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2018

**ILLINOIS
MATH & SCIENCE
CONFERENCE**

OCT 19-20, 2018 | TINLEY PARK, IL

ENGAGEMENT +
INSPIRATION =



EMPOWERMENT

ISTA/ICTM 2018 Conference

General Schedule

Tinley Park, IL

Friday, October 19, 2018

7:30 a.m.—5:00 p.m.	Registration	South Lobby
7:30 a.m.— 8:45 a.m.	Breakfast	South Exhibit Hall
9:00 a.m.—10:30 a.m.	Welcome/General Session	North/West Exhibit Hall
10:30 a.m.—5:30 p.m.	Exhibitors	South Exhibit Hall
10:45 a.m.—11:35 a.m.	Concurrent Sessions	Conference Center
11:45 a.m.—12:50 p.m.	Lunch/Exhibitor Time	South Exhibit Hall
1:00 p.m.— 5:00 p.m.	Concurrent Sessions/Workshops	Conference Center
5:00 p.m.— 5:30 p.m.	Door Prizes/Refreshments	South Exhibit Hall
5:30 p.m.— 7:00 p.m.	ISTA Reception	West Exhibit Hall
5:30 p.m.—7:30 p.m.	ICTM Awards Reception	North Exhibit Hall

Saturday, October 20, 2018

7:30 a.m.—12:00 p.m.	Registration	South Lobby
7:30 a.m.—8:30 a.m.	Breakfast	South Exhibit Hall
7:35 a.m.—8:20 a.m.	ICTM Business Meeting	Muirfield
8:00 a.m.—12:00 p.m.	Exhibitors	South Exhibit Hall
8:30 a.m.—2:20 p.m.	Concurrent Sessions/Workshops	Conference Center
11:00 a.m.—1:30 p.m.	Lunch (for purchase)	South Concourse
11:30 a.m.—1:00 p.m.	ICTM Past-Presidents Affiliate Leaders' Luncheon	Plantain Room/Bananas

Professional Development Hours Available at the Conference

Illinois educators can receive ISBE Professional Development Hours (formerly known as CPDUs) for the 2018 ICTM and ISTA Annual Conference with one simple, paperless process through support from the Office for Mathematics, Science, & Technology Education (MSTE) in the College of Education at the University of Illinois at Urbana-Champaign.

Look for the banner that says “Need Professional Development Hours? Talk to Us!” next to the conference registration booth. Please remember to have your IEIN ready. Computers will be available if you do not have a smart phone. Questions? Contact George Reese at reese@illinois.edu.



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Monday Workshop Descriptions

Elementary Petro Science with Common Core Math Component - Professional Development for Illinois Science Teachers

Understand the process of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems as it relates to the Illinois Crude Oil and Natural Gas Industry. Topics include: Ordered pairs, rock ID, porosity, flow rate of oil, pulleys, oil / water cohesion, crude oil, plastics recycling codes, formation of oil & natural gas, and common core math problems.

Middle School Petro Science - Professional Development for Illinois Science Teachers

Understand the process of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems as it relates to the Illinois Crude Oil and Natural Gas Industry. Topics include: oil & natural gas formation, microorganisms, sound waves, locating crude oil, reservoirs / production, separation process, safety, petroleum-based products, energy conservation.

Core Energy Math Middle/ High School- Professional Development for Illinois Math Teachers

Understand and utilize Common Core Mathematic standards to define, evaluate and solve real world

problems as they relate to the Illinois Crude Oil and Natural Gas Industry. Topics include: Well site clean-up and restoration, directional and horizontal drilling, finding lease locations, oil and natural gas revenue / expenses, and word problems directly tied to a common core standard.

High School Core Energy Science -

Professional Development for Illinois Science Teachers
 Understand the process of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems as it relates to the Illinois Crude Oil and Natural Gas Industry. Topics include: The structure of hydrocarbons, effects of elevation on flow rate, flow rate of a fluid, fractional distillation, oil recovery methods and the use of biological technology by means of cellular respiration to enhance oil production.



Example of various items included in the High School Core Energy Science Kit

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Join me for a guided preview!

Marla Bormann, Senior Account Manager
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Friday 9:00 a.m.— 10:30 a.m.

Welcome/General Session

Timothy D. Kanold, Ph.D.

Heartprint: Living a Fully Engaged and Well Balanced Professional Life!

The relational expectations, give and take, and daily chaos of a PLC school culture can sometimes be overwhelming. By understanding the impact of their heartprint on others, participants become more inspiring, more fully engaged in their work, and experience a magnified impact on students and colleagues—season after season!



Biography

Timothy D. Kanold, Ph.D. is an educator, husband, father, friend, runner, author and presenter. A nationally recognized K-12 mathematics education leader from Illinois, he also served as school district Superintendent at the number one rated public high school district in the country according to niche.com. After receiving his Ph.D. in educational leadership at Loyola University Chicago, he served as President for the National Council of Supervisors of Mathematics and as a co-author of Grades 6-12 mathematics textbooks for Houghton Mifflin Harcourt. His newest book, *HEART: Fully Forming Your Professional Teaching and Leading Life!* was released in March 2017. Recipient of the 2010 Damen Award for outstanding contributions to the field of education, he currently leads inspirational professional development programs for educators interested in using the professional learning community process to develop a positive and effective culture for student learning.

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Anyone—principals, teachers, parents, students, or members of the general public—may nominate exceptional mathematics and science (including computer science) teachers.

NOMINATION DEADLINE: April 1, 2019

Who Can Apply?

Secondary school mathematics and science teachers (7–12th grade) can apply this year.

Elementary school teachers (K-6) will be eligible to apply during a future cycle.

APPLICATION DEADLINE: May 1, 2019



To nominate or apply, visit: www.paemst.org

The National Science Foundation administers PAEMST on behalf of The White House Office of Science and Technology Policy.

Friday

October 19, 2018

Friday 10:45 a.m.—11:35 a.m.
Concurrent Sessions

Room: Breman

Audience: Grades 6-12

My "Flipped" Earth & Space Science Classroom

Are you interested in transforming one or more of your courses into a more student-centered, active-engagement learning environment? In this presentation, I will overview a) the flipping process, b) some of the unique aspects of my flipped ESS curriculum, and c) what I learned about flipping.

Presenter: Christopher P. Cunnings, Millikin University

Room: Muirfield

Audience: Supervisors/Administrators

It's Elementary! Expect Engagement in the K-5 Classroom

Math education has shifted to a focus on interaction and discovery. It is no longer a sit and get focused on procedure alone. Have your teachers made the shift yet? Find out what to look for in the elementary math classroom and discover some resources to take back to your teachers.

Presenter: Amber Denbo, Community Unit SD 308

Room: North Pavilion 1

Audience: prek-2

Pen-to-Print: 3D Printing in the Classroom

Let's empower our students by giving them the freedom to design and build their own structures. In the session we will explore how to incorporate student created designs throughout the engineering design process and bringing the designs to life.

Presenters: Steven Shadel, Allie Underwood, District 69 Skokie

Room: North Pavilion 2

Audience: Grades k-6

Building a Growth Mindset Community Using Cooperative Tasks

Join us to experience creative movement activities and interactive team building challenges to promote students use of the Standards for Mathematical Practice and apply growth mindset ideas to build a positive mathematics classroom community.

Presenter: Rachel Muren, University of Chicago

Friday 10:45 a.m.—11:35 a.m.
Concurrent Sessions

Room: North Pavilion 3

Audience: Grades k-12

Lesson Study: A Virtual Variation

Explore virtual Lesson Study to engage educators to systematically examine their practice with the goal of becoming more effective. Teachers work collaboratively to plan, research, teach, observe and critique a research lesson while honing their habits of self-reflection and critical thinking.

Presenters: Heather Brown, Jeanine Sheppard, ISU

Room: North Pavilion 5

Audience: Grades 6-12

Building Proficiencies of Mathematical Practices through Number Talks

Number Talks are powerful for many reasons! Participants will learn the WHY behind incorporating number talks into daily lessons and HOW they provide a seamless connection to the Mathematical Practices 2, 7, and 8, as well as providing a natural platform for students to build their proficiencies.

Presenters: Sue Ellen Vozza, Adlai E Stevenson HS, Jacqueline Palmquist, Meta Valley HS

Room: North Pavilion 6

Audience: Grades 9-12

Are the Assessments truly Formative?

This session is for the teacher looking to create student growth from formative assessments. This session will share a process to create intentional assessment practices to grow the level of mastery for students.

Presenter: Kathy Young, Lemont High School

Room: South Pavilion 2

Audience: Grades 6-8

Desmos, Tinkercad, Design: Various Math Projects

A collection of various tasks/activities that can be used for 7th/8th graders.

Presenter: Enisa Akgul, Lincoln Jr High

Friday 10:45 a.m.—11:35 a.m.
Concurrent Sessions

Room: Pebble Beach

Audience: Grades k-12

Best Practices in an NGSS-Aligned Science Classroom

Join us as we explore how to engage students in meaningful conversations that connect Language Arts to Science and learn how to fully integrate these two subjects through a hands-on scientific investigation. Connections to the Charlotte Danielson Framework will also be explored.

Presenter: Marjorie Baker, Chicago Zoological Society

Room: Sam Tinley

Audience: Grades 9-12

Empowering Students Through Engaging Labs and NGSS Writing

Using the NGSS Claim, Evidence, Reasoning graphic and rubric learn how to improve student writing skills. Example labs and writing samples that align with NGSS for biology and chemistry classrooms will be provided. Guide students through the process of identifying major data trends in lab and linking them to science content taught during lecture.

Presenters: Julie Widinski, Ross Widinski, Lincoln Way East High School

Room: South Pavilion 1

Audience: Grades 3-5

Fractions Forever - A Rational Approach

Don't wait until your fraction unit to introduce fraction problems. We will use a CGI framework to explore problems and number choices that help students make sense of fraction operations. Attendees will experience math talks, look at student work, and leave with specific grade level recommendations.

