5th Grade Science Curriculum Overview

Aligned with NGSS – Integrated Focus (California Framework)

Matter and Its Interactions

States of Matter

- Solid, liquid, and gas states

Properties of Matter

- Physical properties such as density, conductivity, magnetism

Mixtures vs. Solutions

- How substances combine to form mixtures
- Differences between mixtures and solutions (e.g., dissolving salt in water)
- Using particle models to explain dissolving

Conservation of Mass

- Physical changes: melting, freezing, dissolving
- Measuring matter using mass and volume

Life Science

Ecosystems and Biodiversity

- Producers, consumers, decomposers
- Using models to describe the movement of matter and energy in ecosystems

Energy Flow and Food Webs

- Role of sunlight as the energy source
- Modeling food webs and describing organism interactions

Earth's Systems

Structure of Earth’s Systems

- Geosphere: landforms, surface features
- Hydrosphere: water cycle, oceans, rivers, lakes
- Atmosphere: air, weather, and climate
- Biosphere: plants, animals, and ecosystems

Interactions Between Spheres

- How Earth’s systems interact (e.g., water cycle affecting land and climate)

Cycles and Human Impact

- Water cycle processes
- Human use and impact on Earth’s natural resources

Space Systems

Earth’s Place in the Universe

- Sun, Moon, and Earth relationships
- Using data to describe observable patterns

Phases of the Moon

- Moon phase cycle and surface visibility

Seasonal Changes

- Changing patterns of sunrise and sunset

- Earth's tilt and orbit

Engineering, Technology, and Applications of Science

Designing Solutions to Problems

- Engineering design process: define a problem, set criteria and constraints
- Brainstorm, plan, prototype
- Test and refine solutions

Using Science to Solve Problems

- Applying science knowledge to real-world challenges
- Designing simple tools or systems to address energy or environmental problems

---

Crosscutting Concepts (CCCs)

- Patterns (e.g., moon phases, seasonal changes)
- Systems and system models (e.g., ecosystems, Earth spheres)
- Energy and matter (e.g., food webs, physical changes)
- Cause and effect (e.g., human impacts on resources)

Science and Engineering Practices (SEPs)

- Developing and using models
- Planning and carrying out investigations
- Constructing explanations
- Engaging in argument from evidence

Catholic Integration

- **Stewardship of Creation:** Emphasizing responsibility for caring for Earth as part of God's creation
- **Faith and Science:** Encouraging students to explore the natural world with wonder, responsibility, and gratitude