

Translating National Standards into State Standards

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LASP

What Are We Trying to Do?

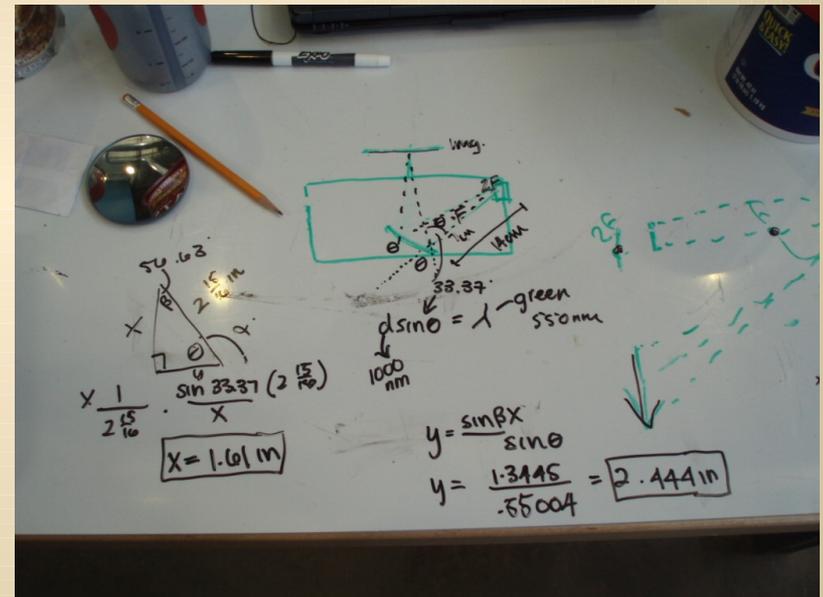
Create Flexible Learners

“As concepts are reinforced, the student will transfer learning beyond the classroom, observing and inquiring.”



How do Students Demonstrate Knowledge?

- Students are expected to demonstrate understanding ... to take knowledge and transfer it creatively.
- They are expected to be:
 - Problem Solvers
 - Flexible
 - Creative
 - Able to ask their own questions (and answer them)
 - Adaptable (taking their knowledge to new situations)



2061 Benchmarks

- Developed by the AAAS to increase science literacy with the goal of moving from rote memorization to deep understanding.
- Very specific goals with broad consequences.
 - There are universal connecting concepts
 - Scientific concepts are transferable in a variety of contexts and new situations.
- Conceptual understanding to provide a solid basis for learning at progressive levels
- “Benchmarks for any section are connected to others and should be read in the context of others.”

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2061 Benchmarks: A practical example

In “The Living Environment,” the chapter begins:

“Living organisms are made of the same components as all other matter, involve the same kinds of transformations of energy, and move using the same basic kinds of forces.”

<http://strandmaps.nsdI.org/>

NSES Standards

- Goals are similar/same as Benchmarks
- Created to promote science literacy as highlighted by the need for scientifically literate individuals in the work place
- Specific guidelines for teaching science in an assessable way
- Calls for inquiry-based “science as process.”

2061 vs. NSES

- NSES is often more specific about which concepts should be emphasized and how
- NSES gives concrete examples of classroom experience
- Otherwise, comparable to Benchmarks in terms of goals and methodology

State standards, how do they compare?

- Colorado-Move toward inquiry based education
 - Align closely with NSES but less specific
- New York-Focus on *conceptual understanding*
 - similar to 2061 Benchmarks, although different specific goals specified.
- Kansas
 - *8th-12th little similarity to national standards in terms of procedure*
 - *Good alignment to NSES and Benchmarks in middle grades*
- Alabama-Very specific with a focus on product and process
 - Some concepts are very advanced
 - Vocabulary paramount
 - Has a state curriculum model

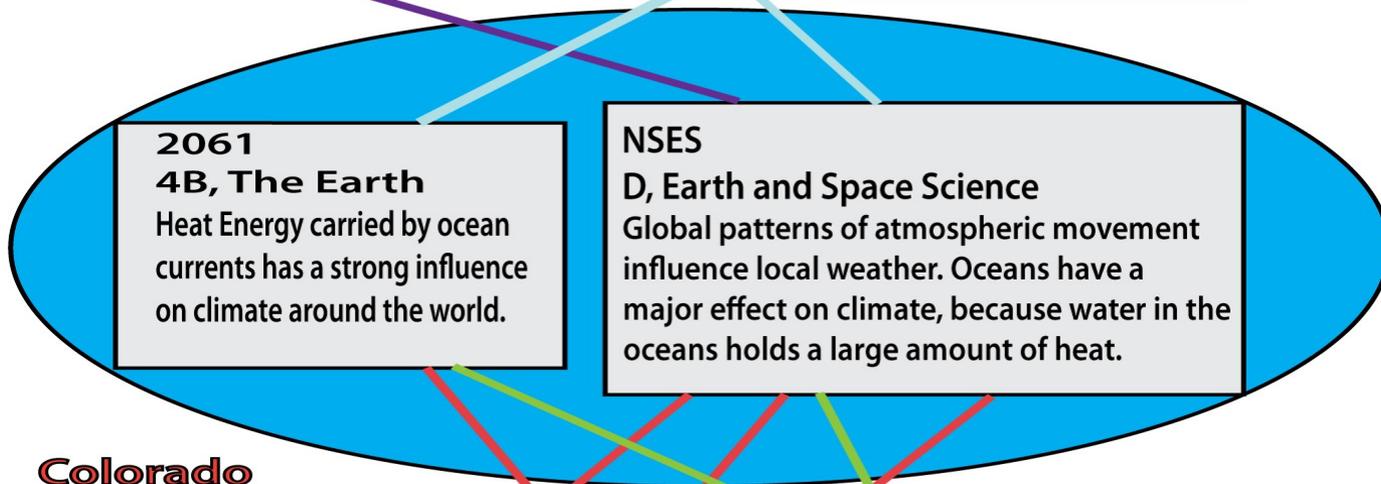
One Example
Climate around the world
By the end of middle school, students
will understand:

Kansas
Earth and Space

Models Earth's cycles, constructive and destructive processes, and weather systems.

Alabama
Earth and Space

Describe effects on weather of energy transfer within and among the atmosphere, hydrosphere, biosphere, and lithosphere.



Colorado
Earth and Space

Atmospheric circulation is driven by solar heating.

The world's water is distributed and circulated through oceans, glaciers, rivers, groundwater, and atmosphere

There are large-scale and local weather systems

New York
Physical Setting

Many of the phenomena that we observe on Earth involve interactions among components of air, water, and land.

What are your experiences?

- What difficulties have you experienced with national standards?
- Do state requirements restrict/help you?
- Do you struggle aligning state and national standards?