



**4 Year Old Kindergarten Curriculum Summary**  
**Science and Social Studies - Edgar Elementary School**  
**Updated August 2022-Kristin Bornbach and Mandy Schnelle**

The 4 Year-Old Kindergarten Science and Social Studies Curriculum is based on the comprehensive curriculum “Big Day for Pre-K!-Scholastic” and the Wisconsin Model Early Learning Standards.

During the 4K school year, young learners will be exposed to four important social studies curriculum topics; “ready for school”, “my family”, “our community” and “moving on-student celebrations of personal growth.” Students will be exposed to four important science topics “awesome animals,” “imagine it, make it” “growing up healthy” and “nature around us.”

During these monthly themes, students will respond to a weekly “essential question.” An example of an essential question is “How do I work and play at school?” Students will also focus on learning targets and “I can” statements. An example of this would be, “I can identify the five senses.” Students will work at specific learning centers geared towards science and social studies topics. Young learners will be exposed to quality literature stories based on weekly themes.

From the “teacher’s side” of this curriculum, science and social studies will be taught twice weekly and implemented in various content areas throughout the school day. We will assess students through teacher observations, daily journal work, student work, state assessments and report card assessments. Based on these formative and summative assessments, we will adjust our instruction to include both intervention and enrichment student activities. In our curriculum template, we have included “DOK-Depth of Knowledge” which refers to the level of comprehension and the skills involved. An example of this skill would be “describe these people.” We also have included the specific standards that this curriculum aligns with. “Scientific Thinking: C.EL. 1 - The student uses observations to gather information,” is an example.

Our science and social studies curriculum template is an important resource for our 4K classroom, teaching staff and parents of young learners. It is a working document that guides teacher instruction in these important content areas.

Thank you for allowing us to work during the summer to update this curriculum.

## Kindergarten Science Overview

Each kindergarten science lesson contains a mystery, discussion questions, and hands-on activities.

The kindergarten science curriculum helps students learn how to:

Ask questions based on prior knowledge and observations, compare common objects, describe how objects move, notice patterns in the natural world, investigate the needs of plants and animals and use knowledge of weather to make informed decisions.

### Plant and Animal Secrets:

Lesson 1: Why do woodpeckers peck wood?

Lesson 2: Where do animals live?

Lesson 3: How can you find animals in the woods?

Lesson 4: How do animals make their home in the forest?

Lesson 5: How do plants and trees grow?

Lesson 6: Why would you want an old log in your backyard?

### Wild Weather:

Lesson 1: How can you get ready for a big storm?

Lesson 2: Have you ever watched a storm?

Lesson 3: How many different kinds of weather are there?

### Circle of Seasons:

Lesson 1: How do you know what to wear for the weather?

Lesson 2: What will the weather be like on your birthday?

Lesson 3: Why do birds lay eggs in the spring?

### Sunny Skies:

Lesson 1: How could you walk barefoot across a hot pavement without burning your feet?

Lesson 2: How could you warm up a frozen pavement?

Lesson 3: Why does it get cold in winter?

### Force Olympics:

Lesson 1: What's the biggest excavator?

Lesson 2: Why do builders need so many big machines?

Lesson 3: How can you knock down a wall made of concrete?

Lesson 4: How can you knock down the most bowling pins?

Lesson 5: How can we protect a mountain town from falling rocks?

Lesson 6: How could you invent a trap?

## First Grade Science Overview

The First Grade Science curriculum is aligned with the Next Generation Science Standards. We will be using the 2022 series by Mystery Science, which includes 3 main units.

The three units for first grade include:

### **Unit 1: Light, Sound & Communication - Lights & Sound**

- How do materials vibrate and make sound?
- How can we use light and illumination to communicate across a distance?

### **Unit 2: Spinning Sky - Day & Night Patterns**

- What causes day and night?
- Day and night are caused by the sun, moon and stars moving in patterns in the sky.

