

Title	Description (GSE)	Date & Time
<p><u>D2D with Captain Irving</u></p> <p>How can we better prepare for severe weather?</p> <p>ES Science</p>	<p>What causes thunder, and why does it always follow lightning? What is a radar, and why do we use it to watch storms?</p> <p>Join Captain Barrington Irving of the Flying Classroom alongside John Trostel and Jessica Losego of GTRI's Severe Storms Research Center to learn more about how researchers are advancing weather monitoring and severe storm preparedness.</p> <p>This session is connected to the following GSE. Instructional resources aligned to these GSE and the topic for the session will be available two weeks prior to the event with your registration.</p> <p>S2E3. Obtain, evaluate, and communicate information about how weather, plants, animals, and humans cause changes to the environment.</p> <p>S4E4. Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data.</p>	<p>Thursday August 26, 2021 10-10:45 am</p> <p><u>REGISTER</u></p>
<p><u>D2D Live in the Lab</u></p> <p>A Rooftop Apiary Tour with the GT Urban Honey Bee Project</p> <p>ES/MS Science and STEM</p>	<p>What are pollinators? Why are they important? What can we do to help pollinator populations in our communities?</p> <p>Join STEM@GTRI and the GT Urban Honey Bee Project Director, Dr. Jennifer Leavey, to explore these questions and more! We'll engage in a live tour of a rooftop apiary, answer student questions, and explore what we all can do to improve lives for the pollinators in our communities. This session stands alone, but is also occurring as part of our broader Pollinator PSA STEAM Challenge.</p>	<p>Friday August 27, 2021 10-10:45 am</p> <p><u>REGISTER</u></p>

	<p>This D2D interaction aligns to the following GSE. Instructional resources will be available two weeks prior to the session.</p> <p>S3L2. Obtain, evaluate, and communicate information about the effects of pollution (air, land, and water) and humans on the environment.</p> <p>S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.</p> <p>S5L2. Obtain, evaluate, and communicate information showing that some characteristics of organisms are inherited and other characteristics are acquired.</p>	
<p><u>D2D STEAM Challenge</u></p> <p>Save our Pollinators!</p> <p>ES/MS Science, STEM, and CS</p>	<p>What are pollinators? Why are they important? What can we do to help pollinator populations in our communities?</p> <p>This Direct to Discovery STEAM Challenge will engage students in learning about pollinators and how we can support them from the GT Urban Honey Bee Project. Students will then have an opportunity to share this learning with their peers and families through the creation of a public service announcement (PSA) using game-based story telling. The STEAM challenge kicks off Friday, August 20th and concludes Friday, October 1st with a live showcase to recognize selected student-created PSAs.</p> <p>This challenge aligns to the following GSE. Resources will be available two weeks prior to the kick off date for the challenge.</p> <p>Science: S3L2. Obtain, evaluate, and communicate information about the effects of pollution (air, land, and water) and humans on the environment.</p> <p>S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.</p>	<p>August 27, 2021 through October 1, 2021.</p> <p><u>REGISTER</u></p>

	<p>S5L2. Obtain, evaluate, and communicate information showing that some characteristics of organisms are inherited and other characteristics are acquired.</p> <p>ELA Strands: Reading (Literary) - Craft and Structure, Key Ideas and Details Writing - Production and Distribution of Writing</p> <p>Computer Science Strands: ES: Knowledge Constructor, Innovative Designer and Creator MSCS 1: Knowledge Constructor, Innovative Designer and Creator</p>	
<p><u>Direct to Discovery</u></p> <p>How can you tell a story with video games?</p> <p>ES/MS ELA, CS, and STEM</p>	<p>How do video games tell stories? How do writers use foreshadowing, allusions, and other literacy devices in video games?</p> <p>This Direct to Discovery interaction will join Laura Levy (Research Director, GEAR) and Tyler Kinner (STEM Curriculum Development Lead, STEM@GTRI) to explore story telling in video games. We'll dive into examples, compare and contrast books and games, and talk about how users can use their own video games to tell unique stories. This interaction stands alone, but is also taking place as part of our broader Pollinator PSA Steam Challenge.</p> <p>This interaction aligns with the following Georgia Standards of Excellence: ELA Strands: Reading (Literary) - Craft and Structure, Key Ideas and Details Writing - Production and Distribution of Writing</p> <p>Computer Science Strands: ES: Knowledge Constructor, Innovative Designer and Creator MSCS 1: Knowledge Constructor, Innovative Designer and Creator</p>	<p>Friday September 3, 2021 10-10:45 am</p> <p><u>REGISTER</u></p>

