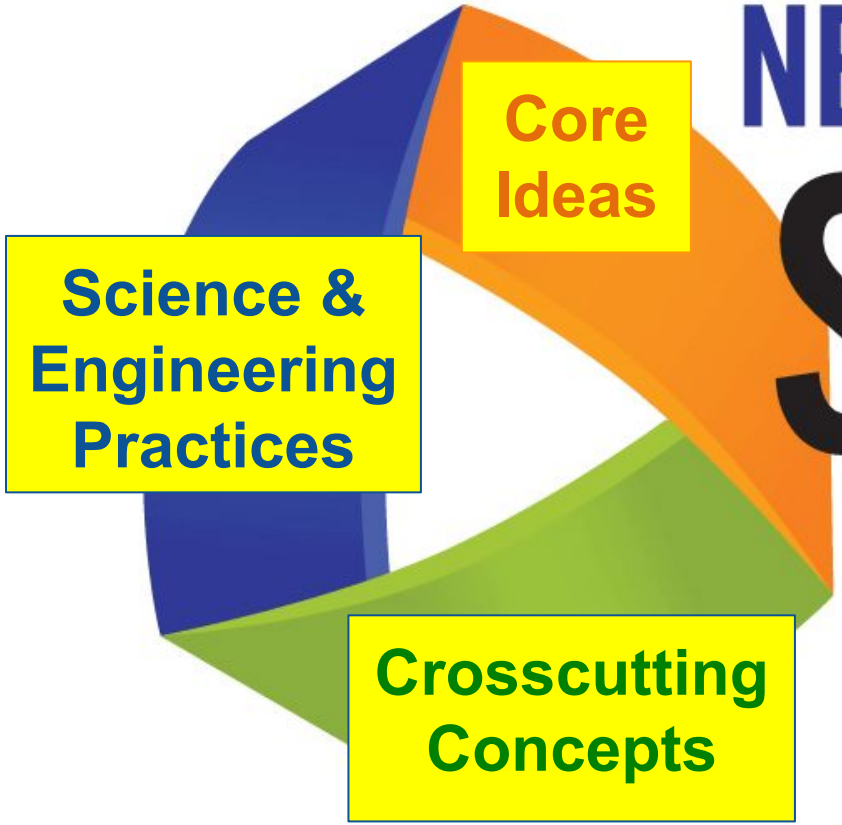
Elementary Science Review

March 21, 2016



NEXT GENERATION SCIENCE STANDARDS

NGSS *Shifts*

- Learning that reflects the ***THREE DIMENSIONS*** of science: what scientists ***KNOW***, what they ***DO***, and how they ***THINK***.
- Standards written as performance expectations: students demonstrate mastery of the three dimensions.
- Integration with Common Core reading, writing, & math.
- Major emphasis on engineering, technology, & the applications of science.

Core Ideas	Science & Engineering Practices	Crosscutting Concepts
Content goals *Students will understand that electric and magnetic forces between a pair of objects do not require that the objects be in contact.*	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	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

THEN	NOW
• Content-driven (mastery of content)	• Content-informed (application of content)
• ~~Essential question(s)~~	• Essential question(s)
• Context = SCHOOL	• Context = REAL-WORLD
• “Show what you know”	• Solve a problem to “show what you know”
• SCIENCE	• INTERDISCIPLINARY

THEN

NOW

The Future of Assessment

THEN	NOW
The major movement of the plates and description of plate boundaries of the Earth are... A. Convergent B. Divergent C. Transform D. All of the Above	Draw a model to show the side view (cross-section) of volcano formation near a plate boundary (at a subduction zone or divergent boundary). Be sure to label all parts of your model. Use your model to explain what happens when a volcano forms near a plate boundary.

From: National research Council presentation “Developing Assessments for the Next Generation Science Standards”

Committee History

- **NGSS exploration/Committee education**
- **Staff introduction to the NGSS**
  - District-Directed Staff Development by Grade-Level
  - NGSS Workshop option at November & February Staff Development Days
- **Summer review of programs**
  - Summer subcommittee screening with six publishers

Committee History

- **Whole committee analysis**
  - Materials from four publishers
  - Used **EQUIP rubric and our own criteria** to analyze each program
  - **Critical criteria** for us:
    - Deep Inquiry
    - Strong Cross-Curricular Connections
    - Meets the grade-level needs of teachers and students

Committee History

In-Depth Analysis of Three Programs

- *Lesson by lesson* on the same topic
- Analyzed the activities in each program for deep inquiry, strong cross-curricular connections, and “fit” for teachers and students at each grade level
- One finalist emerged: TCI: Bring Science Alive!
- Possible supplemental support for inquiry from Defined STEM

Additional Research

- Site Visits: Deerfield 109
- TCI: Review of piloted lessons/units with District 64 students
- Defined STEM: Review of piloted lessons/units with District 64 students
- Final committee recommendation in early April

Questions?

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