File ID Number	14-0144
Introduction Date	2-26-14
Enactment Number	14-0315
Enactment Date	2-26-14
By	

OAKLAND UNIFIED SCHOOL DISTRICT

Community Schools, Thriving Students

OAKLAND UNIFIED SCHOOL DISTRICT
Office of the Board of Education

To: Board of Education

From: Gary Yee, Superintendent

Subject: **District Submitting Grant Proposal**

ACTION REQUESTED:
Approval and support by the Board of Education of District applicant submitting grant proposal for OUSD schools for fiscal years to accept same, if granted, in whole or in part, pursuant to the terms and conditions thereof and to submit amendments thereto, for the grant year, if any.

BACKGROUND:
Grant proposal for OUSD schools for the FY14-15 fiscal year was submitted for funding as indicated in the chart below. The Grant Face Sheet and grant application packets are attached.

File I.D #	Backup Document Included	Type	Recipient	Grant's Purpose	Time Period	Funding Source	Grant Amount
			Oakland Unified School District Leadership Curriculum and Instruction Science Department	Funds for K-8 principal and teacher professional learning and resources to implement Next Generation Science Standards	June 1, 2014 to June 30, 2015	S. D. Bechtel, Jr. Foundation	$1,050,000.00

DISCUSSION:
The district created a Grant Face sheet process to:

- Review proposed grant projects at OUSD sites and assess their contribution to sustained student achievement
- Identify OUSD resources required for program success

OUSD received a Grant Face Sheet and a completed grant application for the program listed in the chart by the school.

FISCAL IMPACT:
The total amount of grants will be provided to OUSD schools from the funders.

- Grants valued at: $1,050,000

RECOMMENDATION:
Approval and support by the Board of Education of District applicant submitting a grant proposal for OUSD schools for fiscal year to accept same, if granted, in whole or in part, pursuant to the terms and conditions thereof and to submit amendments thereto, for the grant year, if any.

ATTACHMENTS: Grant Face Sheet, Proposal, Budget

File ID Number: 14-0174
Introduction Date: 2-26-14
Enactment Number: 14-0315
Enactment Date: 2-26-14
By:

OUSD Grants Management Face Sheet

Title of Grant: Cultivating K-8 Science in the Oakland Unified School District	**Funding Cycle Dates:** June 1, 2014 to June 30, 2015
Grant's Fiscal Agent: Oakland Unified School District	**Grant Amount for Full Funding Cycle:** $1,050,000
Funding Agency: S. D. Bechtel, Jr. Foundation	**Grant Focus:** Professional Learning for K-8 Science
List all School(s) or Department(s) to be Served: All middle and elementary schools	

Information Needed	School or Department Response
How will this grant contribute to sustained student achievement or academic standards?	As a result of this grant, all OUSD's elementary school teachers and middle school science teachers will be better prepared and resourced to teach science aligned to Next Generation Science Standards (NGSS). Principals will be prepared to become strong instructional leaders for science at their sites.
How will this grant be evaluated for impact upon student achievement?	Principal and teacher surveys, evaluations, and planning documents; student assessments and observations; tools and resources developed.
Does the grant require any resources from the school(s) or district? If so, describe.	No.
Are services being supported by an OUSD funded grant or by a contractor paid through an OUSD contract or MOU? **(If yes, include the district's indirect rate of 4.25% for all OUSD site services in the grant's budget for administrative support, evaluation data, or indirect services.)**	Yes, the district indirect will be covered by the grant. BaySci at the Lawrence Hall of Science and the Exploratorium will also be a contracted partnered with funding from grant.
Will the proposed program take students out of the classroom for any portion of the school day?	No.
Who is the contact managing and assuring grant compliance? **(Include contact's name, address, phone number, email address.)**	Caleb Cheung 4551 Steele Street, Portable J Oakland, CA, 94619 510-336-7613, caleb.cheung@ousd.k12.ca.us

Applicant Obtained Approval Signatures:

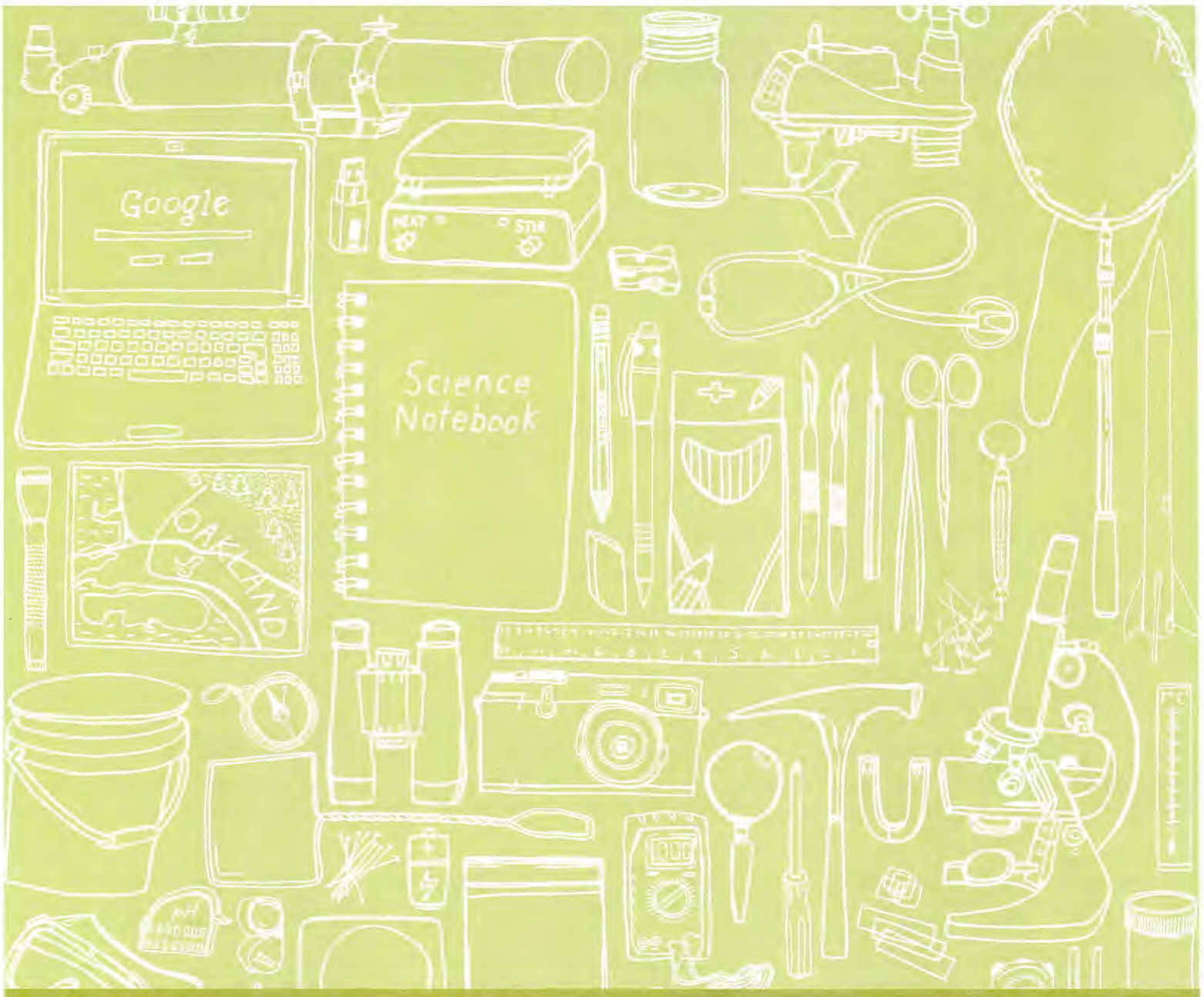
Entity	Name/s	Signature/s	Date
Principal	Caleb Cheung		12/20/13
Department Head	Kyla Johnson		12/20/13

Grant Office Obtained Approval Signatures:

Entity	Name/s	Signature/s	Date
Fiscal Officer	Vernon Hal		1/30/2014
Superintendent	Gary Yee		

2-27-14
David Kakishiba
President, Board of Education

2-27-14
Gary Yee, Ed.D.
Secretary, Board of Education



Cultivating K-8 Science

In the Oakland Unified School District

A Grant Application to the
S. D. Bechtel, Jr. Foundation

2014-15

The Oakland Unified School District is extremely grateful for the opportunity to partner with the S. D. Bechtel, Jr. Foundation to nurture K-8 science in Oakland and the region.