### **Unit 3: Plant & Animal Superpower - Plant & Animal Traits and Survival**

- How are parts of plants and animals important for survival?
- How are parents and their offspring similar?
- How do parents help their offspring survive?
- Zoo Fieldtrip - Animal instincts

## Second Grade Science Curriculum Overview

### Unit 1-Life Science

**Essential Learning Target:** In Life Science, students will explore animal classification and the traits that define each group. They also will learn about habitats and how the surrounding environment affects what organisms live in a particular environment. They will continue to explore what plants need to grow and how they reproduce through hands-on investigations.

#### **Essential Questions:**

- ❖ What do plants need to grow and reproduce?
- ❖ What do animals need to survive in their environment?

#### **Students can:**

- ★ I can tell that plants depend on water and light to grow.
- ★ I can tell that plants depend on animals for pollination or to move their seeds around
- ★ I can understand that there are many different kinds of living things in any area,
- ★ I can understand that living things exist in different places on land and in water
- ★ I can develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

#### **Major projects:**

- Mystery Science Assessments
- Exit Tickets
- Grass Head Project
- Animal Sorting Game
- Habitat Activity
- Construct Birdfeeders

## Unit 2-Physical Science

**Essential Learning Target:** In Physical Science, students will explore the properties of materials and matter and how those properties are useful in meeting basic human needs. They also investigate how heating and cooling affect the properties of materials.

### Essential Questions:

- ❖ How are the different properties of a material suited for different purposes?
- ❖ How can heating or cooling change a substance?

### **Students can:**

- I can understand that matter exists as different substances that have different observable properties.
- I can understand that different properties are suited to different purposes.
- I can understand that objects can be built up from smaller parts.
- I can plan and conduct an investigation to describe and classify different kinds of materials by their observable properties
- I can make an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

### **Major projects:**

- ★ Properties Activity
- ★ Feel the Heat Activity
- ★ Heating and Cooling Experiment
- ★ Create an Invention
- ★ Exit Tickets
- ★ Mystery Science Assessments

## Unit 3-Earth Science

**Essential Learning Target:** In Earth Science, students will explore how water shapes the Earth's surface through the construction of models. The learners will determine the causes of erosion and design solutions to problems caused by erosion.

### **Essential Questions:**

- ❖ What events on Earth occur quickly and which occur slowly?
- ❖ How do wind and water change the shape of the land?

### **Students can:**

- I can understand that some events on Earth occur very quickly; others can occur very slowly.
- I can understand that wind and water change the shape of the land.

### **Major Projects:**

- ★ Flash Flood Finder Activity
- ★ If You Floated Down a River Activity
- ★ Draw the River Rocks Activity
- ★ Enrichment: Cornmeal Canyon Activity and Erosion Activity
- ★ Mystery Science Assessments
- ★ Exit Tickets

## Unit 4-Engineering, Technology, and Engineering Design

**Essential Learning Target:** Students will utilize concepts from Engineering, Technology, and Engineering Design throughout all units by making observations, recording information, solving problems, analyzing data, constructing arguments, and designing and building models.

### **Essential Questions:**

- ❖ Why is it important to compare and test designs?

### **Students can:**

- I can understand that since there is more than one possible solution to a problem, it is useful to compare and test designs.

### **Major Projects:**

- ★ Used throughout activities and investigations in each unit

## 3rd grade science curriculum overview for school board 2022-23

The 3rd Grade Science curriculum is Mystery Science. Each unit is centered around a main science topic. Each lesson involves a learning component and an activity or experiment component. The scientific method and engineering process are embedded in the lessons and experiments.

### Life Science:

Students will identify characteristics of organisms both plants and animals that are inherited or from the environment, and identify different stages of plant and animal life cycles. They will also use fossils to determine the types of organisms and environments that existed long ago.

Essential Question: *How do the characteristics of organisms change over time?*

Assessments: Create a project by picking an animal and giving it a new trait, explain why it should have that trait. Sequence pictures of a bull frog's life cycle.

