NGSS and Teacher Professional Development

OCDE Short and Long Range Support for PreK-12 Science Teachers
NGSS and Teacher Professional Development
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Orange County Department of Education

NGSS Implementation Timeline

- November 2013: SBE adopts the Middle School Progressions "integrated" model as the preferred model
- December 2013: SEP re-convenes to develop an alternative "discipline-specific" option for LEAs
November 2011-April 2012
CA State Review Team Provides Feedback to Achieve
(Member of SRT-OCDE Science Coordinator)

April-May 2012
NGSS First Draft Public Review

Preparing for Public Review of the

Next Generation Science Standards for Today’s Students and Tomorrow’s Workforce
May 2012-June 2013

WRITE A SOLID SECOND

CA State Review Team Provides Feedback to Achieve for NGSS Second Draft

In partnership with Riverside County of Education, Orange County Department of Education Office of Academic Content presents

Science Notebooks: A Powerful Science Program

Science teachers worked collaboratively to design a science teaching program that has shown great gains in student achievement. We invite you to be a part of our collaboration team. Highlights of the program include the use of SCIENCE NOTEBOOKS as the tool to successfully implement:

- Differentiated Instruction
- Literacy Development
- Cooperative Learning
- Critical Thinking & Inquiry
- Assessment & Feedback
- Reflections
- Interventions

Be prepared for an experience that will equip you with the tools necessary to implement effective science notebooks in your classroom. This workshop is perfect for elementary teachers, middle and high school science teachers.

Date: Tuesday, March 5, 2013
Venue: Teacher Created Materials
5301 Oceanus Dr.
Huntington Beach, CA 92649
Time: 9:00 a.m. – 3:00 p.m.

Registration Information:
http://www.ocde.k12oms.org/1248-67209
Cost: $50 per participant
This includes materials and continental breakfast.
Deadline to register is March 1, 2013.
No refunds for no-show participants.

For additional information, please contact:
Dean Gilbert, Coordinator at (714) 966-4291

The Orange County Department of Education Office of Academic Content may take photographs of participants at the event. These photographs will be used to document the event, promote events in written materials, post on the OCDE website and on the World Wide Web, and on the digital frame in the entry to the OCDE offices.

Individuals with disabilities in need of auxiliary aides and services may request assistance by contacting Sandra Pradyanata at (714) 966-4470.

March 2013 NGSS Common Core and Science Notebooking
Educational Robotics Hands-on Workshop for K – 8 STEM Teachers


Continuing Education Unit (CEU) Credit Available

When: Saturday, March 9, 2013
Where: Mathobotix Lab
5055 Jeffrey Road, Suite 325
Irvine, CA 92618
Duration: 8:00 a.m. – 12:30 p.m.

Pre-requisite: Interest to explore STEM through educational robotics. Appropriate for STEM Teaching Staff from K – 8 grade levels.

Limited spacing for 50 participants only. Refund policy provided.

Register Online at: http://ocde.k12oms.org/1248-67697

Workshop Materials: $25 – please remit payment prior to the date of workshop.

CEU units cost $18.00 payable by check. More instruction will be provided after the conclusion of the workshop.

Workshop Objective: Introduce robotics to K-8 STEM subject teachers and explore how it can be used as an alternative learning platform to teach STEM subjects. Robotics loaner program for robotics kit and related resources are available upon request.

Workshop Content and Learning Activities:
- Design, build, and program a robot using the LEGO® Mindstorms® kit.
- Explore and see how robotics can be used to promote student interest in STEM subjects.
- Identify ways to contextualize STEM concepts and teach in a hands-on lab using project based approach.
- Access available online resources to use robotics in classrooms and other alternative teaching environments.


Sponsored and Supported by:

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March 2013 Engineering, Robotics and NGSS

July 2013 NGSS Second Draft Public Review

Preparing for the Second Public Review

Next Generation Science Standards for Today’s Students and Tomorrow’s Workforce

Developed by:

Phil Lafontaine, Director
Professional Learning Support Division
California Department of Education

Dean Gilbert, Science Coordinator
Orange County Department of Education

July 2013

8
The Orange County Department of Education invites Principals and K-12 Science Teachers to a Town Hall Meeting to discuss the architecture and key issues related to the pending approval of the Next Generation Science Standards for California.

August 22, 2013
4:00 – 6:00 p.m.
Orange County Department of Education
200 Kalmus Dr.
Costa Mesa, CA 92626
Board Room

WHO SHOULD ATTEND?
- K-12 Principals
- K-12 Teachers of Science, specifically middle school teachers
- Curriculum Leaders

WHAT IS THE COST? Free

WHAT ARE THE EXPECTED OUTCOMES?
- Learn to read the standards and supporting architecture
- Understand the rationale and “storyline” used by the Science Expert Panel (SEP) to designate specific performance expectations for Grades 6, 7, and 8 to be recommended to State Superintendent Torlakson
- Gain awareness of NGSS implementation timeline and statewide assessment
- Opportunity for Q & A’s
- Opportunity to share perspectives

HOW DO YOU PARTICIPATE?
- Register online at: https://ocde.k12oms.org/1248-73798

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Individuals with disabilities in need of auxiliary aides and services may request assistance by contacting Sandra Pradyanata at (714) 966-4470. deadline for refunds is August 30, 2013. For additional information, please contact Dean Gilbert, Coordinator at (714) 664-4291 or dgilbert@ocde.ca.

