

Wilson Area School District Planned Course Guide

Title of planned course: Third Grade Science

Subject Area: Science

Grade Level: Third Grade

Course Description: The science curriculum will allow students to be young scientists and explore their world through a variety of studies. Students will gain an understanding of systems:

1. Physical Science by investigating motion and forces and electricity and magnetism
2. Earth Science by investigating weather and climate
3. Life Science by investigating life cycles and traits, adaptations and survival, and fossil evidence

Time/Credit for this Course: One Full Academic Year

Curriculum Writing Committee: Amy Carlin and Tracey Silfies

Curriculum Map

1st and 2nd Marking Periods:

Physical Science: 50 days

Topic 1- Motion and Forces

Topic 2- Electricity and Magnetism

Earth Science: 52 days

Topic 3- Weather

Topic 4- Climate

3rd and 4th Marking Periods:

Life Science: 78 days

Topic 5- Life Cycles and Traits

Topic 6- Adaptations and Survival

Topic 7- Fossil Evidence

Wilson Area School District Planned Course Materials

Course Title: Third Grade Science

Textbook: Elevate Science

Supplemental Books:

- www.savvasrealize.com
- Phenomena Readers

Teacher Resources:

- Teacher Edition
- Lab Kits
- www.savvasrealize.com
- Professional Development Videos

Curriculum Scope & Sequence

Planned Course: Third Grade Science

Unit: Physical Science

Topic 1- Motion and Forces

Topic 2- Electricity and Magnetism

Time frame: about 50 days

State Standards: Physical Science: Motion and Stability: Forces and Interactions

- Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object
- Make and communicate observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion
- Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other
- Define a simple design problem that can be solved by applying scientific ideas about magnets

Anchor(s) or adopted anchor:

- S4.A.1.1: Identify and explain the application of scientific, environmental, or technological knowledge to possible solutions to problems
- S4.A.1.3: Recognize and describe change in natural or human-made systems and the possible effects of those changes
- S4.A.2.1: Apply skills necessary to conduct an experiment or design a solution to solve a problem
- S4.A.3.2: Use models to illustrate simple concepts and compare the models to what they represent
- S4.C.2.1: Recognize basic energy types and sources, or describe how energy can be changed from one form to another
- S4.C.3.1: Identify and describe different types of force and motion resulting from these forces, or the effect of the interaction between force and motion

Essential content/objectives: At end of the unit, students will be able to:

- Observe and measure an object's motion
- Use patterns to predict future motion
- Identify the forces acting on an object
- Use evidence to explain how balanced and unbalanced forces affect an object's motion
- Plan and conduct an investigation
- Relate the cause and effect relationships of electric forces between objects
- Describe factors that affect magnetic forces between objects

Core Activities: Students will complete/participate in the following:

- Topic 1- Motion and Forces Lessons 1-4
 - Lesson 1- Motion
 - Lesson 2- Patterns in Motion
 - Lesson 3- Forces and Motion
 - Lesson 4- Balanced and Unbalanced Forces
- Topic 2- Electricity and Magnetism Lessons 1-2
 - Lesson 1- Electric Forces

- Lesson 2- Magnetic Forces
- uConnectLabs
- Topic 1- How do things move?
- Topic 2- How can you move objects without touching them?
- Quest activities
- Topic 1- Pinball Wizard
- Topic 2- Weigh to Go
- uInvestigate Labs
- uDemonstrate Labs
- Virtual Labs
- Digital/Technology resources on www.savvasrealize.com

Extensions:

- uEngineer It
- Literacy Connections
- eText: Phenomena Reader and STEM Engineering Reader
- Math Connections
- Career Connection
- Online games
- STEM activities
- Enrichment activities

Remediation:

- Reteach core skills
- Differentiated Instruction section in teacher's manual
- Remediation worksheets

Instructional Methods:

- Explicit Instruction
- Scaffolded Questions in teacher's manual
- Vocabulary
- Hands-on activities and labs
- Think-pair-share
- Online videos, resources, and learning games

Materials & Resources:

- Teacher Manual
- Student textbook
- Lab materials
- Chromebooks
- Supplemental materials and worksheets
- SAVVAS website

Assessments:

- Teacher observations during whole group instruction and student independent work
- Online Lesson Quizzes
- Lesson Checks in student textbook
- Topic Assessment (online and/or student textbook)
- Performance-Based Assessment: uDemonstrate Lab

Curriculum Scope & Sequence

Planned Course: Third Grade Science

Unit: Earth Science
Topic 3- Weather
Topic 4- Climate

Time frame: about 52 days

State Standards: *Earth and Space Sciences:*

- Earth's Systems
 - Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season
 - Obtain and combine information to describe climates in different regions of the world.
- Earth and Human Activity
 - Make a claim supported by evidence about the merit of a design solution that reduces the impacts of a weather-related hazard

Anchor(s) or adopted anchor:

- S4.A.1.1: Identify and explain the application of scientific, environmental, or technological knowledge to possible solutions to problems
- S4.A.1.3 Recognize and describe change in natural or human-made systems and the possible effects of those changes
- S4.A.2.1: Apply skills necessary to conduct an experiment or design a solution to solve a problem
- S4.A.3.1 Identify systems and describe relationships among parts of a familiar system (e.g., digestive system, simple machines, water cycle)
- S4.A.3.2 Use models to illustrate simple concepts and compare the models to what they represent
- S4.A.3.3 Identify and make observations about patterns that regularly occur and reoccur in nature
- S4.D.1.3 Describe Earth's different sources of water or describe changes in the form of water
- S4.D.2.1 Identify basic weather conditions and how they are measured

Essential content/objectives: At end of the unit, students will be able to:

- Explain how water affects weather
- Describe the weather conditions for each season
- Demonstrate how to stay safe in severe weather
- Describe some factors that affect climate
- Describe ways in which climates can change
- Explain how the global climate is changing
- Describe climates in different parts of the world

Core Activities: Students will complete/participate in the following:

- Topic 3- Weather Lessons 1-3
 - Lesson 1- Water and Weather
 - Lesson 2- Seasons Weather Changes
 - Lesson 3- Weather Hazards

- Topic 4 Electricity and Magnetism Lessons 1-3
 - Lesson 1- Climates
 - Lesson 2- Climate Change
 - Lesson 3- World Climates
- uConnectLabs
 - Topic 3- How can temperature damage a house?
 - Topic 4- How does temperature change on a mountain?
- Quest activities
 - Topic 3- Hold on to Your Roof!
 - Topic 4- Climates on Location
- uInvestigate Labs
- uDemonstrate Labs
- Virtual Labs
- Digital/Technology resources on www.savvasrealize.com

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- Performance-Based Assessment: uDemonstrate Lab

Curriculum Scope & Sequence

Planned Course: Third Grade Science

Unit: Life Science

Topic 5- Life Cycles and Traits

Topic 6- Adaptations and Survival

Topic 7- Fossil Evidence

Time frame: about 78 days

State Standard: *Life Science*

- ***From Molecules to Organisms: Structures and Processes***
 - Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death
- ***Ecosystems: Interactions, Energy, and Dynamics***
 - Construct an argument that some animals form groups that help members survive.
- ***Heredity: Inheritance and Variation of Traits***
 - Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms
 - Use evidence to support the explanation that traits can be influenced by the environment
- ***Biological Evolution: Unity and Diversity***
 - Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago
 - Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing
 - Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all
 - Make a claim supported by evidence about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change

Anchor(s) or adopted anchor:

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- S4.A.2.1: Apply skills necessary to conduct an experiment or design a solution to solve a problem
- S4.A.3.1 Identify systems and describe relationships among parts of a familiar system (e.g., digestive system, simple machines, water cycle).
- S4.A.3.2 Use models to illustrate simple concepts and compare the models to what they represent
- S4.A.3.3 Identify and make observations about patterns that regularly occur and reoccur in nature
- S4.B.1.1 Identify and describe similarities and differences between living things and their life processes
- S4.B.2.1 Identify and explain how adaptations help organisms to survive
- S4.B.2.2 Identify that characteristics are inherited and, thus, offspring closely resemble their parents

Essential content/objectives: At end of the unit, students will be able to:

- Describe how all life cycles follow the same pattern
- Explain that living things inherit many characteristics from their parents
- Provide evidence showing that traits vary in a group of similar organisms
- Relate the characteristics of a plant or animal to how well it can survive
- List some animals that form groups to help them survive
- Explain how plants and animals respond to changes in the environment
- Describe what a fossil is
- Describe some ways that fossils form
- Use fossil data to give evidence of organisms and environments that existed long ago
- Use fossil data to argue how some living things have responded to climate changes

Core Activities: Students will complete/participate in the following:

- Topic 5 Life Cycles and Traits Lessons 1-3
 - Lesson 1- Life Cycles
 - Lesson 2- Inherited Traits
 - Lesson 3- Traits Influenced by the Environment
- Topic 6 Adaptations and Survival Lessons 1-3
 - Lesson 1- Survival of Individuals
 - Lesson 2- Survival of Groups
 - Lesson 3- Survival When Environments Change
- Topic 7 Fossil Evidence Lessons 1-3
 - Lesson 1- Fossils
 - Lesson 2- Fossils as a Record
 - Lesson 3- Living Things and Climate Change
- uConnectLabs
 - Topic 5- Which seeds are from which plant?
 - Topic 6- What clues do beak shapes give about birds?
 - Topic 7- What can a fossil tell you?
- Quest activities
 - Topic 5- Design a Mystery Creature
 - Topic 6- Help the Pond Organisms Survive
 - Topic 7- Written in Stone
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- uDemonstrate Labs
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