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GARY YEE Ed.D. Superintendent

OAKLAND UNIFIED SCHOOL DISTRICT

Community Schools, Thriving Students

December 16, 2013

Susan Harvey, Program Director
S.D. Bechtel, Jr. Foundation
P.O. Box 193809
San Francisco, CA 94119-3809

Dear Ms. Harvey:

Oakland Unified School District (OUSD) is grateful for S.D. Bechtel, Jr. Foundation's continued interest in and commitment to quality science education for all students. We thank you for your ongoing support in funding programmatic work in science, which has impacted tens of thousands of students and teachers in Oakland.

While OUSD's students have exhibited steady achievement gains in science in the past seven years, we have seen an exponential growth in student learning, teacher development, and principal commitment in the past few years. More elementary teachers have scheduled science instruction into their students' school day and are using the District-adopted science materials with integrity. Teacher and principal leadership has improved dramatically at every site.

We celebrate the academic gains in science while recognizing areas of inadequacy. When we delve deeper into the results, there remains an achievement gap between student populations (African American, Latino, English Language Learners), grade spans (elementary and middle school) and school sites. With the release of the Next Generation Science Standards, we have an opportunity to transform teaching and learning. While these new standards are challenging, they provide a road map to the key skills, knowledge and experiences necessary for our students to be successful and graduate prepared for college and careers. We are committed to accelerating science gains and supporting robust teaching and learning to benefit all students.

We will improve science education throughout the system over the life of the Strategic Plan. Each year we will identify targeted science improvement areas and create strategic and systemic solutions to accelerate student performance. Our work will be informed by the analysis of multiple measures that examine the work and its impact. We will also continue to partner with local and national experts in the field including SERP, BaySci, and the Exploratorium. We plan to call on them to help us refine the plan, evaluate the work, design and deliver the professional development, and design and refine curriculum aligned to both the Next Generation Science Standards and the Common Core State Standards.

With your support, we will expand the focus from K-5 to K-8 next year. Students will acquire deeper understandings and develop skills by building stronger teacher instructional delivery in these targeted grade level spans. While this work has already begun, we want to continue to shift the way leaders and teachers plan and implement instructional improvements in OUSD. Principals, in partnership with teacher leaders, district leadership, and community partners will target improvements in science, while informed by a data analysis of both student gains, as well as shifts in classroom and school wide practices.

Each year District leadership and partners will support multiple summer institutes and yearlong professional development for teachers and teacher leaders. We will also continue our successful principal professional development series to increase site leaders' capacity to design, plan, implement, monitor, and evaluate improvement efforts science.

1000 Broadway, Suite 300, Oakland, CA 94607

510.879-8200 ph
gary.yee@ousd.k12.ca.us | www.ousd.k12.ca.us

As we carry out the work plan presented in the enclosed proposal request we will explore additional ways to strengthen implementation and address scale and sustainability challenges especially during these times of fiscal hardship.

We thank you for continuing to support our work and look forward to the work ahead.

Sincerely,

Gary Yee, Ed.D.
Superintendent

Maria Santos
Deputy Superintendent
Instruction, Leadership & Equity-in-Action

EXECUTIVE SUMMARY

Executive Summary

Oakland Unified School District (OUSD) serves the children, youth, and families of the City of Oakland, California. Founded in 1865, OUSD operates 87 regular public schools that serve over 36,000 students. Students of color make up over 86% of the student population with 42% Latinos and 29% African Americans. 69% of OUSD students are eligible for free and reduced lunch, and approximately 25% of students live in public housing. Nearly one third of the students are English Language Learners, 76% of whom are native Spanish speakers. In spite of many challenges, a core part of the OUSD Strategic Plan is to graduate all students ready for college and career.

Over the past eight years, OUSD has nurtured a districtwide elementary science program to prepare students for their future. The program includes a science board policy with a minimum number of required science instructional minutes, a system for providing FOSS curriculum materials to every classroom three times a year, districtwide assessments, a wide range of professional learning opportunities for teachers, support for teacher leadership at every school, a professional learning series for principal, thirteen Science and Literacy Cohort schools that are focused on deep science implementation, and award winning citywide science events. This work is supported by a dedicated central district office that includes the Superintendent, the Associate Superintendent, and the Regional Executive Officers who share the commitment of the Science Department.

Thanks to the support from the S. D. Bechtel, Jr. Foundation and many other partners and funders, Oakland has emerged as one of the top district Science Departments in California. With the completion of the Next Generation Science Standards (NGSS) and the adoption by California Department of Education (CDE) this past year, Oakland continues to actively prepare teachers and principals to engage and utilize the standards to transform science learning in every classroom. Oakland is now positioned to become an early adopter of the standards in California.

In order to implement a systemwide plan for NGSS, the foundational science work in elementary science needs to extend into middle school. The overall work will address three major goals in 2014-15:

- Goal 1 - Develop instructional tools, curriculum, and resources for K-8 teachers and classrooms aligned to the NGSS.
- Goal 2 - Foster teacher expertise in content, skills, and practices along a continuum aligned to the NGSS.
- Goal 3 - Continue to build science instructional leadership for teacher leaders, principals, and district administration.

EXECUTIVE SUMMARY

The three goals are embedded in seven major areas of work outlined in this proposal:

1. Curriculum & Assessment
2. Teacher Professional Learning
3. Teacher Leadership
4. Principal Leadership
5. Family & Community Outreach
6. Partnerships
7. Impact beyond Oakland

We seek funding from the S.D. Bechtel, Jr. Foundation for a grant in the amount of $1,048,058 to support the OUSD Science Department's overall mission for grades K-8 during the 2014-15 school year. The funding directly supports 884 elementary teachers at 54 schools and 70 middle school teachers at 20 schools; and in turn, serve over 27,000 students.

PROJECT DESCRIPTION

Project Description

Oakland Unified School District (OUSD) serves the children, youth, and families of the City of Oakland, California. Founded in 1865, OUSD operates 87 regular public schools that serve over 36,000 students. Students of color make up over 86% of the student population with 42% Latinos and 29% African Americans. 69% of OUSD students are eligible for free and reduced lunch, and approximately 25% of students live in public housing. Nearly one third of the students are English Language Learners, 76% of whom are native Spanish speakers. In spite of many challenges, a core part of the OUSD Strategic Plan is to graduate all students ready for college and career.

Over the past eight years, OUSD has nurtured a districtwide elementary science program to better prepare students for college and a career. What started as a science materials resource center has evolved into a districtwide system of support and innovation for science education. Thanks to the on-going support from the S. D. Bechtel, Jr. Foundation and many other partners and funders, Oakland has emerged as one of the top district Science Departments in California with a team of fifteen specialists, coordinators, and administrative staff. The Department also supports health, garden, and physical education in the District.

The program includes a science board policy with a minimum number of required science instructional minutes, a system for providing FOSS curriculum materials to every classroom three times a year, districtwide assessments, a wide range of professional learning opportunities for teachers, support for teacher leadership at every school, a professional learning series for principal, thirteen Science and Literacy Cohort schools that are focused on deep science implementation, and award winning citywide science events. This work is supported by a dedicated central district office that includes the Superintendent, the Associate Superintendent, and the Regional Executive Officers who share the commitment of the Science Department.

The ongoing implementation of the Common Core State Standards (CCSS) for Mathematics and English Language Arts (ELA) serves as an important acknowledgement of the OUSD plan for CCSS implementation which involves curriculum units, assessments, professional learning, and teacher leaders and principals at all sites to facilitate the transition. The Science Department participates in ongoing planning and discussion of the Common Core Implementation Plan in order to effectively integrate and coordinate professional learning in other key subject areas. For example, non-fiction reading and writing is emphasized in the Common Core. The Science Department has co-developed the Science Writing Tasks with the ELA Department and uses grade level content expectations for science as the subject of the writing tasks.

PROJECT DESCRIPTION

With the completion of the Next Generation Science Standards (NGSS) and the adoption by California Department of Education (CDE) this past year, Oakland continues to actively prepare teachers and principals to engage and utilize the standards to transform science learning in every classroom. Preparation began two years ago with a focus on science and engineering practices in many of our professional learning settings. Oakland is now positioned to become an early adopter of the standards in California. As a result, this proposal will build upon prior work that focuses on supporting and building the tools and resources for implementing the new standards at all grade levels.

A five year implementation timeline has been developed for the elementary and middle schools, and also represents our current plans for building a successful and NGSS aligned science program. See Appendix A and B for details. Much of the work is dictated by the CDE's timeline for NGSS implementation listed below. It necessitates a slightly delayed plan for the science work in Oakland as it might be counterproductive to develop a complete curriculum or assessments before knowing the state's implementation plan and the available future resources.