### Weather

Students will identify typical weather in different climates and make predictions about weather by observing clouds and their changes.

Essential Question: *How can we identify different climates and predict weather by observing clouds?*

Assessments: Draw a picture of a storm cloud and answer the questions where do clouds come from. Design a wind-proof house and compare and defend their structure to classmates using the engineering design process.

### Physical Science: Forces, Motion, and Magnets

Students will identify how objects react to changes in motion such as push and pull. They will compare materials with the most and least amount of friction. They will also recognize that some forces act through direct contact and some do not.

Essential Question: *How can we recognize how forces on objects change motion of the object?*

Assessments: Roll a car on different surfaces to determine which surface has the most friction using the scientific method to guide the experiment. Categorize types of push and pull forces.

## **Overview of Grade 4 Science Curriculum 2022**

Through Mystery Science, Fourth Grade students will investigate, explore, apply, construct, analyze, and interpret data to understand concepts in units taught: Human body, senses, and the brain, Rock Cycle, Erosion and Natural Hazards, Sound, Waves and Communication, Energy and Motion.

### **Thinking Like a Scientist Introduction**

Students will learn how to inquire about their world. They will learn how to use science tools and skills to collect data to carry out investigations.

### **Human Machine**

Students investigate structures and functions of the human body. Students explore how our bones and muscles are interconnected, how our eyes interact with light and impact our vision, and how our brain responds to stimuli in our environment.

### **Birth of Rocks**

Students investigate features and processes of the Earth's surface. Students explore the rapid process of volcanic eruptions! In contrast, students also explore the gradual Earth processes of weathering and erosion. Students apply their knowledge and design solutions to mitigate the impacts of these processes on humans.

### **Waves of Sound**

Students investigate the science of sound. Students construct physical devices to feel the vibrations that allow us to communicate across distances. Students also use digital devices to visualize the characteristics of different sound waves that cause us to hear different things.

### **Energizing Everything**

Students explore energy! Students investigate how energy is stored, how it can make objects move, and how collisions transfer energy between objects. Students also construct devices that convert energy from one form into another, such as heat into motion and electricity into light.

# Board Summary Report 5th Grade

## Social Studies Course Overview

In 5th grade social studies, we cover 5 specific topics over 4 units. Throughout these units, we will use a variety of lessons and activities to measure the students' understanding of what we learned. We will begin the school year discussing the "First Nations and Early Settlers", followed by "A New Nation". After that, we will explore "Westward Expansion", and end with "A New Century". The students are exposed to many learning opportunities through our classroom materials, writing letters to others around the world, guest speakers, and field trip opportunities.

Unit1: Settling the Americas- Introduction to Geography, First Nations, Early Explorers, 13 Colonies

Unit 2: A New Nation- Introduction to American Government, Revolutionary War, Industrial Revolution

Unit 3: Westward Expansion- Cherokee Nation, Lewis and Clark, Oregon Trail

Unit 4: A New Century- Civil War, Civics, Civil Rights Movement

## Science Course Overview

In 5th grade science, we cover 24 lessons over 4 units. We will learn through a variety of hands-on activities, videos, labs, author visits and field trips to measure the students' understanding of what we learned.

We will begin the school year with the *Web of Life* unit detailing how organisms depend on each other and form interconnected ecosystems. Then we will cover the *Chemical Magic* unit that explores the properties of matter. Next, we will cover the *Spaceship Earth* unit which explores parts of space, changing patterns in the sky, and we will make observations of shadows. Lastly, we will cover the *Watery Planet* unit, which explores the importance of water as a natural resource. We will also cover distribution of water, Earth's water cycle, and how it affects human societies. We are excited to adopt this new curriculum as it is more hands-on and condensed which will allow for greater engagement and deeper understanding of our science standards.

