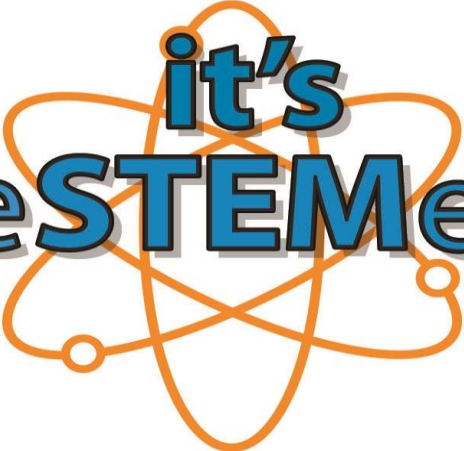


STEM DAY IN EDISON

Saturday, April 26, 2014

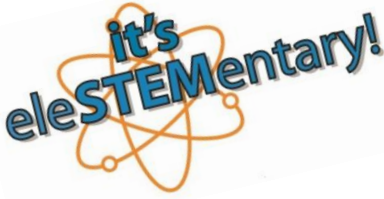
Woodbrook Elementary School
15 Robin Road
Edison, NJ -08820

**it's
eleSTEMentary!**



Hosted by: Edison Township Public Schools





STEM DAY IN EDISON

9:00 – 9:55 a.m.	Welcome & Chris Anderson, Keynote Speaker
10:00 – 10:45 a.m.	Session 1
10:50 – 11:35 a.m.	Session 2
11:40 a.m. – 12: 20 p.m.	Lunch
12:25 – 1:10 p.m.	Session 3
1:15 – 2:00 p.m.	Closing and Raffle

Attention Edison Township Teachers:

Receive 1 **PDI** course credit by attending three sessions on STEM Day, April 26th and the iSTEM PDI on Wednesday April 30th.

See the PDI Brochure on line at:

<http://www.edison.k12.nj.us/PD>

SESSION 1		10:00 – 10:45 AM	
Event Title	Presenter	Room #	
EbD: Agriculture Around Us (Grades 1 and adapted for 2nd)	Maria (Mia) Gallagher, Wall Twp. Public Schools		
Exploring the Simple Machines STEM Style	Nick Beykirch, Bernards Twp. Public Schools		
Fifth grade environmental engineers present their findings and analysis of current global energy issues	Jill Grunewald, Edison G&T Teacher and Edison's 5th grade GT students		
Makerspaces and iSTEM Designs Come to Life Through Computer Controlled Machinery (CNC)	Shane Evans, Howell School Dist. & William Rumaker, W. Deptford School Dist.		
Rescue 911	Henry Harms, The College of NJ		
STEM in the Fifth Grade Classroom	Adam Sack, Edison Twp. Public Schools		
The Bridge from a Digital Book to a Classroom Activity	Dave Janosz, Teach Ingenuity		
The USA BMX STEM program.	Mike DuVarney, USA BMX		
Using Accountable Talk Stems to Improve Classroom Discussions	Kristine Riley, Edison Twp. Public Schools		
You're Teaching Engineering in September	Dr. Larry Siegel, Verona School Dist.		

SESSION 2		10:50 – 11:35 AM	
Event Title	Presenter	Room #	
Creativity & Divergent Thinking, K-5	Chris Anderson, NJ iSTEM		
EbD: Agriculture Around Us (Grades 1 and adapted for 2nd)	Maria (Mia) Gallagher, Wall Twp. Public Schools		
Exploring the Simple Machines STEM Style	Nick Beykirch, Bernards Twp. Public Schools		
Fifth grade environmental engineers present their findings and analysis of current global energy issues	Jill Grunewald, Edison G&T Teacher and Edison's 5th grade GT students		
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Using Accountable Talk Stems to Improve Classroom Discussions	Kristine Riley, Edison Twp. Public Schools		
You're Teaching Engineering in September	Dr. Larry Siegel, Verona School Dist.		

