 121

Strand: Teaching and Learning in MATHEMATICS



Keynote Presentation 8:30 - 9:45 am

Keynote Presentation

Alfie Kohn

Overhauling the Transmission Model: Teaching your students to be active meaning makers

The traditional "bunch o' facts" model of education applied to STEM subjects consists of filling students with information about decimals and variables, cells and minerals. The process typically relies on lectures, worksheets, grades, tests, and homework. But our challenge is to help students think like scientists and mathematicians so they can actively make sense of ideas – and, ideally, to take pleasure in doing so. In his keynote address, Alfie Kohn invites us to reflect on how we can bring about just such a shift in our classrooms.

Alfie Kohn writes and speaks widely on human behavior, education, and parenting. His twelve books include *PUNISHED BY REWARDS (1993), THE SCHOOLS OUR CHILDREN DESERVE (1999), THE CASE AGAINST STANDARDIZED TESTING (2000), UNCONDITIONAL PARENTING (2005), THE HOMEWORK MYTH(2006)*, and, most recently, *FEEL-BAD EDUCATION (2011)*.

Kohn has been described by *Time* magazine as "perhaps the country's most outspoken critic of education's fixation on grades [and] test scores." His criticisms of competition and rewards have helped to shape the thinking of educators – as well as parents and managers – across the country and abroad. He has appeared on numerous TV and radio programs, including the "Today" show and two appearances on "Oprah." He lectures widely at universities and to school faculties, parent groups, and corporations, as well as speaking at staff development seminars and keynoting national education conferences. Kohn's articles include "Turning Children into Data" in *Education Week*; "Five Reasons to Stop Saying Good Job" in *Young Children*; and "The Case Against Grades" in *Educational Leadership*.

Inquiry in the College Classroom: Enhancing the Undergraduate Experience

Double Session – Block A & B: 10:00 – 11:50 AM

A2 & B2 A Smorgasbord of Active Learning Tools: Appetizers, Entrees, & Desserts

Using a menu approach, we will sample a variety of the tools I use to tempt the appetite for active learning of the contemporary student. We will explore ways to insert new flavors into a busy and demanding course schedule from ice-breakers ('appetizers') to major projects ('entrees') to summary. Participants can direct which 'menu items' we focus upon.

Presented by: Chris Boudrie, Lourdes University

Grade Level: College ***Room:*** BA 1000

Block C: 12:50 – 1:40 PM

C2 Meeting The Challenges of Beginning STEM Majors - It's All About Engagement

Examples of engagement in large general chemistry classes will be detailed using videos and data from grades and student surveys.

Presented by: Andy Jorgensen, The University of Toledo

Grade Level: College ***Room:*** BA 1000

Block D: 1:50 – 2:40 PM

D2 Did You See/Hear What I Saw/Heard?!

A problem arises when students in a methods class display incorrect content. We will be leading a discussion about how to handle this situation. Does a methods course become a content course? Is it ignored? Do we jump down the throat of the content instructor? Hopefully a spirited discussion will transpire.

Presented by: Raymond Heitger, Bowling Green State University
Andrea Milner, Adrian College

Grade Level: College ***Room:*** BA 1000

Integrating Technology in the Classroom

Block A: 10:00 – 10:50 AM

A1 Screencasts and Video Tutorials for Online and Face-to-Face Classes (LIMIT 20)

In this presentation we will give an overview of how to create narrated videos for your courses, similar to Kahn Academy videos. We will discuss some popular applications for creating videos on your computer or iPad as well as strategies and the pedagogical benefits of creating and using these types of whiteboard videos. Finally, we will provide an opportunity for you to try making your own video using an iPad. Bring your own iPad if you have one!

Presented by: Kate Dellenbusch, Bowling Green State University
Peter Blass, Bowling Green State University

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 1002

A10 Empowered by Google: Statistics in Real Time

This session will explore one method of utilizing Google in order to teach Statistics. While in the session, participants will be: (1) Taken through the process from beginning, collecting data, to end, analyzing the data from both the teachers and a students perspective. (2) Discover the capabilities of Google Spreadsheets and how to utilize the technology in the classroom. This project has been used in an 8th grade classroom, but is adaptable for various levels.

Presented by: Stephanie Buckenmeyer, Anthony Wayne Local Schools
Lori Williams, Anthony Wayne Local Schools

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 2001

Double Sessions – Block A & B: 10:00 – 11:50 AM

A4 & B4 Using Augmented Reality to Teach Forces and Motion

This is a hands-on experience using augmented reality to learn about forces and motion with roller coasters. Augmented reality is a digital technology that enhances learners' perceptions by enabling them to simultaneously experience physical and digital reality. We will employ augmented reality to enhance the participants' learning experience by providing them with digital media to replay their hands-on experiences with roller coasters with an enhanced tutorial overlay.

Presented by: Rick Worch, Bowling Green State University
Lan Li, Bowling Green State University

Grade Levels: 5 - 8 ***Room:*** BA 115

A9 & B9 Apps for Science Content, Creation, Connecting, and Collaborating

This presentation will highlight apps that can be utilized in Math, Science, and Engineering to support student learning. Apps for managing work flow, documenting learning, exploring science, and creating projects to show understanding will be discussed. Simple ways to utilize the iPad for labs will also be addressed.

Presented by: Leah LaCrosse, Huron City Schools

Grade Levels: PreK - 4, 5 - 8, 9 - 12 ***Room:*** BA 1007

Block C: 12:50 – 1:40 PM

C9 Teach Your Students to Think Using Programming

Check out some of the key ideas behind programming in Scratch, explore some possible tasks that 4 – 6 grade students could be given to encourage problem solving and higher level thinking, and find out how students feel Scratch is making a difference to their learning.

Presented by: Amy Contos, St. Kateri Catholic Academy

Grade Levels: 2 & up ***Room:*** BA 101

C11 Help Needed for Building Student Research Skills: NOW!

Attend this session to learn about two FREE tools available through INFOhio to help build research skills of today's students and supports the emphasis on inquiry and research in Ohio's New Learning Standards. We'll explore Go! Ask, Act, Achieve, for grades 4-10 by presenting the research process as a series of small steps. This tool for beginning researchers helps with skills needed to manage a project and introduces a variety of INFOhio digital resources as well as websites with mind-mapping tools, note-taking strategies, and presentation ideas. The second tool, for grades 11 and 12, Research 4 Success is a blended-learning course, presented in six modules, that teaches juniors and seniors rigorous research skills needed for college and careers.