2013 - NGSS is adopted
2014 - State NGSS implementation team is formed
2015 - NGSS framework and implementation plan is completed
2016 - NGSS Assessments is developed
2018 - Instructional materials adoption initiated

Although 6-8th grade science work has continued on a parallel developmental process over the past eight years, progress has been significantly limited by funding and staffing. These constraints are not because of a lack of interest or priority, but rather, it is due to the available grants being focused at the elementary level. With additional support from the S.D. Bechtel, Jr. Foundation, the OUSD Science Department will be able to provide a systemwide strategic plan for the middle school science program that builds on the successes of the elementary program.

On a broader scale, the theory of action for improving student achievement in science centers on five key areas: central district leaders, school site leadership, teachers, the classroom, and students. It is our belief that if central leadership provides quality professional learning, appropriate resources, and accountability that supports the implementation of innovative practices in science, and if site leadership shares that responsibility and creates the culture, conditions, and competencies necessary at each school site, then teachers will develop science knowledge for teaching and use the inquiry cycle to shift their professional practices, and implement those practices in the instructional core in every classroom for every student; and in turn, students will shift their practices, resulting in increased achievement. A detailed description of this Theory of Action is provided in the following table.

PROJECT DESCRIPTION

OUSD Theory of Action for Improving Student Achievement in Science				
Central Leaders	Site Leaders	Teachers	Classrooms	Students
If **Central Leadership**[1] provides quality professional learning, appropriate resources, and accountability that supports the implementation of innovative practices in science,	And if **Site Leadership**[2] shares that responsibility and creates the culture, conditions, and competencies necessary at each school site,	Then **Teachers** will develop science knowledge for teaching and use the Inquiry Cycle to shift their professional practices,	And they will implement those practices in the Instructional Core of every **Classroom** for every student,	And in turn, **Students** will also shift their practices resulting in increased achievement.
• Develop and manage a vision with clear goals • Promote professional capital • Nurture the academic demand of the content and curriculum, and understand grade level expectations • Employs evidence-informed decision making • Allocate resources strategically • Model the collaborative practices envisioned for sites and students	• Develop and manage a vision with clear goals • Develop and build high functioning teams within schools • Create a culture of observation and feedback, implement an evaluation cycle, use effective coaching strategies, and engage courageous conversations in service of student achievement • Build strong curriculum and content, understand grade level expectations, use data for instructional decisions • Gather, compile, use, and communicate evidence and data competently as a lever for change	• Understand deeply the science they are teaching • Reflect constantly on their practice • Build their human capital through social capital • Use the Inquiry Cycle and formative assessment evidence in collaboration with each other to plan and adjust instruction • Keep parents and other partners informed and engaged • Work with school leaders to support change efforts • Connect everything back to their students	**Instruction** • Provide students with common engaging and relevant sciences experiences • Focus on deeper understanding through academic discussions, writing, and reading • Use sound pedagogical strategies (e.g., hands-on, science talk, and scaffolds) • Connect science and literacy to accelerate language learning for ELs. • Teach, model, and reinforce socio-emotional competencies • Hold students accountable for explaining their reasoning **Curriculum** • Focus on the 3 dimensions of NGSS • Create new units or adapt current units aligned to NGSS **Assessment** • Use formative assessment strategies • Analyze student work and engage around key science concepts	• Communicate their reasoning effectively through **academic discussions**, revised explanations, and viable arguments • Perform well on **performance tasks** and other assessments that require explanation and reasoning • Build a positive science identity and be metacognitive about their learning with a **growth mindset**

[1] EXOs, LCI, QAA, FSCP, External Partners, etc, [2] Principals, Assistant Principals, Site-based Teacher Leaders and Coaches

In order to implement a systemwide plan for NGSS, the OUSD Science Department will focus on three major goals in 2014-15.

Goal 1 - Develop instructional tools, curriculum, and resources for K-8 teachers and classrooms aligned to the NGSS.

Goal 2 - Foster teacher expertise in content, skills and practices along a continuum aligned to the NGSS.

Goal 3 - Continue to build science instructional leadership for teacher leaders, principals, and district administration.

PROJECT DESCRIPTION

The three goals are embedded in seven major areas of work, which are further outlined in this proposal and include the following:

1. Curriculum & Assessment
2. Teacher Professional Learning
3. Teacher Leadership
4. Principal Leadership
5. Family & Community Outreach
6. Partnerships
7. Impact beyond Oakland

We seek funding from the S.D. Bechtel, Jr. Foundation for a grant in the amount of $1,048,058 to support the OUSD Science Department's overall mission for grades K-8 during the 2014-15 school year. The funding directly supports 884 elementary teachers at 54 schools and 70 middle school teachers at 20 schools; and in turn, serve over 27,000 students. While the overall science work is fully outlined in this proposal, the funding request covers only certain portions as described in the budget.

PROJECT DESCRIPTION

CURRICULUM & ASSESSMENT

Curriculum and Assessment is the foundational focus of the Science Department. Given the recent adoptions of both the CCSS and NGSS, new tools and structures must be developed that will provide strong and accessible resources to support teachers during this time of transition. The subsections below summarize prior achievements and outline one year goals for improvement in the elementary and middle grades.

Elementary

FOSS Curriculum

The FOSS curriculum serves as the District's foundation for elementary science teaching. Since its adoption in 2007, a system for maintenance, delivery, rotation, and refurbishment has been supported by the district and partially funded by the S. D. Bechtel Jr. Foundation. In moving towards sustainability, the District is funding the future implementation costs of the FOSS curriculum. While NGSS covers a different sequence of standards than the current FOSS kits, OUSD will continue to use the curriculum for two more years until the CDE provides new guidelines for curriculum. In the meantime, the projects below will help bridge the current FOSS curriculum with NGSS.

Science Instructional Minutes

OUSD will continue to mandate the minimum instructional minutes in the Board Policy passed in May 2010. This includes 60 minutes (K-2) and 90 minutes (3-5) per week. These expectations are now a part of each schools master schedule and a component of school plans completed every spring. Many schools are exceeding these minimal minutes in order to more fully teach the FOSS curriculum and cover the standards. Having explicit time for science instruction is even more important with the transition to NGSS.

Science Writing Task (SWT)

In 2012, the Science Department and the English Language Arts Department has collaborated in designing the Science Writing Task (SWT), which is a process writing assessment based on science content found in the 3rd, 4th, and 5th grade FOSS kits. They assess the ability of students to evaluate a scenario. Each task involves multiple science related variables. Students have to choose the best solution for the situation by writing in a well-structured opinion essay. It was developed in response to the need for deeper content writing and to connect the CCSS-ELA writing standards to NGSS's argumentation practices.

The Science Department and the English Language Arts Department are still determining the future implementation schedule of the SWT as the district adopts a new writing curriculum, but is currently administered three times a year for each of the three FOSS kits. The SWT is an on-going project

between the two departments. The assessment will be reviewed and revised by a team with members from the two departments.

Science Instructional Reflection and Assessment (SIRA)

The SIRA is an instructional resource that helps focus and deepen the teaching of the FOSS science modules. It is anchored by clear learning goals, encourages frequent formative assessment, and leads to a single summative assessment for each FOSS modules. The SIRA begins with a conceptual framework that tightly outlines the most important concepts, science practices, and crosscutting concepts that are addressed in a particular FOSS module. A lesson-by-lesson instructional roadmap outlines connected focus questions, key concepts, and learning objectives. Suggestions for assessing each objective through writing or discussion prompts are offered, including optional scaffolds and expected student responses. The instructional plan culminates in a written assessment which is designed from a pool of existing FOSS assessment items as well as ones that are developed internally. The assessment covers science concepts as well as crosscutting concepts and practices from NGSS with a focus on higher-order thinking skills and evidence-based reasoning as emphasized in the Common Core State Standards.

During the 2013-14 school year, SIRAs for the three 3rd grade FOSS kits were developed by the Elementary Science Team with input from teacher leaders and from BaySci. Piloting was completed by volunteers and teachers in the Science & Literacy Cohort schools. Overall, the SIRA was very well received by teachers. Additionally SIRAs for 4th and 5th grade will be developed and piloted in the 2014-15 school year. (See Appendix C for a sample Third Grade SIRA)

Other Instructional Resources

Additional tools for supporting NGSS include:

- 5X8 Card – an evidence gathering and observing tool for student learning in K-12 science classrooms. Created and revised over the past year, it is used in coaching and principal/peer observations. The compendium for this card is to be completed by June 2015 and refined over the following year. (See Appendix D)
- K-5 FOSS Curriculum Guides – new tools for bridging the FOSS curriculum with NGSS Practices and Crosscutting Concepts, literacy integration, ELA instruction, and other resources for teachers. Each guide will also include recommended instructional sequences based on the amount of instructional time available each trimester. New topics in NGSS, but not in the FOSS curriculum will be added. Topics not aligned to NGSS will be deemphasized. The SIRA will eventually become the Curriculum Guide for grades 3-5. Development will take place during the 14-15 school year.

