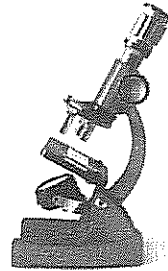


Lyndhurst Public Schools

Lyndhurst, NJ

# Science Curriculum



Mr. Joseph Abate, Jr.  
Superintendent  
School Business Administrator  
Board Secretary

Tracey L. Stellato Ed.D  
Assistant Superintendent

Madalena Zak  
Supervisor of Science

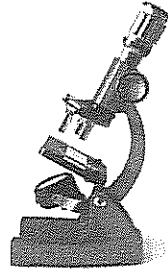
Adopted: September 2007

Lyndhurst Public Schools

Lyndhurst, NJ

# Science Curriculum

## Kindergarten



Mr. Joseph Abate, Jr.  
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Adopted: September 2007

**Lyndhurst School District  
Elementary School Map**

Kindergarten	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.5				
<b>September (3 weeks)</b>	<p>What are the parts of the body and what do they do?</p> <p>What are the four basic food groups?</p> <p>What can we do to stay healthy?</p>	<p>About Me"- Life and the Body Parts</p> <p><b>Unit Vocabulary:</b> Head, chin, ears, nose, mouth, shoulders, neck, waist, chest, knees, ankles, toes, elbows, wrists, fingers, feet, hands, hips, lips</p>	<p><b>SWBAT:</b> Name the different body parts and their functions.</p> <p>Name the four basic food groups.</p> <p>Identify healthy foods.</p> <p>Practice good personal hygiene to maintain good health.</p>	<p>Read poems, stories, and sing songs.</p> <p>Learning center activities.</p> <p>Guided practice.</p> <p>Big Book- "About Me"</p> <p>Flannel Board.</p> <p>Hands-on Inquiry.</p> <p>Computer activities.</p> <p>Video Tapes</p>	<p>Teacher observations</p> <p>Copy Masters</p>
<b>Standards</b>	5.1, 5.5				
<b>October (5 weeks)</b>	<p>What are our senses?</p> <p>What organs allow us to see, hear, smell, and touch?</p>	<p>About Me"- Life and the Senses</p> <p><b>Unit Vocabulary:</b> Eyes, see, light, dark, senses, ears, hear, sound, skin, touch, feel, smooth, rough, hard, nose, odors</p>	<p><b>SWBAT:</b> Name the five senses and organs that are involved.</p> <p>Tell the function of each sense organ.</p>	<p>Read poems, stories, and sing songs.</p> <p>Learning center activities</p> <p>Guided practice</p> <p>Big Book- "About Me"</p> <p>Flannel Board</p> <p>Hands-on Inquiry</p> <p>Computer activities</p> <p>Video Tapes</p>	<p>Teacher observations</p> <p>Performance Testing</p>

**Lyndhurst School District  
Elementary School Map**

Kindergarten	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.5				
<b>November (2 weeks)</b>	What do plants need to grow?	Life- Plants & Seeds  <b>Unit Vocabulary:</b> Seed, plant, root, stem, leaves, water, sunlight, soil, plants, leaves, classify, veins	<b>SWBAT:</b> Tell how leaves are used to classify plants.	Read poems, stories, and sing songs.  Learning center activities. Guided practice. Big Book- "Animals" Flannel Board. Hands-on Inquiry. Computer activities. Video Tapes	Teacher observations  Performance Testing
	What are seeds?  How can we classify plants?	Life- Animals  <b>Unit Vocabulary:</b> Fur, feathers, scales, shell, animal, baby, grow, parent, adult, egg,	List the shapes, colors, and sizes of seeds.  Observe seeds found in fruits and vegetables.		
<b>(2 weeks)</b>	What are the stages of animal development?  How are body coverings used to classify plants?				
<b>Standards</b>	5.1, 5.5				
<b>December (5 weeks)</b>	Where do plants and animals live?	Where do plants and animals live?	<b>SWBAT:</b>  Name and identify the various land habitats of plants and animals.  Name and identify various water habitats of plants and animals.	Read poems, stories, and sing songs.  Learning center activities Guided practice Big Book- "Animals" Flannel Board Hands-on Inquiry Computer activities Video Tapes	Teacher observations  Performance Testing

