Next Generation Science Standards

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

**Crosscutting Concepts**
- Patterns
- Cause and effect
- Scale, proportion, and quantity
- Systems and system models
- Energy and matter
- Structure and function
- Stability and change

**Disciplinary Core Ideas**

**Physical Sciences**

**PS1: Matter and Its Interactions**
- PS1.B: Chemical Reactions
- PS1.C: Nuclear Processes

**PS2: Motion and Stability: Forces and Interactions**
- PS2.A: Forces and Motion
- PS2.B: Types of Interactions
- PS2.C: Stability and Instability in Physical Systems

**PS3: Energy**
- PS3.A: Definitions of Energy
- PS3.B: Conservation of Energy and Energy Transfer
- PS3.C: Relationship Between Energy and Forces
- PS3.D: Energy in Chemical Processes and Everyday Life

**PS4: Waves and Their Applications in Technologies for Information Transfer**
- PS4.A: Wave Properties
- PS4.B: Electromagnetic Radiation
- PS4.C: Information Technologies and Instrumentation

**Life Sciences**

**LS1: From Molecules to Organisms: Structures and Processes**
- LS1.A: Structure and Function
- LS1.B: Growth and Development of Organisms
- LS1.D: Information Processing

**LS2: Ecosystems: Interactions, Energy, and Dynamics**
- LS2.A: Interdependent Relationships in Ecosystems
- LS2.B: Cycles of Matter and Energy Transfer in Ecosystems
- LS2.C: Ecosystem Dynamics, Functioning, and Resilience
- LS2.D: Social Interactions and Group Behavior

**LS3: Heredity: Inheritance and Variation of Traits**
- LS3.A: Inheritance of Traits
- LS3.B: Variation of Traits

**LS4: Biological Evolution: Unity and Diversity**
- LS4.B: Natural Selection
- LS4.C: Adaptation
- LS4.D: Biodiversity and Humans

**Earth and Space Sciences**

**ESS1: Earth’s Place in the Universe**
- ESS1.A: The Universe and Its Stars
- ESS1.B: Earth and the Solar System
- ESS1.C: The History of Planet Earth

**ESS2: Earth’s Systems**
- ESS2.A: Earth Materials and Systems
- ESS2.B: Plate Tectonics and Large-Scale System Interactions
- ESS2.C: The Roles of Water in Earth’s Surface Processes
- ESS2.D: Weather and Climate
- ESS2.E: Biogeology

**ESS3: Earth and Human Activity**
- ESS3.A: Natural Resources
- ESS3.B: Natural Hazards
- ESS3.C: Human Impacts on Earth Systems
- ESS3.D: Global Climate Change

**Technology, Engineering, and Applications of Science**

**ETS1: Engineering Design**
- ETS1.A: Defining and Delimiting an Engineering Problem
- ETS1.B: Developing Possible Solutions
- ETS1.C: Optimizing the Design Solution

**ETS2: Links Among Engineering, Technology, Science, and Society**
- ETS2.A: Interdependence of Science, Engineering, and Technology
- ETS2.B: Influence of Engineering, Technology, and Science on Society and the Natural World