

NGSS and Literacy in the Elementary Classroom

This topic was selected because of my desire to develop training and professional development to provide teachers with the basic knowledge, understanding, and implementation of NGSS with language arts. Our new language arts adoption will be able to engage learners with cross curricular science.

Integrate NASA content

The integration of NGSS and Literacy in the classroom is a strategy of learning I gained knowledge from through Endeavor, the specific course, Reading and Writing across the Science Classroom. Through my Endeavor classes, I have found that CCSS and NGSS promote an interdisciplinary learning, allowing collaboration across subjects. Specifically, the migration from subject areas allows students through complementary means of learning across ELA/Literacy and science.

Over the course of two years of taking classes from Endeavor, I have been able to implement different sciences throughout the curriculum. Specifically at the elementary level with language arts. I would like my colleagues to realize that NGSS is not a separate entity, but can be a part of a meaningful learning experience for all students

Audience

My proposed audience will be between 9 and 12 teachers at our Title I school. The professional development will be 2 separate presentations, for a period of 45 minutes. These will take place during grade level planning. The educators represent grade levels 2nd through 5th, teaching in self-contained classrooms.

STEM Concepts

The California State Board of Education (SBE) adopted the Next Generation Science Standards for California Public Schools, Kindergarten through Grade Twelve (CA NGSS) in 2013. NGSS additional emphasis on identifying key literacy connections and on students' ability to use English language arts successfully to address and express their Science-related learnings and understandings. My objective for this professional development is to demonstrate how the science standards complement language arts which in turn enable the classroom instruction to reflect the real world. In addition, to demonstrate that solving problems can require skills from other disciplines.

Our school is located in Citrus Heights California, 30 minutes northeast of our state capitol, Sacramento. We are a Title 1 school. 15 teachers on staff

which include a resource specialist, a SDC/LH, and SDC CH. We have several supportive staff personnel as well.

As educators we will also view a common unit of study from our adopted Language Arts and identify Science and engineering principals that could be applicable to the specific text. Through out the presentation I will also be referencing the benefits of purposeful integration of NGSS and ELA:

Enhanced student engagement

Improved ELA skills: critical thinking and reasoning

NGSS Standards for the Professional Development

RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears. (4-ESS2-2)

W.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears. (4-ESS2-2)

W.4.8 Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. (4-ESS2-1)

CCSS.ELA-LITERACY.RI.4.7

Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

CCSS.ELA-LITERACY.RI.4.9

Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

CSS.ELA-LITERACY.W.4.2

Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

Cross Cutting Concepts

Patterns

Patterns can be used as evidence to support an explanation. (4-ESS1-1)

Organization of the PD

The PD will take place after school during two to three of our Grade Level planning times, there will be approximately 6-8 teachers attending. I will be providing snacks and water for the participants. (time is dependent on the understanding and needs of the teachers). I will be providing information to the educators the week before, instructing on a unit of study from their Benchmark Advance Language Arts program to bring to the PD, a copy of the NGSS standards as well as CCSS California ELA standards, in addition they will be bringing their charged laptops. Each session will be 45 minutes in length. The teachers will also be asked to complete a survey one week before the presentation.

Learning Objectives and materials

The learning objective is to use a the Benchmark Advance Reading Curriculum, and sharing the alignment of units with NGSS. The ultimate goal is for the participants to choose a text from the unit and apply NGSS standards and an activity.

The following link provides information on NGSS standards for the specific domain in Benchmark Advance.

[https://achieve.lausd.net/cms/lib/CA01000043/Centricity/Domain/174/Benchmark%20Advance%20NGSS%](https://achieve.lausd.net/cms/lib/CA01000043/Centricity/Domain/174/Benchmark%20Advance%20NGSS%20standards)

The participants will also read articles specifically addressing ELA and NGSS. I will print the articles for the participants to read and distribute for their use. (I am presently gathering those articles which I believe will be beneficial for the participants)

I will share a lesson that I created on Earthquakes from Unit 4 from Benchmark advanced, and demonstrating the NGSS standards.

The participants will then be asked to look at a unit of study from Benchmark Advanced, one that has already been read or one hopefully they will be doing soon. Utilizing the above link from achieve.lausd, the participants will identify NGSS standards and the text that will be relevant for their use. They will have the opportunity to share their lesson with their colleagues. The

following up PD will be 2 weeks after the initial. If a third is required I shall have that one 2 weeks apart.

Pre-Post Surveys

The pre-survey will focus on Teacher knowledge and understandings of NGSS and cross curricular implementation. This survey will be administered the week prior to our first PD. The post PD will be given 1 week after our final meeting allowing plenty of time for an implementation of NGSS with ELA. The surveys will be pen and paper. My expectation is that teachers will be able to gain a better understanding of the implementation of NGSS with ELA. I also expect them to understand implementation of strategies that will assist students with their learning.

Survey questions will be:

1. Shifts in teaching with the NGSS:

Rate your own understanding of this element of the NGSS.

I am not yet aware of this.

I am aware of this but do not yet incorporate this into my instructional planning.

I am aware of this and do incorporate this into my instructional planning.

I incorporate this into my instructional planning and could teach others about this.

2. Performance Expectations (PE) in the NGSS:

Rate your own understanding of Performance Expectations in the NGSS.

I am not yet aware of this.

I am aware of this but do not yet incorporate this into my instructional planning.

I am aware of this and do incorporate this into my instructional planning.

I incorporate this into my instructional planning and could teach others about this.

3. Disciplinary Core Ideas (DCIs) in the NGSS:

Rate your own understanding of DCIs in the NGSS.

I am not yet aware of this.

I am aware of this but do not yet incorporate this into my instructional planning.

I am aware of this and do incorporate this into my instructional planning.

I incorporate this into my instructional planning and could teach others about this.

4. Science and Engineering Practices (SEPs) in the NGSS:

Rate your own understanding of SEPs in the NGSS.

I am not yet aware of this.

I am aware of this but do not yet incorporate this into my instructional planning.

I am aware of this and do incorporate this into my instructional planning

I incorporate this into my instructional planning and could teach others about this.

5. Shifts in teaching with the NGSS and connections to the shifts for Common Core Math and ELA:

Rate your own understanding of this element of the NGSS.

I am not yet aware of this.

I am aware of this but do not yet incorporate this into my instructional planning.

I am aware of this and do incorporate this into my instructional planning.

I incorporate this into my instructional planning and could teach others about this.

6. Grade level performance expectations in the NGSS:

Rate your own understanding of grade level performance expectations in the NGSS.

I am not yet aware of this.

I am aware of this but do not yet incorporate this into my instructional planning.

I am aware of this and do incorporate this into my instructional planning.

I incorporate this into my instructional planning and could teach others about this.

7. Cross cutting concepts (CCCs) in the NGSS:

Rate your own understanding of CCCs in the NGSS.

I am not yet aware of this.

I am aware of this but do not yet incorporate this into my instructional planning.

I am aware of this and do incorporate this into my instructional planning.

I incorporate this into my instructional planning and could teach others about this.

8. Which choice below describes your current Science curriculum and teaching practice?

Fitting it in when I can

Science Textbooks

Science instructional materials with identified phenomena

Science Kits

Follow up with Teachers

I will be meeting with the teachers during another Grade Level planning day 6 weeks after the last PD. In addition I will visit classrooms if they desire my assistance during my prep time to help in any way possible for at least one implementation. I hope they will continue to share their questions, ask for assistance if needed, and observe a lesson I would do if their time allowed.