

Tuesday, July 30, 2024

NEW TEACHERS ONLY

	CSMS	CIJE BYTES Pre- Eng. MS/HS
9:15-10:00	Registration and Breakfast	
10:00 - 10:15	Conference Kickoff	
10:20 - 11:20	<p>Marshmallow Towers: STEAM as a Way to Integrate Design Thinking into Classroom Culture</p> <p>This session is the introduction to the CSMS curriculum for teachers new to CIJE. Participate in an engineering challenge while practicing small group work, steps of the design thinking process and constructive criticism.</p> <p>Katherine, David</p>	<p>Why CIJE Bytes</p> <p>Coding as a means to an end.</p> <p>Orly, Dewain, Bob</p> <p>Welcome to the "Team"</p> <p>Get signed into the Pre-engineering cohort on Microsoft Teams. Practice site communication and navigation.</p> <p>Orly, Dewain, Bob</p>
11:25 - 12:25	<p>Penny for your Boat: Failure and Iteration as a Chance to Improve Through Design Thinking</p> <p>Teachers will use the CIJE Keep Your Boat Afloat module as an example of the Engineering Design Process. Float your boat until it sinks, understand the reasons why, and celebrate the iterative process of improving towards success. Leave buoyant and inspired for the next year of CIJE activities.</p> <p>David, Katherine</p>	<p>Blink, Blink, Build:</p> <p>Learn Bytes Blink and start building a project!</p> <p>Orly, Dewain, Bob</p>

Tuesday, July 30, 2024 (Continued)

12:30 - 1:15	Lunch	
1:15 - 2:15	Creating Student Scientists: Science of Discovery Through Mystery and Experimentation Through hands-on activities and guided exploration, participants will develop critical thinking skills and learn to navigate the scientific process safely and effectively.	Get Moving: Bytes Servo Motor Lessons and continue building. Orly, Dewain, Bob
2:20 - 3:25	Barbara, Katherine	What's in the Box? - Discover byte components, how to teach and learn with them. Bytes mentors will model component introduction and classroom discussion leading.
3:30 - 4:35	A Towering Mess - Density Towers: Managing the Mess in a STEAM classroom Learning can be messy, and the mess can be managed. We will be using the CIJE Density Tower module to explore the concepts of density when combining liquids and solids. Explore methods to manage the mess in the classroom. Katherine, David	Orly, Dewain
4:35 - 5:30	Notebooking and Student Portfolios: The Power of Notebooking, Student Portfolios and Parent Communication. - KO and DSS Learn how notebooking and student portfolios make learning visible to students, teachers and parents. We will discuss empowering students in communicating their successes and areas of difficulty. David, Katherine	Press the Button: Bytes Button Lesson. Connecting the Bytes: Any questions? Orly, Dewain

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8:00 – 8:55	Breakfast		
9:00-10:05	<p>STEAM Culture Box: Small Group Dynamics and Whiteboarding</p> <p>Engage in a design challenge as a tool to introduce, maintain and embed team roles and whiteboarding into the STEAM classroom culture.</p> <p>Barbara, Katherine, David</p>	<p>Begin with the End in Mind:</p> <p>Discuss Bytes projects and fair ideas</p> <p>Orly, Dewain</p>	
10:10-11:05	<p>Go With the Flow: An Overview of CSMS Electricity Modules</p> <p>This session will electrify you with four different electricity modules, wrapped around group roles and peer to peer presentation techniques.</p> <p>David and Katherine</p>	<p>Pulleys Workshop</p> <p>Get hands-on with pulleys as you build and test your own simple machines. Learn how pulleys work and discover how they make lifting heavy objects easier. Take home your own pulley system to continue the fun and learning!</p> <p>Yafa and Barbara</p>	<p>Bytes in YOUR classroom -</p> <p>We'll discuss how this curriculum is intended to be implemented, and how it can work for everyone's individual classroom situation.</p> <p>Orly, Dewain</p>
11:10- 12:15	<p>Electromagnetism: The Power of Productive Struggle and Troubleshooting.</p> <p>Put power to productive struggle by building an electromagnetic motor. This session focuses on building the motor and techniques for student perseverance when building a complex kit.</p> <p>David and Katherine</p>	<p>Engineering Sandbox</p> <p>Continue exploring, designing, and building your pulley system in the sandbox.</p> <p>Yafa and Barbara</p>	<p>Bytes Unconference:</p> <p>Orly, Dewain</p>
12:20-1:20	Lunch: Meet Your Mentor Middle School and High School		

