

Appendix O

NGSS Implementation Survey Results

Next Generation Science Standards Adoption Implications

December 2013

Demographics

- 197 teachers, administrators, and instructional facilitators were sent the survey link
- 112 participants responded
- 61 school districts representing all ACTAAP regions
- All grade levels represented
- Majority identified as a science teacher. Many also indicated expertise in one or more areas including AP, SPED, ELL, CTE and GT

Educator Awareness

The Majority of Responders indicated they

- are somewhat knowledgeable of *A Framework for K-12 Science Education*.
- are most knowledgeable of Life and Physical Sci. and least knowledgeable of Earth Sci. and Engineering.
- have some understanding of the elements of the NGSS.

Gradual NGSS Implementation Plan

Academic Year	K-4	5-8	9-12
2014-15	Building knowledge and understanding for the new standards	Building knowledge and understanding for the new standards	Building knowledge and understanding for the new standards
2015-16	Curriculum and instructional shifts	Building knowledge and understanding for the new standards	Building knowledge and understanding for the new standards
2016-17	Implement the NGSS	Curriculum and instructional shifts	Building knowledge and understanding for the new standards
2017-18	Sustain NGSS	Implement the NGSS	Curriculum and instructional shifts
2018-19	Sustain NGSS	Sustain NGSS	Implement the NGSS

Professional Development

Rank possible options for support of districts as they write science curriculum

1. Access to curricular resources aligned to the NGSS
2. Access to model lessons/units aligned to the NGSS
3. Access to assessments aligned to the NGSS

Professional Development

Select the number of hours of science-related PD in which you participated last year.

Answer Choices	Responses
0-6 hours	30.43%
7-18 hours	15.22%
19-30 hours	15.22%
30 or more hours	39.13%
Total	

Professional Development

Rank your need for professional development in each of the following instructional “advances” envisioned in the NRC Framework.

1. Identifying student learning outcomes that combine a science/engineering practice with a core idea and a crosscutting concept
2. Supporting students with developing conceptual models to explain scientific phenomena
3. Guiding students to participate in scientific argument supported by evidence
4. Integrating engineering design concepts and practices within science lessons

Professional Development

Rank the professional learning formats which are most effective in helping you learn and implement new teaching practices

1. Summer workshops (multiple days)
2. Weekly grade level or department meetings during the school day
3. Summer institutes (one or more weeks)

Professional Development

Which individuals or organizations would your school/district likely rely on for professional learning related to science and engineering content and pedagogy envisioned in the NRC Framework and NGSS?

Answer Choices	Responses
ADE science program advisors	50%
Educational Service Cooperatives/STEM Center science education specialists	76.09%
Science education leaders within my school/district	48.91%
Teachers within the school/district	57.61%
Informal science centers (museums, state parks or nature centers)	17.39%
University science education faculty	30.43%
University scientists and engineers	21.74%

Curriculum and Instruction

Majority of Respondents indicated

- their current curriculum consisted of documents (e.g. Arkansas State Science Standards and CCSS, unit start/end dates, learning objectives, or learning activities)

and

- the science curriculum is determined by each teacher.

Science Teaching and Learning

My school/district communicates a clear expectation that science teaching and learning is a valued part of the school curriculum.

Elementary

- 40% valued
- 37% do not value
- 23% do not know

Middle School

- 68% valued
- 12% do not value
- 20% do not know

High School

- 83% valued
- 5% do not value
- 12% do not know

NGSS Middle and High School Options

Select the statement which describes the best the way to group the NGSS grade banded performance expectations

Grades 6-8

- 44% - A different science domain taught each year.
- 39% - Create 3 integrated science courses
- 17% - Do not know

High School

- 33% - Create three separate courses (life science, earth/space science, physical science)
- 29% - Bundle performance expectations from all four science domains to create three courses: biology, chemistry, physics
- 13% - Bundle performance expectations from all science domains to create three integrated science courses.
- 25% - Do not know

Rank the aspects of science learning emphasized in your class, school or district.

1. Knowing science facts, concepts and terminology.
2. Using scientific inquiry practices (such as developing conceptual models, generating and analyzing data, or constructing evidence-based arguments) to deepen understanding of core ideas.
3. Understanding the nature of science and the historical development of scientific knowledge.
4. Cultivating science-linked interests, aspirations and identity.

In your school/district, about how much time per week do students spend doing science?

At K-5 the majority of respondents do not know how much time is being spent doing science.

Of those who indicated a time

- K-2 – 44% indicated 0-30 min/week
- 3-5 – 24% indicated 2-3 hours/week
- 6-8 – 64% indicated 2-3 hours/week

Lab Facilitates and Equipment

What capacity currently exists for students to engage in a particular, grade-level NGSS performance expectation?

Grade Bands	Facilities and Equipment	Facilities, but not Equipment	Neither Facilities nor Equipment	Do not know
K-2	19%	9%	12%	60%
3-5	23%	14%	9%	53%
6-8	31%	29%	6%	34%
9-12	30%	20%	6%	44%

About how much time per week do teachers in your district use nonfiction science texts to support literacy?

	0-30 min	30 min to 1 hour	1 to 2 hours	2 to 3 hours	3 to 5 hours	more than 5 hours	Don't know
Kindergarten, Grade 1, and Grade 2	7.61% 7	8.70% 8	3.26% 3	2.17% 2	0% 0	0% 0	78.26% 72
Grade 3, Grade 4, and Grade 5	5.43% 5	6.52% 6	7.61% 7	8.70% 8	1.09% 1	2.17% 2	68.48% 63
Grade 6, Grade 7, and Grade 8	4.40% 4	10.99% 10	10.99% 10	12.09% 11	3.30% 3	2.20% 2	56.04% 51
Grades 9, Grade 10, Grade 11, and Grade 12	14.29% 13	6.59% 6	8.79% 8	6.59% 6	3.30% 3	3.30% 3	57.14% 52

About how much time per week do teachers in your district use science concepts to teach numeracy?

	0-30 min	30 min to 1 hour	1to2 hours	2to 3 hours	3to 5 hours	more than 5 hours	Donknow
Kindergarten	12.22% 11	3.33% 3	2.22% 2	1.11% 1	0% 0	0% 0	81.11% 73
Grade 3, Grade 4, and Grade 5	7.61% 7	10.87% 10	5.43% 5	5.43% 5	1.09% 1	0% 0	69.57% 64
Grade 6, Grade 7, and Grade 8	2.17% 2	15.22% 14	13.04% 12	8.70% 8	3.26% 3	1.09% 1	56.52% 52
Grades 9, Grade 10, Grade 11, and Grade 12	7.53% 7	8.60% 8	4.30% 4	8.60% 8	7.53% 7	4.30% 4	59.14% 55