

Thursday  
(Updated September 29)

Exhibits open at 4:30 pm  
Keynote Address by Dan Meyer at 6:30 pm

Mini-Courses  
(pre-registration necessary)

Thursday		21 9:00-12:00		22 1:00-4:00	
Mini Courses		# 1		# 17	
Clackamas Cs	Jane 1 – 6	Felling		Dan 6 – 12	Meyer
	Rolling into Fact Fluency			Charge Up Your Classes with Free Desmos Technology	
	Who knew dice games could be used to teach so many concepts: all operations including multi-digit work and games to fill gaps in upper elementary learning. Games are easy to differentiate. Get activities for math journals, math talk extensions, assessment strategies and small group instruction. Gameboards and student samples provided.			Charge up your STEM classes with the Desmos Calculator and Activity Builder. We'll show you how the calculator can be used for both teacher demos and student problem-solving. Use movable points, dynamic sliders, quick regression and more to help your students makes sense of math. Then learn how the Desmos Activity Builder can help you create dynamic activities as well as use pre-built activities from Desmos itself and its user community.	
Clark Ck	Tom 6 – 12	Stricklin		Kim K – 5	Sutton
	Facilitating Meaningful Mathematical Discourse by Developing Collaborative Study Teams			Walk the Number Line for Research-Based Results for K-5!	
	This mini-course will provide teachers with ways to explain the "why" behind student-to-student discourse, research based best practices that foster a collaborative approach to problem solving, and instructional methods that explicitly teach students the moves of constructive conversations.			Elementary learners need a number line for powerful math concepts- skip counting, adding on, alternative algorithms for regrouping, making change, elapsed time, rounding, factoring and fractions! Be ready for action with all the latest ideas for teaching every area of mathematics!	
Multnomah Mh	Sasha K – 6	Hammond			
	How to Know What They Don't Know and Fix It			— overflow	
	Classroom intervention program that enables you to identify mathematical misconceptions and provides leveled activities with the goal of conceptual understanding and grade level competency. CCSS aligned and built from SBA Item Specifications.				
Crown Z Cn	James 1 – 5	Burnett			
	Developing Fact Fluency with Understanding – Not Gimmicks!				
	Fluency is more than memorization. Students need to see connections between facts and they need visual models that connect to the thinking strategy. This session will utilize powerful visual aids and games that help students to master the basic number facts with understanding!				
Weyerhaeuser Wr	Anne 9 – College	Gallagher		Anne 6 – 8	Gallagher
	Applying Mathematical Modeling in the Real World: High School			Applying Mathematical Modeling in the Real World: Middle School	
	Still grappling with how to incorporate mathematical modeling? Did you know that almost every industry uses some aspect of modeling? Participants will experience how to transform math and science problems into engaging modeling problems both with and without technology. Bring a devise!			Still grappling with how to incorporate mathematical modeling? Did you know that almost every industry uses some aspect of modeling? Participants will experience how to transform math and science problems into engaging modeling problems both with and without technology. Bring a device!	
White Stag We	Art 11, 12	Mabbott		Tom 7 – College	Reardon
	Exploring the Triangle Sum Theorem on the Sphere: What happens when you change the rules in Euclidean Geometry?			10 Minutes of Coding – Great Ways to Introduce ALL Students to Programming	
	Come play with beachballs and string to see how and why the sum of the angles on a triangle is NOT ALWAYS 180°. We will also explore the sum of the angles in a triangle on cubes, tetrahedrons, and more. WE will move from discrete to continuous mathematics.			No prior coding experience necessary! Get hands-on experience doing activities that show students – and teachers – how to program on a TI-83/84. Topics: Variables, Input/Output, Conditional Statements, Loops, Graphics. Also use the TI-Innovator Hub – ideal for STEM – and program a song!	
Washington Wn	Dennis 4 – 8	Mulhearn		Chris 6 – 12	Shore
	My Favorite Math Contest Problems			The Clothesline: Algebra, Geometry & Statistics on the Number Line	
	Challenge young minds with rich classic problems. Deepen and strengthen their understanding of math while exciting their imagination and empowering them through discovery and collaboration.			This dynamic number line is the Master Number Sense Maker. Help students enhance numeracy, make sense of variables, develop proportional reasoning and increase understanding of statistical measures. This manipulable tool will blow your mind; I promise. clotheslinemath.com	
Flanders Fs	Ronald 7 – 12	Leonard		Ronald 7 – 12	Leonard
	GEOMETRY AND CONSTRUCTIONS: A lost art or important skill			APPLICATION: The ability to use knowledge in new ways.	
	Explore using a compass and straight edge for a fun way to introduce, reenforce, and apply the concepts from geometry.			Application is not doing exercises, story problems, or test questions. Application is being able to put knowledge into practice or use. Participants will have an opportunity to apply knowledge.	
