

August 8, 2012, Wednesday, Professional Development Session Description for Science

Session Abbreviation	Session Title and Description	Presenter	Am/Pm	Middle School/High School
A	<p>Show me the SPI's: Are you always trying to engage and reach every student? During this session various hands-on and visual strategies will be modeled to cover numerous science SPI's in 6th, 7th, and 8th grades. Teachers will be given the opportunity to participate in some hands-on activities, as well as share their ideas with their peers.</p>	<p>Danny Wages and Shannon Seigle (Tyner Middle Academy)</p>	AM/PM	Middle School
B	<p>Teach Like a Champion - Strategies that Work: This workshop will be based on the popular book, "Teach Like a Champion" by educational specialist Doug Lemov. In the book, Lemov outlines teaching methods that are common among master teachers in a variety of school settings. Many of the recommendations are simple, common sense strategies that will make an immediate impact on student performance and engagement. Workshop participants will have an opportunity to explore these methods through video clips, discussion, and collaboration and will leave with many strategies that can be implemented in the classroom on the first day of school. While this book is highly recommended for all educators, it is not required reading for teachers choosing to attend this session.</p>	<p>Kim Brown (Signal Mountain Middle/High School)</p>	AM	Middle School/ High School
C	<p>Inquiry through hands-on Engineering Design Process Labs: Learn how to use expeditionary learning practices that engage students through EDP investigations. Engage in activities that promote scientific thinking and engineering principles while providing a focused learning context. Use problem-solving skills to design and build a simple marble rollercoaster out of everyday classroom materials, construct a working hand from cardboard and rubber bands, and use aluminum foil to build a prototype boat. All activities shown can be used at any level.</p>	<p>Jennifer Casey (East Hamilton Middle/High School)</p>	AM/PM	Middle School/ Some High School
D	<p>We're Cooking in Here: The Gourmet Lab Are you hungry for science? Food takes that phrase to a whole new level as students have the opportunity to discover science concepts and learn experimental design skill through interaction with everyday foods. In this session we will make gummy invertebrates, Butterscotch candy and homemade butter. As you stuff your face, you may not even realize you are learning all about phase changes, Chemical Vs. Physical changes in matter, molecular structure and its properties, experimental design (independent and dependent variables), and data table construction. So put on your apron, safety goggles and chef hat and help your students start cooking up science!</p>	<p>John Cooper (Tyner High)</p>	AM/PM	Middle School/High School

E	<p>Next Generation Science Standards A look at the new Middle School Science Standards. Session will focus around comparing the new standards to what is currently in place and ideas for future implementation. Session will also discuss current and future pacing guides.</p>	Anthony Goad (Tyner Middle Academy)	PM	Middle School
F	<p>Girls, Gadgets, and Gigabytes: Developing and Sustaining Girls' Interest in STEM In this interactive, hands-on session, participants will discuss the challenges in keeping girls engaged in STEM subjects, learn proven methods for stimulating girls' interest in information technology, and experience "challenge activities" to use in the classroom. The skills gained in this session will aid in facilitating a fun, engaging, and interactive classroom environment.</p>	Hannah Vann (Girls, Inc. of Chattanooga)	AM/PM	Middle School/ High School
G	<p>Population decline in <i>Cryptobranchus alleganiensis</i>, the Eastern Hellbender The Eastern Hellbender, the largest Salamander in the western hemisphere, is the third largest species in the world. The largest are the Japanese and Chinese Giant Salamanders. The largest Hellbender was 29 inches and came from the Smoky Mountains in the 1950's. This discussion will cover natural history, decline in range states, population survey methods, and in situ and ex situ conservation projects.</p>	David Hedrick (Chattanooga Zoo)	AM Session	Middle School/ High School
H	<p>Alternative Energy Comparing and designing alternative energy systems for a home. Look at the needs/efficiencies/viability between solar, wind, and small hydroelectric systems. Consider the design requirements for each and compare small scale vs. large scale considerations and problems. This project could be used in Middle School classrooms and will look at engineering and science elements and the math required to design and compare the various types of systems.</p>	Meg Kiessling (University of Tennessee Chattanooga)	AM/PM	Middle School/ High School
I	<p>Critical and Creative Thinking for Engineering Success! This session will engage teachers in recognizing and applying critical and creative thinking to aid successful initiation of the design process as it applies to producing client desired and application successful devices. How this applies to the teaching of math and science and why UTC is putting high importance on assessing critical thinking will also be discussed.</p>	Cecelia Wigal (University of Tennessee Chattanooga)	AM/PM	High School
J	<p>When You Flush – You Start a Billion Dollar Operation: In this session participants will view a detailed animation of the Moccasin Bend Wastewater Treatment Plant. The modern sewer system is an engineering marvel. Homes, businesses, industries, and institutions throughout the modern world are connected to a network of below-ground pipes which transport wastewater to treatment plants before it is released to the environment. Educators will: Learn why wastewater treatment plants are important, Have a better understanding of the complex operation involved in the flow of used water from a community, What happens in a wastewater treatment plant, Learn how bio-solids recycling is a beneficial technology for a better environment, Learn some of the special challenges of treating wastewater, Learn the facts about wastewater treatment, Learn what your community is doing, and understand the value of wastewater treatment.</p>	Joyce Snyder (Moccasin Bend Treatment Plant)	AM/PM	Middle School/High School

K	Open Street Mapping (OSM) – Want an exciting FREE internet based tool to use in your classroom that students love to work on and even get possessive of their work? This workshop will take teachers through the world of OSM-POTLASH and teach them how to map in our science course work for real world application. This will help with the problem we all have in meeting the Engineering/Modeling/Technology standards that we all face today.	Leah Keith and Randy Hale (Red Bank High School and North River Geographic Systems, Inc.)	AM/PM	High School
L	NSTA and NSTA Learning Center The primary goal of this session is to make teachers aware of NSTA’s Learning Center opportunities including Online PD and Portfolio, PD Indexer, and Discussion Boards. Finally teachers will get some free samples of other materials offered by NSTA. Includes the personal library, Sci-Packs, Sci-Guides, Web Seminars, Podcasts, Online Courses, NSTA Press Books, and Journal Articles.	Kendra Young (NSTA Learning Center)	AM/PM	Middle School/High School
M	Alternative Energy This is an all-day session (including both morning sessions) for teachers who did not attend the summer course and will be teaching Alternative Energy this year.	David Wehunt (Soddy Daisy High School)	All Day	High School

Grade/Course Level Sessions

Abbreviation	Grade/Course Level Session
6	6 th Grade Science
7	7 th Grade Science
8	8 th Grade Science
Phy	Physical World Concepts and Physics
Bio	Biology
Chem	Chemistry
Oth	Other Sciences