<p><u>D2D Reading with a Researcher</u></p> <p>STEM story time</p> <p>K-2</p>	<p>Engage your elementary class or children in reading with a researcher!</p> <p>Join us for STEM story time and Q&A with a GTRI researcher. We'll engage in a read-aloud with a STEM children's book, and then answers student questions! (Targeted at grades K-2)</p>	<p>Wednesday September 8, 2021 10-10:45 am</p> <p>REGISTER</p>
<p><u>D2D Reading with a Researcher</u></p> <p>STEM story time</p> <p>K-2</p>	<p>Engage your elementary class or children in reading with a researcher!</p> <p>Join us for STEM story time and Q&A with a GTRI researcher. We'll engage in a read-aloud with a STEM children's book, and then answers student questions! (Targeted at grades K-2)</p>	<p>Thursday September 9, 2021 10-10:45 am</p> <p>REGISTER</p>
<p><u>D2D Reading with a Researcher</u></p> <p>Un cuento con una científica</p> <p>K-2 DLI</p>	<p>¿Buscas por actividades o oradores de STEM en español? ¡Unirse a esta sesión! Vamos a escuchar una científica de Georgia Tech Research Institute. Va a leer un libro de niños y contar su experiencias en tecnológica y salud.</p> <p>Looking for Spanish-language STEM experiences? Join this session! We will hear from a research scientist at Georgia Tech Research Institute. We'll read a short story and also share related experiences from their work in technology and health.</p> <p>(Targeted at grades K-2 in DLI programs)</p>	<p>Friday September 10, 2021 10-10:45 am</p> <p>REGISTER</p>
<p><u>D2D Cyber Series</u></p> <p>How can you keep a secret?</p> <p>MS/HS CS</p>	<p>This session will focus on the basics of Cybersecurity, including the CIA triad, ciphers, encryption, and more! In our special Cyber Series, STEM@GTRI is teaming up with the University of North Georgia and the Georgia Cyber Center to engage classrooms in learning more about cybersecurity.</p> <p>This session aligns with the following GSE. Instructional resources related to this session will be available two weeks before the session date.</p>	<p>Tuesday September 14, 2021 2:30 – 3:15 pm</p> <p>REGISTER</p>

	<p>IT-IDT-10 - Describe, analyze, develop and follow policies for managing ethical and legal issues in the business world and in a technology-based society.</p> <p>IT-ICS-10 - Demonstrate how to implement proper access controls and identity management.</p> <p>IT-ICS-11 - Research and explore basic principles of cryptology.</p>	
<p><u>D2D with Captain Irving</u></p> <p>What is the science behind a football helmet?</p> <p>MS/HS Science, STEM, and Engineering CTE</p>	<p>Why do football players need to wear helmets? What are helmets actually made of? How do helmets protect athletes?</p> <p>Join Captain Barrington Irving of the Flying Classroom and Dr. Jud Ready of Georgia Tech Research Institute and the GT College of Engineering to explore the science and engineering behind modern football helmets.</p> <p>This session is connected to the following GSE. Instructional resources aligned to these GSE and the topic for the session will be available two weeks prior to the event with your registration.</p> <p>S8P3. Obtain, evaluate, and communicate information about cause-and-effect relationships between force, mass, and the motion of objects.</p> <p>SPS8. Obtain, evaluate, and communicate information to explain the relationships among force, mass, and motion.</p> <p>SP2. Obtain, evaluate, and communicate information about how forces affect the motion of objects.</p> <p>SP3. Obtain, evaluate, and communicate information about the importance of conservation laws for mechanical energy and linear momentum in predicting the behavior of physical systems.</p>	<p>Wednesday September 15, 2021 10-10:45 am</p> <p>REGISTER</p>