Lovejoy Ly	Diana 8 – College	Fisher		Susan 10, 11, 12	Robinson
	Reinforce Algebra Functions Structure & Behavior Using Free Web-Based Modeling			String Art: An Introduction to Tangent Lines and Quadratic Functions	
	Reinforce algebra functions structure and behavior using a free web-based, visual modeling software and then help students build multi-function models to study population change, etc. Can publish models to web. Software works on mobile devices and computers. Algebra teacher presenting.			Using string and cardboard, create curves from the envelopes of families of straight lines. Explore parabolas, Reuleaux triangles and more, while creating mathematical art. Experience an activity that can be used as an introduction to tangent lines in or quadratic functions.	
Pendleton Pn	Daniel 4 – 9	Finkel		Daniel 3 – 9	Finkel
	Rich Tasks and Transformative Mathematical Experience			Making and Breaking Conjectures	
	Beautiful mathematical experiences can change a student's life: once students see mathematics as a subject involving autonomy, creativity, and power, they (and you!) will never want to go back.  In this workshop, we'll explore how rich tasks can create opportunities for authentic mathematical adventure; we'll even try some of our own!			Explore how the act of making conjectures—and disproving them with counterexamples—can provide a pathway to deeper mathematical understanding and persistence.	
Glisan Gn	Russell 6 – College	Hanes		Jerry 6 – 12	Young
	A Beginner's Introduction to GeoGebra			How do I do problem solving in class with all the material I must cover?	
	GeoGebra is a free program that can do geometry, algebra, calculus, statistics, 3D, and more. You'll learn GeoGebra's basic functions and see its power as a classroom tool. For maximum benefit, please bring a laptop with GeoGebra installed: <a href="http://www.geogebra.org/download">www.geogebra.org/download</a> .			The mini-course introduces the idea of incorporating problem solving on a daily basis. You will design activities to support your curriculum that can be used at either the beginning or end of class and that cover a wide range of topics, from Arithmetic to Algebra 2/Pre-Calculus.	
Hayden Hn	Nicole Pre-K – College	Rigelman		Shereen K – 8	Horton
	Ensuring the Tasks in our Curriculum are Worthwhile			Number Talks: Connection to Progressions through the Common Core	
	How do we use tasks to promote reasoning and problem-solving? We accept this charge from Principles to Actions and consider ways to develop and use tasks. Participants analyze typical tasks' potential and revise for multiple entry points and solution strategies.			Wondering how to connect Number Talks to CCSS's math progressions and differentiation? This session will help educators better utilize Number Talks for vertical PLC's and school wide data collection. Purposeful Number Talks can reflect the CCSS structure, weave domains, and help teachers better plan instruction.	
Overton On	Tom 10 – College	Reardon		Craig 3, 4, 5	Willmore
	Problem Solving: All-Time Favorite Mathematically Rich Precalculus Activities, Individualized, with Complete Solutions			Fear Not the Fraction	
	We will tailor the problems we do based upon the attendees. Choose from: The Great Applied Problem, Midpoint Polygon, Painted Cube, Maximize Rectangle Area Under Parabolas, Solve the Quadrilateral, Ferris Wheel, Plane Wind Vector. 30 individualized problems/solutions for each!			Do you wonder why students struggle when learning fractions? This interactive workshop will focus on the underlying, and often missing, concepts necessary for students to be successful with fractions. We will explore different representations and interpretations of fractions and why they are so critical.	
Pettygrove Pe	Melinda K – 6	Schwartz		Melinda K – 5	Schwartz
	Powerful Mathematics			Building Supports for Problem Solving	
	What role does conceptual understanding play in assisting struggling math students? What are the steps to providing effective instruction for these students? Participants will tackle these questions during this interactive workshop.			Participants will discover how to support students in developing the skills, concepts, and math processes needed to be effective at solving problems and how to foster an environment that nurtures students as problem solvers.	
Jantzen Jn	Mark 9 – College	Freed		Nicholas 4 – 10	Restivo
	Content Focus for High School Math			Building Boxes for Mathematical Success	
	Participants will engage in reviewing and providing feedback on focus content within high school math, serving college-career readiness. Input received will be considered by state staff as part of the scheduled 2020 Oregon math standards review and adoption process.			Explore, expand and condense geometry definitions. Argue about them while transforming a greeting card into a box. Perimeter, area, volume, ratios, proportions, polygons, and quadrilaterals will be connected and their relationships better understood. Real-life problems related to geometry might challenge you.	