Middle School

MS Curriculum Development Team

OUSD will be adopting the CDE approved, integrated NGSS sequence for middle school. The previous California Science Standards have separated earth, life, and physical science content standards correspondingly into grades six, seven, and eight. However, NGSS includes earth, life, and physical science content in each of the three grades. This presents a few challenges for implementation. No curriculum currently exists that represents these new standards. It is very difficult for teachers to modify or develop curriculum that truly integrates these traditionally separate science disciplines. Also, most science teachers only have a background in biology, chemistry, physics, or earth science. With the integrated approach, teachers will need content knowledge in all of these disciplines to be successful.

To solve these challenges, the Science Department will bring together teams of teacher leaders to develop model units based on the work of past curriculum development projects and provide extensive professional learning opportunities. The work is starting this year with the development of sample NGSS aligned, pilot lessons in grades 6-8. These week long mini units are intended to be innovative test cases for addressing NGSS and include protocols and formative assessments, representing the best thinking of the Science Department to date.

These pilots will in turn inform the larger scale work at each grade level. Small teams of experienced teachers will spend four weeks during the summer of 2014 to create one complete 6-12 week curriculum unit for each grade level that addresses the NGSS Practices, Crosscutting Concepts, and Disciplinary Core Ideas. The lessons will also incorporate protocols and activities to guide students in the three districtwide foci: academic discussion, close reading of complex text, and evidence-based writing. Whenever possible, lessons should have a hands-on and minds-on focus. They will also include both scientific inquiry and engineering problem-solving. The Curriculum Development Team will incorporate and adapt from existing lessons, and receive additional support from BaySci and from the Exploratorium.

All middle school teachers will be invited to pilot the completed units during the 2014-15 school year. Revisions will be made based on teacher feedback and formative assessment data. The units will be presented during the NGSS Middle School Summer Institute in August and during the monthly second Wednesday District Science PL sessions. Additional content focused session will also be provided to support the science content expertise of our teachers.

All curriculum and print materials will be consistently formatted and made available electronically on the Science Department website. While every attempt will be made to design high quality

investigations that require inexpensive and readily available materials, some essential equipment and materials will be purchased, organized, and centrally distributed.

TEACHER PROFESSIONAL LEARNING

Professional learning (PL) not only provides opportunity for teachers to develop their teaching skills, but also establishes communities who are focused on improving their work together. Teachers vary tremendously in terms of years of experience. Many are isolated at school sites and have few if any colleagues who teach the same grade level or course. The professional culture and resources available at schools also differ significantly. These variables create barriers to equitable implementation of NGSS.

The table below represents the various PL opportunities provided to different groups of teachers. Some learning opportunities are provided to all teachers while others are more intensive or offer specialized experiences based on differentiated needs.

Participants	Elementary	Middle School
All Teachers	• Elementary Site Based Professional Learning (9 hours)	• Secondary Districtwide Science Professional Learning (15 hours) • Buy Back Day PD Sessions (2 days) • Middle School Site-Based Professional Learning (15 hours)
Some/Most Teachers	• Elementary NGSS Summer Institute (5 days) • Buy Back Day PD Sessions (2 days) • Coaching Support (3x a year)	• Middle School NGSS Summer Institute (5 days) • Middle School Novice Teachers Coaching (30 hours)
Selected Teachers	• 5-6th Transition Focus Group (8 hours) • NGSS Video Project (4-6 hours)	
Optional	• Science Fair and Family Science Workshops (4 hours)	

Elementary Site Based Professional Learning

Starting in 2013 and continuing into 2014-15, each elementary school is expected to host at least six science professional learning sessions each year for their entire staff, including transitional kindergarten teachers. Most sessions take place during staff professional development times on Wednesday afternoons for 90 minutes each.

The expectation is that the Lead Science Teacher will be primarily leading these sessions using a package of materials developed by the District Elementary Science Team. Elementary Specialists are available to lead/co-lead at least one session per site or offer planning support. The sessions will be

based on the needs of the school based on their Instructional Leadership Team's input, instructional rounds, and walk-throughs by principals. Other teacher leaders from current or past science projects (CAL:BLAST, PRACTISE, BAYSCI Leadership, BASP) will also be encouraged to participate.

Most sessions weave in the practices from the Next Generation Science Standards (NGSS) and components of the Common Core State Standards (CCSS) which allows transition to the new standards. Explicit connections will be made between science instruction and access to CCSS-ELA. Currently, twenty-seven sessions have been developed with supporting materials, covering various topics such as science notebooking, literacy in science, science fair and inquiry, and assessment. See Appendix E for detailed descriptions of each session.

Secondary Districtwide Science Professional Learning

For the past three years, OUSD has scheduled districtwide, monthly professional learning time for secondary science and other content areas. Taking place on shortened Wednesdays, they allow most teachers to participate during their contractual hours for 1.5-3 hours in the afternoon.

In the past, the secondary science sessions have focused on specific aspects of the Science and Engineering Practices initially found in the National Research Council's K-12 Science Framework, and now in the NGSS. Topics included student reasoning, science investigation protocols, questioning strategies, and academic discussions. Teachers participate in hands-on activities and collaborate in cross-site, content-specific groups to plan how to embed the resources. Time permitting, teachers assemble in site teams to further their collaborative inquiry with the goal of vertical and horizontal alignment. All materials, protocols, and tools from each professional learning session are accessible to teachers on-line.

In 2014-15, the content of these sessions will include additional protocols and tools, along with material from the Curriculum Development Team. Additionally, up to 6 hours of professional learning will be focused on the strategic integration of math and science to support the 50% of middle school teachers who teach both math and science instruction to the same group of students in a single cored classroom.

Middle School Site-Based Professional Learning

In addition to attending the Secondary Districtwide Science Professional Learning sessions, each school site is expected to devote an additional Wednesday afternoon each month for their science department to engage in collaborative inquiry. The purpose of this time is for improving individual teaching and aligning practices and expectations across the department. Topics include:

- Teambuilding
- Developing a common vision
- Identifying and researching strategies to improve student learning

- Refining an investigable question and designing a plan
- Implementing the strategy across the grades and collecting student work
- Analyzing student work and or gathering observation data
- Revising the strategy or protocol for iterative cycles
- Documenting the work and lessons learned

These sessions are planned and facilitated by Science Teacher Leaders, and are supported by the district monthly teacher leader sessions as described in the next section of the proposal.

NGSS Summer Institutes

Elementary Summer Institute

June 2014, elementary schools will be invited to send teams of 3-5 teachers to participate in a one week NGSS Elementary Summer Institute. The goal is to build their academic science content knowledge, strengthen their pedagogical skills, model the FOSS curriculum as it intersects with literacy and language development. The 60 participating teachers from 12-15 school sites will serve as a group of master science teachers at each of the participating schools. Afterwards, they will build the school's science capacity and contribute to science implementation and sustainability by working with colleagues during the school year. Principals will be asked to support their teachers to meet these goals.

Applications for schools will be available February 2014. Priority will be given to schools who have not been in past schoolwide science professional development projects. The goal is to support a new cluster of schools each year who have not received the support necessary to further their science program. In 2015-16, another cluster of schools will be selected to participate with the goal of eventually providing all 54 school sites with a deep professional learning and the necessary support to improve their science program.

The main theme of the Summer Institute will be on explicitly connecting the NGSS practices and the crosscutting concepts to FOSS science instruction. The summer work will engage teacher leaders in a careful reading of the K-12 Framework for Science Education and of the NGSS and an understanding of a preliminary timeline for implementation. The content of the institute will include:

- Supporting evidence-based writing through a deeper use of science notebooks
- Modeling strategies for reading complex science texts
- Supporting academic discussions and argumentation as a means for interdisciplinary convergence with ELA and mathematics.
- Modeling strategies for language learning in science, with an emphasis on supporting English Language Learners (ELL) which includes literacy, language, discourse, home language, culture.

- Understanding the language demands of high impact NGSS practices (developing models, constructing explanations, engaging in argument, and communicating information).
- Planning for lessons and units that integrate NGSS practices and crosscutting concepts
- Focusing on formative and summative assessment through the SIRA.

Much of the content will be drawn from previous summer institutes and professional learning sessions using common language and structures. The Institute will be a mixture of large group for everyone and grade levels sessions with differentiated context for teachers of different backgrounds. Team planning time will also be provided to help teachers integrate the content into their instruction. Details of the Academy will be planned with BaySci, university partners, teacher leaders, and the elementary team in March 2014.