<p><u>D2D STEAM Challenge</u></p> <p>How can we improve sports using science?</p> <p>MS/HS Science, STEM, and Engineering CTE</p>	<p>What is materials science? How do scientists and engineers improve athlete safety and performance? This Direct to Discovery STEAM Challenge will engage students in exploring how materials science can be used to improve athlete performance and safety.</p> <p>What is the STEAM Challenge? The STEAM challenge is for students to design an innovation in athletics using either chemistry or physics. This challenge is suitable for MS/HS physical science, chemistry, and physics students.</p> <p>This session is connected to the following GSE. Instructional resources aligned to these GSE and the topic for the session will be available two weeks prior to the event with your registration.</p> <p>S8P1. Obtain, evaluate, and communicate information about the structure and properties of matter.</p> <p>S8P2. Obtain, evaluate, and communicate information about the law of conservation of energy to develop arguments that energy can transform from one form to another within a system.</p> <p>S8P3. Obtain, evaluate, and communicate information about cause and effect relationships between force, mass, and the motion of objects.</p> <p>SPS6. Obtain, evaluate, and communicate information to explain the properties of solutions.</p> <p>SPS8. Obtain, evaluate, and communicate information to explain the relationships among force, mass, and motion.</p> <p>SP2. Obtain, evaluate, and communicate information about how forces affect the motion of objects.</p>	<p>September 15, 2021 through October 8th, 2021.</p> <p>REGISTER</p>
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	<p>SP3. Obtain, evaluate, and communicate information about the importance of conservation laws for mechanical energy and linear momentum in predicting the behavior of physical systems.</p>	
<p><u>D2D with the GT Observatory</u></p> <p>A Live Lunar Viewing!</p> <p>ES/MS Science</p>	<p>What does the surface of the Moon look like? What is the history of the Moon?</p> <p>Join STEM@GTRI and the GT Observatory Director, Dr. Jim Sowell, for a live viewing of the Moon during the school day with the <i>Aloha</i> telescope.</p> <p>This session aligns to the following GSE. Instructional resources for the session will be available to registered teachers two weeks before the session date.</p> <p>S4E1. Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.</p> <p>S4E2. Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from the Earth.</p> <p>S6E2. Obtain, evaluate, and communicate information about the effects of the relative positions of the sun, Earth, and moon.</p>	<p>Tuesday September 21, 2021 10-10:45 am</p> <p>REGISTER</p>
<p><u>D2D Cyber Series</u></p> <p>How does psychology impact cybersecurity?</p> <p>MS/HS CS</p>	<p>This session will focus on the human side of cybersecurity, and in specific, social engineering. In our special Cyber Series, STEM@GTRI is teaming up with the University of North Georgia and the Georgia Cyber Center to engage classrooms in learning more about cybersecurity!</p> <p>This session aligns with the following GSE. Instructional resources related to this session will be available two weeks before the session date.</p> <p>IT-IDT-10 - Describe, analyze, develop and follow policies for managing ethical and legal issues in the business world and in a technology-based society.</p>	<p>Tuesday September 21, 2021 2:30 – 3:15 pm</p> <p>REGISTER</p>

	IT-ICS-2 - Demonstrate an understanding of cybersecurity concepts and research	
<u>D2D Live in the Lab</u> How do we know our food is safe? MS Science	Join STEM@GTRI and GTRI's Agricultural Technology Research Program for a look into the science and engineering behind food safety! We'll explore how science helps to prevent the growth of microbes, the use of robotics and VR in food processing, and more with Stephanie Richter, Research Scientist at GTRI. This session is connected to the following GSE. Instructional resources aligned to these GSE and the topic for the session will be available two weeks prior to the event with your registration. S7L1. Obtain, evaluate, and communicate information to investigate the diversity of living organisms and how they can be compared scientifically. S7L2. Obtain, evaluate, and communicate information to describe how cell structures, cells, tissues, organs, and organ systems interact to maintain the basic needs of organisms.	Tuesday September 28, 2021 10-10:45 am REGISTER
<u>D2D Cyber Series</u> What is information and cyber warfare? MS/HS CS	This session will focus on the basics of Cybersecurity, including the CIA triad, ciphers, encryption, and more! In our special Cyber Series, STEM@GTRI is teaming up with the University of North Georgia and the Georgia Cyber Center to engage classrooms in learning more about cybersecurity. This session aligns with the following GSE. Instructional resources related to this session will be available two weeks before the session date. IT-IDT-10 - Describe, analyze, develop and follow policies for managing ethical and legal issues in the business world and in a technology-based society. IT-ICS-10 - Demonstrate how to implement proper access controls and identity management.	Tuesday October 12, 2021 2:30 – 3:15 pm REGISTER

	IT-ICS-11 - Research and explore basic principles of cryptology.	
<u>D2D with Captain Irving</u> What do scientists learn from blobs of worms? ES/MS Science	<p>What is a worm blob? Why would worms tangle themselves up? How do we benefit from learning more about them?</p> <p>Join Captain Barrington Irving of the Flying Classroom and Harry Tuazon of Georgia Tech to learn more about worm blobs, a naturally-occurring phenomenon within the world of worms. We'll explore how science and technology broadly benefit from studying natural adaptations, as well as specifically unpacking the insights worm blobs may provide to scientists and engineers.</p> <p>This session is connected to the following GSE. Instructional resources aligned to these GSE and the topic for the session will be available two weeks prior to the event with your registration.</p> <p>S5L1. Obtain, evaluate, and communicate information to group organisms using scientific classification procedures.</p> <p>S5L2. Obtain, evaluate, and communicate information showing that some characteristics of organisms are inherited and other characteristics are acquired.</p> <p>S7L1. Obtain, evaluate, and communicate information to investigate the diversity of living organisms and how they can be compared scientifically.</p> <p>S7L4. Obtain, evaluate, and communicate information to examine the interdependence of organisms with one another and their environments.</p>	Thursday October 14, 2021 10-10:45 am REGISTER
<u>D2D Data</u> <u>Transmissions from</u> <u>Space</u> How far away is Pluto?	<p>How far away is Pluto? How much closer is Mercury to the Sun than Earth?</p> <p>We'll explore these questions and more in this special math + science Direct to Discovery.</p>	Thursday October 21, 2021 10-10:45 am REGISTER