Presented by: Judith Tucker, NWOET

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 2001

Block D: 1:50 – 2:40 PM

D4 COSI Interactive Video Conferencing - Science Delivered at the Speed of Light!

COSI Interactive Videoconferencing delivers STEM education to students with unforgettable, hands on activities and demonstrations all across the United States and Canada. From an INTERACTIVE LIVE KNEE SURGERY, to a KIDNEY TRANSPLANT for older students all the way down to an INTERACTIVE SIMPLE MACHINES program where students get to identify simple machines with our presenters, these programs are all aligned with the Ohio New Revised Science Standards. They are also interactive and each classroom receives a STEM kit of materials. Learn more about these programs and try out the activities that we present to the students

Presented by: Kurt Huffman, COSI (Center of Science and Industry)
Jessica Teng, COSI (Center of Science and Industry)
Jordan Rader, COSI (Center of Science and Industry)

Grade Levels: PreK - 4, 5 - 8, 9 - 12 ***Room:*** BA 115

D9 A Tail of Two Homework Programs: Advanced Technologies Utilized at The University of Toledo

Technology was introduced into the classroom as a way to help hold students accountable. It was utilized as a way to make sure that students were practicing problems without the need for extensive hours of hand grading and also became useful in giving instant feedback to the students about their understanding of the material. Advances in technology have created ways to move beyond these benefits. Traditional online homework systems are beginning to move toward adaptive learning. These new programs have many advantages. Tutorial problems help students understand concepts by working through problems instead of just passively reading. Lessons tailored to individual students allows them to focus on what will benefit them the most as opposed to spending time on lessons that are too easy or fighting with material that they are not yet ready for. Finally, with the ability to test retention, they help students learn that the old pattern of learning for the lesson or the test and forgetting is not beneficial. The University of Toledo both ALEKS and Mastering Chemistry are used as examples of such technologies.

Presented by: Kristi Mock, The University of Toledo

Grade Levels: 9 - 12, College ***Room:*** BA 101

Block E: 2:50 – 3:40 PM

E7 Engaging the Technologically Augmented Student

While personal technology affords access to a multitude of internet resources, it also provides persistent connection to social media, games, entertainment, and other diversions. Students with smartphones, tablets, and laptops can easily become distracted during class. How can teachers keep these students engaged? In this presentation, we introduce recommendations to deal with this daunting challenge. Moreover, we offer suggestions to leverage students' personal technology to enhance the classroom experience.

Presented by: Jerry Schnepp, Bowling Green State University & Paul Cesarini, Bowling Green State University

Grade Levels: 9 - 12, College ***Room:*** BA 103

Putting Creativity to Work: Teaching STEM With Innovation

Block A: 10:00 – 10:50 AM

A8 G3: Game Design in the Classroom

Teachers and instructors have been playing games for years as a method of instruction. How does today's emerging game based learning strategies connect to 21st Century skills? The G3: Game Design in the Classroom presentation will provide an overview of game-based learning, gamification, game design, web-based game design tools, and reasons why we should play more games. A brief look at the Zulama Game Academy and curriculum will be presented.

Presented by: Dean Goon, Mount Vernon Nazarene University/Makeadent Educational Consulting

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 101

A11 CJ STEMM - An Innovative Multifaceted Approach to K-12 STEM Education in the Classroom and Beyond

The mission of the CJ STEMM initiative is to empower students to serve the world. Inside and, perhaps more significantly outside, the classroom, we offer opportunities for middle and high school students and their families to interact with, and learn from, practicing STEM professionals who serve the world, and know and apply the science, technology, engineering, and math content that teachers strive to teach and students are challenged to make sense of. Learn from the CJ STEMM Coordinator and partner middle grade science teacher about the program elements of CJ STEMM and three nationally researched STEM education quality rubrics.

Presented by: Meg Draeger, Chaminade Julienne Catholic High School
Christine Evans, St. Albert the Great School

Grade Levels: 5 - 8, 9 - 12 ***Room:*** OLSC 117

Block B: 11:00 – 11:50 AM

B1 Weaving STEM, Standards, & Inquiry Based Learning for the Real Pre-K Class: Connecting STEM & Ohio's Preschool Standards Through Inquiry Based Learning for Today's Preschooler (LIMIT 20)

This presentation will demonstrate how to connect Ohio's preschool standards, STEM through practical Inquiry Based Learning strategies.

Presented by: Melissa Romero, Lourdes University
Christine Knaggs, Lourdes University

Grade Levels: PreK - 4 ***Room:*** BA 1002

B3 Teaching Simple Machines and Force and Motion using LEGO

Hands-on session where the least-science oriented educator will feel confident learning how to teach pulleys, levers, gears, wheels and axles, force and motion and a little energy using a wonderful manipulative-LEGO. Focus for this session is gears.

Presented by: Ivery Toussant, Jr., LEGO Education

Grade Levels: PreK - 4, 5 - 8, 9 - 12 ***Room:*** BA 117

B10 Complexity Made Simple: Creating Dynamic Systems to Model Diversity, Thresholds, and Feedback Loops.

Technology can be more than bells and whistles as an instructional aid. Modern software allows students to construct computer models of complex interactions that demonstrates important concepts including, diversity, thresholds, and feedback loops. Students can have a concrete, creative, and interactive experience investigating complex systems such as climate change, forest fires, natural selection, sugar metabolism, and neighborhood segregation. Modeling systems allows students to investigate the interconnections of "big ideas" in a visual way.

Presented by: Jon Darkow, Seneca East Local Schools

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 2001

B11 What incorporates STEM, gets students excited, students like it because it is fun and hands-on, and it allows students to think outside the box? ROBOTICS!!!!

Robotics is the buzz word right now! Students are energized as they immerse themselves in this fun and exciting environment that reinforces all the aspects of STEM education. What is holding you back from introducing robotics to your students? This presentation will show you how to easily implement robotics into your classroom whether you are in elementary, middle, or high school. We will discuss what tools are available to you and what you will need to get started. After reviewing our STEM online curriculum you will have the option to experience the hands on robot activities. Information on in-class competitions and local competitions will be made available to you. This will include costs to enter, how to enter, what to expect and what tools are available to help you prepare for competition.

Presented by: Rob Smith, DEPCO, LLC

Grade Levels: PreK - 4, 5 - 8, 9 - 12 ***Room:*** OLSC 117

Block C: 12:50 – 1:40 PM

C3 Explicit Enhancement Tools to Facilitate STEM Content Acquisition (LIMIT 20)

Given the abstract nature of the STEM content and the non-observable nature of the underlying processes, teachers need to use explicit enhancements to re-present information in an unambiguous way. This is especially paramount for students with high incidence disabilities and for students who are at-risk for academic failure. In this presentation, evidence-based strategies/tools that teachers can use to enhance STEM instruction are discussed.