SESSION 3		12:25 – 1:10 PM	
Event Title		Presenter	Room #
EbD: Agriculture Around Us (Grades 1 and adapted for 2nd)		Maria (Mia) Gallagher, Wall Twp. Public Schools	
Exploring the Simple Machines STEM Style		Nick Beykirch, Bernards Twp. Public Schools	
Fifth grade environmental engineers present their findings and analysis of current global energy issues		Jill Grunewald, Edison G&T Teacher and Edison's 5th grade GT students	
Lessons Learned from Implementing iSTEM in the Elementary Classroom		Mary Mavroudas, Elementary Supervisor, Edison Twp. Public Schools	
Makerspaces and iSTEM Designs Come to Life Through Computer Controlled Machinery (CNC)		Shane Evans, Howell School Dist. & William Rumaker, W. Deptford School Dist.	
Rescue 911		Henry Harms, The College of NJ	
STEM in the Fifth Grade Classroom		Adam Sack, Edison Twp. Public Schools	
The Bridge from a Digital Book to a Classroom Activity		Dave Janosz, Teach Ingenuity	
The USA BMX STEM program.		Mike DuVarney, USA BMX	
Using Accountable Talk Stems to Improve Classroom Discussions		Kristine Riley, Edison Twp. Public Schools	
You're Teaching Engineering in September		Dr. Larry Siegel, Verona School Dist.	

KEYNOTE

Elementary iSTEM Education Primer

Description: STEM or Science, Technology, Engineering and Mathematics, is the education buzzword of the decade, and everyone is using it. The question is, amidst so much hype and misinformation, are you confident in your own ability, and that of those around you, to recognize, articulate and respond to the trends and implications of STEM education reforms? Through this entertaining, practical and dynamic presentation participants will 1) contextualize current trends, key-players, and issues; 2) develop a common language for engaging in related discourse; 3) examine the role of engineering, inquiry and design-based pedagogy in PK-12 classrooms; and 4) identify and prioritize the emerging implications and specific opportunities that stakeholders in Elementary education need to be aware of.

Presenter: Chris Anderson, NJ iSTEM

Creativity & Divergent Thinking, K-5

Sessions: 2

Description: Creativity has been at the top of Bloom's Pyramid since the year 2000, representing the highest level of cognitive engagement in the classroom, accompanied by a rich taxonomy of verbs which support a field of design-based pedagogy that is distinctly different from the pervasive inquiry approach models most teachers were trained in and rely on in their current practice. As a result, creativity is diminished and misunderstood as being too fuzzy or subjective to be taught and/or measured in schools. Participants in this workshop will learn how to facilitate Brainstorming methods, such as the Morph Chart, that they can use in their own classroom in order to foster students' creativity and innovation capacity in any academic context.

Presenter: Chris Anderson, NJ iSTEM

EbD: Agriculture Around Us (Grades 1 and adapted for 2nd)

Sessions: 1, 2, 3

Description: Discussion/Presentation: EbB in the Gifted and Talented Classroom. Using Agriculture as a springboard for STEM.

Presenter: Maria (Mia) Gallagher, Wall Township Public Schools

Exploring the Simple Machines STEM Style

Sessions: 1, 2, 3

Description: Participants in this session will have a chance to work with LEGO simple machines kits to build solutions to mechanical design problems. Teacher made demonstrations will be highlighted to make concepts easy to understand for any learner. Each teacher will be shown how math, science and engineering concepts can be taught within a hands-on problem solving context. Ideas will be shared about implementing this type of instruction at various grade levels. The idea of learning through play and discovery will be highlighted and modelled throughout the presentation.

Presenter: Nick Beykirch, Bernards Township Public Schools

Fifth grade environmental engineers present their findings and analysis of current global energy issues

Sessions: 1, 2, & 3

Description: Fifth Graders sharing their iSTEM research using BrainPOP, Reading A-Z, Britannica research as they show their opinions, backed up by research on what they believe will be the most efficient energy societies should use in the 21st century. Presentations on sustainability, history, economic viability, availability and impacts on societies will be shared by students of Woodbrook and James Madison Intermediate Schools using presentation technology such as PREZZI, GOANIMATE, SCRATCH; Powerpoint: PADLET; and GOOGLE+, as well as others.