<p>ES Math and Science</p>	<p>This sessions aligns with the following GSE. A special topic-focused 3 Act Task will be made available to registered teachers to use alongside this interaction to support integration of the session into your planned learning. Look for this two weeks prior to the interaction.</p> <p>MGSE4.NF.1 - Explain why two or more fractions are equivalent by using visual fraction models. Focus attention on how the number and size of the parts differ even though the fractions.</p> <p>MGSE4.NF.2 - Compare two fractions with different numerators and different denominators, e.g., by using visual fraction models, by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions.</p> <p>MGSE4.MD.2 - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p>S4E1. Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.</p> <p>S4E2. Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from the Earth.</p>	
<p><u>D2D Data</u> <u>Transmissions from</u> <u>Space</u></p>	<p>What is low-Earth orbit and why is it important? What can we learn about the Earth by studying it from space? Join STEM@GTRI for this special math+science Direct to Discovery interaction. We'll explore how scientists study the Earth's surface by looking at it from above -- with satellites!</p>	<p>Thursday October 28, 2021 10-10:45 am</p> <p>REGISTER</p>

<p>Studying Geology with Satellites!</p> <p>ES Math and Science</p>	<p>This session aligns to the following GSE. A 3 Act Math Task will be available two weeks prior to the session date to help registered teachers integrate this session into their instruction.</p> <p>S5E1. Obtain, evaluate, and communicate information to identify surface features on the Earth caused by constructive and/or destructive processes.</p> <p>MGSE.5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</p> <p>MGSE.5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	
<p><u>D2D Live in the Lab</u></p> <p>How do scientists study lighting?</p> <p>MS Science and STEM</p>	<p>How do scientists learn more about lightning while staying safe? How do engineers help weather scientists improve our ability to learn about storms?</p> <p>Join STEM@GTRI and the GTRI's Severe Storms Research Center to explore answers to these questions and more in this electrifying Direct to Discovery session!</p> <p>This event is aligned to the following GSE. Instructional resources to help facilitate the challenge will be made available two weeks prior to the kick off date to registered teachers.</p> <p>S6E3. Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes.</p> <p>S6E4. Obtain, evaluate, and communicate information about how the sun, land, and water affect climate and weather.</p>	<p>Friday October 29, 2021 10-10:45 am</p> <p>REGISTER</p>

	S4E4. Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data	
<u>D2D STEAM Challenge</u> Building a Weather Monitoring Device MS Science and STEM	What is the STEAM Challenge? The STEAM challenge is for students to design and develop grade-level appropriate weather monitoring devices. After learning about how scientists and engineers work together to develop new ways of studying lightning and other weather phenomena, students will be tasked with creating and pitching their own weather monitoring devices. Students participating in the STEAM challenge will submit a brief 3-minute pitch of their designed or created weather monitoring device in grade-level categories. This event is aligned to the following GSE. Instructional resources to help facilitate the challenge will be made available two weeks prior to the kick off date to registered teachers. S6E3. Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes. S6E4. Obtain, evaluate, and communicate information about how the sun, land, and water affect climate and weather. S4E4. Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data.	October 29, 2021 through November 12, 2021 REGISTER
<u>D2D with Captain Irving</u> What is the science behind toys? MS/HS Science	How high can a bouncy ball bounce? How fast is a Nerf dart? Join Capt. Barrington Irving and STEM@GTRI's Jack Wood to explore the answers to these questions and more in another session around <i>The Science of Toys!</i>	Thursday November 11, 2021 10-10:45 am REGISTER

	<p>This session is connected to the following GSE. Instructional resources aligned to these GSE and the topic for the session will be available two weeks prior to the event with your registration.</p> <p>S8P3. Obtain, evaluate, and communicate information about cause and effect relationships between force, mass, and the motion of objects.</p> <p>S8P4. Obtain, evaluate, and communicate information to support the claim that electromagnetic (light) waves behave differently than mechanical (sound) waves.</p> <p>SPS8. Obtain, evaluate, and communicate information to explain the relationships among force, mass, and motion.</p> <p>SPS9. Obtain, evaluate, and communicate information to explain the properties of waves.</p>	
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