Presenters: Margie Pligge, Nancy Mueller, University of Illinois at Chicago

Room: South Pavilion 3

Audience: Grades 6-8

Claim-Evidence-Reasoning: Scientific Explanations about Phenomena

As students explain observed phenomenon in a scientific way and connect observations and data to science knowledge, this successful STEM instructional strategy is changing how lab are conducted and making science investigations meaningful. ELD strategies will be shared and modeled for an equitable learning environment.

Presenter: Jill Krynski, STEMscopes

Friday 10:45 a.m.— 11:35 a.m.
Concurrent Sessions

Room: South Pavilion 4

Audience: Grades k-12

Materials and Programs from the IDNR

Learn how the IDNR's Illinois-specific materials and programs can supplement your teaching. Grants, professional development workshops, publications and resources for loan are just some of the topics to be discussed.

Presenter: Joe Bauer

Room: South Pavilion 5

Audience: Grades 3-5

Fostering the Equitable Math Talk Community

Engaging students in math discourse is reliant upon a strong math community. How can we empower students and defeat helplessness in efforts to reach higher levels of math discourse? Come explore simple, yet transformative ideas to better your community and therefore better the discourse.

Presenter: Shannon Kiebler

Room: South Pavilion 6

Audience: Grades k-5

What's Keeping You Up at Night?

Differentiating Instruction? Managing Centers & Small Group Resources? Providing Hands-On Learning? Join ETA/Hand2Mind and experience Small Group Math & STEM Center Solutions. The school with the most attendees will receive a Center Makeover with the resources used during the workshop. Door prizes for ALL.

Presenters: Sara Reed, Barbara Jo Evans, ETA Hand2Mind

Room: St. Andrew

Audience: Grades k-12

Literacy and Inquiry Stations in the Science Classroom

This session will present ideas on how to create inquiry stations that will have students exploring concepts, reading, and working with other students. We will also work on breaking down standards, using the 5-E model, and teaching kids how to collaborate during the stations. Recommended for K-8 teachers, but everyone is invited.

Presenter: Aprilanne Lynch, Prairie Trail School/Gurnee District 56

Friday 10:45 a.m.— 11:35 a.m.

Concurrent Sessions

Room: Turnberry

Audience: Grades 9 -12+

Get your students in the Zone

This session we will reflect on your teaching practices and which students you are reaching in class. We will use the work from McKenzie and Skrla's book "Using Equity Audits in the Classroom".

Presenters: Melissa Lighty, Christine Rinkenberger, Urbana High School

10:45 a.m.— 12:30 p.m.

**Teacher Exploratorium
South Side South Exhibit Hall**

Engage your science and math students in making predictions and generating explanations through the use of discrepant event demonstrations. We will present short discrepant events you can incorporate into your classroom this year. Walk from table to table and gather lesson plans to take with you.

Presenters: NIU Pre-service Teachers

Lunch/Exhibitor Time

11:40 a.m. - 12:50 p.m.

(See ticket for lunch time)

Friday 1:00 p.m.— 1:50 p.m.

Concurrent Sessions

Room: Breman

Audience: Grades 6-12

Materials Matter! Using SOLIDS to Teach Chem

Solid materials comprise the "stuff" the world uses in every facet of life - from industrial to personal. Yet ignored. Teaching solids brings engineering into chemistry classrooms. Activities will show students the importance of the concepts they learn in traditional classes, and lend the way to adding more engineering practices and inquiry / critical thinkers.

Presenter: Sherri C Rukes, Libertyville High School

Room: Muirfield

Audience: Administrators/Supervisors

Leading Change in Mathematics Education

Participants in this session will engage in a dialogue about strategies for facilitating change in their respective settings. The process of change is complex and unique for each setting. Strategies for planning and implementing will be shared and discussed.

Presenters: Jennie Winters

Friday 1:00 p.m.—1:50 p.m.

Concurrent Sessions

Room: North Pavilion 1

Audience: Grades 6-12

Explore Learning Simulations to Model NGSS & Make Science Fun!

Engaging students through online simulations (Gizmos) to model NGSS, build classroom community and keep learning fun and meaningful. Explore sample lessons, hundreds of Gizmos and see all the student centered resources there are to offer.

Presenter: Kelly Battistone, Explore Learning

Room: North Pavilion 2

Audience: Grades k-6

Eight Mathematical Practices- Your GOLDen Ticket to Success

See the standards for mathematical practice come alive, engage in an activity & explore frameworks that encourage problem solving, reasoning & communication. The frameworks empower students to see mathematics as sensible, useful & worthwhile. They're also easily embedded into your daily lessons.

Presenters: Kristi Isaacson, Christina Betz-Cahill, Ardmore Elementary School

Room: North Pavilion 3

Audience: Grades k-12

Effective Differentiation of Mathematics

Explore a variety of easy to implement differentiation strategies that will effectively engage the diverse learners in your classroom.

Presenters: Jeanine Sheppard, Heather Brown

Room: North Pavilion 4

Audience: Grades k-6

Awesome Activities for the Elementary NGSS Classroom!

In this session, you will explore the pedagogy changes inherent to NGSS 3D teaching and apply them to a variety of activities in both science and engineering. From constructing a model backbone that illustrates systems and, to exploring the engineering of a simple paperclip wheel-and-axle, you will experience understanding through the facilitation of process experiences. You will leave with a variety of new ideas for teaching NGSS science!

Presenter: Michael DiSpezio, Houghton Mifflin Harcourt

Room: South Side South Exhibit Hall

Audience: k-12

Operation Endangered Species

Students, responsible for raising and reintroducing threatened or regionally extinct species to their native home range.

Presenters: Students of Pontiac Township HS and Whitney Young Magnet School

Friday 1:00 p.m.—1:50 p.m.
Concurrent Sessions

Room: North Pavilion 5

Audience: Grades 6-12

The End of High School Placement Exams

This session shares the work of middle and high school teachers in articulating curriculum, sharing instructional strategies, and developing common assessments. We will share how this led to our common vision for a "Portrait of a Mathematically Proficient Student" and the end of placement exams.

*Presenters: Darshan M. Jain, Sue Ellen Vozza,
Adlai E. Stevenson HS*

Room: North Pavilion 6

Audience: Grades 3-5

Fractions: The WHOLE Truth!

Fractions: Cringe, Retreat, Abandon, HELP! Learn how our district developed a shared definition of a fraction to strengthen students' understanding. We will examine student work and watch students' deepen their ability to reason, make sense, & work with fractions using a common language.

*Presenter: Susan Whited, Covington School,
Margaret Nugent, Kolman School*

Room: Pebble Beach

Audience: 9-12

Why Don't Antibiotics Work Like They Used To?

Participants will work with classroom resources that spark student questions through an investigation of a medical case of a young girl with a life-threatening infection of pan-resistant bacteria. All will have access to unit materials including the storyline and supporting guides, which have been evaluated by Achieve using the EQUiP Rubric.

*Presenters: Tara McGill, Will Reed, Trey Smith,
Northwestern University*

Room: Sam Tinley

Audience: Grades k-8

STEM-Related Activities for K-8 Science

Emphasis will be placed on activities that integrate engineering and technology activities appropriate for elementary and middle school classrooms. NGSS connections included.

Presenter: Don Powers, Western Illinois University

Friday 1:00 p.m.—1:50 p.m.
Concurrent Sessions

Room South Pavilion 5

Audience: Grades 6-8

It's Not the Destination, but the Journey

Hear about our district's directions, mile markers, and detours as passengers on the road to using Skills Based Reporting in the classroom. We will share how students are now in the driver's seat and taking ownership of their learning. See what beautiful paths were discovered without getting lost.

*Presenters: Jennifer Love, DeeDee Stine, Tami Geurts,
Olympia Middle School*

Room: South Pavilion 6

Audience: Grades 3-5

Using 3D Printing and Design to Engage Students

This session will discuss how 3D Printing and Design can enrich and expand learning in the classroom. As well as the different approaches and skills that can be explored using this technology.

Presenter: Michael Bleytle, Je-Neir Elementary

Room: St. Andrew

Audience: Grades 6-12

H2knOw--Fertilizer, Water Quality & Algal Bloom

The Nutrients For Life Foundation's newest resource, H2Know is here! It's a digital case study on water quality, the Lake Erie algal bloom and our industry's proactive response. In addition, teachers will gain materials on soil, science and sustainability from our free curriculum and resources.

*Presenter: Haley Siergiej,
The Nutrients For Life Foundation*

Room: Turnberry

Audience: Grades 9-12

Down with Retakes!

What do you do when a student fails a test? Are you sick of retakes as the solution? We will outline alternative techniques to help students improve their learning process and become more self-directed before the test as well as effective strategies for retakes that have made them manageable.

*Presenters: Jody Trapani, Amy Koning
Niles North High School*

Friday 1:00 p.m.– 2:50 p.m.
Workshops

Room: South Pavilion 1

Audience: Grades 6-12

NGSS 3D Learning: Storylining

In this session, participants will engage in understanding the process of NGSS implementation through a phenomenon-driven investigation of the three-dimensional nature of the standards. Participants will gain greater knowledge of three-dimensional learning by applying their understanding of it to their own past or newly created curriculum. Developing an understanding of how to build curriculum coherence around central phenomena will be a central focus.

Presenters: Kristin Rademaker, Jason Crean

Room: South Pavilion 2

Audience: Grades k-6

Making Number Talks Work in your Classroom K–6

Want to learn how to use Number Talks in you K-6 classroom to increase number sense and math confidence in your students? Join us for this hands on workshop where you will be introduced to Number Talks or take your Number Talks to the next level. Walk out with Number Talks in your pocket.

*Presenters: Leslie Penkala, Deb Kimminau,
Metea Valley HS*

Friday 1:00 p.m.— 2:50 p.m.
Workshops

Room: South Pavilion 3

Audience: Grades 9-12+

Does Wet Spaghetti Bounce?

Take an exploratory journey into the graphs of polynomial functions. We'll let your inquisitive nature take over with the help of Desmos (minimal experience required), to forge connections between factors, roots, multiplicity, power functions, end behavior, and the graphs of polynomial functions.