Additional follow up PL will be provided on Buy Back Days and through three onsite coaching visits during the school year. A smaller subset of teacher will participate in the NGSS Video Project. The details are described subsequent sections.

Middle School Summer Institute

Forty middle school teachers will spend five days in August to prepare their yearlong curriculum to align with NGSS. In teams, teachers at each grade will include the one unit created by the Curriculum Development Teams during the summer. Additional units and lessons will focus on incorporating NGSS practices into their existing curriculum. An emphasis will be placed on language based practices that includes using and developing science models, developing explanations, argument from evidence, and obtaining, evaluating, and communicating information. This focus will allow instruction to surface student reasoning and students to develop competency in the practices.

More specifically, the institute will provide tools in the following topics while providing time for teachers to write curriculum.

- Evidence-based discussion and writing
- Close reading of text
- Vocabulary development in context of concepts and models
- Strategies for English Language Learners
- Protocols for student collaboration
- Building a culture of inquiry in the classroom
- Scientific Models
- Science Investigations (not the same as Scientific Method)
- Engineering design process
- Student presentations

This balance has proved effective during the smaller summer institutes in 2012 and 2013. The majority of the content will be use tools and resources from previous professional learning sessions. A smaller subset of teacher will participate in the NGSS Video Project. The details are described below.

Buy Back Day Professional Learning Sessions

Buy Back Days (BBD) take place three times a year as a part of every teachers' work calendar. Historically, these days have been at the discretion of school sites, but in the last two years, the district has provided centralized PL events based on content areas. With the increase need to support CCSS and NGSS, almost all schools now attend the centralized Buy Back Day PL events.

In 2014-15, the Science Department will provide professional learning on October and January Buy Back Days for K-8 teachers. The elementary teachers who attended the NGSS Summer Institute will be primary participants in the elementary BBD session. They will be building and applying their learning from the summer. Science Resource Teachers will also be invited to participate. After a general session, there will be breakout sessions that focuses on close-reading strategies, writing with evidence, and academic discussions. Student work and videos from participating teachers will be incorporated. Teachers will also have time to plan and utilize the SIRA and new FOSS Curriculum Guides.

Middle school teachers will similarly build upon the NGSS Summer Institute, Second Wednesday PL and Site-based PL. As with all PL in 2014-15, there will be a major focus on curriculum development.

Elementary Coaching Support

Elementary Specialists will provide onsite coaching support to the following three groups:

1. Support the NGSS Summer Institute participants with three onsite coaching visits during the school year.
2. Work with teachers who are participating in the NGSS Video Project to plan, film, and edit teacher and student interactions representing best practices.
3. Provide technical assistance to the current 13 Science and Literacy Cohort schools up to 5 times a year. The purpose is to maintain a connection with these sites who have received intensive support for science teaching over the past two years, and support their leaders to assist with the science work at other sites. Depending on the need of the school, this could include meeting with the Lead Science Teachers and principal, attending ILT meetings and supporting teachers and principals during instructional rounds and walk-throughs.

Middle School Novice Teachers Coaching

Every year, 20% of OUSD's middle school science teachers are new to the district. Many are inexperienced with an Intern teaching credential and minimal training. These teachers have to

address the challenges of being a new teacher, contend with the demands of an urban context, and take on the increased demand of NGSS. Currently, there are no provisions for Intern credentialed teachers to receive coaching in most districts around the state. Coaching is only available for teachers who have received their Preliminary credential, and can then enter the Beginning Teacher Support and Assessment induction program (BTSA). This takes place usually, after two years of teaching for Interns.

In years past, Intern teachers have received support from veteran teachers through the TeamScience Project and have consistently identified the program as having the greatest impact on their teaching. Much of the coaching is built on explicit connections to other science PL. We plan on bringing back this program to support this critical group of approximately 12 teachers. The Science Department will recruit veteran coaches who have participated in TeamScience over the last five year to support Intern teachers. Coaches will be expected to:

- Meet weekly 1:1 with their Intern teacher
- Observe in their classroom monthly and debrief the observation
- Provide support: strategies, materials, curriculum
- Document their work together
- Engage in reflective cycles of inquiry and analyze student work
- Receive 12-15 hours of coach training provided by the Talent Development Office

5-6th Transition Focus Group

This group of eight 5th and 6th grade teachers will meet four times during the school year to explore the transition and articulate issues between elementary and middle school. The teachers will examine both 5th and 6th grade instructional strategies, student work, assessments (SWT, SIRA), and content in order to support and inform the larger K-8 work of the Science Department. All materials and input will be shared electronically on our website. The 6th grade teachers will also attend a portion of the Elementary NGSS Summer Institute.

NGSS Video Project

The NGSS Video Project will create a high quality video library of classroom instruction that model NGSS practices and tools. The implications and challenges of implementing NGSS require major changes in classroom practices. For many teachers, the NGSS is abstract and conceptual. There exists few current examples of what an NGSS aligned lesson or pedagogy looks like. Good videos can provide access to classrooms where this is beginning to take place. However, there is a paucity of science teaching videos with high production AND instructional value, especially for the purpose of science PL. In a professional learning setting, a video clip can capture the richness, challenges, and complexities of good teaching in a short amount of time.

PROJECT DESCRIPTION

While the use of video has increased exponentially on the internet and social media, it remains an underutilized tool for teacher and principal professional learning. The increase in technology investments and infrastructure due to CCSS/SBAC assessments offers new opportunities for systemwide innovations. Possible uses of video include:

- Various professional learning sessions with teachers, teacher leaders, and principals including in monthly district PD sessions, new teacher training, and principal PL
- Flipped learning, where participants are required to watch a video before attending a PL session, increasing the total amount of learning time
- Use of videos with students in classrooms for the purpose of setting expectations
- Practice for classroom observation tools

Over the past year, the OUSD Science Department has begun to pilot classroom filming to meet this need. Six videos have been produced so far and more will be created during the 2013-14 school year. The first few videos were produced in partnership with SERP, but now the project is completely managed by the Science Department. Most of the necessary equipment has been purchased. Expertise is being developed across the Department to plan, film, and edit footages to ensure high quality content, audio, and video. Planning tools and templates are being piloted for filming and editing, allowing us to produce the final product in as little time as possible. While not every filming session will produce usable footage, all efforts will be made to ensure that the right lesson, activity, and technical execution is present before a filming session begins. Although the work is still evolving, current guidelines are as follows.

- Each video will be 5-15 minute long and edited from 30-60 minutes of instruction to capture the most important components of teacher instruction and student interactions.
- Videos will focus primarily on tools and methods for engaging students in NGSS Practices, with the science content serving a secondary role.
- Videos will open with a brief teacher introduction and may feature best practices or teaching dilemmas.
- Clear protocols will be used with teachers and for the filming process.
- On-line platform for video sharing as videos will eventually be open source and available publically
- When possible, a package of digital resources for each video will be created. These include background material, handouts, student work, photographs, discussion questions, and presentation materials.

Currently, all the videos are focused on student writing, academic discussions, and student reasoning. These represent the District's priorities this year and allow for a common focus with the CCSS ELA and Mathematics efforts. The goal is to have at least 20 videos completed by June 2015 representing a

range of NGSS practices, K-8 grade levels, and demographics. With all the equipment already available, the major expenses are staffing time and stipends for teacher participation. An estimated 10-15 hours of staff time per video will be required.

The planning and filming process also provide professional learning opportunities for the teachers involved in video production as it requires them to reflect on their teaching and plan their lessons in detail. Teachers who have participated in the NGSS Summer Institute, curriculum development, and teacher leadership activities will be encouraged to participate.

Science Fair and Family Science Workshops

The Science Department will continue to offer workshops for K-8 teacher leaders and coordinators to help implement science fairs and family science events at school sites. Efforts will be made to take a more comprehensive approach to supporting family engagement. Additional details are in the subsequent Family & Community Outreach section.

TEACHER LEADERSHIP

Teacher Leadership has played an important role in the work of the Science Department over the last eight years. Initially, elementary teacher leaders (Lead Science Teachers) started as an operational role seven years ago for the purpose of FOSS curriculum implementation. The middle school teacher leaders served as mentors in the TeamScience project and also presented professional learning sessions at different district events. During the more recent three years, the roles have evolved into a stronger leadership role that includes management of science resources, planning time with principals, and professional learning for their site. Principals appoint teacher leaders and expected them to also serve on the school's Instructional Leadership Team. They meet regularly to establish site priorities and school-wide practices.

