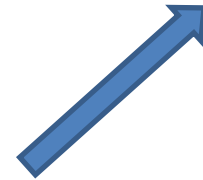
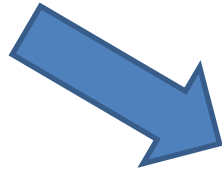




Developing the Next Generation Science Standards

Development Process

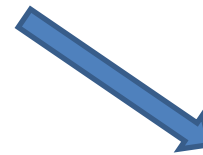
K-12 Framework for Science Education



Curriculum



Lesson Plans



Assessment

K-12 Framework for Science Education: Renewing a Vision for the Next Generation

- Skim/read vision statements from both the KS and NGSS
 - (handout or www.ksde.org/science)
- Identify one similarity and one difference
- Share with your neighbor
- Pick the top similarity and difference from your table and be ready to report out

K-12 Framework for Science Education--cheat sheet

The Three Dimensions of the Framework

1. Scientific and Engineering Practices

1. Asking questions (for science) and defining problems (for 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 (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

2. Crosscutting Concepts

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

3. Disciplinary Core Ideas

Physical Sciences

- PS 1: Matter and its interactions
- PS 2: Motion and stability: Forces and interactions
- PS 3: Energy
- PS 4: Waves and their applications in technologies for information transfer

Life Sciences

- LS 1: From molecules to organisms: Structures and processes
- LS 2: Ecosystems: Interactions, energy, and dynamics
- LS 3: Heredity: Inheritance and variation of traits
- LS 4: Biological evolution: Unity and diversity

Earth and Space Sciences

- ESS 1: Earth's place in the universe
- ESS 2: Earth's systems
- ESS 3: Earth and human activity

Engineering, Technology, and the Applications of Science

- ETS 1: Engineering design
- ETS 2: Links among engineering, technology, science, and society

Developing the NGSS



- The Framework for K-12 Science Education contains three dimensions:
 - Dimension I – Scientific and Engineering Practices
 - Dimension II – Crosscutting Concepts
 - Dimension III – Core Ideas
- Kansas Science Standards
 - Standard 1 – Inquiry
 - Unifying Scientific Concepts and Processes, Standards 5-7
 - Standards 2-4



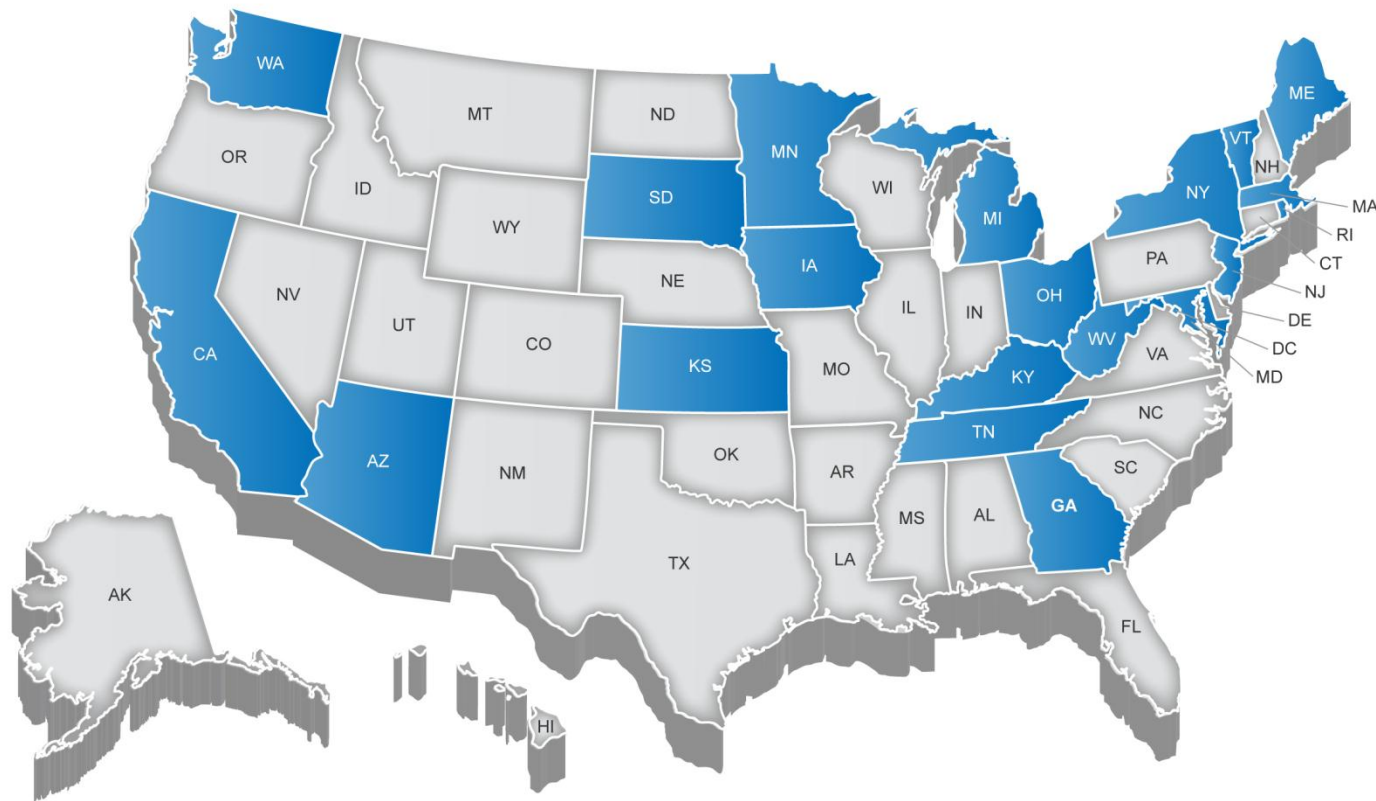
Overview of Standards Development Process