**Workshop Objectives:**

- Understand the Habits of Mind and 21st Century Skills in science instruction.
- Use research-based reading strategies to increase reading comprehension using evidence.
- Use Common Core Standards to enhance inquiry-based learning.
- Build the Scientific and Engineering Practices into your existing inquiry-based, centrifugal science instruction.

**Location:** Orange County Department of Education

**Date:** September 14, 2013

**Time:** 7:30-8:45am Registration/Continental breakfast
8:15-9:00am Keynote: Next Generation Science Standards
9:00-10:15am Break
10:15-11:30am Breakout Session #1
11:30-12:15pm Lunch & Jazz Fest
12:45-1:45pm Breakout Session #2
1:45-2:30pm Lunch & Jazz Fest
2:30-3:30pm Breakout Session #3
3:30-4:30pm Raffle/Evaluation/Reflection

**Cost:** $75.00 per person; Registration includes symposium materials, continental breakfast and lunch.

Registration at: [insert OCDE website link here] Deadline for refunds is November 14, 2013. For additional information, please contact Dean Gilbert, Coordinator at (714) 664-4291 or dgilbert@ocde.ca.

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**Workshop Objectives:**

- Describe connections between Common Core and science.
- Incorporate the Habits of Mind and 21st Century Skills into science instruction.
- Use research-based reading strategies to increase reading comprehension using evidence.
- Use Common Core Standards to enhance inquiry-based learning.
- Build the Scientific and Engineering Practices into your existing inquiry-based, centrifugal science instruction.

**Location:** Orange County Department of Education

**Date:** November 12, 2013

**Time:** 8:15-4:00pm

**Cost:** $30.00 per participant

**Materials & refreshments will be provided.**

**Workshop Objectives:**

- Describe connections between Common Core and science.
- Incorporate the Habits of Mind and 21st Century Skills into science instruction.
- Use research-based reading strategies to increase reading comprehension using evidence.
- Use Common Core Standards to enhance inquiry-based learning.
- Build the Scientific and Engineering Practices into your existing inquiry-based, centrifugal science instruction.

**Location:** Orange County Department of Education

**Date:** December 3, 2013

**Time:** 8:15-4:00pm

**Cost:** $30.00 per participant

**Materials & refreshments will be provided.**

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**Workshop Objectives:**

- Describe connections between Common Core and science.
- Incorporate the Habits of Mind and 21st Century Skills into science instruction.
- Use research-based reading strategies to increase reading comprehension using evidence.
- Use Common Core Standards to enhance inquiry-based learning.
- Build the Scientific and Engineering Practices into your existing inquiry-based, centrifugal science instruction.

**Location:** Orange County Department of Education

**Date:** January 2014

**Time:** 8:15-4:00pm

**Cost:** $30.00 per participant

**Materials & refreshments will be provided.**
Come and explore ways to embed STEM and Engineering tasks into your existing science and kit-based program. Emphasis will be on the use of the Science and Engineering Practices from the National Science Framework and Next Generation Science Standards. We will provide an ‘easy-to-use’ planning matrix applicable to all grade levels to help embed STEM practices into your existing science program. You will participate in a variety of fun and challenging engineering tasks, using simple and economical materials that support the current California Science Standards. Bring your teacher’s edition science text or Science Kit manual.

For additional information, please contact:
Dean Gilbert, Science Coordinator at dgilbert@ocde.us
Maureen Allen, Consultant at mallen@ocde.us or call (714) 966-4291.

**DATE:** Tuesday, January 14, 2014

**VENUE:** Orange County Dept. of Education
301 East Aliso
Costa Mesa, CA 92626
Building D, Room 1002

**TIME:** 4:00 p.m. – 7:00 p.m.

**COST:** $20.00 per participant
Includes workshop materials and refreshments.

Register at: [OCDE’s website](http://ocde.k12.ca.us/1248-73898)
Deadline for refunds is January 7, 2014.

The Orange County Department of Education, Office of Academic Content, may take photographs of participants at the event. These photographs will be used to document the event, promote events in written materials, post on the OCDE website and on the World Wide Web, and on the digital frame in the entry to the OCDE offices.

Funding options: Participation in OCDE Office of Academic Content events may be supported through categorical funding sources such as Title I, Services for English Learners, Title VII, GATE, School Improvement, Special Education, and others.

Individuals with disabilities in need of auxiliary aides and services may request assistance by contacting Sandra Pradyanata at (714) 966-4470.