	CSMS		Design Fab
1:20-2:25	<p>Game Your Way to Sustainability: Earthship CIJE, An Introduction to Climate Change</p> <p>Teachers will participate in a hands-on learning experience by playing a game that challenges them to manage resources. The ultimate goal is to build a prototype of a sustainable home. Teachers will leave with a ready-to-use game.</p> <p>Barbara, Katherine</p>	<p>Electricity Let's Spark Your Curiosity</p> <p>Explore simple circuits and experiment with different materials to understand the basics of electrical conductivity. Create a mini light-up project of your own to take home and illuminate your learning.</p> <p>Yafa and David</p>	<p>Intro to Design Fab + Makerspace 101</p> <p>3D printing 101</p> <p>Intro into TinkerCAD</p> <p>Orly</p>
2:30-3:35	<p>Sustain Your Game: Hack-a-Home</p> <p>Time to build your own Earthship: a climate friendly sustainable home based on your game in part 1. Go beyond building to power your dream home with CIJE supported materials.</p> <p>Barbara, Katherine</p>	<p>Buoyancy Discovery Station:</p> <p>Dive into buoyancy with engaging experiments and demonstrations. Investigate how different materials float or sink in water based on their densities. Discover the secrets of submarines with a cartesian diver you can take home.</p> <p>Yafa, David</p>	<p>Design Thinking Sprint for Tzedek Box</p> <p>Orly & Aryeh L</p>
3:40-5:00	<p>Need a Lift?: Aerodynamics and Bernoulli's Principle</p> <p>In this exciting workshop on Newton's Laws of Aerodynamics and Bernoulli's Principle, students will explore the fundamentals of flight and air pressure through engaging, hands-on activities. Take off into fun, interactive experiments and model-building projects that make the principles of aerodynamics come alive.</p> <p>Yafa and Barbara</p>	<p>Gravity, Relatively: Address key ideas and misconceptions of gravity.</p> <p>Make gravity concepts visible with CIJE's Gravity Kit. Learn how to build your own or reserve your spot to borrow CIJE's gravity table.</p> <p>Katherine</p>	<p>Design Fab Curriculum</p> <p>National 3D modeling Design Challenges infused with Jewish values</p> <p>Orly and Bob</p>
5:30-6:30	<p>Makerspace Expedition: Stay Tuned for Details</p>		

Robotics

9:00 – 11:05

Ready, Set, Robots!

Welcome to the CIJE Middle School Robotics League: Tournament game rules and strategy. How to brainstorm and design a robot. Build a mini VEX robot from scratch. Set up a robot to drive with a controller. Basic coding for robots. Laptop (not Chromebook) recommended

Joey

11:10 – 12:15

Gearing it Up

Take your robot to the next level by learning how to use gears, sprockets, and more

Joey

1:20 – 2:25

Building Better Bots

Learn tips for building better robots, including common mechanisms, manipulators, linkages, and supports

Joey

2:30-3:35

Advanced Robotics

Introduction to autonomous robots and PID control

Joey

3:40-4:15

Robotics Classroom Curriculum

How to use the CIJE lesson sequence for introducing robotics to your classroom. How to design and run your own robot tournament/challenge in your classroom

David

4:20-5:20

Mock "Tournament": Rapid Relay 2024-2025 Game

Participate in a mock tournament for this year's game. Bring your own pre-built robot to test out on the playing field. If you do not have your own robot, you can try one of our CIJE robots

Joey

	CSMS		BYTES
8:00	Breakfast		
9:00-10:05	<p>Beyond What the Eye Can See: Cell Biology and the Unseen World:</p> <p>Dive into the unseen world of cell biology, focus on mastering microscope skills, build your own microscopes, create slides, and culture cells. Gain practical knowledge and tools to effectively teach students about the fascinating and critical realm of cell biology.</p> <p>Barbara and Katherine</p>	<p>Engineering Sandbox</p> <p>Explore, design, and build in the sandbox.</p> <p>Yafa, David</p>	<p>Bytes Build Time:</p> <p>Prepare projects for presentation.</p> <p>Dewain and Orly</p>
10:10-11:05	<p>Artificial Intelligence (AI) and Sense and Senses: The Intersection of AI and Biology</p> <p>Explore how computers can sense the world around them just as humans do, through building circuits to detect color and feel temperature. This hands-on introduction to AI will equip educators with practical skills to demonstrate artificial intelligence concepts in the classroom.</p>	<p>Pulleys Workshop:</p> <p>Get hands-on with pulleys as you build and test your own simple machines. Learn how pulleys work and discover how they make lifting heavy objects easier. Make your own pulley system to continue the fun and learning!</p> <p>Yafa, David</p>	<p>Bytes Finalizing Projects</p> <p>Orly, Dewain</p>
11:10-12:15	<p>Part 2- Voice and Choice: Bytes + AI or stay to see demos of other senses and their circuits</p> <p>Barbara and Katherine</p>	<p>Electricity! Let's Spark Your Curiosity</p> <p>Explore simple circuits and experiment with different materials to understand the basics of electrical conductivity. Create a mini light-up project to illuminate your learning.</p> <p>Yafa, David</p>	<p>Bytes + AI</p> <p>Train a machine to sort objects using machine learning and physical computing in a hands-on DIY way</p> <p>Orly</p>

	CSMS	BYTES
12:20-1:10	Networking Lunch	
1:20-2:25	<p>Water, Water Everywhere and Not a Drop to Drink: Water Filtration STEM Challenge</p> <p>Teachers will take on the role of students and explore the global issue of water scarcity and its implications for access to clean drinking water. Through a STEM challenge, they will brainstorm innovative solutions and design their own water bottle filters to address this environmental concern.</p> <p>Barbara and Katherine</p>	<p>Buoyancy Discovery Station:</p> <p>Dive into buoyancy with engaging experiments and demonstrations. Investigate how different materials float or sink in water based on their densities. Discover the secrets of submarines with a cartesian diver you can take home.</p> <p>Yafa, David</p>
2:30-3:35	<p>Games (Middle School) Math and Science: The Power of Play</p> <p>Teachers will explore innovative ways to review and reinforce math and science concepts through engaging game play. Participants will learn to design and implement educational games and will take home several ready-to-use games for their classes.</p> <p>Barbara and David</p>	<p>Bytes Presentations:</p> <p>Show and Tell</p> <p>Dewain and Orly</p>
		<p>Build-a-Droid:</p> <p>Electronics animates 3D printing</p> <p>David Merel</p>