The district Science Department collaborates with the ELA and Mathematics Department to support a common teacher leadership model across all three content areas. Specialists and Coordinators in each Department meet twice a month to plan and coordinate the work that takes place during the Summer Leadership Institutes and Monthly Collaborative Meetings. Specific teacher leadership activities are described in detail below.

Summer Leadership Institute

The Summer Leadership Institute brings together science teacher leaders from each school for three days in August to focus on leadership development, facilitation skills, planning for school site science professional learning aligned to NGSS and CCSS (such as academic discussions, writing with evidence, reading complex text). Additionally, the larger district efforts to support social emotional learning (SEL) will serve as a foundation for much of this work. The schedule will also include common time for

the three Science, ELA and Mathematics teacher leaders from the same school to plan and identify site priorities for the year. Principals will also be invited to participate for a part of this time. This collaboration will help form the goals of the Instructional Leadership Team (ILT). The current plan is to have separate Leadership Institutes for elementary and middle school.

Monthly Teacher Leader Collaborative

Monthly Teacher Leader Collaborative meetings take place during school year to build on the themes of the Summer Leadership Institute. The goal is to establish communities of leaders for collaboration and learning. Over the course of the year, a total of 20 hours of follow up training, planning, and collaboration time will be provided.

For elementary teacher leaders (Lead Science Teachers), there will be an emphasis on greater leadership responsibilities as members of their schools' Instructional Leadership Team (ILT) and leading schoolwide professional learning sessions. As described previously, each Lead Science Teacher (LST) is expected lead or co-lead six professional learning sessions with their entire staff. Materials and training for the different sessions will be provided during the monthly meetings. Because most elementary teachers teach all subjects, it is very important to coordinate the work across different content areas. To this end, there will be two joint sessions a year with ELA and Mathematics teacher leaders.

Middle school teacher leaders have a slightly different role as they lead the science department at their school, have stronger science expertise, and work more closely with a smaller group of teachers. They also have an opportunity to share leadership with their science colleagues. Therefore, the focus of their leadership development centers on a deeper understanding of NGSS instruction, distributive leadership skills, and facilitating collaborative teacher inquiry sessions. The monthly meetings will be highly interactive and provide opportunities for problem-solving in Critical Friends groups. These sessions also provide ongoing feedback about districtwide needs that inform district level PL and resource development. The work at sites is documented and shared on-line for principals, ILT's, and support from other Science Teacher Leaders.

Elementary Science Resource Teacher Work Group

The Science Resource Teacher Work Group will continue to meet monthly. The goal is to support the ~15 school sites who have by science prep teachers, STIP subs, and other instructors who are responsible for teaching science to most or all students at their school. The meetings focus on making connections with classroom teachers for extending science instruction. This includes extending the hands-on science prep lessons into science literacy during ELA time. Participants will also continue to share successes and challenges through consultancies. Meetings take place in different teachers' classrooms in order to share classroom organization and management strategies.

Community Resources for Science

Membership to Community Resources for Science (CRS) provides additional resources for K-8 Teacher Leaders to support their schools. CRS offers hands-on activities in the classroom, but more importantly connects teachers with a network of scientists, museums, and external professional development programs in order to bring more science support to students. Over the past few years, CRS has been a partner in bringing the larger scientific community into OUSD classrooms.

PRINCIPAL LEADERSHIP

Principal Professional Learning Sessions

For the past three years, the district Science Department has supported elementary principal professional learning sessions for science education. Principals play a key role in the amount of science taught at the elementary schools. With No Child Left Behind and the emphasis on ELA and Mathematics, most elementary schools have significantly reduced or eliminated science instruction over the last 13 years. The focus on principal leadership has significantly helped to overcome these challenges. This year, science principal PL expanded into middle and high school.

For the 2014-15 school year, the district Science Department will continue to work with district leadership to provide 12-15 hours science professional learning to all elementary and middle school principals. The goal is to help principals to become strong instructional leaders and support their teachers to transition to NGSS and CCSS. Activities include:

- Conducting science investigation
- Analyzing instruction using classroom videos
- Developing action plans for their school site
- Using of tools to support teacher observation and feedback
- Gathering evidence from their instructional rounds and walkthroughs

Middle School principals will have an added component of focusing on collaborative cycles of inquiry facilitated by teacher leaders. This will allow them to better support their science departments.

Instructional Walkthroughs

In addition to the Professional Learning sessions, principals will spend 12-15 hours over the course of the year observing classrooms using protocols and various tools. The goal is to understand the instruction that is taking place in their science classes and apply the content presented at the principal PL sessions. The observations will take place through instructional rounds, regional site visits, and walkthroughs with their Executive Officer and Teacher Leader. The district Science Department will attend when possible and support actions steps resulting from the walkthroughs.

PROJECT DESCRIPTION

FAMILY & COMMUNITY OUTREACH

Family Science Events

Over the past few years, science fairs and family science nights at K-8 schools have increased in popularity due to support offered by the Science Department. In 2012-13, over 40 schools hosted science fairs and at least 23 schools hosted family science nights.

In addition to workshops described in the Teacher Professional Learning section earlier, the Science Department would like to develop 3-4 pre-packaged, kit-based Family Science Events in 2014-15. These easy-to-use event kits would be created and maintained by the Science Department at the SMART Center. Schools will be able to borrow the kits to create instant events. The materials will be modeled after existing curricula, such as the engineering-themed Build It Festival or forensic Mystery Festival, both developed by GEMS at the Lawrence Hall of Science. Alternatively, family science events could be co-designed with existing partners, based on shared areas of interest. Examples of this might include a climate change-focused family science event in conjunction with the existing Climate Change initiative at the Chabot Space & Science Center or a culturally-themed Astronomy Night, in partnership with the Space Sciences Lab at UC Berkeley.

An informal survey to both Principals and Lead Science Teachers suggests that schools would eagerly take advantage of such a district resource. In so doing, we hope to dramatically increase the number of family science events district-wide and elevate the quality of such events to reflect current science topics and NGSS sophistication.

A longer term vision for high quality family science engagement will include:

- Encourage high quality family science events at all schools
- Design family science events with student achievement in mind, such as incorporating strategic parent education modules to support science learning
- Create information pathways to connect the wealth of science-based resources in the Bay Area to the families and communities of Oakland
- Increase the role of families in the science curriculum and community science

K-12 District Science Fair

The K-12 District Science Fair takes place every year in May and has grown to become a large citywide celebration of science at the Chabot Space & Science Center. In 2013, 47 schools (44 elementary, 3 middle) submitted 300 projects. The evening celebration has been attended by 830 teachers, students, and family members and featured activities from 13 partner organizations along with Chabot's exhibits and planetarium shows. The Science Department continues to improve the workshops, documents, and tools to support school sites to plan better local events. Much of the

resources have evolved over time, supporting teachers to help students create projects that connect to the existing curriculum in their classrooms and NGSS practices.

Dinner with a Scientist

Four award winning Dinner with a Scientist events take place every year in May at the Oakland Zoo. Together, they bring together 700 local scientists, teachers, and students for an evening of food, science conversations, and activities. These events serve to highlight and celebrate the larger work of science in Oakland.

Together the Science Fair and Dinner events further broaden the science experiences of teachers and students, and increase the presence of science across the city of Oakland. They also provide a way for families and the larger scientific community to participate in the science education of students in Oakland.

PARTNERSHIPS

BaySci

BaySci is designed to strengthen inquiry-based elementary science instruction in the Bay Area through a concerted partnership and supportive network of local school districts, district leadership, schools, and teachers with the Lawrence Hall of Science and Exploratorium. The goal of the OUSD – BaySci partnership is to further district- and teacher-based elementary science education reform in Oakland through district-level planning and technical assistance focused on leadership and capacity-building around elementary science education. A key feature of BaySci is that it addresses the specific individual needs expressed by the district by taking strategic advantage of top-level district and school site leaders' participation for the purpose of prioritizing high-quality science instruction within the district and building leadership capacity at various ranks in the district administration.

The current partnership includes technical assistance on the professional learning plan, advising and planning for systemic science implementation, and evaluation of current science teaching practices. For 2014-15, BaySci will continue in a similar role. The Scope of Work includes:

1. Provide technical assistance for the Elementary Team including NGSS transitional strategies, the inquiry cycle, and evaluation, with an emphasis on CERR (claims, evidence, reasoning, and rebuttal), English Language Learners, and literacy integration.
2. Assist in the design and delivery of the Summer Institute.
3. Support the development and analysis of the SIRA.

Exploratorium

The Exploratorium is one the premiere science museums in the world with an extensive Teacher Institute that supports educators with classroom versions of their exhibits and a large collection of

science activities. As a part of the Middle School Curriculum Development Team, the Exploratorium will provide planning and technical assistance for the pilot units. The specific Scope of Work will be finalized in the Spring of 2014.