Presented by: Sekahr Pindiprolu, The University of Toledo

Grade Levels: PreK - 4, 5 - 8, 9 - 12 ***Room:*** BA 117

C7 Comparing Years 1, 2, and 3 of Strategies Modeling and Reading Together Through Integrating Science (SMARTTIS)

This presentation will share the results of a comparison of three years of a summer camp component of a larger study: "Strategies Modeling and Reading Together Through Integrating Science" (SMARTTIS). This research centers around the integraton of science and reading, teacher beliefs, student content knowledge, and student attitudes. Curriculum reform, state and national standards, and research have argued for cross-curricular integration among different subject areas, more specifically in science and reading. Classroom teachers play a critical role in the successful implementation of reform and research-based best practices; and their beliefs strongly influence their practice.

Presented by: Andrea Milner, Adrian College
Vanessa Morrison, Adrian College

Grade Levels: PreK - 4 ***Room:*** BA 110

C13 A Forensics Approach to STEM

CSI and forensics can spark students' interest in science. Ideas will be presented from the crime scene to qualitative and quantitative testing. Quantitative tests allow students to apply their math skills, adding to an appreciation for math and science.

Presented by: Cynthia Molitor, Lourdes University

Grade Levels: 3 - 12, College ***Room:*** OLSC 117

Block D: 1:50 – 2:40 PM

D1 STEM Approach to Blended Learning

Blended learning combines two things in a way that makes each better than they are on their own: teachers' talent and technology tools. Blended learning allows teachers to do what they do best – work directly and closely with individual students and small groups – by harnessing the adaptive power and precision of technology.

Presented by: Marcy Raymond, Reynoldsburg City Schools

Grade Levels: 9 - 12, College ***Room:*** BA 1002

Block E: 2:50 – 3:40 PM

E1 Collaborative Action Research Project Part II: Visualization and Processing Speed Differences in STEM and Literacy Education: When Does Slow Become Good?

This Collaborative Action Research project is a continuation from the work we presented last year. We would like to again encourage conference attendees to voluntarily stop by our room throughout the day to test their 3-D visualization ability and cognitive processing speed. It will take approximately 20 minutes for individuals to complete both tests on an Apple ipad. During the last session of the day, we will present our findings. Individuals who volunteer to participate in this collaborative action research project will be entered into a raffle.

Presented by: Richard Oldrieve, Cleveland State University
Cynthia Bertelsen, Bowling Green State University

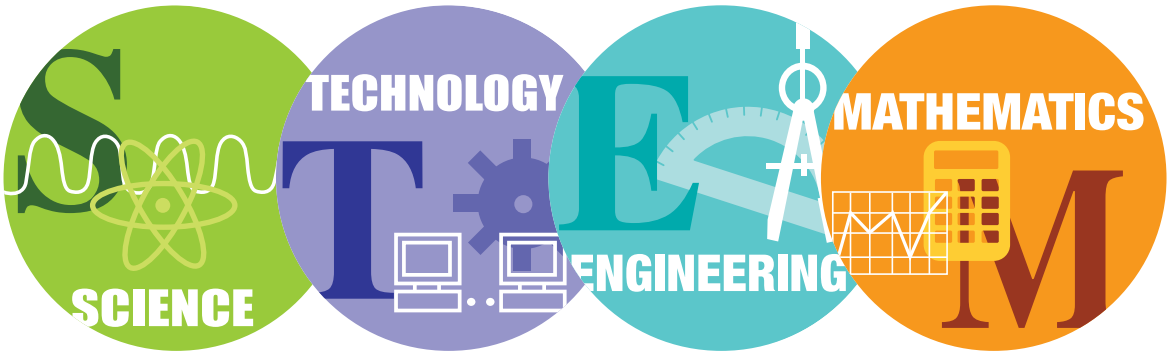
Grade Levels: PreK - 4 ***Room:*** BA 1002

E8 Differentiated Instruction in Lesson Planning

Differentiated instruction has many values to student learning. When used throughout instruction, students are exposed to a variety of activities and objectives. The key is using curriculum that is inherently diversified therefore making differentiated instruction a natural part of teaching. This presentation will feature excerpts from three graduate students' lesson plans.

Presented by: Amy Biggs, Mount Vernon Nazarene University
Amanda Barrell, Mount Vernon Nazarene University

Grade Levels: 5 - 8 ***Room:*** BA 101



STEM in the Community: Thinking Outside the Classroom

Block A: 10:00 – 10:50 AM

A7 Zoo Animals Helping STEM Learning

The Toledo Zoo animals are excellent living examples of how science and technology is important. Join the Zoo and learn about cool ways the Zoo uses science and technology to help animals and how animals can help your students learn!

Presented by: Josh Minor, Toledo Zoo
Nicole Syrek, Toledo Zoo
Jerran Orwig, Toledo Zoo

Grade Levels: PreK - 4, 5 - 8 ***Room:*** BA 103

Block B: 11:00 – 11:50 AM

B7 The University of Toledo ACS STEMM Summer Camp

Exposing educators to a different way of reaching out to local high school students. Help students gain an understanding on what STEMM knowledge can lead them to. Use summer camp curricula and concepts to focus on teaching the students how to balance a STEMM education with everyday life. Applying the information taught in a classroom to an industrial or laboratory setting.

Presented by: Christina Onyskiw, The University of Toledo
Edith Kippenhan, The University of Toledo

Grade Levels: 9 - 12 ***Room:*** BA 103

Block C: 12:50 – 1:40 PM

C1 The Chemistry of Art (LIMIT 15)

The general format of this introductory chemistry course for non-science majors will be described, a mini lecture will be presented, and salt tests done at the Toledo Museum of Art will be performed by attendees. The course applies basic principles of chemistry to the topics of color, paint, clay, glass, metals, photography, and art restoration.

Presented by: Elizabeth Wise, Lourdes University

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 1002

C10 Watershed Dynamics for 21st Century Learners

Our Watershed Dynamics project created flipped lessons and iPad app for collected physical, chemical, and biological samples for stream quality assessments. In this project, funded by an Ohio EPA OEEF grant, 8 educators collaborated creating a water quality assessment program. This presentation will review the curriculum that is freely available and easily accessible for all school districts. The curriculum integrated resources from the NSTA Press Watershed Dynamics, The GLOBE Program, and the Ohio Stream Quality Monitoring Program.