## Middle School Science Overview

### 6th Grade:

Course Description: Sixth-grade science contains all aspects of life science at a middle school level. This will contain cells and how life is organized within different organisms, reproduction, heredity, and growth. How matter and energy moves through all living and nonliving things within an ecosystem. The history of life; looking at different organisms that lived and how we can relate that to the organisms that we see now (evolution).

#### Units:

- Unit 1: Cells and Organization in Organisms
- Unit 2: Reproduction, Heredity, and Growth
- Unit 3: Matter and Energy in Living Systems
- Unit 4: Ecosystem Dynamics
- Unit 5: The History of Life on Earth
- Unit 6: Evolution

### 7th Grade:

Course Description: Seventh-grade science contains all aspects of physical/engineering science at a middle school level. This will contain what energy/matter is and how it can be transferred through everything. Different chemical processes and the equations that are associated with them. All types of forces (electric/magnetic) and motions we experience in our physical world. How many types of information can be transmitted via waves. And lastly an introduction to the different parts/steps of engineering.

#### Units:

- Unit 1: Energy
- Unit 2: Energy Transfer
- Unit 3: The Structure of Matter
- Unit 4: Chemical Processes and Equations
- Unit 5: The Chemistry of Materials
- Unit 6: Forces and Motion
- Unit 7: Electric and Magnetic Forces
- Unit 8: Waves and Information Transfer
- Unit 1: Introduction to Engineering and Science

### 8th Grade:

Course Description: Eighth-grade science contains all aspects of Earth and Space science at a middle school level. This will contain circulation patterns of air/water and how these things can affect weather and climate as well as the human impact. How the Earth changes over time including rock cycle, plate tectonics, and resources. Then we get into the history of the Earth including the geologic time scale and natural hazards. Then we dive into space science which includes Earth-Moon-Sun systems, seasons, gravity, universe, solar system, and using models.

#### Units:

- Unit 1: Circulation of Earth's Air and Water
- Unit 2: Weather and Climate
- Unit 3: The Dynamic Earth
- Unit 4: Earth Through Time
- Unit 5: Earth's Natural Hazards
- Unit 6: Resources in Earth Systems
- Unit 7: Human Impacts on Earth Systems
- Unit 8: Patterns in the Solar System
- Unit 9: The Solar System and Universe

## GENERAL SCIENCE

### GRADE 9

#### COURSE DESCRIPTION:

Our general science class will be a physical science course. The two main branches of physical science are chemistry and physics.

Chemistry is the study of the properties and composition of matter and the ways in which substances can react and change. Chemistry helps us understand what the world around us is made of and why one substance is different from the next.

Physics is the branch of science that focuses on the interactions of matter and energy. Physics helps us to describe how things move, why they move, and why they change their motion. Physics helps us understand how energy interacts with the things around us. Essentially, physics attempts to uncover the basic principles that guide our natural world.

#### COURSE OVERVIEW LISTING ALL UNITS BEING COVERED:

- 1) Science Skills (Chapter 1)
- 2) Properties of Matter (Chapter 2)
- 3) States of Matter (Chapter 3)
- 4) Atomic Structure (Chapter 4)
- 5) Periodic Table (Chapter 5)
- 6) Chemical Bonding (Chapter 6)
- 7) Chemical Reactions (Chapter 7)
- 8) Nuclear Chemistry (Chapter 10)
- 9) Motion (Chapter 11)
- 10) Forces & Motion (Chapter 12)
- 11) Forces in Fluids (Chapter 13)
- 12) Work & Energy (Chapters 14-15)
- 13) Thermal Energy & Heat (Chapter 16)
- 14) Mechanical Waves & Sound (Chapter 17)

**CHEMISTRY**  
**GRADES 10-12**

COURSE DESCRIPTION:

Chemistry is the study of the properties and composition of matter and the ways in which substances can react and change. Chemistry helps us understand what the world around us is made of and why one substance is different from the next.