Fieldtrips to Successful STEM Academies

**Wednesday, October 30, 2013**
**8:00 am – 3:00 pm**
Clark Magnet High School
Glendale Unified School District

**Cost:** $20 per person
Includes round-trip bus transportation and lunch;
Minimum of 10 participants

Register at: [OCDE’s website](http://ocde.k12.ca.us/1248-80072)

Schedule for the Day
7:30 am - Meet at OCDE front parking lot
8:00 am - Departure
9:00 am - Arrive at Clark Magnet
9:00 am - 12 Noon - Tour of STEM Facilities
12:00 – 1:00 pm - Lunch
1:00 – 2:00 pm - Q & A with Administration & Staff
2:00 pm - Departure
3:00 pm - Return to OCDE

The mission of Clark Magnet High School is to provide academically talented and motivated students with advanced science and engineering education in a highly competitive atmosphere which will prepare them for college and careers in Science, Technology, Engineering, and Mathematics (STEM). Clark Magnet High School is a magnet school for the Glendale Unified School District for students in grades 9-12.
January-June 2014
Districts Forging Ahead with NGSS

NGSS Unit Development At A Glance

START

STEP 1 - IDENTIFY FIG:

- Identify the guiding questions that the team will work on in the NGSS Unit Development process.
- This should include questions that focus on the key learning experiences necessary to develop an understanding of the core ideas and disciplinary core ideas.

STEP 2 - ESSENTIAL DCIs:

- Identify the Essential DCIs (Disciplinary Core Ideas) that provide an understanding of the core ideas.
- These DCIs should be correlated with essential Disciplinary Core Idea(s); (a) the interdependence of science, engineering, and technology; (b) the influence of science, engineering, and technology on society and the natural world.

STEP 3 - KEY LEARNING EXPERIENCES:

- Identify the key learning experiences that are necessary to develop an understanding of the core ideas.
- These experiences should be correlated with essential Disciplinary Core Idea(s).

STEP 4 - SCIENCE & ENGINEERING PRACTICES:

- Identify the Science and Engineering Practices that are necessary to develop an understanding of the core ideas.
- These practices should be correlated with essential Disciplinary Core Idea(s).

STEP 5 - IDENTIFY COMMON CORE MATH, ELA & SCIENCE & ENGINEERING PRACTICES:

- Identify the Common Core Math, ELA, and Science and Engineering Practices that are necessary to develop an understanding of the core ideas.
- These practices should be correlated with essential Disciplinary Core Idea(s).

STEP 6 - DEVELOP LEARNING TARGETS:

- Identify the learning targets that will support the development of an understanding of the core ideas.
- These targets should be correlated with essential Disciplinary Core Idea(s).

STEP 7 - SUMMATIVE & FORMATIVE ASSESSMENTS:

- Identify the summative and formative assessments that will support the development of an understanding of the core ideas.
- These assessments should be correlated with essential Disciplinary Core Idea(s).

STEP 8 - INSTRUCTIONAL SEQUENCE:

- Identify the instructional sequence that will support the development of an understanding of the core ideas.
- This sequence should be correlated with essential Disciplinary Core Idea(s).

FINISH

Spring-Summer-Fall 2014
What’s Next in Professional Learning?

ORANGE COUNTY DEPARTMENT OF EDUCATION
OFFICE OF ACADEMIC CONTENT

Professional development centers on in-depth exploration for each of the NGSS Appendices.

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SPRING-SUMMER-FALL 2014
Establishing Effective Bi-Directional Communication with OC School Districts

Lead STEM Practitioner Network

LSP Network Communication Protocol
Receiving/Sending a Communication from/to OCDE or OC STEM
**Professional Development Grant Awards**

**ESCAPE (Equitable Science Curriculum for Advanced Public Education)** will provide professional development for 120 Grade 3-5 elementary teachers to use the Visual and Performing Arts experiences in dance, music and art, to help English Language Learners gain a greater understanding of major science concepts and the academic language used to explain them. The project pairs teachers in six different districts with artist mentors from the Segerstrom Center for the Arts, who will coach them in using techniques from the arts to deliver lessons that bridge the language barrier.

**SYSTEMS (STEM-izing Young Scholars through Technology, Engineering, Mathematics, and Science)**, will establish a 3-year cohort of 70 teachers, from 7 school districts and 3 private schools, to provide intensive science and STEM professional development through the development and use of Project Based Learning projects for vertically-team teachers in grades 3rd through 8th. It will also establish a regional collaborative to serve in an advisory role for program direction. By Year 3, the cohort participants will serve as Teacher Leaders to share and sustain the strategies and STEM PBL units with their respective districts, developed during the program. Partners include: UCI, CSUF, and UCI.

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**Statewide NGSS Symposia**

**OCDE/LACOE Regional NGSS 2-Day Symposium**

May 22-23, 2014

**COMING SOON!**
FOR MORE INFORMATION

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Orange County Department of Education
dgilbert@ocde.us • (714) 966-4291