Presented by: Jon Darkow, Seneca East Local Schools
Kathy Mohr, North Central Ohio Educational Service Center
Beth Diesch, Seneca Soil & Water Conservation District

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 1007

Block D: 1:50 – 2:40 PM

D3 Macroinvertebrates: Water Quality Indicators

Session will provide hands-on equipment use, calculations of cumulative index values, identifying preserved macroinvertebrates, and showing participants how their students or groups can become citizen scientists. Additional resources will be provided for follow-up and who to contact in your local area for additional help. Participants will also see/use a new application for compiling their field data on an iPad.

Presented by: Dennis Clement, Ohio EPA, OEE

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 117

D10 Stone Laboratory - OSU's Lake Erie Island Campus for Education and Outreach

Bring science alive for your students and yourself! Learn about our hands-on aquatic Workshop Field Trip Program for grades 4 - 12, summer class opportunities for high school juniors and seniors, college students, and of course professional development to enrich your teaching skills, all in an island setting.

Presented by: Susan Bixler, Franz Theodore Stone Laboratory
Angela Greene, Franz Theodore Stone Laboratory

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 1007

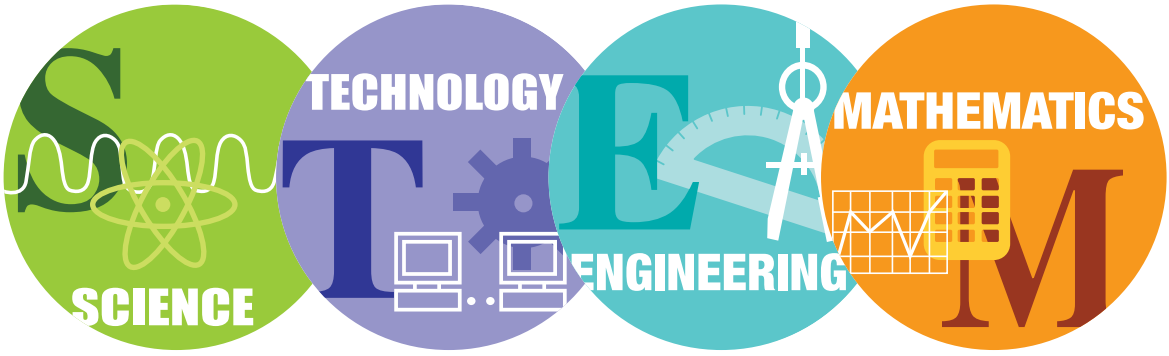
Block E: 2:50 – 3:40 PM

E3 Immersion of Learning - Take a Field Trip That Immerses Students in STEM Education

At COSI, the Center of Science and Industry, we invite field trip groups to have a learning experience that immerses them in STEM education. Through the 21st Century Learning Labs, students get to experience everything from a plant dissection, to a videoconferencing live knee surgery, to a lab experience that shows the effects of different drugs on neuronal communication! This presentation will showcase some of these components/activities and the different educational methods we use to teach our field trip groups.

Presented by: Kurt Huffman, COSI (Center of Science and Industry)
Robin Dungan, COSI (Center of Science and Industry)

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 115



Teaching and Learning in MATHEMATICS

Block A: 10:00 – 10:50 AM

A12 Examining Model Curriculum in Mathematics: 8th Grade

The (CO)^{2}RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)^{2}RES Teacher Participants

Grade Level: 8 ***Room:*** OLSC 119

A13 Examining Model Curriculum in Mathematics: 5th Grade & Special Education

The (CO)^{2}RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)^{2}RES Teacher Participants

Grade Level: 5 & Special Education ***Room:*** OLSC 120

Block B: 11:00 – 11:50 AM

B8 "The Man Who Counted: A Collection of Integrated Adventures"

A successful integration of multiple disciplines may be achieved by adopting a strong belief that no content can truly stand alone without supporting or leaning on topics or applications spanning across several subjects or even the entire curriculum. This is most easily recognized in mathematics, for this discipline on its own can be seen as beautiful, but rather misplaced pieces, with no puzzle to complete. In a PBL environment, an integrated project was designed to effectively merge mathematics, literature, history, and technology, while strengthening the collaboration, communication, and presentation skills, essential for the 21st century. This was accomplished through the tale of "The Man Who Counted", and his collection of mathematical adventures. This presentation offers a description of this project and how it was implemented and received in a sophomore class in a local STEM high school.

Presented by: Sandra Wilder, Bio-Med Science Academy

Grade Level: 9 - 12 ***Room:*** BA 101

B12 Examining Model Curriculum in Mathematics: 3rd & 4th Grade

The (CO)^{2}RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)^{2}RES Teacher Participants

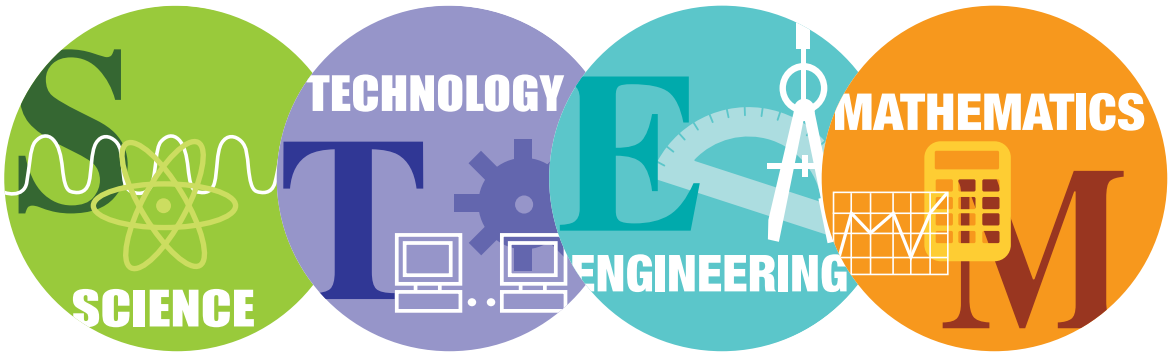
Grade Level: 3 - 4 ***Room:*** OLSC 119

B13 Examining Model Curriculum in Mathematics: 7th Grade

The (CO)^{2}RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)^{2}RES Teacher Participants

Grade Level: 7 ***Room:*** OLSC 120



Northwest Ohio Symposium on Science, Technology, Engineering, and Mathematics Teaching

Block C: 12:50 – 1:40 PM

C14 Examining Model Curriculum in Mathematics: Kindergarten

The (CO)^{2}RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)^{2}RES Teacher Participants

