Conceptual Shifts in the Alabama Course of Study: Science

The standard in the 2015 Alabama Course of Study: Science...

1. ...reflect how science is done in the real world by intertwining three dimensions: scientific and engineering practices, crosscutting concepts, and disciplinary core ideas.
2. ...are student performance expectations.
3. ...build coherently from grades K-12.
4. ...focus on deeper understanding of content and applications of content.
5. ...integrate science, technology, and engineering throughout grades K-12.
6. ...are designed to prepare students for college, careers, and citizenship.
7. ...correlate to the CCRS standards in English language arts and mathematics.
3-Dimensional Learning

Scientific & Engineering Practices
- Asking questions (science) and defining problems (engineering)
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations (science) and designing solutions (engineering)
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information

Crosscutting Concepts
- Patterns
- Cause and effect: Mechanism and explanation
- Scale, proportion, and quantity
- Systems and system models
- Energy and matter: Flows, cycles, and conservation
- Structure and function
- Stability and change

Disciplinary Core Ideas
Physical Sciences:
- PS1: Matter and its interactions
- PS2: Motion and stability: Forces and interactions
- PS3: Energy
- PS4: Waves and their applications in technologies for information transfer

Life Sciences:
- LS1: From molecules to organisms: Structures and processes
- LS2: Ecosystems: Interactions, energy, and dynamics
- LS3: Heredity: 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

Engineering, Technology, and Applications of Science
- ETS1: Engineering design
- ETS2: Links among engineering, technology, science, and society