

Standard Aligned, Inquiry Based Science Kits

KIT DESCRIPTION

NGSS STANDARDS ALIGNMENT

Ant Homes Under the Ground *Preschool-Grade 1*
 These delightful science- and math-integrated activities introduce young children to ant behavior using role-play, cooperative exercises, and close observation of live ants. A large poster is assembled in stages to highlight ant tunnels, food, social structure, and life cycle.

- Kindergarten From Molecules to Organisms: Structures and Processes LS1.C
- 1st From Molecules to Organisms: Structures and Processes LS1.A, LS1.B,
- 1st Heredity: Inheritance and Variation of Traits LS3.A, LS3.B
- Crosscutting Concepts: Patterns, Structures and Functions

Bubble Festival *Grades K-6*
 These captivating, bubble-centric tabletop learning stations are packed with math and science content. The unit includes detailed teacher assistance with classroom logistics, writing and literature extensions, and tips for setting up an all-school Bubble Festival.

- 1st Grade Waves and Their Application 1-PS 4-3
- 2nd Grade: Matter and Its Interactions 2-PS 1-1
- 6th Grade Matter and Its Interactions MS-PS 1-1
- Crosscutting Concepts: Cause and Effect; Structure and Function; Scale, Proportion, Quantity

Investigating Artifacts *Grades K-6*
 This rich unit introduces children to the concepts of inference and evidence with activities relating to anthropology, archaeology, and diverse Native American and world cultures. Students sort and classify natural objects, make masks and create "myths," and excavate a shoebox midden.

Coming Soon

Mother Opossum and Her Babies *Grades 1-3*
 Integrating math with life science, these activities for young children use role-play, drama, measurement, and comparison to study opossum adaptations. Students learn about marsupial pouches and the development of baby opossums, and about the famous trick of "playing possum."

- Kindergarten From Molecules to Organisms: Structures and Processes LS1.C
- 1st Grade: From Molecules to Organisms: Structures and Processes LS1.A, LS1.B, LAS1.D
- 1st Grade: Biodiversity and Humans, LS4.D
- 2nd Grade: Matter and Its Interactions PS1.A, PS1.
- Kindergarten Math MD. A.1, MD.A.2
- 1st Grade Math MD.A.1, MDA.2
- Crosscutting Concepts: Patterns, Cause and Effect, Energy and Matter

Penguins and Their Young *Preschool-Grade 1*
 This appealing guide addresses important math concepts and skills as children learn about the adaptations and habitat of the Emperor penguin. With role-play, drama, and multisensory games, children integrate language learning with mathematics and the physical and life sciences.

- Kindergarten From Molecules to Organisms: Structures and Processes LS1.C
- 1st Grade: From Molecules to Organisms: Structures and Processes LS1.A, LS1.B, LAS1.D
- 1st Grade: Biodiversity and Humans, LS4.D
- 2nd Grade: Matter and Its Interactions PS1.A, PS1.B
- Kindergarten Math MD.A.1, MD.A.2
- 1st Grade Math MD.A.1, MDA.2
- Crosscutting Concepts: Patterns, Cause and Effect, Energy and Matter

Liquid Explorations *Grades 1-3*
 A great way to introduce young students to the properties of liquids, and an excellent physical science unit for primary grades. Activities include classification, observation, and experimentation; one activity supports discussion of oil slicks and other environmental issues.

- Kindergarten: Earth and Human Activity K-ESS 3-3
- 2nd Grade Matter and Its Interactions 2-PS 1-1
- Crosscutting Concepts: Patterns, Cause and Effect