Grade Level: Kindergarten ***Room:*** OLSC 106

C15 Examining Model Curriculum in Mathematics: 3rd Grade

The (CO)^{2}RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)^{2}RES Teacher Participants

Grade Level: 3 ***Room:*** OLSC 121

C16 Examining Model Curriculum in Mathematics: 6th Grade

The (CO)^{2}RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)^{2}RES Teacher Participants

Grade Level: 6 ***Room:*** OLSC 119

C17 Examining Model Curriculum in Mathematics: 9th – 12th Grade

The (CO)^{2}RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)^{2}RES Teacher Participants

Grade Level: 9 - 12 ***Room:*** OLSC 120

Double Session – Block D & E: 1:50 – 3:40 PM

D6 & E6 What's Different in the New Learning Standards for Mathematics

Implementation of the New Learning Standards is in full force in schools around Ohio. The new standards for mathematics include standards for content as well as standards for mathematical practices. We need to teach our students both. In this session you will get information on the major instructional shifts in teaching mathematics. You will be introduced to a deep dive into a few of the eight mathematical practices and discuss how this might require a change in the design of lessons. You will be introduced to the Ohio Quality Review Rubric that can be used when deciding if current lessons are aligned to the new standards or as a guide to design new lessons.

Presented by: Annika Moore, Ohio Department of Education

Grade Levels: 5 - 8 ***Room:*** BA 112

Block D: 1:50 – 2:40 PM

D13 Examining Model Curriculum in Mathematics: 1st Grade

The $(CO)^2$RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: $(CO)^2$RES Teacher Participants

Grade Level: 1 ***Room:*** OLSC 106

D14 Examining Model Curriculum in Mathematics: 4th Grade

The $(CO)^2$RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: $(CO)^2$RES Teacher Participants

Grade Level: 4 ***Room:*** OLSC 121

Block E: 2:50 – 3:40 PM

E9 Examining Model Curriculum in Mathematics: 2nd Grade

The (CO)^{2}RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)^{2}RES Teacher Participants

Grade Level: 2 ***Room:*** OLSC 106

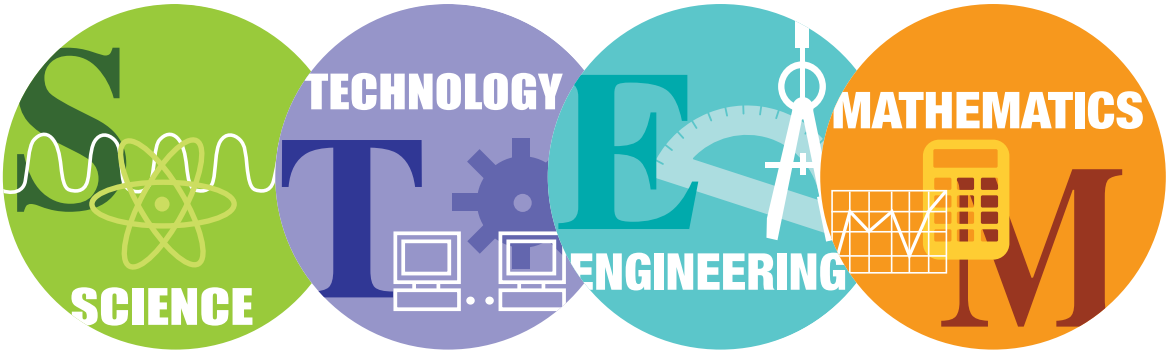
E10 Examining Model Curriculum in Mathematics: 5th Grade

The (CO)^{2}RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)^{2}RES Teacher Participants

Grade Level: 5 ***Room:*** OLSC 121

The "Common Core for Reasoning and Sense Making" [(CO)^{2}RES Elementary and (CO)^{2}RES Secondary] programs are funded by the Ohio Board of Regents. The purpose of these programs is to familiarize teachers with the Common Core Standards and to support their growth in two content domains. Teachers participating in the program deeply explored researched based classroom practices, which led to the engagement of students in the Standards for Mathematical Practice.



Teaching and Learning in SCIENCE

Block A: 10:00 – 10:50 AM

A3 Helping Students Construct Models: Modeling Instruction in Physical Science

Have you heard about Modeling Instruction and wondered what it's all about? Whiteboard sessions, Socratic questioning, and graphical analysis have been a part of my classroom since 2007. Come and participate in a unique hands-on, inquiry approach where misconceptions are confronted and students construct a series of carefully coordinated models to represent an observable event or concept.

Presented by: Mary Kate Hafemann, Ottawa Hills High School

Grade Levels: 9 - 12 ***Room:*** BA 117

Double Sessions – Block A & B: 10:00 – 11:50 AM

A5 & B5 Explore! Plate Tectonics

This workshop will present numerous inquiry-based activities for you to use in your classroom that will keep your students engaged throughout your plate tectonic lesson. Free plate tectonic resources are provided for each participant.

Presented by: Davida Buehler, The Geological Society of America

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 114

A6 & B6 Get the "Scoop on Soils"! Free Lesson Plans and More for K-4 Soil Study

Elementary GLOBE is designed to introduce K-4 students to the study of Earth System Science. The complete instructional unit includes: (1) Science-based storybooks designed to introduce students to key concepts in water, soil, clouds, seasons, and Earth system studies. (2) Classroom learning activities complementing the science content covered in each storybook that are designed to further engage students in GLOBE's 5 investigation areas (air, soil, water, life, and earth as a system). In this session, we will investigate the "Scoop on Soils" unit. Participants will learn through hands-on activities and interactive discussions. Free materials through GLOBE website and other related resources will be provided.

Presented by: Jodi Haney, Bowling Green State University

Grade Levels: PreK - 4 ***Room:*** BA 110

Block C: 12:50 – 1:40 PM

C4 Population Comparisons in Aphid Resistant and Non-Aphid Resistant Soybeans

Population estimation methods will be demonstrated using aphids on soybeans. Lesson plans for using soybeans in your classroom for population studies, algebra, and inquiry-based science will be highlighted. Sponsored by the Ohio Soybean Council.

Presented by: Heather Bryan, Education Projects & Partnerships
Jane Hunt, Education Projects & Partnerships

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 115

C6 Using Fossils to Engage Students in Science Learning

Fossils provide a fascinating window into Earth's ancient past and are a great way to excite kids about scientific discovery. We'll discuss hands-on activities using fossils that target general science skills and specific content standards in life and earth sciences. Every participant will receive lesson plans and resource guides.