COURSE OVERVIEW LISTING ALL UNITS BEING COVERED:

- 1) Introduction to Chemistry (Chapter 1)
- 2) Matter & Change (Chapter 2)
- 3) Scientific Measurement (Chapter 3)
- 4) Atomic Structure (Chapter 4)
- 5) Electrons in Atoms (Chapter 5)
- 6) Periodic Table (Chapter 6)
- 7) Ionic & Metallic Bonding (Chapter 7)
- 8) Covalent Bonding (Chapter 8)
- 9) Chemical Names & Formulas (Chapter 9)
- 10) Chemical Calculations (Chapter 10)
- 11) Chemical Reactions (Chapter 11)
- 12) Stoichiometry (Chapter 12)

**PHYSICS**  
**GRADES 10-12**

COURSE DESCRIPTION:

Physics is the branch of science that focuses on the interactions of matter and energy. Physics helps us to describe how things move, why they move, and why they change their motion. Physics helps us understand how energy interacts with the things around us. Essentially, physics attempts to uncover the basic principles that guide our natural world.

COURSE OVERVIEW LISTING ALL UNITS BEING COVERED:

- 1) Introduction to Physics (Chapter 1)
- 2) Motion in One Dimension (Chapter 2)
- 3) Two-Dimensional Motion & Vectors (Chapter 3)
- 4) Forces & the Laws of Motion (Chapter 4)
- 5) Work & Energy (Chapter 5)
- 6) Momentum & Collisions (Chapter 6)
- 7) Circular Motion & Gravitation (Chapter 7)
- 8) Vibrations & Waves (Chapter 11)
- 9) Sound (Chapter 12)

**BIOLOGY**  
**GRADES 10**

COURSE DESCRIPTION:

This course takes students through a comprehensive study on the major topics in biology. Topics include ecology, population biology, biomes, cell biology, genetics along with invertebrate and vertebrate diversity. Students will actively participate in microscope, lab dissection and project work.

COURSE OVERVIEW LISTING ALL UNITS BEING COVERED:

- The Science of Biology - Introduction
- Ecosystems and Ecology
- Population Biology
- Cell Structure and Function - Plant and Animal
- Cell Growth and Division - Mitosis
- Genetics - Mendel and Meiosis
- DNA Structure and Replication
- RNA and Protein Synthesis
- Introduction to Animals - Vertebrate and Invertebrate organisms

## ENVIRONMENTAL SCIENCE

### GRADES 11-12

#### COURSE DESCRIPTION:

This course develops awareness through a hands-on and in-the-field approach to the local environment. Topics include a strong focus on the water while completing water tests in the Scotch Creek and Rib River, ecological footprints, invasive species, land use and renewable/nonrenewable energy. Students will actively participate in field work and project work.

#### COURSE OVERVIEW LISTING ALL UNITS BEING COVERED:

- Introduction to Environmental Science
- Edgar Recycling Program
- Water Resources
- Invasive Species
- Land Use and Management
- Waste Management
- National Parks
- Nonrenewable Energy
- WPS Energy Enrichment Activities
- Renewable Energy
- Atmosphere and Climate Change

## **BODY, STRUCTURE & FUNCTION (BSF) – DUAL CREDIT**

### **GRADES 11-12**

#### COURSE DESCRIPTION:

This course in biology takes an in-depth look at the essential principles of human anatomy and physiology. Topics include histology and tissues, and the following human systems: integumentary, skeletal, muscular, nervous, cardiovascular system and more. Students will actively participate in microscope, lab dissection and project work. Students may receive college credit for the Body Structure and Function class for NTC's Surgical Technician Program.

#### COURSE OVERVIEW LISTING ALL UNITS BEING COVERED:

- The Human Body: An Orientation
- Tissues of the Body: Histology
- The Integumentary System
- The Skeletal System
- The Muscular System
- The Nervous System
- The Senses
- Blood and the Cardiovascular System
- The Respiratory System
- The Digestive System
  - Endocrine
  - Lymphatic
  - Urinary
  - Reproductive
- Fetal Pig Dissection Final Lab