Presenter: Janice Krouse, IMSA

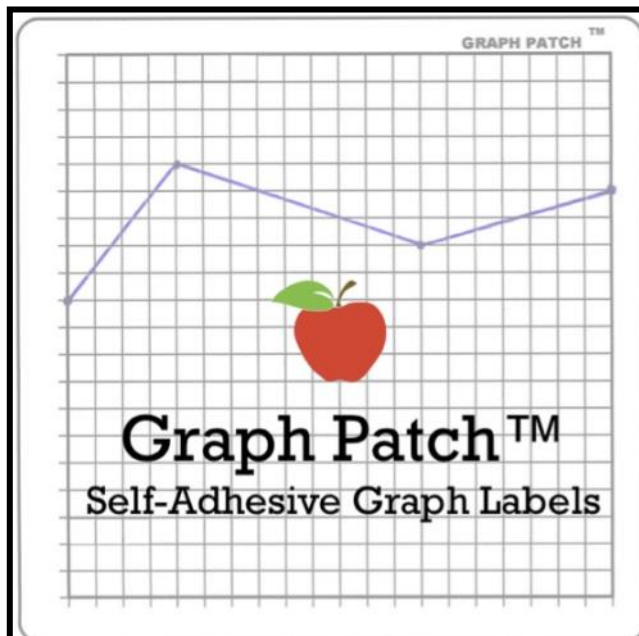
Room: South Pavilion 4

Audience: Grades 9-12+

AP Environmental Storyline - Unit 1

Join us as we showcase the first APES Storyline designed to engage APES students through NGSS based educational practices. In addition we will begin developing our next APES units during the session and inviting participants to help co-author the next storylines. All participants will receive access to the first storyline.

Presenters: Todd Katz, Lisa Pavic, Jenny Kahn



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**Friday 2:00 p.m.—2:50 p.m.
Concurrent Sessions**

**Friday 2:00 p.m.— 2:50 p.m.
Concurrent Session**

Room: Bremen

Audience: Grades 9-12

Engaging AP Students In Visible Learning

We will be sharing engaging activities giving students the opportunity to learn science as a process of interconnected and interrelated phenomena. Incorporated into the session are ideas for student-choice, tech/STEAM applications, and authentic assessment. Participants will leave with valuable resources to incorporate into their classrooms.

Presenters: Laura Turngren, Julie Baylor, Barrington HS

Room: Muirfield

Audience: Supervisors and Administrators

Data-Driven Math Coaching

As a math or instructional coach, you know the importance of using data. In this session, we will explore ways to collect and use data to inform your coaching and show evidence of success. We will discuss coaching cycles, ways to build trust, and how to influence real change in your school.

Presenter: Annie Forest, Berwyn South District 100

Room: North Pavilion 1

Audience: Grades 3-5

Get Hands-on with STEM!

Do your grade 3-5 students struggle with real-world problem solving? Do you have a hard time fitting science and STEM into your day? In this fast-paced centers session, you will get elbow deep in engineering challenges. Experience activities from earth, life, and physical science. You will leave with goodies to use now!

Presenters: Karen Achtemeier, Sara Reed, ETA hand2mind

Room: North Pavilion 2

Audience: Grades Pre k-2

Numberless, yet Full of Sense!

Many times sense-making takes a back seat to number hunting in math. Come watch student thinking unfold. Leave with instructional tools to help your students grapple with part-whole relationships in real world situations and observe how language uncovers an understanding about those relationships.

Presenters: Margaret Nugent, Susan Whited, Kolmar

Room: North Pavilion 3

Audience: Grades 6-8

Improve Your Use of the Five Innovations

Experience the 5 Innovations firsthand using the Smithsonian's STC Middle School Matter and Its Interactions. This thought provoking hands-on workshop will demonstrate 3-dimensional learning using a density phenomenon at its core. Leave with a better understanding of how the innovations enhance the teaching of science with model learning progressions and designing solutions.

Presenters: Bob Friedel, Rick Borost, Carolina Biological

Room: North Pavilion 4

Audience: Grades 6-8

The Makerspace Revolution

Makerspaces are all the rage lately and in this session you will learn how we implement a makerspace day in our classroom and how it can work for yours. You will leave with many ideas of how your students can create things that they are proud of while also developing their critical thinking skills.

Presenters: Andrew Bean, Meghan Huschen, Dever Elementary School

Room: North Pavilion 5

Audience: Grades 6-12

Factoring -A Teaching Backwards Approach for Algebra 1

Teaching factoring backwards instead of forwards? Can it work? Does it work? After trying several other methods and recognizing the #1 thing students need is to feel successful, I decided to go backwards. This presentation will highlight a systematic approach to teaching factoring in Algebra 1.

Presenter: Jessie Rezba, Herscher High School

Room: North Pavilion 6

Audience: Grades 6-12

Competency Based Education in Math - Year 2

Last year we switched all our math classes to Competency. We would like to share our process, what we have learned, and how we have adjusted along the way.

Presenters: Eric Lasky, Lisa Balata, Ridgewood HS Dist. 234

Room: Pebble Beach

Audience: Grades 9-12

Collaborating with Scientists to Create Engaging Urban Science Lessons

How do students know what scientists do? Do scientists practice the skills we teach students? This session will focus on engaging urban science students through collaborations with scientists, museums, and institutions to create a meaningful experience on how science is applied and why it is important.

Presenter: Ayesha T. Qazi, Northside College Preparatory HS

Friday 2:00 p.m.— 2:50 p.m.
Concurrent Sessions

Room: Sam Tinley

Audience: Grades 6-8

Human Impacts on Environment and Historical Primary Sources

Historical maps, manuscripts, newspaper articles, legislation, photos, and oral histories offer opportunities to connect science, engineering, civics, and history. Teachers will engage with a set of digitized primary sources available for free and nonfiction literacy strategies for supporting critical thinking and knowledge construction.

Presenter: Trey Smith, Northwestern University

Room: South Pavilion 5

Audience: Grades 6-8

Math Science Olympics at the Junior High

Math Science Olympics is a day of student competition that focuses on math and science. The events encourage problem solving and collaborative work among students. We will discuss event ideas, logistics and what we've learned from hosting the event for the past 5 years. Come ready to compete.

Presenters: Jessica Lawent, Stephanie McClure, Ben Klekamp, Prairie Central Junior HS

Room: South Pavilion 6

Audience: Grades 3-5

Drones and Other STEM Topics

Learn simple and engaging ways to incorporate STEM and technology into your elementary science curriculum.

Presenter: Alyssa Hofeld, Christine Muno, Louis Kotvis, Thomas Edison Elementary

Room: St. Andrew

Audience: Grades 6-8

Bicycle Frame Materials: The Decision Challenge

Presentation will demonstrate how science and mathematics can drive engineering decisions, with constraints related to bicycle frame design, for the purposes of a human need.

Presenter: Sebastian Szyjka, Western Illinois University

Room: Turnberry

Audience: Grades 9-12+

Quick Wins With Formative Assessment Tools

During this session teachers will learn about five ways to assess students that take 10 minutes or less to implement in order to provide quick, effective feedback. We will be exploring Plickers, Let's Recap, Kahoot, Quizizz, and Google Quizzes.

Presenters: Marianna Jennings, Molly Lahart, Prosser Career Academy High School

Friday 3:00 p.m.— 3:50 p.m.
Concurrent Sessions

Room: Bremen

Audience: Grades 6-12

How Can We Make a Fog Machine?

This storyline challenges students to make fog for a Haunted House. Patterns in weather data motivate investigations of water and air. Students develop a particle model of matter, the mechanism of temperature change, and a model of fog. Students apply these ideas to engineer their own fog machines.

Presenters: Aliza Zivic, Misty Richmond, Northwestern University

Room: Muirfield

Audience: Supervisors/Administrators

Leading for Excellence

How can you help all teachers perform at their best and flourish in their roles? We will discuss how to build a culture of excellence, continuous improvement, and risk-taking.

Presenter: Zachary Herrmann, University of Pennsylvania

Room: North Pavilion 1

Audience: Grades 3-5

STEM Bins: Engineering Through Play

Discover how to effectively use STEM Bins as a foundational, developmentally appropriate form of engineering for elementary students. Learn simple ways to implement STEM Bins for early finishers, enrichment, morning work, centers, makerspaces, and literacy and math extensions. Get your hands on the materials and try STEM Bins for yourself!

Presenter: Karen Achtemeier, Sara Reed, ETA hand2mind

Room: North Pavilion 2

Audience: Grades k-6

Teacher University and Summer Math Camp

Learn how a school district partnered with a university to run a learning experience for students and teachers through a Summer Math Camp and Teacher University. Pairing these programs offered teachers real-time learning, of mathematical content and understanding of how children learn mathematics.

Presenters: Denise Porter, Alison Whittington, Catherine Stallmeyer-Gerard, UChicago STEM Education

Friday 3:00 p.m.— 3:50 p.m.
Concurrent Sessions

Room: North Pavilion 3

Audience: Grades k-12

Look Who's Talking!

Teachers will learn a variety of strategies to promote student talk in the classroom to build mathematical discourse skills for students. This session will focus on the mathematical practices of attending to precision, and constructing viable arguments and critiquing the reasoning of others.

*Presenters: James Dobrzanski, Lauren Keppler,
JS Morton East High School*

Room: North Pavilion 4

Audience: Grades: 6-8

Effectively Using Science Scope:

A Teacher/Coach Perspective. Would you be interested in using Science Scope to collaborate with another teacher? How do you advocate for science learning for you and your students? Listen to a teacher/coach explain how Science Scope: NSTA's peer-reviewed journal for middle level science teachers, can be indispensable.

Presenter: Laura Riley, Westmont Junior High School

Room: North Pavilion 5

Audience: Grades 6-12

Coloring, Party Invitations, Fish Tanks and Scheduling Coloring is a stress reducer.

Let's look at the mathematics of coloring: Camille Jordan's Two Color Theorem, Four Color Problem, maps, vertex graphs, party invitations, fish tanks and scheduling. A discrete mathematics topic appropriate for middle school through college.

Presenter: Mary T. McMahon, North Central College

Room: North Pavilion 6

Audience: Grades 6-12

Thinking Mathematically from Minute One:

Warm Up Resources Engage students at the start of class with activities that push them to think mathematically about situations with no risk and participate in productive discourse. All activities promote CCSS Math Practice Standards, use technology, support student ownership, and can be used in your class tomorrow!