**Lyndhurst School District  
Elementary School Map**

Kindergarten	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.3, 5.6				
<b>January</b>	<p>What are objects made of?</p> <p>How do objects differ?</p> <p>What are the different colors?</p> <p>What are the different shapes?</p>	<p>Physical Science-Matter</p> <p><b>Unit Vocabulary:</b> Color, purple, red, yellow, blue, green, black, white, brown, gray, orange, circle, triangle, rectangle, square, octagon, line, straight, sides, curved</p>	<p><b>SWBAT:</b> Distinguish between and identify the different colors.</p> <p>Distinguish between and identify the different shapes of objects.</p> <p>Observe how objects differ in mass, number, and volume and relate to more or less</p>	<p>Read poems, stories, and sing songs.</p> <p>Learning center activities Guided practice Big Book- "How Do We Learn" Flannel Board. Hands-on Inquiry Computer activities Video Tapes</p>	<p>Teacher observations</p> <p>Performance Testing</p>
<b>Standards</b>	5.1, 5.7, 5.8				
<b>February</b>	<p>What is energy?</p> <p>What are some of the forms of energy?</p> <p>What do we need energy for?</p> <p>How do objects move?</p> <p>How does heat affect matter?</p>	<p>Physical Science-Energy</p> <p><b>Unit Vocabulary:</b> Roll, slide, bounce, swing, direction, left, right, forward, backward, up, down, move, solid, cold, heat, melt, liquid, sound, soft</p>	<p><b>SWBAT:</b> Tell why we need energy.</p> <p>Tell how objects can move in different ways and directions.</p> <p>Tell how heat affects matter.</p> <p>Discuss how sound varies in intensity.</p>	<p>Read poems, stories, and sing songs.</p> <p>Learning center activities Guided practice Big Book- Flannel Board Hands-on Inquiry Computer activities Video Tapes</p>	<p>Teacher observations</p> <p>Performance Testing</p>

**Lyndhurst School District  
Elementary School Map**

Kindergarten	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.8				
<b>March</b>	<p>What are the four seasons?</p> <p>What are the various weather conditions of the seasons?</p> <p>How are animals affected by the seasonal changes?</p>	<p>Earth Science- The Weather</p> <p><b>Unit Vocabulary:</b> Weather, windy, cloudy, sunny, rainy, snowy, hot, cold, warm, cool, season, summer, fall, autumn, spring, wet, hibernate, migrate</p>	<p><b>SWBAT:</b> Name the four seasons.</p> <p>Tell the weather conditions of each season.</p> <p>Relate how weather conditions affect, the way you dress.</p> <p>Tell how the seasonal changes affect plants and animals.</p>	<p>Read poems, stories, and sing songs.</p> <p>Learning center activities Guided practice Big Book- Flannel Board Hands-on Inquiry Computer activities Video Tapes</p>	<p>Teacher observations</p> <p>Test Performance</p>
<b>Standards</b>	5.1, 5.8				
<b>April</b>	<p>What makes up the Earth?</p> <p>What are the different shapes of rocks?</p>	<p>Earth Science- The Earth</p> <p><b>Unit Vocabulary:</b> Rounded, jagged, straight, boulders, mountain, valleys, oceans, smallest, largest, pebbles, hills, plains, streams, rivers, lakes</p>	<p><b>SWBAT:</b> Identify the various land forms.</p> <p>Identify the various bodies of water.</p> <p>Discuss the different shapes and sizes of rocks.</p>	<p>Read poems, stories, and sing songs.</p> <p>Learning center activities Guided practice. Big Book- "Earth" Flannel Board Hands-on Inquiry Computer activities</p>	<p>Teacher observations</p> <p>Performance Testing</p>