Presented by: Peg Yacobucci, Bowling Green State University/Paleontological Society

Grade Levels: PreK - 4, 5 - 8 ***Room:*** BA 112

C8 I Really Do Study and Now I'm Starting To Get It

"I really did study." How many times have teachers heard this statement from students after a poor performance on a test? Student perception of their mastery of content does not always match reality. Explore the strategies 3 students have used to improve their mastery of content and improve their self-monitoring to be more academically successful. Also explore the relationship between self-monitoring and post exam reflection. Finally, take a minute to examine your own teaching style as it influences self-monitoring and the goal of moving students from being novice learners toward becoming experts.

Presented by: Debra Bercher, Lourdes University

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 103

Double Sessions – Block C & D: 12:50 – 2:40 PM

C5 & D5 Explore! Rocks using Inquiry-Based Learning

Through a series of inquiry-based learning activities, teachers will walk away with a unit plan that will help their students learn the characteristics of rocks and how to identify rocks with ease. Additionally, the lessons include ties to plate tectonics, environments of formation, and geologic time.

Presented by: Davida Buehler, The Geological Society of America

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 114

C12 & D12 Moving into the New Ohio Learning Standards: Let's Talk About Motion!

Build your vehicle! Test the effects of force and mass on it as you engage in Project Based Science lessons teaching motion. These lessons, written in the 5-E Learning Model format, address the new Ohio Science Standards in Grade 5, but the concept activities can be used at any grade level.

Presented by: Mikell Lynne Hedley, ODE Network Leader
Elizabeth Buckholtz, Toledo Public Schools
Janet Struble, ODE Network Leader

Grade Levels: 5 - 8 ***Room:*** BA 2003

Block D: 1:50 – 2:40 PM

D7 Who is that Lady, and What Does She Want?

Learn how to use games, songs, and visuals to quickly focus your students' attention in new situations, environments, and subject matter. Take home a CD.

Presented by: Jennifer Elsworth, Metroparks of the Toledo Area

Grade Levels: PreK - 4, 5 - 8 ***Room:*** BA 110

D8 Science for Upper Elementary Kids with Fun and Purpose!

This session will include discussion and presentations focused on science resources, inquiry, 21st century skills and their importance, and more!

Presented by: Heather Janes, Lake Middle School

Grade Levels: 5 - 8 ***Room:*** BA 103

D11 Awesome FREE INFOhio Science Resources — One Returns, Two New

Participants will explore many features of the comprehensive resource returning for this school year — Science Online, grades 4-12, with articles on major topics and issues in science, math, and technology, plus diagrams, illustrations, experiments, videos, and more. New this year are two additional EBSCO products, Science Reference Center and Points of View Reference Center, grades 9-12. Attend this session to find out how these two additions will support Ohio's New Learning Standards with valuable resources in helping students analyze and evaluate non-fiction materials. Science Reference Center, for grades 4-12, contains full text for hundreds of science encyclopedias, reference books, and periodicals.

Presented by: Judith Tucker, NWOET

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 2001

Block E: 2:50 – 3:40 PM

E2 Growing Ohio

An introduction to Ohio corn and how it can be used in the classroom to teach plant biology, environmental issues, and math. Teachers will receive lessons and materials used in the workshop. Sponsored by the Ohio Corn Marketing Program.

Presented by: Jane Hunt, Education Projects & Partnerships
Heather Bryan, Education Projects & Partnerships

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 117

E4 Claim, Evidence, Reasoning

The claim, evidence, reasoning (CER) format provides students a framework for talking about, and writing about science concepts. Students learn important core science ideas and concepts when students engage in the cogitative processes involved in making a claim, citing the evidence that led them to make the claim, and explaining why the evidence supports the claim (McNeil & Krajcik, 2012.) The CER framework supports the new Common Core English Language Arts Standards for Science and Technical Subjects pertaining to Argumentation (Writing, Text Type and Purpose). The goal of this session is to introduce teachers to the CER framework and explore how to apply the CER framework in the classroom including; summarizing experimental results, answering research questions, and reviewing released OAA/OGT test questions.

Presented by: Elizabeth Buckholtz, Toledo Public Schools

Grade Levels: 5 - 8, 9 - 12 ***Room:*** BA 114

E5 Exercise Science: What does it take to be a world-class marathon runner?

The legendary marathon requires a blend of good genes, physiology, biomechanics, nutrition, training, and luck. Explore the lore of the marathon and the characteristics needed to run a competitive 42 km race. Follow the quest from the next hurdle...running a marathon in less than two hours.

Presented by: Frederick Andres, Bowling Green State University
Matt Laurent, Bowling Green State University