The Practicum Academy to Improve Science Education (PRACTISE)

The PRACTISE project is a 3-year research study that will provide intensive summer and school year professional development to support teachers in their ability to facilitate student discourse. The focus will be on argumentation, in order to improve students' use of evidence-based explanations and argumentation skills in the science classroom. They will also support FOSS instruction, preparation for the District's Science Writing Task, and the newly adopted California English Language Development Standards. The goal of the project is to gain a better understanding of the efficacy of a variety of professional development models to help grade 3-5 teachers improve their practice around student argumentation.

Funded by a DRK12 National Science Foundation grant, professional development providers from the Lawrence Hall of Science and researchers from the Stanford Graduate School of Education are collaborating with the OUSD Science Department to research the efficacy various models of professional development. The project began summer 2013 with 45 Oakland elementary teachers from 19 schools.

IMPACT BEYOND OAKLAND

CSTA/NSTA Conference Presentation

The entire science department plans to attend the 2014 National Science Teacher Association's Area Conference on December 4-6, 2014. This conference will overlap with the California Science Teacher Association's Annual Conference and will be the premier opportunity to not only learn from colleague from around the state, but also present the science work in Oakland to a broader audience. Each member of the Science Department submitted at least one conference presentation proposal for a total of 14 proposals, representing different aspects of our work.

BaySci Network

The District will continue to participate as a partner district in the BaySci Network. As one of the more advanced implementers, OUSD will continue to regularly share our work with other districts at the leadership Seminars.

Regional Resource

Once finalized, all materials developed as a part of the Science Department's work will be made publically available on our website as open source materials. This includes videos, Curriculum Guides, curriculum units, assessments, and tools for supporting NGSS. We also have an open door policy for

leaders from other districts to attend our professional learning and teacher/principal leadership sessions. Over the past two years, several district have attended and used out materials with their teachers, including the San Francisco Unified School District.

State Level NGSS Support

The OUSD Science Department plans on working with the California Department of Education to support NGSS implementation efforts. Currently, this includes presenting at regional NGSS Awareness Symposia events and potentially serving on the Curriculum Framework and Evaluation Criteria Committee for NGSS.

Outcomes and Evaluation

OUTCOMES

There are a number of outcomes we expect to achieve during the 2014-15 school year. This section details our expected outcomes and evaluation goals organized by the major areas of work.

Curriculum & Assessment

- FOSS curriculum distributed and used in all elementary classrooms
- Minimal science instructional minutes met in all classrooms
- Science Writing Task (SWT) administered in all 3-5th grade classrooms
- Science Instructional Reflection and Assessment (SIRA) completed and piloted
- 6-8th grade units completed and piloted by MS Curriculum Development Team

Teacher Professional Learning

- 80% of elementary school sites complete six Site-Based Professional Learning sessions
- 60 teachers participate in the Elementary Summer Institute
- 80% of Middle School Teachers attend each Monthly Districtwide Science Professional Learning session
- 80% of Middle School Teachers attend each Buy Back Day PD Sessions
- 80% of Middle Schools hold monthly Site-Based Professional Learning
- 40 teachers participate in the Middle School Summer Institute
- Eight teachers recruited and meet four times in the 5-6th Transition Focus Group
- 20 videos completed for the NGSS Video Project

Teacher Leadership

- Teacher leaders are selected by principals at every elementary and middle school
- 75% of K-8 school sites participate in Summer Leadership Institute
- 85% of K-8 school sites participate at each Monthly Teacher Leader Collaborative

Principal Leadership

- 95% of K-8 principals participate in each Principal Professional Learning Sessions and Instructional Walkthroughs

OUTCOMES AND EVALUATION

Family & Community Outreach

- 70% of K-8 schools organize site based Science Fairs and participate in the District Science Fair
- 50% of K-8 schools organize Family Science Nights
- Three pre-packaged, kit-based Family Science Events created and provided to school sites
- 95% of K-8 schools participate in the Dinner with a Scientist events

Impact Beyond Oakland

- 100% of the District Science Department submits presentation proposals and attend the NSTA Conference

Changes in K-5 Teacher Pedagogical Practices

- 80% of teachers use science notebooks in conjunction with the FOSS curriculum
- 70% of teachers actively support English Learners with language scaffolds
- 70% of teachers incorporate academic discussions into each lesson

EVALUATION

Evaluation will be collected from the following data sources.

Curriculum & Assessment

- SWT – comparison of student scores, teacher feedback
- SIRA – completion of 3-5th grade units, assessment scores, survey of teacher use
- Middle school curriculum units – completion of units, application of NRC rubrics to the units, feedback from pilot teachers

Teacher Professional Learning

- Professional learning session attendance and evaluations
- Annual districtwide teacher survey covering quantity and quality of science instruction as it aligns to NGSS, and use of various pedagogical practices

Teacher & Principal Leadership

- Meeting attendance and evaluations at Summer Institute and Monthly Collaborative Meetings
- Number of professional learning sessions presented by LSTs at each site
- Use of CRS resources
- Teacher Leader fall and spring narrative reflections and self-evaluations
- Principal reflection, planning, and self-assessment documents from the start and end of the school year

OUTCOMES AND EVALUATION

Family & Community Outreach

- Number of school site science fairs and family science events
- Number of participants at the district Science Fair and Dinner with a Scientist events
- Feedback from teachers from attending workshops and participating in the events

Partnerships & Impact Beyond Oakland

- Completion of contracted work
- Number of participants at conference workshops
- Number of visits and materials downloaded from the website
- Number of inquiries from other districts for materials or presentations

Staffing (Specialists, Coordinators, Administrative Assistant)

- Assessment on achievement of work plan objectives
- Specialist narratives including progress at sites, summary of observation data, and pilot implementation data, process, numbers

FINANCIAL INFORMATION

Financial Information

BUDGET

The OUSD Science Department requests a total of $1,048,058 for the 2014-15 school year, June 16, 2014 – June 15, 2015. Additional in-kind contributions from OUSD is listed along with funding that is currently being requested from other sources. The full budget is listed below.

Funding Area	Days	Ppl	Rate	Hrs	Total	OUSD	Bechtel	Other
ES Summer NGSS Institute (5 days)								
Participant Stipends ($150/day, 18% benefits)	5	60	$ 177	1	$ 53,100		$ 53,100	
Teacher Presenters	5	2	$ 35	6	$ 2,100		$ 2,100	
University/Partner/Teacher Presenters	5	2	$ 100	3	$ 3,000		$ 3,000	
Materials		60	$ 100		$ 6,000		$ 6,000	
Food	5	70	$ 13		$ 4,550		$ 4,550	
Subtotal					*$ 68,750*		*$ 68,750*	
MS Summer NGSS Institute (5 days)								
Participant Stipends ($150/day, 18% benefits)	5	40	$ 177	1	$ 35,400		$ 35,400	
Teacher Presenters	5	2	$ 35	6	$ 2,100		$ 2,100	
University/Partner/Teacher Presenters	2	2	$ 100	3	$ 1,200		$ 1,200	
Materials		40	$ 100		$ 4,000		$ 4,000	
Food	5	45	$ 13		$ 2,925		$ 2,925	
Subtotal					*$ 45,625*		*$ 45,625*	
ES Summer Leadership Institute								
Participant Stipends ($150/day, 18% benefits)	3	54	$ 177	1	$ 28,674	$ 28,674		
University/Partner/Teacher Presenters	3	2	$ 30	6	$ 1,080	$ 1,080		
Materials		54	$ 75		$ 4,050	$ 4,050		
Food	3	62	$ 13		$ 2,418	$ 2,418		
Subtotal					*$ 36,222*	*$ 36,222*		
MS Summer Leadership Institute								
Participant Stipends ($150/day, 18% benefits)	3	16	$ 177	1	$ 8,496	$ 8,496		
Teacher Presenters	3	2	$ 30	6	$ 1,080	$ 1,080		
Materials		16	$ 75		$ 1,200	$ 1,200		
Food	3	19	$ 13		$ 741	$ 741		
Subtotal					*$ 11,517*	*$ 11,517*		
ES SIRA Development and Pilot								
Participant Stipends ($150/day, 18% benefits)	10	6	$ 177	1	$ 10,620		$ 10,620	
Materials		6	$ 100		$ 600	$ 600		
Food	10	6	$ 13		$ 780		$ 780	
School Year Meetings	3	6	$ 35	2	$ 1,260		$ 1,260	
Subtotal					*$ 13,260*	*$ 600*	*$ 12,660*	