Presenter: Marissa Grayson, Rock Island High School

Friday 3:00 pm — 3:50 p.m.
Concurrent Sessions

Room: Pebble Beach

Audience: Grades: 6-8

Teaching With Phenomena: Climate Change and Coughing Dogs

Explore local connections to a global issue while taking on the role of a veterinary assistant in a small town faced with the question: Why are dogs getting sick and what can we do about it?. This NGSS aligned phenomena-based unit addresses climate change, populations, and ecosystem dynamics.

*Presenters: James Planey, Barbara Hug,
University of Illinois at Urbana-Champaign*

Room: South Pavilion 5

Audience: Grades 6-8

Meeting Environmental Challenges with Math

Discover hands-on activities that use real-world data to create mathematical models to understand trends in land use, population growth, climate change and more. Build students' environmental I.Q. while developing skills in measurement, data analysis, modeling and problem solving.

Presenter: Patricia Rieman, Carthage College

Room: South Pavilion 6

Audience: Grades 3-5

Key Word "Flexible" Math Workshop

Are your students sitting on the floor or in their desks too much during math? Or want to switch up the way math instruction is happening in your class? Come to this session and hear about different ways that math workshop can be blended into your daily instruction.

*Presenters: Louis Kotvis, Steven Shadel,
Skokie School District 69*

Room: St. Andrew

Audience: Grades 6-12

Science Olympiad Team:

Inspiring STEM careers, looking for an avenue to challenge your science students? Learn about working with a Science Olympiad team. Experience sample events in areas of science and engineering. Learn how Science Olympiad can engage students in the scientific process, improve critical thinking, and build teamwork skills.

Presenter: Stacy Martinez, Natalie Keigher, Illinois Science Olympiad

**Friday 3:00 p.m.—3:50 p.m.
Concurrent Sessions**

Room: Turnberry

Audience: Grades 9-12+

Beautiful Geometric Diagrams and Connecting the Mathematics Beneath

We will look at some beautiful problems (and GeoGebra diagrams) which connect geometry and algebra to proportional and numeric reasoning. These diagrams help our students look for and make use of structure (#symmetry) and develop problem-solving and proof-writing strategies.

*Presenters: James Olsen, Audrey Fletcher,
Western Illinois University*

**Friday 3:00 p.m.—4:50 p.m.
Workshops**

Room: South Pavilion 1

Audience: Grades 6-12

NGSS 3D Learning: Assessment

In this session, participants will engage in understanding the process of 3-dimensional assessment through a thorough application of the Next Generation Science Standards. Participants will gain greater knowledge of three-dimensional learning by applying their understanding of it to their own past or novel curriculum. This will be achieved through developing an understanding of how to create assessments that are meaningful to students and produce useful data to their teachers.

Presenters: Kristin Rademaker, Jason Crean

**Friday 3:00 p.m.—4:50 p.m.
Workshops**

Room: South Pavilion 2

Audience: Grades 6-12

Breakout of Traditional Teaching (Using Escape Games in The Classroom)

Do you want to get your students to problem solve, use teamwork, persevere through difficult problems, stay engaged, and think out of the box? Come experience a math escape and learn how to incorporate it into your classroom.

Presenter: Rita Grunloh, Lexington High School

Room: South Pavilion 3

Audience: Grades 6-12

Group-Worthy Tasks that Foster Collaborative Learning Environments

The Complex Instruction Consortium (an ICTM affiliate) is a network of math educators dedicated to improving math education through collaboration with a focus on rich mathematical, group-worthy tasks. Come join us as we explore a variety of tasks that you can implement in your classrooms tomorrow!

*Presenters: Gary Chu, Niles North High School
Tina Nocella, Adlai E. Stevenson HS*

Room: South Pavilion 4

Audience: Grades 6-8

Phenomena to Guide Instruction

Join us to explore how (and why) to incorporate phenomena in your instruction. After sharing resources and real-world examples, we'll work together to plan phenomena that you can use in your classroom tomorrow!

Presenters: ISTA Professional Learning Team



STEMscopes™
NGSS 3D

**ALL ISTA Teachers and Administrators
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Serving Appetizers & Drinks
West Exhibit Hall
5:30-7:00

**Friday 4:00 p.m.—4:50 p.m.
Concurrent Sessions**

Room: Breman

Audience: Grades k-12

Twitter Tweetup

Have you used Twitter to communicate with other math teachers? Have you obtained great ideas for your classroom? Have you used hashtags such as #mtbos or #ictmchat? Have you wondered about how to use Twitter to grow professionally? If you can answer yes to any of these questions, then this is a place for you. This room will offer a place to meet with others who utilize this online community and a chance to learn about it for those new to Twitter.

Presenters: Anne Agostinelli, Annie Forest, John O'Malley IV

Room: Muirfield

Audience: Supervisors/Administrators

Supervisors and Administrators Debrief

Join us to debrief the Supervisors and Administrators sessions. We will discuss takeaways both immediately actionable items and those that may take longer. We will also raise unanswered/new questions that arose and to provide feedback as to how ICTM/ISTA can further support you in your role.

Presenter: *Jeremy Babel*

Room: North Pavilion 1

Audience: Pre k-6

Robotics Coding Introduces Young Learners to Computer Science

This presentation will show how the basic concepts of coding can be developed at the concrete level using physical blocks to program a child-friendly robot. Then the commands will be implemented in a more powerful, on-screen, free version of the Logo language.

Presenters: *Brian Schack, Mark Schack, Indiana University*

Room: North Pavilion 2

Audience: Pre k-2

Burn Your Flash Cards!

A Redefinition of Fluency Have you ever complained about your students lacking their "facts"? Come join us and learn how to build number sense and fact fluency through strategies embedded in the Practice Standards. We will engage you with activities focused on Number Talks, CRA model, and Progression of Fact Fluency.

Presenters: *Capri Paluch, Carisa Wozniak,
May Whitney Elementary School*

**Friday 4:00 p.m.—4:50 p.m.
Concurrent Sessions**

Room: North Pavilion 3

Audience: Grades k-12

How to Create Assessment that Supports Learning

What makes assessment successful and engaging for students? In this session we will think about how to create and implement assessment that drives student learning and brings joy back into the classroom. Bring an assessment to share or one in mind to make.

Presenter: *Anna van Asselt, Freedom Middle School*

Room: North Pavilion 4

Audience: Grades k-12

It All Stacks Up!

Participants engage in an investigation that incorporates the use of modeling, both from a science and mathematical perspective. They collect, organize, and analyze data. They use the data collected to develop and optimize a design solution. Throughout the session, participants engage as learners in both the Mathematical Practice Standards and the NGSS Practices for the K-12 Science Classrooms to both highlight and affirm these habits of mind that support deep understanding.

Presenters: *Nicole Kirksey, Math Solutions a Division of
Houghton Mifflin Harcourt*

Room: North Pavilion 5

Audience: Grades 6-12

ELL Strategies in a Regular High School Classroom

Students need more literacy support in a math classroom due to different language levels, math abilities, and global perspectives. Through examining practice, teachers can focus on their formatting to ensure they are best supporting students.

Presenters: *Jen Thomas, Kari Ferguson, East Leyden HS*

Room: North Pavilion 6

Audience: Grades 6-12

A Descriptive Overview of the Redesigned SAT

The purpose of this session is to provide a descriptive overview of the mathematics portion of the redesigned SAT test. This will include an explanation of the three areas of focus in math: problem solving and data analysis; the "heart of algebra", and what is called a "passport to advanced math".

Presenters: *Dianna Galante, Will Rose, Governors State
University*

**Friday 4:00 p.m.—4:50p.m.
Concurrent Sessions**

Room: Pebble Beach
Audience: Grades 6-8

Model Rocketry: It's WOW Factor in Engineering Design

This session will prepare teachers to align a rocketry unit to the NGSS, solve a real engineering problem, and guide students in designing and building their own rockets. Participants will be given a list of resources, including content and financial resources, to assist in unit implementation.

Presenter: Shannon Sankstone, Kilmer Elementary School

Room: Sam Tinley
Audience: Grades 6-8

How Do Eggs Become Chickens or other Living Things?

In this session, participants explore the storyline titled How Do Eggs Become Chickens or Other Living Things? Come experience a middle school storyline focused on the role food, blood, cells, and tissues play in the growth and development of embryos. Multiple LS1 PEs are addressed in this unit.

Presenters: Dawn Novak, Katherine Seol, Tyler Scaletta, Michael Novak, Barbara Hug,

Room: South Pavilion 5
Audience: Grades 6-8

Rethinking Routines: Revamping the Conventional Math Class

Do you crave more quality instructional time with students? Maybe it's time to rethink the typical math class routines - bellwork, warm-ups, homework, reviewing answers. In this session we will challenge some long-held math class routines and beliefs, and explore ways to get more out of your time.

Presenter: Pauline Zdonek Jane, Addams Middle School

Room: South Pavilion 6
Audience: Teacher Educators
Math Trivia

If you are looking to get competitive, have some fun, and enjoy some music, then this is for you.

Presenters: Patrick Fox, John Riddle, Metea Valley HS

Room: St. Andrew
Audience: Grades 6-8

Improve Your Use of the Five Innovations

Experience the 5 Innovations firsthand using the Smithsonian's STC Middle School Matter and Its Interactions. This thought provoking hands-on workshop will demonstrate 3-dimensional learning using a density phenomenon at its core. Leave with a better understanding of how the innovations enhance the teaching of science with model learning progressions and designing solutions.

Presenters: Bob Friedel, Rick Brost, Carolina Biological

**Friday 4:00 p.m.—4:50 p.m.
Concurrent Sessions**

Room: Turnberry
Audience: Grades 9-12

My Favorite Statistics Activities for AP Statistics

A few of my favorite activities on design of a study and inference.