Grade Levels: 5 - 8, 9 - 12, College ***Room:*** BA 110

Vendors

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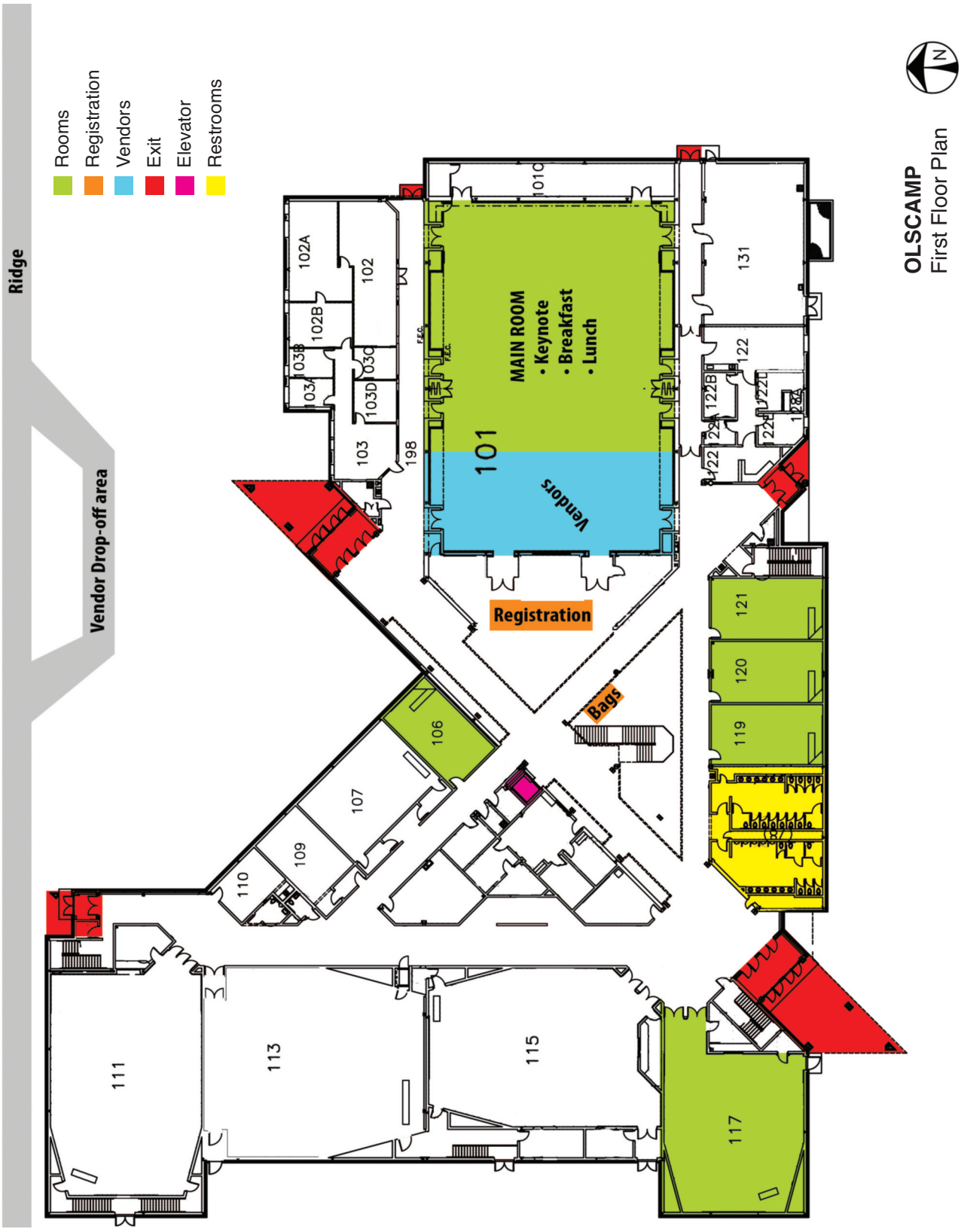
Session Overview

Welcome & Keynote: 8:30-9:45 AM	Keynote Address: Alfie Kohn (Olscamp Hall: Room 101)							
Room #	**BA 1002**	**BA 1000**	**BA 117**	**BA 115**	**BA 114**	**BA 112**	**BA 110**	**BA 103**
Block A: 10:00-10:50 AM	Integrating Technology in the Classroom **A1**	**A2** Inquiry in the College Classroom: Enhancing the Undergraduate Experience	Teaching and Learning in SCIENCE **A3**	**A4** Integrating Technology in the Classroom	**A5** Teaching and Learning in SCIENCE		**A6** Teaching and Learning in SCIENCE	STEM in the Community: Thinking Outside the Classroom **A7**
Block B: 11:00-11:50 AM	Putting Creativity to Work: Teaching STEM With Innovation **B1**	**B2**	Putting Creativity to Work: Teaching STEM With Innovation **B3**	**B4**	**B5**		**B6**	STEM in the Community: Thinking Outside the Classroom **B7**
Lunch: 11:50 AM - 12:40 PM								
Block C: 12:50-1:40 PM	STEM in the Community: Thinking Outside the Classroom **C1**	Inquiry in the College Classroom: Enhancing the Undergraduate Experience **C2**	Putting Creativity to Work: Teaching STEM With Innovation **C3**	Teaching and Learning in SCIENCE **C4**	**C5** Teaching and Learning in SCIENCE	Teaching and Learning in SCIENCE **C6**	Putting Creativity to Work: Teaching STEM With Innovation **C7**	Teaching and Learning in SCIENCE **C8**
Block D: 1:50-2:40 PM	Putting Creativity to Work: Teaching STEM With Innovation **D1**	Inquiry in the College Classroom: Enhancing the Undergraduate Experience **D2**	STEM in the Community: Thinking Outside the Classroom **D3**	Integrating Technology in the Classroom **D4**	**D5**	**D6** Teaching and Learning in MATHEMATICS	Teaching and Learning in SCIENCE **D7**	Teaching and Learning in SCIENCE **D8**
Block E: 2:50-3:40 PM	Putting Creativity to Work: Teaching STEM With Innovation **E1**		Teaching and Learning in SCIENCE **E2**	STEM in the Community: Thinking Outside the Classroom **E3**	Teaching and Learning in SCIENCE **E4**	**E6**	Teaching and Learning in SCIENCE **E5**	Integrating Technology in the Classroom **E7**