FINANCIAL INFORMATION

Funding Area	Days	Ppl	Rate	Hrs	Total	OUSD	Bechtel	Other
MS Curriculum Development Team								
Participant Stipends ($150/day, 18% benefits)	20	9	$ 177	1	$ 31,860		$ 31,860	
Materials		9	$ 100		$ 900		$ 900	
Food	5	9	$ 13		$ 585		$ 585	
School Year Meetings	10	9	$ 35	4	$ 12,600		$ 12,600	
Materials for Classrooms		65	$ 400		$ 26,000	$ 26,000		
Subtotal					*$ 71,945*	*$ 26,000*	*$ 45,945*	
Other Professional Development								
Principal PD Hours	7	70	$ 50	4.5	$ 110,250	$ 110,250		
Middle School Monthly Wed PD Teacher Hours	10	70	$ 25	1.5	$ 26,250	$ 26,250		
Middle School Site-Based PD Teacher Hours	10	70	$ 25	1.5	$ 26,250	$ 26,250		
Middle School Buy Back Day Teacher Hours	2	70	$ 25	6	$ 21,000	$ 21,000		
Elementary Site-Based PD Teacher Hours	54	17	$ 25	9	$ 206,550	$ 206,550		
5th-6th Transition Focus Group	4	8	$ 35	2	$ 2,240	$ 2,240		
Science Prep Teacher Work Group	10	15	$ 35	2	$ 10,500	$ 10,500		
NGSS Video Project		20	$ 35	4	$ 2,800		$ 2,800	
Family Science and Science Fair Workshops	2	40	$ 35	2	$ 2,800	$ 2,800		
Family Science and Science Fair Resources	4		$ 1,000		$ 4,000	$ 4,000		
Subtotal					*$ 412,640*	*$ 409,840*	*$ 2,800*	
ES & MS Teacher Leadership								
Teacher Leader Stipends (includes 18% benefits)		70	$ 1,770		$ 123,900	$ 45,000	$ 78,900	
Teacher Leader Materials		70	$ 50		$ 3,500		$ 3,500	
Community Resources for Science Membership		70	$ 30		$ 2,100		$ 2,100	
Subtotal					*$ 129,500*	*$ 45,000*	*$ 84,500*	
FOSS Curriculum Implementation								
FOSS Kit Refurbishment Materials					$ 50,000	$ 50,000		
FOSS Rotation Support (short term staffing)	4	10	$ 15	8	$ 4,800	$ 4,800		
FOSS Live Materials					$ 8,000	$ 8,000		
Summer HS Student Interns (kit refurbishment)	30	5	$ 6	8	$ 7,200	$ 7,200		
Subtotal					*$ 70,000*	*$ 70,000*		
Other								
MS Novice Teacher Coaching		12	$ 1,500		$ 18,000		$ 18,000	
District Science Fair					$ 6,000		$ 6,000	
Dinner with a Scientist	4		$ 8,000		$ 32,000		$ 24,000	$ 8,000
CSTA/NSTA Conference Presentation		9	$ 1,200		$ 10,800		$ 10,800	
Exploratorium Support					$ 25,000		$ 25,000	
BaySci Program Support					$ 35,000		$ 35,000	
Subtotal					*$ 126,800*		*$ 118,800*	*$ 8,000*
Staffing (includes benefits)								
Elementary Science Specialists		3.0	$ 88,000		$ 264,000		$ 264,000	
Middle School Science Specialists		3.0	$ 88,000		$ 264,000		$ 264,000	
Elementary Science Coordinator (Vargas)		1.0	$ 125,000		$ 125,000	$ 62,500	$ 62,500	
Secondary Science Coordinator (Cotty)		1.0	$ 125,000		$ 125,000	$ 125,000		
Science Manager (Cheung)		1.0	$ 130,000		$ 130,000	$ 130,000		
SMART Center Clerk (Logan)		1.0	$ 70,000		$ 70,000	$ 70,000		
Administrative Assistant		1.0	$ 73,000		$ 73,000	$ 36,500	$ 36,500	
Subtotal					*$ 1,051,000*	*$ 424,000*	*$ 627,000*	
				Subtotal	*$ 2,023,999*	*$ 1,022,579*	*$ 993,420*	*$ 8,000*
						Indirect (5.5%)	*$ 54,638*	
						Total	*$ 1,048,058*	

FINANCIAL INFORMATION

SUSTAINABILITY AND SCALING

The work described in this proposal builds on more than eight years of investment in science education by the District, partner organizations, and the S. D. Bechtel, Jr. Foundation. This next phase of development during the 2014-15 school year serves as a critical transitional time for OUSD between the former California State Science Standards and NGSS. One of the limitations of early adoption and implementation of NGSS is that there are few resources currently available to support the significant effort needed to successfully transition. For example, there is strong indication that the California Department of Education and the State Legislature will increase funding to in the next few years to implement CCSS and NGSS. OUSD is committed to obtaining and utilizing any available public funding to support the work in this proposal when available. Our challenge is that as an early adopter of NGSS, we are gearing up for the NGSS transition while funding is limited. Therefore, funding from the S. D. Bechtel, Jr. Foundation is critical to the success of our work.

The major shift in 2014-15 for the OUSD Science Department is laying a strong foundation for the implementation of NGSS. Much of the work will be focused on building school site leadership and capacity to continue the work for years to come. As schools sites continue to increase their internal capacity to support teachers over the next few years, there will be a reduced need for Science Specialists. In the meantime, the foundational work needed during this period of time can only be accomplished with additional staffing.

The development of tools and resources such as the SWT, SIRA, videos, and Curriculum Units require a substantial initial investment. When the final versions are complete, we believe that the tools and resources themselves will provide ongoing support for many years without the need for a significant amount of revision or additional development.

TIMELINE

Timeline

Activity	Person(s) Responsible	Summer 2014	Fall 2014	Spring 2015
• FOSS Curriculum Implementation	Vargas	X	X	X
• Science Writing Task (SWT)	Vargas	X	X	X
• Science Instructional Reflection and Assessment (SIRA) and FOSS Curriculum Guides	Vargas, BaySci	X	X	X
• MS Curriculum Development Team	Cheung, Cotty, Exploratorium	X	X	X
• Elementary NGSS Summer Institute • Middle School NGSS Summer Institute • Summer Leadership Institute	Cheung, Vargas, Cotty, BaySci	X		
• Monthly Teacher Leader Collaborative • Buy Back Day PD Sessions • Science Fair and Family Science Workshops • Principal Professional Learning Sessions • Principal Instructional Walkthroughs	Cheung, Vargas, Cotty		X	X
• Elementary Site Based Professional Learning • 5-6th Transition Focus Group • Elementary Science Resource Teacher Work Group • Coaching Support	Vargas		X	X
• Secondary Districtwide Science Professional Learning • Middle School Site-Based Professional Learning • Middle School Novice Teachers Coaching	Cotty		X	X
• Family Science Events	Cheung, Vargas, Cotty		X	X
• NGSS Video Project	Cheung, Science Department	X	X	X
• K-12 District Science Fair	Science Department			X
• Dinner with a Scientist	Science Department			X
• CSTA/NSTA Conference Presentation	Science Department		X	
• BaySci Network	Science Department	X	X	X

Project Staff Information

STAFFING

- Science Manager, Caleb Cheung (in-kind, resume in Appendix F)
- Elementary Team
  - 1 Elementary Coordinator, Claudio Vargas (.5 FTE in-kind, resume in Appendix F)
  - 3 Elementary Specialists
  - 1 SMART Center Clerk (in-kind)
- Middle School Team
  - 1 Secondary Coordinator, Phil Cotty (in-kind, resume in Appendix F)
  - 3 Middle School Specialists
- Administrative Assistant (.5 FTE in-kind)

CONTACT

Caleb Cheung, Science Manager
Science Department
Oakland Unified School District

4551 Steele Street, Oakland, CA 94619
510-336-7613
caleb.cheung@ousd.k12.ca.us
http://science.ousd.k12.ca.us

Appendix

A. Elementary NGSS Implementation Timeline
B. Middle School NGSS Implementation Timeline
C. SIRA Sample Unit
D. 5x8 Card
E. Elementary Science Site-Based Professional Learning Sessions
F. Resumes (Caleb Cheung, Claudio Vargas, Phil Cotty)
G. Organizational Documents - Board of Directors
H. Organizational Documents – Organization Charts
I. Organizational Documents - Organization Adopted Budget FY2013-14
J. Organizational Documents - Audited Financial Report FY2010-11
K. Organizational Documents - Strategic Plan
L. Non-Profit Documentation - Copy of IRS Determination Letter
M. Non-Profit Documentation - Confirmation of Good Standing
N. Non-Profit Documentation - Grantee Self-Designation Form