Presenters: Jill Grunewald, Edison G&T Teacher and Edison's 5th grade GT students

Lessons Learned from Implementing iSTEM in the Elementary Classroom

Sessions: 3

Description: This session will provide the participants with information about our first and second year experiences with our iSTEM initiative across 10 elementary buildings. It will include our successes and challenges, with resources to support your future success in implementation.

Presenter: Mary Mavroudas, Elementary Supervisor, Edison Township Public Schools

Makerspaces & iSTEM Design Come to Life Through Computer Controlled Machinery (CNC)

Sessions: 1, 2, 3

Description: 3D Printers, Laser Cutters, Vinyl Cutters, and Mills, offer a stunning variety of opportunities in the design and technology classroom/environment. CNC machines provide amazing accuracy and speed in developing 2D and 3D shapes and models out of a wide range of materials, while still allowing the creativity of the student to be the driving force. Participants of this workshop will be able to design, create, and walk away with a custom CNC object that they made right in front of them.

Presenters: Shane Evans, Howell School Dist. & William Rumaker, W. Deptford School Dist.

Rescue 911

Sessions: 1, 2, 3

Description: Participants will engage in an exciting hands-on activity using the engineering design process (EDP) and inexpensive materials to solve a challenging problem based on an actual event. Learn about STEM and ELA connections and how to access the free 150 instructional guide that includes 15 additional activities, teacher guide and student handouts.

Presenter: Henry Harms, The College of NJ

STEM in the Fifth Grade Classroom

Sessions: 1, 2, 3

Description: Participants will experience hands-on STEM activities, as they relate to the grade 5 Engineering by Design building block for Urban Infrastructure. Fifth grade students will discuss their experiences with the Engineering Design Process and how this process has made them think more creatively and critically.

Presenter: Adam Sack, Edison Township Public Schools

The Bridge from a Digital Book to a Classroom Activity

Sessions: 1, 2, 3

Description: This session will highlight the children's iBook "Engineers Decide" and explore how it might be used to introduce a project about bridges using everyday materials. Suggestions for integration of math and science topics for a range of grade levels will be included.

Presenter: Dave Janosz, Teach Ingenuity

The USA BMX STEM Program.

Sessions: 1, 2, 3

Description: USA BMX, the governing body of bicycle motocross racing in North America, developed the first of its kind after school enrichment program combining STEM and cycling. The program is equal part education, equal part athletics and exercise. Specifically designed for kids ages 7 to 14, this eight chapter program has taken the after school world by storm.



The inclusion of BMX racing into the Olympic Games in 2008 has catapulted the popularity of the sport of BMX Racing to new levels. No other Olympic sport offers an officially sanctioned after school program in the United States.

Presenter: Mike DuVarney, USA BMX

Using Accountable Talk Stems to Improve Classroom Discussions

Sessions: 1, 2, 3

Description: Attendees will be introduced to the Accountable Talk Stems as they apply to the integrative STEM model of instruction. Topics will include why to use them, ways to integrate them, strategies for student use, and ways to model good discussions. Attendees will be involved in actually using the talk stems in a discussion focused on an iSTEM topic.

Presenter: Kristine Riley, Edison Township Public Schools

You're Teaching Engineering in September

Sessions: 1, 2, 3

Description: In December of 2012, the K-12 Math/Science Supervisor informed me that I will be teaching EbD/STEM, water renewability, in September of 2013. I went online that evening and began to understand the EbD/STEM philosophy. Hands-on problem solving, collaborative student teams and real world engineering are essential. Solutions to problems are responses to world-wide clean water demands. This presentation will include working models characterizing runoff and downstream, Earth's salt and fresh water proportions, aquifers, Earth's natural sedimentary filtering system, scale/ proportion and water conservation. Students compose technical drawings in STEM notebooks. The (EDP), Engineering Design Process is consistently emphasized. My students quickly learned that there are many solutions to a problem. It's a great gig! Get involved!!!

Presenter: Dr. Larry Siegel, Verona School District