Presenter: Rick A. Cazzato, Hinsdale South High School

**Friday 4:30 p.m.—5:30 p.m.
Poster Session South Exhibit Hall**

Engaging Children in Routines to Promote Mathematical Practices

Presenters: Jeanne White, Linda Dauksas

Strategies to Promote Student Discourse Using Technology

Presenter: Elizabeth Given

Mindset and Persistence of Middle School Students Learning

Presenter: Amanda Meiners

It's Never Too Tesselate to Learn Math

Presenters: Gricelda Monroy, Erin Byrne, Josephine Tadros

No Homework, No Problem

Presenter: Amar Patel

Mathematics and Computational Thinking in the Elementary School

Presenters: Wendy Maa, George Reese

Taking it to the limity

Presenter: Jerry Becker

Mathemon Go

Presenter: Reginald Duncan

Preparing for STEM and STEM Success

Presenter: Cheng-Yao Lin

**5:00 p.m. Door prizes/Refreshments
South Exhibit Hall**

**5:30 p.m. ISTA/STEMscopes Reception
West Exhibit Hall**

**5:30 p.m. ICTM Awards Reception
North Exhibit Hall**



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Waukegan, Illinois



6-8 Winner

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STEAM Teacher, Grades 6-8
Jack Hille Middle School
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Educator Award



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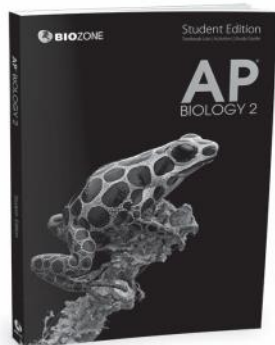
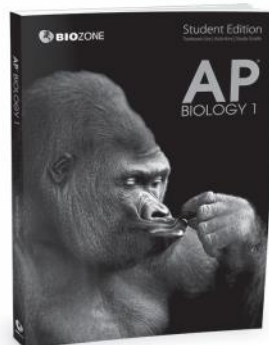
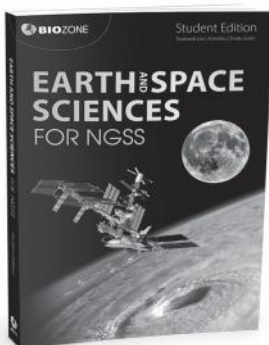
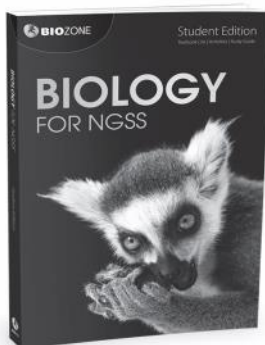


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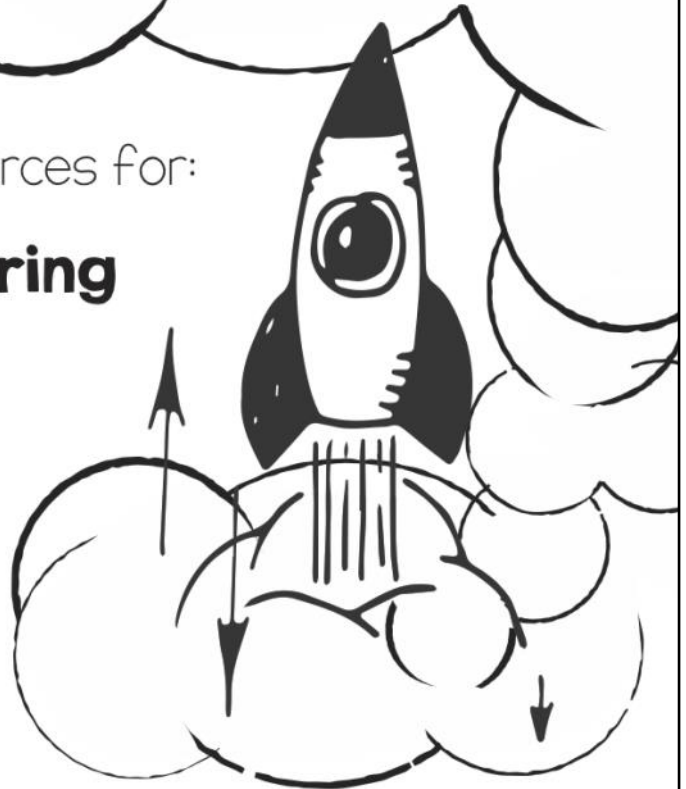
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Saturday October 20, 2018

Saturday 7:35 a.m.— 8:20 a.m.

ICTM Business Meeting Muirfield

Saturday 8:30 a.m.—9:20 a.m.

Concurrent Sessions

Saturday 8:30 a.m.—9:20 a.m.

Concurrent Sessions

Room: Bremen

Audience: Grades k-6

Math Stations: Using Data to Support Instructional Decisions

Are you living in a constant battle between analyzing data and planning instruction? If you are looking for ways to maximize student growth but minimize the time spent reteaching and adjusting instruction while staying on pace with your district curriculum, then you are in the right place.

*Presenters: Kristin Gedmin, Lisa Trilli-Mayfield,
Joliet Public Schools District 86*

Room: Muirfield

Audience: Supervisors/Administrators

Monitoring Student Growth

PERA requires that school districts include student growth data as an element of teacher evaluation systems. But what is "student growth"? This session will address research-based practices for monitoring student growth that comply with PERA expectations but also promote improved teacher practice.

Presenter: Jennie Winters

Room: North Pavilion 1

Audience: Grades 6-12

Facilitating Math Learning for Struggling Readers with LD

Students with reading disabilities such as dyslexia may be talented in math, but struggle with reading, memorization, and timed tasks. In this session, learn more about why those students struggle and how you can help them learn math content better using literacy strategies.

Presenter: M. Tara Joyce, Saint Xavier University

Room: North Pavilion 2

Audience: Grades: 6-12

Rethinking Math Homework

Do you have 100% of your students completing your homework? Are students in your classes routinely using your homework assignments as learning tools? Yes? Then this session is not for you!!! This session is designed to challenge your views on HW, and help you utilize research based HW strategies.

*Presenter: Frank Wapole, Jacobs High School,
Evan Borkowski, D300*

Room: North Pavilion 3

Audience: Grades 6-8

Engaging Strategies for a Wide Range of Learners

Learn ways to engage your middle school math students in problem solving while encouraging positive behavior through the use of math talks and various learning stations.

Presenter: Margaret Navolio, Heritage Middle School

Room: North Pavilion 4

Audience: Grades 9-12+

Transdisciplinary Learning: Making Academics Relevant for All Students

Evanston Township High School has used out-of-the-box thinking to create transdisciplinary innovation in their school. Presenters will discuss their innovative courses, Geometry in Construction, Algebra in Entrepreneurship, STEAM Design Thinking & Innovation as well as new ideas on the horizon.

Presenter: Dale Leibforth, Evanston Township HS

Room: North Pavilion 5

Audience: Grades 9-12+

Algebra I: Who is doing the thinking?

Divergent tasks (those that don't have answer keys) make 9th grade algebra more interesting for students and for teachers.

*Presenters: Jay Hooper, Jana Sebestik, George Reese,
Centennial High School*

Room: Sam Tinley

Audience: Grades 9-12

Science Smorgasbord

You will learn about sketch notes, vocab journaling, microbe Mondays, developing experiments, developing NGSS themed lessons, online graphing, phylogenetic trees, and more. You will walk away with more resources than you can imagine. Bring your electronic devices so you can "steal" and your 4 leaf clover for the raffle.

Presenter: Jeff Grant, Downers Grove North High School

Saturday 8:30 a.m.— 9:20 a.m.
Concurrent Sessions

Room: South Pavilion 5

Audience: Grades 6-8

NGSS Engineering: Hands-On Approach Using Self-Powered Vehicles

Join Michael for an informative, enlightening and entertaining journey into the fundamentals of the NGSS middle school engineering standards, as you plan, design and construct several self-powered vehicles. Developed on the engineering performance standards, this workshop offers practical experience in both retooling your pedagogy for the NGSS classroom.

Presenter: Michael DiSpezio, Houghton Mifflin Harcourt

Room: South Pavilion 6

Audience: Grades 9-12

How Humans Impact the Spread of Vector-Borne Disease

Participants will take part in activities that have been developed for an NGSS-aligned unit that investigates the roles that humans play in the prevalence and spread of Lyme disease. Participants will play the role of students, evaluating current data to make predictions of how habitat fragmentation and climate change will impact Lyme prevalence.

Presenters: Natasha Capell, Tanya Josek, Barbara Hug, Academy High

Room: Turnberry

Audience: Grades k-12

Go Outside and Teach! Powerful Outside Educational Tools

Teaching outside is a powerful way to increase the impact of your daily lessons regardless of the subject. Learn how to adapt your lesson plans, how to survey your schoolyard for learning sites and how to make administrators, parents and students comfortable with outdoor lessons.

Presenters: Val Wright, Heidi Vassel, House In The Wood Outdoor Ed Center

Saturday 8:30 a.m.—10: 20 a.m.
Workshops

Room: North Pavilion 6

Audience: Grades 3-5

Fractions Are Numbers, Too!

Oh, fractions. Many students say they hate them. Sometimes fractions can even be our least favorite to teach. Let's change that! I'll share my best discovery activities for understanding benchmark fractions, placing them on the number line, and getting the fraction talks going in your classroom!

Presenter: Annie Forest, Berwyn South District 100

Saturday 8:30 a.m.—10:20 a.m.
Workshops

Room: South Pavilion 1

Audience: Grades 6-8

Demystifying 3D NGSS and STEM through the Phenomenon of Earthquakes

STEM science provides for the three dimensions of the Illinois NGSS standards. Simulations and engineering design challenges are part of the hands-on components to study of the phenomenon of earthquakes. Waves and towers will be the models used to find the balance in blended learning and hands-on for observing and problem-solving.

Presenter: Jill Kryszinski, STEMscopes

Room: South Pavilion 2

Audience: Grades 6-8

Differentiated 3D Modeling in Middle School

The NGSS classroom revolves around student modeling of phenomenon. Modeling can take many shapes and forms, and this session will present different ways to model for both formative and summative student assessment.

Presenter: Brian Klaft, Activate Learning

Room: South Pavilion 3

Audience: Grades 9-12

Mathematical Mindsets - Focus on the Problem

Jo Boaler inspired mathematical mindsets in action! We have made comprehensive changes to the ways in which we teach Algebra 1 by beginning with challenging problems that prompt a need to develop skills. It is organic and fun!

