

Louisiana Believes

Understanding Louisiana Student Standards for Science
Supervisor and Principal Implementation Support
June 2017

Schedule

The framework

Instructional shifts

LDOE implementation support

Framework of LSS for Science

Coding and Descriptor:

Performance Expectation:

Clarification Statement:

Science and Engineering
Practices:

Disciplinary Core Ideas:

Crosscutting Concepts:

Framework of LSS for Science

How does this framework exemplify 3-dimensional learning?

Coding and Descriptor

Performance Expectation: States what students should be able to do to demonstrate that they have met the standard. Performance expectations are built on the foundation of the science and engineering practices, disciplinary core ideas, and crosscutting concepts.

Clarification Statement: Provides examples or additional clarification of the performance expectation.

Science and Engineering Practices: Detail the behaviors that students should engage in that mimic those of scientists and engineers.

Disciplinary Core Ideas: Describe the most essential ideas (content) in the major science disciplines.

Crosscutting Concepts: Ideas that have applications across all areas of science.

Framework of LSS for Science

7-MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

CS: Emphasis is on recognizing patterns in data, making inferences about changes in populations, and on evaluating empirical evidence supporting arguments about changes in ecosystems.

SEP: 7. Engaging in argument from evidence: Construct, use, and/or present an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.

DCI: Ecosystem Dynamics, Functioning, and Resilience
Ecosystems are dynamic in nature; their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations.

CC: Stability and Change: Small changes in one part of a system might cause large changes in another part.

Science and Engineering Practices

The standards are explicit about which practice is the focus on the performance expectation. However, all practices should be integrated into instruction of all performance expectations. Using the given worksheet, identify which practice is particularly stressed in the performance expectation.

1. Asking questions (science) and defining problems (engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (science) and designing solutions (engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Disciplinary Core Ideas

Doman	Topics
Physical Science	PS1: Matter and its interactions PS2: Motion and stability: Forces and Motions PS3: Energy PS4: Waves and their applications in technologies for information transfer
Life Science	LS1: From molecules to organism: Structures and processes LS2: Ecosystems: Interactions, energy, and dynamics LS3: Hereditary: Inheritance and variation of traits LS4: Biological evolution: Unity and diversity
Earth and Space Science	ESS1: Earth's place in the universe ESS2: Earth's systems ESS3: Earth and Human activity
Environmental Science	EVS 1: Resources and Resource Management EVS 2: Environmental Awareness and Protection EVS 3: Personal Responsibility
Engineering, Technology, and Applications of Science	ETS1: Engineering design ETS2: Links among engineering, technology, science, and society

Crosscutting Concepts

Unlike the practices, the performance expectations are rarely explicit in calling out the crosscutting concepts. However, educators familiar with the standards will begin to see obvious links. Using the given worksheet, discuss which of the crosscutting concepts correlate to the given performance expectations.

1. Patterns
2. Cause and effect
3. Scale, proportion, and quantity
4. Systems and system models
5. Energy and matter
6. Structure and function
7. Stability and change

Schedule

The framework

Instructional shifts

LDOE implementation support

Instructional Shifts

The Louisiana Student Standards for Science represent the knowledge and skills needed for students to successfully transition to postsecondary educations and the workplace. The standards call for science students to:

- Apply Content Knowledge
- Investigate, Evaluate, and Reason Scientifically
- Connect Ideas Across Disciplines

Analyze the “shifts” page. Define, in your own words, what each of these “shifts” mean.

Instructional Shifts

Review the video.

[Red-winged blackbird](#)

As a table, discuss how the instructional shifts were exhibited in the unit and the benefit of using phenomena-based instruction.

- Apply Content Knowledge
- Investigate, Evaluate, and Reason Scientifically
- Connect Ideas Across Disciplines

Instructional Shifts

Review the videos.

[Video 1](#): elementary

[Video 2](#): high school

As a table, discuss how the instructional shifts were exhibited in the lesson.

- Apply Content Knowledge
- Investigate, Evaluate, and Reason Scientifically
- Connect Ideas Across Disciplines

Instructional Shifts

Evaluate the standards: HS-LS2-4 and HS-PS3-3

- How can you use the crosscutting concepts to help students connect their understanding of a life science and physical science system?
- How do the crosscutting concepts help students understand the disciplinary core ideas of each standard?

Schedule

The framework

Instructional shifts

LDOE implementation support

LDOE Support

Area	Support and Timeline
Curriculum and Resources	<p data-bbox="523 439 1070 472">Instructional Materials Review</p> <ul data-bbox="552 491 1663 625" style="list-style-type: none"><li data-bbox="552 491 1547 524">● Rubric released and call for submissions- <i>March 2007</i><li data-bbox="552 539 1663 572">● Hiring and training of TLA's - TLA application - <i>Summer 2017</i><li data-bbox="552 588 1174 621">● First review released - <i>Fall 2017</i> <p data-bbox="523 694 900 726">New Standards Tools</p> <ul data-bbox="552 745 1591 958" style="list-style-type: none"><li data-bbox="552 745 1315 778">● Connections to ELA and math standards<li data-bbox="552 802 1309 835">● Key shifts and instructional implications<li data-bbox="552 859 1476 892">● Middle School sample transition plan - <i>June 2017</i><li data-bbox="552 916 1591 949">● Sample scope and sequence documents - <i>Summer 2017</i>

LDOE Support

Area	Support and Timeline
Professional Development	<p data-bbox="484 396 836 434">Self-paced Learning</p> <ul data-bbox="517 454 1692 491" style="list-style-type: none"><li data-bbox="517 454 1692 491">● Live and recorded webinars on new standards - <i>June - July 2017</i> <p data-bbox="484 562 745 599">Collaborations</p> <ul data-bbox="517 614 1228 694" style="list-style-type: none"><li data-bbox="517 614 1228 651">● Session at March 2017 collaboration<li data-bbox="517 662 1228 694">● Sessions at 2017-2018 collaborations <p data-bbox="484 765 909 802">Teacher Leader Summit</p> <ul data-bbox="517 816 1499 853" style="list-style-type: none"><li data-bbox="517 816 1499 853">● Multiple 2-day and 1-day institutes at the TL Summit <p data-bbox="484 916 633 953">Vendors</p> <ul data-bbox="517 968 1812 1205" style="list-style-type: none"><li data-bbox="517 968 1812 1048">● The Department works with vendors to align trainings to the new standards<li data-bbox="517 1068 1812 1148">● Multiple vendors offering intensive summer sessions (LSU Cain Center, LA Tech North, LA Tech South)<li data-bbox="517 1168 1437 1205">● Vendors offering ongoing coaching opportunities

LDOE Support

Area	Support and Timeline
Assessment	<p data-bbox="523 444 1566 482">Previous RFP secured vendor for assessment development</p> <ul data-bbox="552 501 1644 658" style="list-style-type: none"><li data-bbox="552 501 1282 539">● Field test for grades 3-8 – <i>Spring 2018</i><li data-bbox="552 558 1151 596">● Operational test – <i>Spring 2019</i><li data-bbox="552 615 1644 654">● Platform the same as ELA, Math, Social Studies, and EAGLE <p data-bbox="523 729 942 768">EAGLE Assessment Tool</p> <ul data-bbox="552 801 1769 972" style="list-style-type: none"><li data-bbox="552 801 1769 901">● Teacher Leader Advisors, who will help create sample assessment items, hired in June 2017 and trained during the summer<li data-bbox="552 929 1663 972">● EAGLE items created throughout the 2017-2018 school year