

Curriculum Map Overview

The curriculum framework is intended to meet the needs of small rural school districts that have a range of single grade and multi-grade classrooms, including single-teacher schools.

The framework is based on a three-year cycle. Each year includes instruction in Life, Physical, and Earth Science, with traditional ecological knowledge, science inquiry skills and applications woven throughout.

During each year of the cycle, all students at all grade levels, district wide, will study the same content strand at roughly the same time. This will allow for possible school-wide or even district wide research and community service projects that can be related to the science content students are learning. Resource people and scientists from agencies that are interested in partnering with schools may be able to do so with some efficiency, and students transferring between schools in the district will have a more consistent and coherent science education.

The framework does not require students to study every science topic every year. They will have an opportunity to focus in some depth on a specific area within each science strand during each of the three years. For example, the Physical Science Strand is divided into the “big idea” areas of Properties of Matter, Forces and Motion, and Energy; students study only one of those areas each year.

As the curriculum “spirals”, a student will have an opportunity to study each of the content areas four times as they progress from Kindergarten to Grade 12, building on what they have previously learned and handling more complex and sophisticated concepts each time.

Standards Woven Throughout Units		Year	Physical Science	Earth Science	Life Science
Grades K-2	Inquiry and Process Science and Technology Cultural, Social, Personal Perspectives and Science	1	Properties of Matter 1. Classifying Matter 2. Observing Reactions	Water Cycle, Rock Cycle, Weather 1. Observing the Weather 2. Freezing, Thawing & Evaporating 3. Looking at Rocks	Biodiversity 1. Living & Nonliving 2. Needs of Living Things/Life Cycles 3. Alike & Different
		2	Motions & Forces 1. How Things Move 2. Vibrations Make Sound 3. Magnets	Forces that Shape the Earth 1. All Sizes & Shapes of Rocks 2. Changes Happen to Our Surroundings	Interdependence in Ecosystems 1. Plants & Animals Need Each Other 2. Different Places, Different Plants & Animals
		3	Energy Transfer & Transformation 1. The Sun Warms the Land, Air & Water 2. Insulation	Solar System & Universe 1. Observing the Sun 2. The Moon Looks Different 3. Stars in the Sky	Adaptations & Changes Over Time 1. Plant & Animal Features for Survival 2. Offspring & Parents 3. Alive in the Past
Grades 3-5	History and Nature of Science Traditional and Ecological Knowledge	1	Properties of Matter 1. Solid, Liquid, Gas 2. Heating, Cooling & Change	Water Cycle, Rock Cycle, Weather 1. Water Movement 2. Rocks & Soils 3. Weather Patterns	Biodiversity 1. Comparing & Sorting Living Things 2. Systems and Structures
		2	Motions & Forces 1. How Forces Change Motion 2. Moving Without Touching	Forces that Shape the Earth 1. Features of the Land 2. Erosion, Deposition & Soil 3. Catastrophic Events	Interdependence in Ecosystems 1. Food Chains & Energy 2. Interactions Between Organisms
		3	Energy Transfer & Transformation 1. Insulators & Conductors of Heat 2. Different Kinds of Energy 3. Changes Made by Energy	Solar System & Universe 1. Changing Daylight, Changing Seasons/Movements of Earth 2. Phases of the Moon 3. Objects in the Sky	Adaptations & Changes Over Time 1. Organisms Match their Environment 2. Traits are Inherited 3. Fossils

Standards Woven Throughout Units		Year	Physical Science	Earth Science	Life Science
Grades 6-8	Inquiry and Process Science and Technology Cultural, Social, Personal Perspectives and Science	1	Properties of Matter 1. Atoms, Molecules & States of Matter 2. Mixing & Separating 3. Physical & Chemical Changes	Water Cycle, Rock Cycle, Weather 1. Igneous, Metamorphic, Sedimentary 2. Water, Earth & Weather 3. Weather & Energy	Biodiversity 1. Dichotomous Keys & Taxonomy 2. Cells, Tissues, Organs & Systems 3. Behaviors for Survival
		2	Motions & Forces 1. Magnets & Currents 2. Waves 3. How Light Travels 4. Forces	Forces that Shape the Earth 1. Inside the Earth 2. Changes Related to Tectonic Plate Movement 3. Mapping & Stewardship	Interdependence in Ecosystems 1. Food Webs 2. Flows, Cycles & Conservation 3. Energy for Changes
		3	Energy Transfer & Transformation 1. Energy Changes Form 2. Explaining Changes of State (solid, liquid, gas)	Solar System and Universe 1. Tilt & Rotation 2. Planets, Stars & Distances 3. Modeling the Solar System	Adaptations & Changes Over Time 1. Reproduction 2. Adaptations for Survival 3. The Role of Genes
Grades 9-12	History and Nature of Science	1	Properties of Matter 1. Periodic Table 2. Atomic Structure 3. Chemical Reactions	Water Cycle, Rock Cycle, Weather 1. Modeling the Rock Cycle 2. Water, Carbon & Oxygen Cycles 3. Climate	Biodiversity 1. Structure & Function 2. Kingdoms, Phyla & Divisions 3. Cells & Systems 4. Learning & the Brain
		2	Motions & Forces 1. Newton's Laws 2. Interactions of Electric & Magnetic Forces 3. Movements of Waves	Forces that Shape the Earth 1. Erosion, Deposition & Humans 2. Plate Tectonics Model & Theory	Interdependence in Ecosystems 1. Carbon & Nitrogen Cycles 2. Population Dynamics 3. Impacts of Changes in Ecosystems
		3	Energy Transfer & Transformation 1. Types of Heat Transfer 2. Useful Energy 3. Electrical Circuits	Solar System & Universe 1. Tides 2. Aurora 3. The Universe & its Changes	Adaptations & Changes Over Time 1. Chromosomes, DNA & Inheritance 2. Natural Selection & Evolution 3. Issues in Genetics