Presenters: Laura Smith, Jon Lepeska, New Trier Township HS

Room: South Pavilion 4

Audience: Grades 3-5

Why Do Dead Things Disappear Over Time?

Discover how to use this fifth-grade unit to engage students in three-dimensional learning in the life sciences. It is launched through the exploration of a startlingly phenomenon - the gradual disappearance of the body of a dead raccoon over time. This unit is open-source and is a freely accessible resource provided by www.nextgenstorylines.org.

Presenters: Michael Novak, Gretchen Brinza, Amy McGreal, Ty Scaletta, Park View School

Room: Pebble Beach

Audience: Grades k-12

IMTE Annual Business Meeting

Please attend the annual meeting of the IL Math Teacher Educators to discuss current issues and changes at ISBE in addition to election of officers. This is a time set aside to network with the math educators in the state and share local issues and brainstorm solutions. All k-16 educators invited.

Presenter: Mary McMahon

Saturday 8:30 a.m.—10: 20 a.m.
Workshops

Room: St. Andrew

Audience: Grades 6-12

Creating Better Classroom Discussion with Technology

Looking for ways to integrate technology into your classroom and build rich discussions? Come see how Desmos Activity Builder can have your students thinking, talking, and learning. We'll explore resources and instructional approaches you can use in class next week! No Desmos experience required.

Presenter: Scott Miller, Naperville Central High School

Saturday 9:30 a.m.—10:20 a.m.
Concurrent Sessions

Room: Bremen

Audience: Grades k-5

Counting Collections

Use counting collections to develop early numeracy. Counting collections are an active and engaging method which provides rich mathematical experiences for young children. Leave this session with creative ideas to implement counting collections in your classroom.

Presenter: Denise Brown, Murphysboro CUSD #186

Room: Muirfield

Audience: Supervisors/Administrators

Teaching and Leading Mathematics with a Growth Mindset

The work of Carol Dweck and Jo Boaler has inspired many educators to help students develop a growth mindset towards mathematics. This session will discuss the importance of teachers' and school leaders' mindset in creating classrooms and systems for greater equity and achievement in mathematics.

Presenter: Jennifer Lawler Kenosha, Unified School District

Room: North Pavilion 1

Audience: Grades 6-12

Clairvoyance or Mathematics?: Developing the "Rules"

Math is around your students every day; however, they struggle to see how the concepts learned in the classroom translate to life. Come walk through an activity to help your students develop the rules for exponents, see math in a real life situation, and an activity that has multiple entry points.

Presenter: Amanda Meiners, University of Iowa

Saturday 9:30 a.m.— 10:20 a.m.
Concurrent Sessions

Room: North Pavilion 2

Audience: Grades 6-12

Mathematical Insights Using Geometry, Algebra and History

Significant insights can be gained from studying mathematical concepts from multiple perspectives. This session will provide numerous examples using geometric, algebraic and historical perspectives to enhance and enlighten concepts such as quadratic equations and the Pythagorean Theorem.

Presenter: Craig Roberts, Southeast Missouri State Univ.

Room: North Pavilion 3

Audience: Grades 6-8

Why Students Struggle with Computing Percent Operations

Students face many difficulties in computing rational number operations, especially, in percent. In this session, attendees will have an opportunity to examine various percent operation strategies and they will make decisions regarding what strategies work best for students' learning and memory.

Presenter: Eunmi Joung, Southern Illinois Univ. Carbondale

Room: North Pavilion 4

Audience: Grades 9-12

Blended Learning in the Mathematics Classroom

Discover how a Blended Learning environment will help you to create a student-centered course where students take ownership of their own learning. Learn how to create differentiated mathematics instruction, while giving student options in how they learn.

Presenter: Katie O'Brien, Jacobs High School

Room: North Pavilion 5

Audience: Grades 9-12+

Improving SAT Scores and Instruction Through Literacy Strategies

Often times students' struggle to demonstrate learning has nothing to do with Math. In this session you will explore both explicit literacy strategies to improve SAT Math performance, as well as cognitive strategies to ensure your students are making connections between vocabulary and Math content.

Presenters: Alexander Lepkowski, Frank Wapole, Jacobs High School

Room: Sam Tinley

Audience: Grades 9-12

Learning Preferences and Academic Performance in Chemistry

Individuals have preferences of how they would like to learn. Research has indicated that knowledge of learning preferences increase academic success. This study investigates whether students awareness of their learning preferences and motivation to incorporate multiple learning strategies enhances learning outcomes.

Presenter: Daniel Kyinakwa, Illinois State University

**Saturday 9:30 a.m.— 10:20 a.m.
Concurrent Sessions**

Room: South Pavilion 5

Audience: Grades 3-5

Literacy and NGSS

This session is designed to provide K-4 teachers with several ideas of how to incorporate trade books into their science classes. Teachers will participate in classroom tested hands on activities that relate to NGSS standards and books from Read Across America and Read Illinois.

Presenters: Jennifer Smith, Chris Sewel, Monticello MS

Room: South Pavilion 6

Audience: Grades k-12

Data Generating Games for APES/IB ESS or Biology

Discover data-generating activities that teach scientific phenomenon and NGSS through modeling. Use the data set to write a mathematic equation and hypothesis supported with evidence.

Presenter: Kristen Dotti, Verde Valley School

Room: Turnberry

Audience: Grades 3-5

Smithsonian Science for the K-5 Classroom

Find out how this NGSS-based K-5 program takes the stress out of teaching Engineering Design. The problem-solving approach challenges young minds to systematically plan and creatively design solutions to real-world problems including how to design an energy-efficient home or providing freshwater to those in need. Material will be provided for you to take with you, so come spend time with us as we explore How We Can Provide Freshwater to Those in Need.

Presenters: Bob Friedel, Rick Brost, Carolina Biological

**Saturday 10:30 a.m.— 11:20 a.m.
Concurrent Sessions**

Room: Bremen:

Audience: Grades k-12

Equity, Social and Emotional Learning in Math Practices

Learning mathematics can be very difficult. Facing that challenge illuminates inequities and taxes the social and emotional competencies of students and educators. Let's engage a conversation about uncovering social and emotional learning in an equity oriented math practice.

Presenter: Tyrone Martinex-Black

**Saturday 10:30 a.m.— 11:20 a.m.
Concurrent Sessions**

Room: Muirfield

Audience: Supervisors/Administrators

Math Leadership for Equity and Social Justice

Two High School department chairs from the western suburbs will describe what teaching math through a lens of equity and social justice could look like. Engage in a math lesson to demonstrate the look and feel of using math to understand the world we live in.

*Presenters: Jackie Palmquist, Scott Miller,
Metea Valley High School*

Room: North Pavilion 1

Audience: Grades 6-12

Enhancing Student Engagement Through Problems, Tasks, and Activities

Let's explore how to bring excitement for learning into the mathematics classroom! I'll share resources and favorite places to find tools and strategies for effective instruction that will make even the least interested student improve their mathematics thinking and deepen conceptual understanding.

Presenter: Kathy Felt, Sherrard Junior/Senior High School

Room: North Pavilion 2

Audience: Grades 6-12

Googlizing Your Math Papers

Are you using Google docs, forms, sheets or apps in your math classroom? If so, then come and share your secrets. If not, then come and find out how to use Google Applications like EquatIO and flubaroo. You don't have to start over, you can convert your worksheets and lessons.

Presenter: Mary Walz, Sauk Prairie High School

Room: North Pavilion 3

Audience: Grades 6-8

Negatives, Opposites and Subtracting: How are They Connected?

Misunderstandings about signed numbers often lead to frustration, wrong answers and loss of interest. We will explore the sources of confusion and ways to engage students to develop conceptual understanding and empower them for future math involving negative numbers.

Presenter: Astrida Cirulis, Concordia University Chicago

Room: North Pavilion 4

Audience: Grades 9-12

Some interesting Geometry

There are endless interesting geometry problems. I will collect a few I find particularly fascinating and give you the chance to think about them.

Presenter: John Benson, Evanston High School (retired)

**Saturday 10:30 a.m.— 11:20 a.m.
Concurrent Sessions**

Room: North Pavilion 5

Audience: Grades 9-12+

Working with Community Colleges: Preparing for College Placement

The purpose is to inform participants about the transitional program between York High School and the College of DuPage that was piloted during the 2017 - 2018 school year to help students become familiar with college course placement and prepare students to test into college level math.

Presenters: Jenna Nolan, Erik Westerberg, York Community HS, Christy Peterson, College of DuPage

Room: Sam Tinley

Audience: Grades k-12

The Phenomena Finder: Incorporating Phenomena into your Teaching

Leveraging phenomena to promote student questioning and sensemaking is a critical aspect of aligning instruction to the NGSS. The Phenomena Finder is a collection of NGSS framed phenomena developed to support teachers in scaffolding student learning. Come explore, critique, and add to the tool!

Presenters: Danielle Cozzola, James Planey, Oktawia Brozda, Barbara Hug, University of Illinois at Urbana-Champaign

Room: South Pavilion 5

Audience: Grades 6-8

Science in the Makerspace

Makerspaces provide a variety of ways to engage students in STEM activities. In this session participants will learn about high and low tech additions to makerspaces and how they can be utilized to teach a variety of NGSS science and engineering concepts. Student project ideas will be shared and participants will have an opportunity to try out materials.

Presenter: Jennifer Smith, Monticello Middle School

Room: South Pavilion 6

Audience: Grades 3-5

Where Does Our Clean Water Come From and Where Does It Go After We Make It Dirty? A 5th Grade NGSS Storyline

Beginning with an everyday phenomenon WATER, this unit leads students to ask questions, design investigations & solve real-world problems to protect freshwater & minimize human impacts on the environment. This FREE unit targets 9 Grade 5 NGSS PEs about earth systems, matter, & engineering design.

Presenters: Katie Larson, Amy McGreal, Alliance for the Great Lakes, Gretchen Brinza, CPS, Alcott College Prep

**Saturday 10:30 a.m.— 12:20 p.m.
Workshops**

Room: North Pavilion 6

Audience: Grades k-6

Strategies to Meet Reading Demands in Math

Math and reading instruction are assigned unique times in a K-6 schedule, but there are reading demands during math. Get strategies for teaching reading in math, even to students with disabilities. Meet an adult with dyslexia to hear about his journey to reading competence.