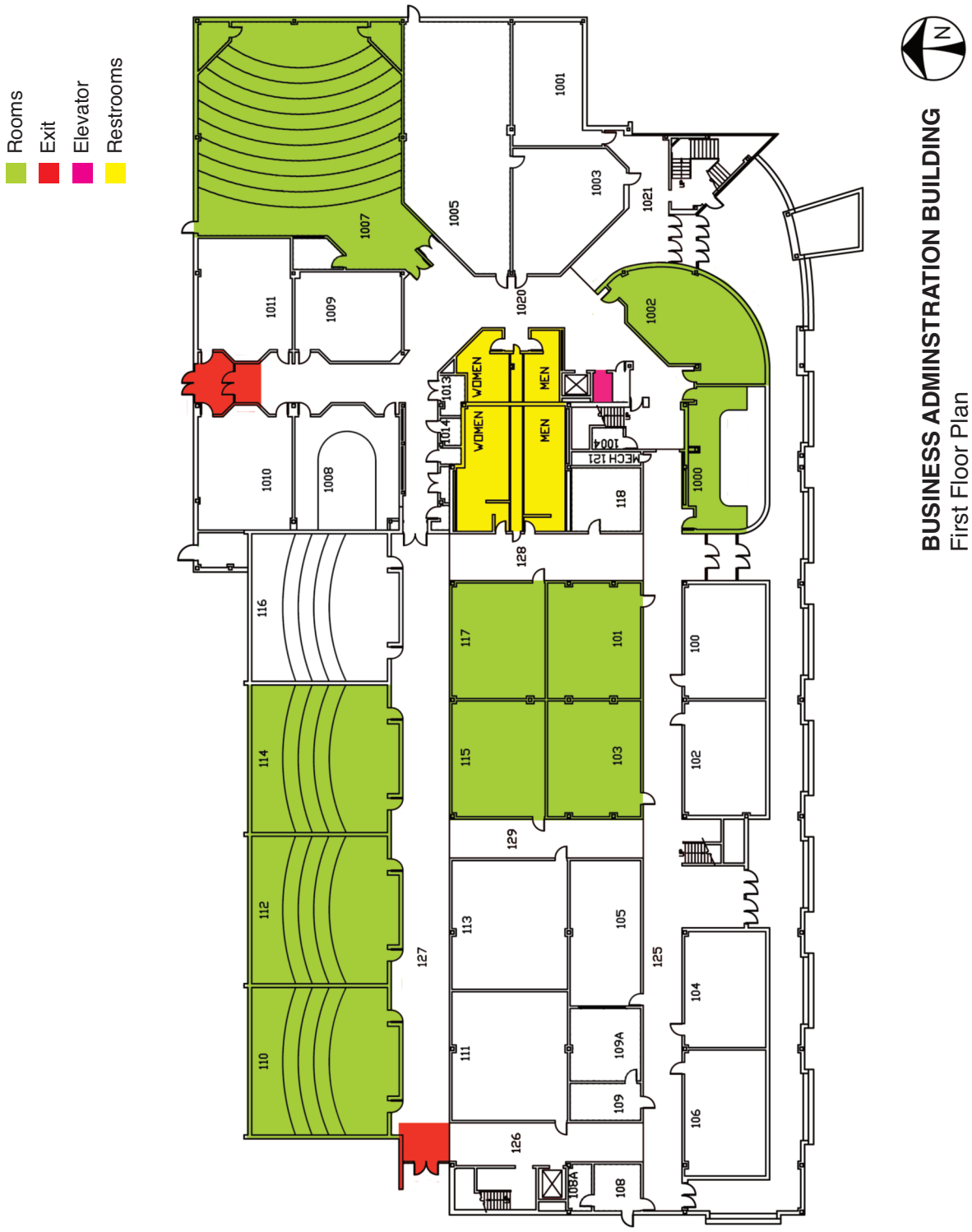
Welcome & Keynote: 8:30-9:45 AM	Keynote Address: Alfie Kohn (Olscamp Hall: Room 101)								
Room #	**BA 101**	**BA 1007**	**BA 2001**	**BA 2003**	**OLSC 117**	**OLSC 106**	**OLSC 121**	**OLSC 119**	**OLSC 120**
Block A: 10:00-10:50 AM	Putting Creativity to Work: Teaching STEM With Innovation **A8**	**A9** Integrating Technology in the Classroom	Integrating Technology in the Classroom **A10**		Putting Creativity to Work: Teaching STEM With Innovation **A11**			Teaching and Learning in MATHEMATICS **A12**	Teaching and Learning in MATHEMATICS **A13**
Block B: 11:00-11:50 AM	Teaching and Learning in MATHEMATICS **B8**	**B9**	Putting Creativity to Work: Teaching STEM With Innovation **B10**		Putting Creativity to Work: Teaching STEM With Innovation **B11**			Teaching and Learning in MATHEMATICS **B12**	Teaching and Learning in MATHEMATICS **B13**
Lunch: 11:50 AM - 12:40 PM									
Block C: 12:50-1:40 PM	Integrating Technology in the Classroom **C9**	STEM in the Community: Thinking Outside the Classroom **C10**	Integrating Technology in the Classroom **C11**	**C12** Teaching and Learning in SCIENCE	Putting Creativity to Work: Teaching STEM With Innovation **C13**	Teaching and Learning in MATHEMATICS **C14**	Teaching and Learning in MATHEMATICS **C15**	Teaching and Learning in MATHEMATICS **C16**	Teaching and Learning in MATHEMATICS **C17**
Block D: 1:50-2:40 PM	Integrating Technology in the Classroom **D9**	STEM in the Community: Thinking Outside the Classroom **D10**	Teaching and Learning in SCIENCE **D11**	**D12**		Teaching and Learning in MATHEMATICS **D13**	Teaching and Learning in MATHEMATICS **D14**		
Block E: 2:50-3:40 PM	Putting Creativity to Work: Teaching STEM With Innovation **E8**					Teaching and Learning in MATHEMATICS **E9**	Teaching and Learning in MATHEMATICS **E10**		

OLSC = Olscamp Hall ***BA = Business Administration Building***

Olscamp Hall Map



Business Administration Building Map



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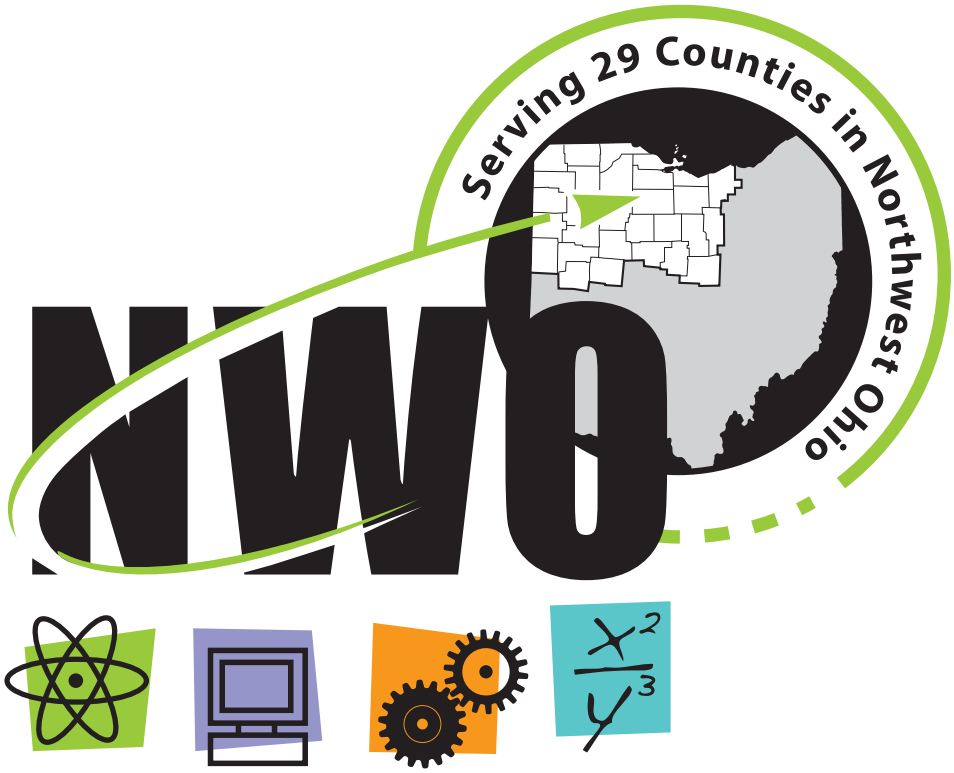

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