Writing and Reviewing

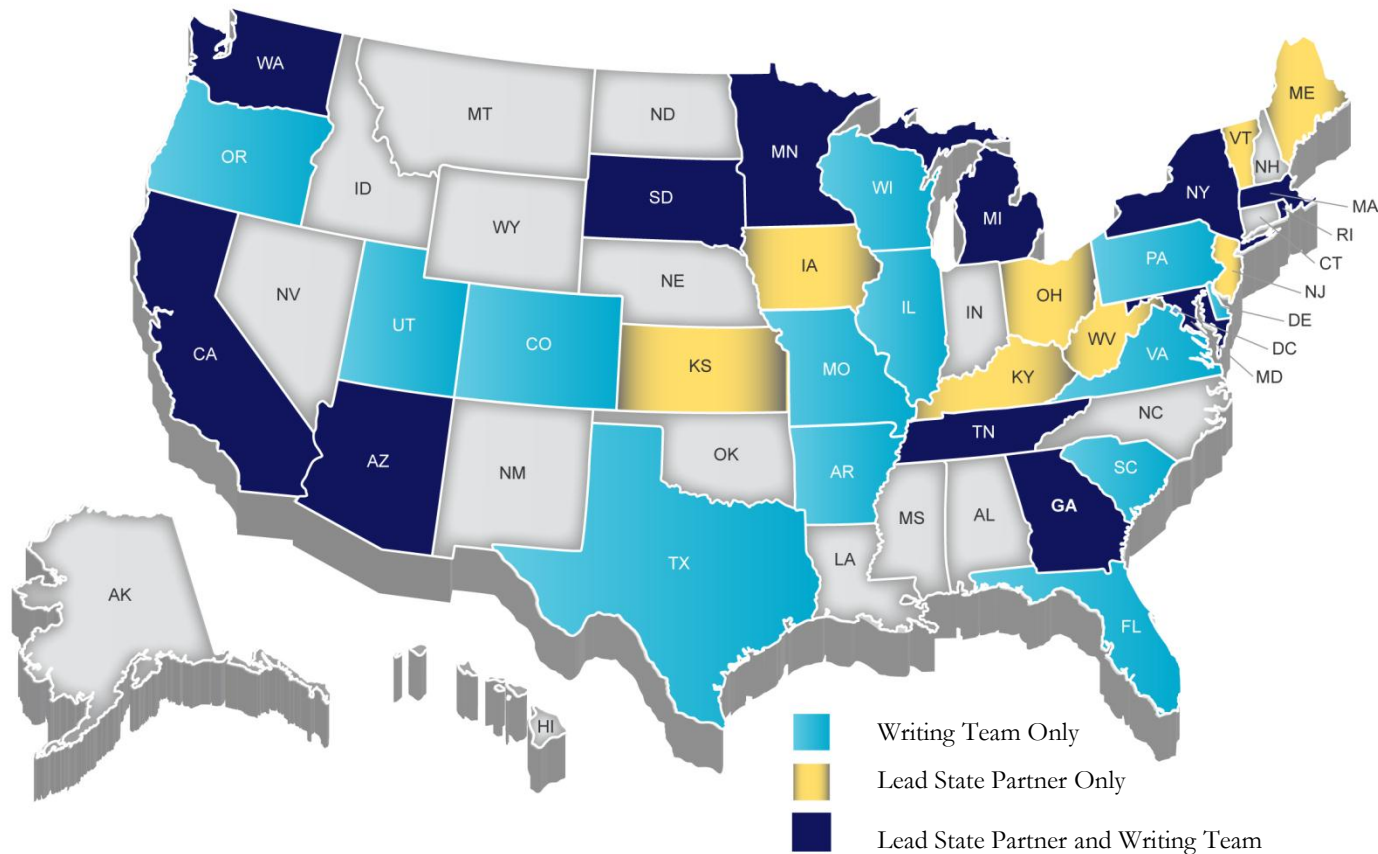


- Writing team will write the standards based on the NRC's *A Framework for K-12 Science Education*
- Lead state only draft—feedback
- All States will provide feedback on 3 more state level drafts
- 2 public drafts

Lead State Partners



Lead State Partners and NGSS Writing Team



Proposed Timeline



Our Task—write standards

- Pick a Disciplinary Core Idea
- Pick a grade (band or specific level)
- Write at least one performance expectation that links the EE core idea to a cross-cutting theme and a science/engineering practice
- Share yours with your group and critique each others examples
- Pick one to share out from your group