NM STEM Ready! Science 101

INSPIRE 2019

May 31, 2019

Shafiq Chaudhary, Math & Science Specialist, NM PED Math and Science Bureau
Danielle Kusmak, Board Member, New Mexico Science Teachers’ Association
Goals

Goal 1: To ground ourselves in the structure of the NM STEM Ready! Science Standards

- Criteria for success: I can describe the structure of the NM STEM Ready! science standards to other people.
Development of the Next Generation Science Standards (NGSS)

Step 1
National Research Council (NRC) develops Conceptual Framework

2010-2011

Step 2
April 2013
Released for states’ adoption

1990s

1990s-2009

Previous national science education efforts

2003 New Mexico State Science Standards

Adapted from NSTA web seminar: Karen Ostlund and Stephen Pruitt, Introduction to the NGSS Second Public Draft, January 2013
NM STEM Ready! Science Standards

NGSS + New Mexico 6 Specific Standards = NM STEM Ready! science standards

Together, the NGSS in their entirety, plus the New Mexico 6 specific standards comprise the NM STEM Ready! science standards.
The 3 Dimensions of the NGSS

This symbol actually means something!
3-Dimensional Learning

Student Performance Expectation (PE)

Science & Engineering Practices (doing science)

Disciplinary Core Ideas (facts)

Crosscutting Concepts (connecting science)
SCIENCE!

- Physical Sciences (PS)
- Life Sciences (LS)
- Earth and Space Sciences (ESS)
- Engineering, Technology, and Applications of Science (ETS)

Disciplines
Disciplinary Core Ideas
DCI
Component Ideas

From California Academy of Sciences
Science 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
The Framework identifies seven crosscutting concepts that can help students deepen their understanding of the **disciplinary core ideas.**

**Crosscutting Concepts**

Physical Sciences  
Life Sciences  
Earth and Space Sciences  
Engineering, Technology, and Applications of Science
Crosscutting Concepts

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

Mark up the following pages in your NGSS Volume 1 book:

• pg. xxii
• pg. 163
• pg. 293
• Location of your grade level/band
Wrap Up

• Put table kits back together
Thank You!

Shafiq Chaudhary
Math and Science Specialist
shafiq.chaudhary@state.nm.us
505.827.6511