Presenters: Margaret Kelly Carroll, Jaclyn Murawska, Saint Xavier University, Alby Lewis

Room: Pebble Beach

Audience: Grades 3-5

The Art of Math/The Math of Art

Spatial reasoning, measurement, geometry, and more will be introduced through Art. Tessellations, tangrams, and optical illusions can be used to teach plane figures, area, fractions, and angle measurement. A supplement to any Math program. Includes math literature and websites.

Presenter: Glory Jurich-Sarna, Indian Springs SD 109

Room: South Pavilion 1

Audience: Grades k-5

Connecting Kids to STEM Through Entrepreneurship and Storytelling

We outline results from the use of entrepreneur-based integrated science curriculum in classrooms. Topics covered include: decoding STEM jargon; drawing connections between STEM methods and those from ELA, social studies & art; and integrating STEM content into all classes aligned w/CCS & NGSS.

Presenter: Katharine Geramita, CrescoitySpace LLC

Room: South Pavilion 2

Audience: Grades k-12

OMG! MATH Graphic Organizers!

OMG! MATH Graphic Organizers!

Presenter: Rhonda Davis

Room: South Pavilion 3

Audience: Grades 9-12+

Probability Problems and Experiments

Hands-on experiments and well-chosen problems illustrate & explain ideas of probability topics.

Presenter: Richard Rukin, Evanston (retired)

Room: South Pavilion 4

Audience: Grades 6-8

Evolution for Middle School Educators

The purpose of TIES is to inform interested middle school science teachers about the most up-to-date concepts of natural selection, common ancestry, and diversity for them to confidently cover the topics and fulfill their curriculum requirements. We will share our presentation as a free download.

Presenter: Kathy Van Hoeck, York Community HS (retired)

Saturday 10:30 a.m.— 12:20 m.m.
Workshops

Room: St. Andrew
Audience: Grades 6-8
To Desmos and Beyond

Desmos is much more than an online graphing calculator. Bring your laptop to find, create, and teach custom Desmos classroom activities including math vocabulary-based Polygraphs, low floor-high ceiling Card Sorts, and discovery-based learning opportunities with Activity Builder.

Presenters: David Keller, Michael Juskiewicz, Thomas MS

Room: Turnberry
Audience: Grades 6-12
Standards-Based Learning: Bringing research to classroom practices

Converting to a standards-based learning model can improve your instruction, grading, and reporting of student mastery. Published research, however, will only take you so far. I will share the researched-based strategies I use to grade assessments, assign grades, and check for improved mastery.

Presenter: Derrick Tiveron, Deerfield High School

Saturday 11:30 a.m.— 12:20 p.m.
Concurrent Sessions

Room: Bremen
Audience: Grades k-12
IMT Journal Reception

The editors of the Illinois Mathematics Teacher, official journal of the ICTM, invite conference attendees to discuss mathematics, teaching, and article ideas over light refreshments.

Presenters: Daniel Jordan, Christopher Shaw, Columbia College Chicago

Room: Muirfield
Audience: Grades k-12
Differentiating Math Instruction that impacts CC Readiness

Differentiating math instruction is essential in order to prepare all students for college and career endeavors. Educators need time, tools, and resources to be able to differentiate effectively. Free online resources, aligned to Illinois standards, will be shared.

Presenter: Jane Scott

Saturday 11:30 a.m.— 12:20 p.m.
Concurrent Sessions

Room: North Pavilion 1
Audience: Grades: 6-12
Thin Films: Prisms and Nanotechnology in Geometry

Introduction to a module created through the nano@illinois Research Experience for Teachers. In this hands-on session, participants will use regular polygonal prisms to approximate the thickness of paint films, and be pointed to where to find nanotechnology resources for their classrooms.

Presenters: Steven Pavlakis, Kevin Kennedy, Urbana HS

Room: North Pavilion 2
Audience: Grades 6-12
Helping Students Retain Math

Are your students having difficulty retaining the concepts they've learned? Well, here is a bunch of activities that you can use in your classroom the next day.

Presenter: Ghada Ali, Aqsa School

Room: North Pavilion 3
Audience: Grades 6-8
Academic Achievement & the Power of Perseverance!

Mathematics achievement is often diminished or missed by students' and teachers' underlying beliefs or thinking about mathematics. Holding the belief that "I'm not a math person" constraints student math achievement. Changing a child's "mindset" can have powerful impact on achievement.

Presenter: Phyllis Cavallone-Jurek, St. Therese Chinese Catholic School

Room: North Pavilion 4
Audience: Grades k-5
What's Keeping You Up at Night?

Differentiating Instruction? Managing Centers & Small Group Resources? Providing Hands-On Learning? Join ETA/Hand2Mind and experience Small Group Math & STEM Center Solutions. The school with the most attendees will receive a Center Makeover with the resources used during the workshop. Door prizes for ALL!

Presenter: Sara Reed, ETA/hand2mind

Room: Sam Tinley
Audience: Grades 6-12
Building in Biology

Looking for a way to bring engineering into your biology class? Models are a great way to let your students apply what they're learning through design and construction. Come see examples my students have completed in the past and get tips for how to execute a building project from start to finish. You will be amazed with what your students come up with!

Presenter: Aubrey Mikos, Ottawa Township High School

Saturday 11:30 a.m.— 12:20 p.m.
Concurrent Sessions

Room: South Pavilion 5

Audience: Grades 6-12

Developing 3D NGSS-Aligned Assessment Tasks

To be aligned with NGSS, science assessment tasks must be 3-dimensional. Students should be carrying out specific Science and Engineering Practices in order to demonstrate their understanding of the Disciplinary Core Ideas and Crosscutting Concepts. In this session, participants critique assessment tasks and then refine them to be 3D.

Presenter: Alissa Berg, Science/STEM Ed. Consultant

Saturday 12:30 p.m.— 1:20 p.m.
Concurrent Sessions

Room: Muirfield

Audience: Grades 3-5

Math Instruction with a Splash of Differentiation

Have students think like mathematicians! Hear a brief overview of differentiation and add strategies to your teacher toolbox to help increase student engagement and address various readiness levels of your students. Discover ways to vary instruction to help your students make sense of math.

Presenter: Pamela Gruzynski, Bloomington District 13

Room: North Pavilion 1

Audience: Grades 6-12

Discovering Circles

By cutting, pasting, and folding paper models, you will discover the secrets of circles. The goal is to put the action on the students desk, the emphasis is what the student does. We will view math as simple, natural and obvious.

Presenter: George J. Marino, Retired

Room: North Pavilion 2

Audience: Grades 6-12

Geometric Habits of Mind Via Paper Folding

Come learn how paper folding can be used to deepen students' ability to conceptualize and apply geometric thinking to the study of the area of geometric objects. You will be introduced to an investigation that gives students opportunities to both deepen and describe their geometric thinking.

Presenter: Todd D. Oberg, Illinois College

Room: North Pavilion 3

Audience: Grades 9-12

Tantalizing Tents: Modeling With Mathematics

One 4 by 6 notecard, one fold, one provoking question: which tent provides the most room? The many possibilities for this tent are easy to physically create and examine, yet the one 'best' tent is challenging to determine and justify. The result is mathematical modeling, analysis, and learning!

*Presenter: Bob Mann, Western Illinois University
Logan Brown, WIU Student*

Saturday 12:30 p.m.— 1:20 p.m.
Concurrent Sessions

Room: North Pavilion 4

Audience: Grades 6-12

Launching into Engagement and Accessibility

Launching a lesson is key to creating engagement and access to grade level content. By exploring the structure of activities, we will see the impact on discussions and accessibility. Join us to dive into a variety of strategies you can implement with your students tomorrow!

Presenter: Afreeka Miller, Carnegie Learning

Room: North Pavilion 5

Audience: Grades k-12

Teachers of Color Community Space

Navigating the dominant culture within mathematics education professionally can often look and feel differently for teachers of color. This space and time will be devoted to reflecting, listening, and supporting each other in a safe space within the conference. This time will be facilitated and meant to produce "an exhale" from many of the challenges specific to teachers of color.

Presenters: Esther Song, Jerica Jurado

Saturday 12:30 p.m.— 2 :20 p.m.
Workshops

Room: North Pavilion 6

Audience: Grades k-6

Creating Short Geometry Tasks to Encourage Student Talk

Have you thought about adapting the number talk instructional strategy to develop geometric thinking? You will create tasks to help students visualize shapes and verbalize their reasoning about properties. We will share strategies for engaging students in productive discussions about geometry.

*Presenters: Peter Wiles, Rick Anderson,
Eastern Illinois University*

Room: Pebble Beach

Audience: Teacher Educators

Coaching for Instructional Change

How can we help, encourage, and convince K-5 teachers to make the instructional shifts required of the CCSS-M? Come join this mini-PLC and engage in activities and conversations about supporting new/pre-service or reluctant teachers. Walk away with useful ideas and a network of peers to tap into!

*Presenters: Lisa J. Bernstein, Ava Belisle-Chatterjee,
Columbia College Chicago*

**Saturday 12:30 p.m.— 2:20 p.m.
Workshops**

**Saturday 12:30 p.m.— 2:20 p.m.
Workshops**

Room: Sam Tinley

Audience: Grades 9-12

Let the Sun Shine! Using Trigonometry to Model Data

Participants will collect and model data for the hours of daylight for world cities using trigonometric functions. Comparisons between the results lead to interesting discoveries and discussion.

Leave the conference with an activity proven to motivate and engage student learning!

Presenter: Scott Knapp, Glenbrook North High School

Room: South Pavilion 5

Audience: Teacher Educators

Sharing your Innovative Teaching Practices as Scholarly Articles

In this workshop, the editors of the Illinois Mathematics Teacher journal will guide participants through the process of creating a scholarly article. Participants are encouraged to bring ideas that they are interested in publishing.

Presenters: Christopher Shaw, Daniel Jordan, Columbia College Chicago

Room: South Pavilion 6

Audience: Grades 6-12

Developing Algebraic Concepts Using Diagrams and Manipulatives

Multiple concepts from algebra will be explored using manipulatives and diagrams to create a concrete understanding before applying these ideas in abstract settings, thus enhancing student learning. Come prepared to collaborate and engage in productive struggle.