<p>Elephants and Their Young <i>Preschool-Grade 1</i> With art, drama, and role-play, young children learn all about the African elephant’s unique body structure and fascinating social behaviors. Math and science concepts include measurement, weight, volume, and comparisons of many kinds.</p>	<ul style="list-style-type: none"> Kindergarten From Molecules to Organisms: Structures and Processes LS1.C 1st Grade: From Molecules to Organisms: Structures and Processes LS1.A, LS1.B, LAS1.D 1st Grade: Biodiversity and Humans, LS4.D 2nd Grade: Matter and Its Interactions PS1.A, PS1.B Kindergarten Math MD.A.1, MD.A.2 1st Grade Math MD.A.1, MDA.2 <ul style="list-style-type: none"> Crosscutting Concepts: Patterns, Cause and Effect, Energy and Matter
<p>Stories in Stone <i>Grades 4-8</i> This earth science unit explores the formation of igneous, sedimentary, and metamorphic rocks. Students distinguish and classify rocks and minerals, observe formation of salt crystals and make model crystal shapes, and use clay-modeling activities to learn about the rock cycle and more. A strong curricular companion to <i>Plate Tectonics</i>.</p>	<ul style="list-style-type: none"> 4th Grade Earth and Human Activity 4-ESS3-1 4th Grade Earth’s Systems 4-ESS 2-1 5th Grade Earth’s Systems 5-ESS 2-1 6th Earth’s Systems MS-ESS 2-1 6th Earth’s Systems MS-ESS 2-2 <ul style="list-style-type: none"> Cross Cutting Concepts: Cause and Effect; Patterns, Stability and Change; Systems and System Models
<p>Build It! Festival <i>Grades K-6</i> This unit’s wealth of learning-station activities help students make real-world connections as they focus on construction, geometric challenges, and spatial visualization. Geometry background is provided. Requires pattern blocks and polyhedra, but patterns for shapes and tangrams are provided.</p>	<p style="text-align: center; font-size: 2em; font-weight: bold; opacity: 0.5;">Coming Soon</p>
<p>Group Solutions <i>Grades K-4</i> The activities in this popular guide are designed for groups of four, who share clues with their group and then have to work cooperatively to solve problems that convey fundamental logical thinking and mathematical concepts.</p>	<p style="text-align: center; font-size: 2em; font-weight: bold; opacity: 0.5;">Coming Soon</p>
<p>Plate Tectonics <i>Grades 6-8</i> These groundbreaking earth science activities—including models of erupting volcanoes, strike-slip faults, and sea-floor spreading—reveal the dynamic nature of the Earth’s crust. Like real earth scientists, students conduct “research” at key geological sites around the world and record observations, calculations, and conclusions in a geological field notebook. An expansive complement to <i>Stories in Stone</i>.</p>	<ul style="list-style-type: none"> 4th Grade ESS1-1 4th Grade ESS2-2 4th Grade ESS 3-2 5th Grade ESS 2-1 Earth’s Place in the Universe MS.ESS.1.c Earth’s Systems MS.ESS.2.A, MS.ESS.2.B Earth and Human Activity MS.ESS.3.B <ul style="list-style-type: none"> Crosscutting Concepts: Patterns; Cause and Effect; Stability and Change; Systems and System Models; Energy and Matter; Scale, Proportion and Quantity
<p>Convection: A Current Event <i>Grades 6-8</i> In the course of this dynamic unit, students explore the many roles of convection by observing and diagramming convection currents in fluids. Where traditional textbooks use two-dimensional images to convey the <i>notion</i> of convection, this GEMS guide brings the concept to life with physical experiments on the movement of heat, the diffusion of scent, the trajectory of carbon dioxide, and other seeming intangibles.</p>	<ul style="list-style-type: none"> Energy and thermal energy transfer MS-PS3-3 Unequal heating and roation of the earth’s impact on weather MS-ESS2-6 <ul style="list-style-type: none"> <i>Crosscutting concepts:</i> Energy and Matter; Systems and System Models

<p>Frog Math <i>Grades K-3</i> In an artful interweaving of math and literature, this unit begins with free exploration of buttons and leads to age-appropriate sorting, classifying, and graphing activities. It also introduces the concept of probability.</p>	<ul style="list-style-type: none"> • <p style="text-align: center;">Coming Soon</p>
<p>Buzzing a Hive <i>Grades K-3</i> In this extensive and fascinating unit, young students get a good introduction to the honeybee's extravagant communication system and intricate behavior, and an appreciation for our interdependence with these and all insects. In a series of guided-discovery activities that build on one another, the children make paper bees to learn about bee body structure; act as bees in a beehive drama, taking the parts of guard bees and other role-players in the hive; perform bee dances to learn how bees communicate directions; and learn about bee predators and honey robbers.</p>	<ul style="list-style-type: none"> • Kindergarten: From Molecules to Organisms: Structures and Processes K-LS 1-1 • 1st Grade Heredity: Inheritance and Variation of Traits 1-LS 3-1 • 1st Grade From Molecules to Organisms: Structure and Processes 1-LS 1-1 • 2nd Grade Ecosystems: Interactions, Energy, Dynamics 2-LS 2-2 • 3rd Grade Heredity: Interitance and Variation of Traits 3-LS 3-1 • 3rd Grade Biological Evolution: Unity and Diversity 3-LS 4-2 • Crosscutting Concepts: Patterns, Structure and Function, Cause and Effect
<p>Quadice <i>Grades 4-8</i> Quadice is a challenging game that encourages students to think and talk about mathematical relationships. Students are motivated to perform mental calculations and to handle fractions with greater confidence. The game setting makes the practice of basic operations fun and promotes discussion of game-playing and problem solving strategies. Students' enthusiasm for the game builds from session to session as they become more familiar with the procedures and more creative about their strategies.</p>	<ul style="list-style-type: none"> • <p style="text-align: center;">Coming Soon</p>
<p>Tree Homes <i>Preschool-Grade 1</i> These activities focus on appreciation for trees and the animals that live in them, stimulating children's interest in the natural world and emphasizing the biological need for warmth and shelter. Students use role-play to understand adaptation and deepen their math learning by sorting, classifying, and measuring.</p>	<ul style="list-style-type: none"> • Kindergarten: From Molecules to Organisms: Structures and Processes K-LS1-1 • Kindergarten: Energy K-PS 3-1 • 1st Grade: From Molecules to Organisms: Structures and Processes 1-LS 1-1; 1-LS 1-2 • Crosscutting Concepts: Patterns, Cause and Effect