Presenters: Tammy Voepel, Kevin Voepel, Southern IL University Edwardsville

Room: St. Andrew

Audience: Grades 5-12

Facilitating Mathematical Conversations with Desmos Activities

Desmos activities can be effective tools to engage students in meaningful mathematical conversations. We'll examine various Desmos features and strategies to promote those discussions in grades 5 - 12. We will also work on finding and editing the right activities for your classroom. Bring a device!

Presenter: Adam Poetzel, University of Illinois

Room: South Pavilion 1

Audience: Grades 9-12+

Transitional Math: Reducing Remediation While Increasing College Readiness

The PWR Act's transitional math courses smooth the college transition for high school seniors. Upon successful completion, students will earn guaranteed placement at all IL community colleges and some IL universities. Attendees will learn about these courses and the statewide scaling of them.

Presenter: Kathleen Almy, Northern Illinois University

Room: South Pavilion 2

Audience: Grades k-6

In my not so Humble Opinion!

Ten ways we must change our teaching in order to foster mathematical equity, and engage, inspire, and empower our K-5 math students. A few relevant thoughts on the subject by Angela G. Andrews, a teacher who has been around the math block a time or two and lived to tell about it.

Presenter: Angela Andrews

**Saturday 1:30 p.m.— 2:20 p.m.
Concurrent Sessions**

Room: Bremen

Audience:

NCTM MET Grant Scholarship Awardees Gathering

For recipients of the 2018 National Council of Teachers of Mathematics (NCTM) Mathematics Education Trust (MET), join the leaders of ICTM to connect with your fellow awardees, reflect on your conference experience, and plan for the future.

Presenters: Jackie Murawska, George Reese, ICTM

Room: Muirfield

Audience: Grades 3-5

Using 5 Practices for Orchestrating Productive Math Discussion

The 5 Practices framework identifies a set of instructional practices that will help teachers plan to facilitate productive student discussions. A summary of the 5 practices and how to use this planning process with any district provided resource to engage students will be shared.

Presenters: Mary J Pickens, Erica Stabrawa

Room: North Pavilion 1

Audience: Grades 6-12

Reinvent Your Math Classroom Through The Flipped Model.

Reinvent your math classroom! Give students ownership in their own learning and see how the speaker has used the flipped classroom to improve student learning.

Presenter: Kirk Humphreys, Caruso Middle School

**Saturday 1:30 p.m.— 2:20 p.m.
Concurrent Sessions**

Room: North Pavilion 1

Audience: Grades 6-12

Reinvent Your Math Classroom Through The Flipped Model

Reinvent your math classroom! Give students ownership in their own learning and see how the speaker has used the flipped classroom to improve student learning.

Presenter: Kirk Humphreys, Caruso Middle School

Room: North Pavilions 2

Audience: Grades 6-12

Let's Move!

Participants will engage in physical and cognitive activities that increase student engagement through the use of math brain breaks and kinesthetic math lessons. Participants will leave energized and encouraged to integrate movement into the instruction of mathematics the next day in class.

*Presenters: David Sladkey, Scott Miller,
Naperville Central High School*

Room: North Pavilion 3

Audience: Grades 9-12

Using Statistics to Explore Equity and Privilege

Using statistics in an Algebra 1 class to explore issues of equity and privilege in society. We will share a unit covering basic Common Core statistic ideas, as well as current research on teaching with equity in mind.

*Presenters: Christine Rinkenberger, Kevin Kennedy,
Urbana High School*

Saturday 2:30 pm.—3: 30 p.m.

Room: Muirfield

ICTM Conference Advisory Meeting

A meeting of the ICTM Board and any interested parties to reflect on the 2018 conference and plan for future conferences.

Room: North Pavilion 2

CPS Reflection & Planning Huddle

How does today's learning apply to your classroom? How might we design around the context of CPS? Join the CPS Department of STEM in rounding off your conference experience by reflecting, connecting, planning, and sharing your practice with other CPS math educators.

Presenters: Chris Nho, Lily Nassiri

**See You Next Year
in
Peoria, IL
on
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Save the Date for upcoming ISTA events.

- March 1, 2019 – ISTA's Life Science Institute
- March 16, 2019 – ISTA's Weather & Climate Summit

Go to **www.ilscience.org** for other event information as it becomes available!

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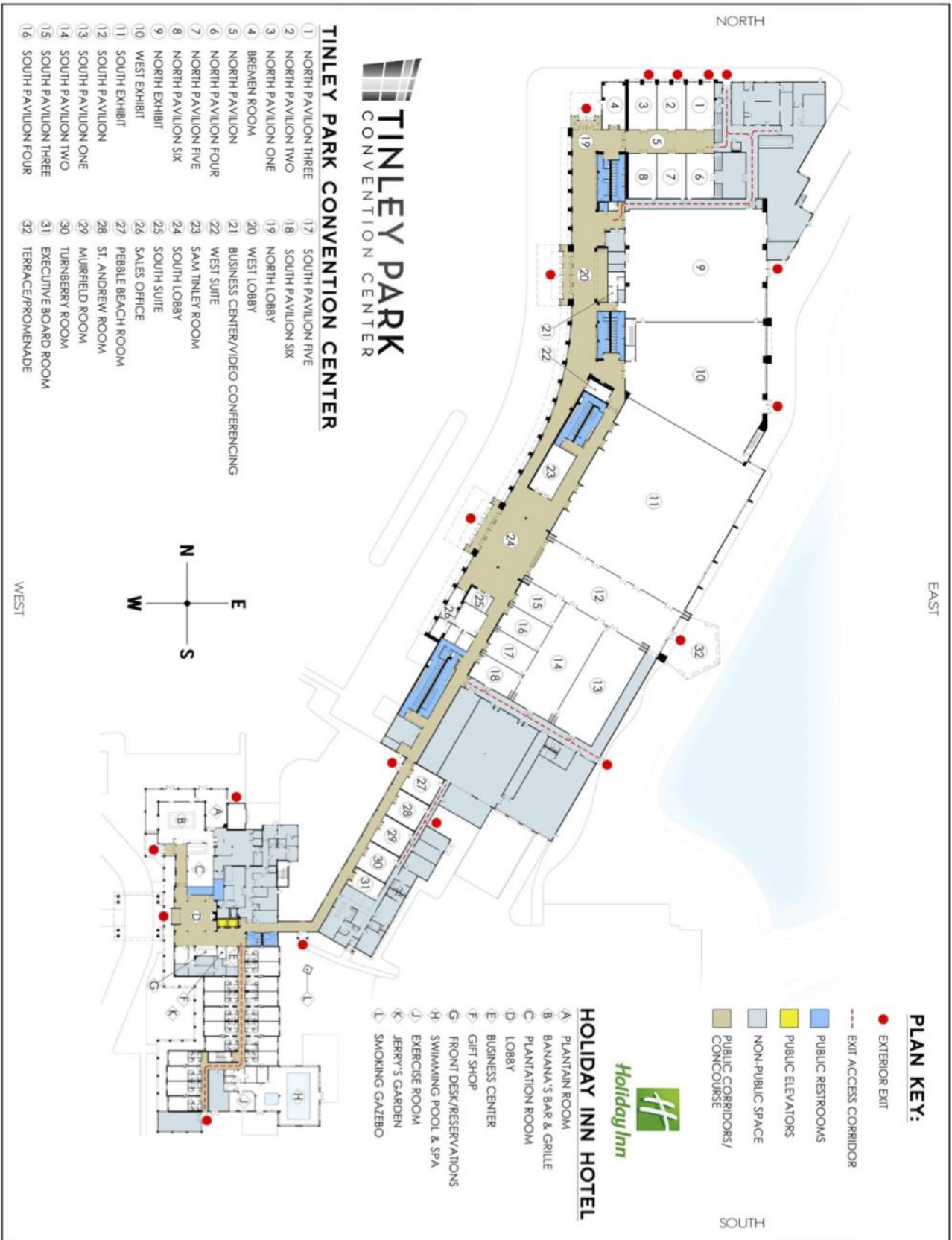
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Go to www.ictm.org for more information



PLAN KEY:

- EXTERIOR EXIT
- EXIT ACCESS CORRIDOR
- PUBLIC RESTROOMS
- PUBLIC ELEVATORS
- NON-PUBLIC SPACE
- PUBLIC CORRIDORS/ CONCOURSE

HOLIDAY INN HOTEL

- A PLANTAIN ROOM
- B BANANA'S BAR & GRILLE
- C PLANTATION ROOM
- D LOBBY
- E BUSINESS CENTER
- F GIFT SHOP
- G FRONT DESK/RESERVATIONS
- H SWIMMING POOL & SPA
- I EXERCISE ROOM
- J JERRY'S GARDEN
- K SMOKING GAZEBO

TINLEY PARK CONVENTION CENTER

- 1 NORTH PAVILION THREE
- 2 NORTH PAVILION TWO
- 3 NORTH PAVILION ONE
- 4 BREMEN ROOM
- 5 NORTH PAVILION
- 6 NORTH PAVILION FOUR
- 7 NORTH PAVILION FIVE
- 8 NORTH PAVILION SIX
- 9 NORTH EXHIBIT
- 10 WEST EXHIBIT
- 11 SOUTH EXHIBIT
- 12 SOUTH PAVILION
- 13 SOUTH PAVILION ONE
- 14 SOUTH PAVILION TWO
- 15 SOUTH PAVILION THREE
- 16 SOUTH PAVILION FOUR
- 17 SOUTH PAVILION FIVE
- 18 SOUTH PAVILION SIX
- 19 NORTH LOBBY
- 20 WEST LOBBY
- 21 BUSINESS CENTER/VIDEO CONFERRING
- 22 WEST SUITE
- 23 SAM TINLEY ROOM
- 24 SOUTH LOBBY
- 25 SOUTH SUITE
- 26 SALES OFFICE
- 27 PEBBLE BEACH ROOM
- 28 ST. ANDREW ROOM
- 29 MUIRFIELD ROOM
- 30 TURNBERRY ROOM
- 31 EXECUTIVE BOARD ROOM
- 32 TERRACE/PROMENADE