**Lyndhurst School District  
Elementary School Map**

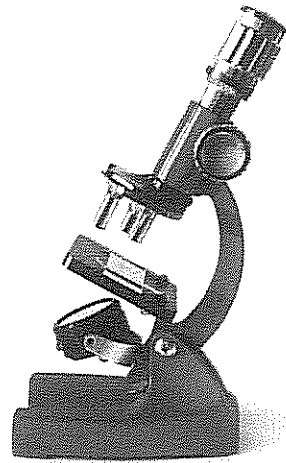
Kindergarten	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.9				
<b>May</b>	Where is the Moon and Sun in relation to the Earth?  What are the different features of the Earth, Moon, and the Sun?  How does daytime differ from nighttime?	Earth Science- The Sun, Earth & Moon  <u><b>Unit Vocabulary:</b></u> Sun, Earth, Moon, space, planet, crater, sunrise, sunset, light, heat, sunshine, shadow, day, nigh	<b>SWBAT:</b> Discuss the differences between the Earth, Sun, and Moon.  Tell the difference between daytime and nighttime.	Read poems, stories, and sing songs.  Learning center activities Guided practice Big Book-Flannel Board Hands-on Inquiry Computer activities Video Tapes	Teacher observations  Test Performance
<b>Standards</b>					
<b>June</b>	REVIEW		<b>SWBAT:</b>		Teacher observations  Performance Testing

Lyndhurst Public Schools

Lyndhurst, NJ

# Science Curriculum

## Grade 1



Mr. Joseph Abate, Jr.  
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School Business Administrator  
Board Secretary

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Assistant Superintendent

Madalena Zak  
Supervisor of Science

Adopted: August 2008

**Lyndhurst School District  
Elementary School Map**

1 <sup>st</sup> Grade Science	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.4, 5.7A1-2, 5.9A2				
<b>September (Physics)</b>	<p>What is the position of an object?</p> <p>Is the object in motion?</p> <p>Why do objects move?</p>	<p>Objects in motion – “Where is it? Is it Moving?”</p> <p><b>Unit Vocabulary:</b> Direction, force, measure, position, speed, change, pull, push</p>	<p>SWBAT:</p> <p>Describe an object's position in relation to another object</p> <p>Talk about different ways things move</p> <p>Understand that a push and a pull are forces that can cause motion</p> <p>Recognize how a force can change an object's position, direction and speed</p> <p>Measure how far an object moved.</p>	<p>Read First Reader</p> <p>Lab: Shadows Change Places - students go outside and observe that shadows change over time. Record changes in a shadow from morning to midday to afternoon and infer that changes are caused by the position of the Sun.</p> <p>Activity Sheets</p> <p><u>Integration of Technology</u></p> <p>Internet Resources</p>	<p>Teacher observations</p> <p>Teacher Generated Tests</p> <p>Copy Masters</p>

Standards	5.4, 5.8B3-4				
<p>October/November (Earth Science)</p>	<p>How does weather change from day to day?</p>	<p>Weather- changes from season to season</p>	<p><b>SWBAT:</b> Understand different types of weather and their characteristics.</p>	<p>Read First Readers Lab: What is Weather? – Students observe and describe the weather and discuss how weather affects everyday life. They conclude that weather changes from day to day and from season to season and varies from place to place.</p>	<p>Teacher observations Teacher Generated Tests</p>
	<p>How does weather change from season to season?</p>	<p><b>Unit Vocabulary:</b> Change, observe, seasons, weather, air, land, Sun, water</p>	<p>Name the four seasons , and discuss how weather changes from season to season.</p> <p>Examine how changing weather and seasons affect Earth and its inhabitants.</p> <p>Identify clothes people wear in different weather.</p> <p>Understand that the Sun warms the land, water and air.</p>	<p>Activity Sheets <u>Integration of Technology</u> Internet Resources</p>	<p>Copy Masters</p>

Standards	5.4, 5.5A1,5.6A1				
<p><b>December (Chemistry &amp; Life)</b></p>	<p>How do we sort things?</p> <p>What are some properties we use to sort things?</p> <p>How do we use our senses to sort things?</p>	<p>Sorting – Using properties of objects to classify them.</p> <p><b>Unit Vocabulary:</b> Magnet, material, properties, senses, sort</p>	<p><b>SWBAT:</b> Understand that we use different senses to determine properties of objects.</p> <p>Describe, sort, and classify objects according to observable properties, including color, shape, size, texture, sound and weight.</p> <p>Know that objects are composed of different materials</p>	<p>Read First Readers</p> <p>Lab: What are Properties? – Students compare and contrast various objects and gain experience describing objects by their attributes.</p> <p>Activity Sheets</p> <p><u>Integration of Technology</u></p> <p>Internet Resources</p>	<p>Teacher observations</p> <p>Teacher Generated Tests</p> <p>Copy Masters</p>

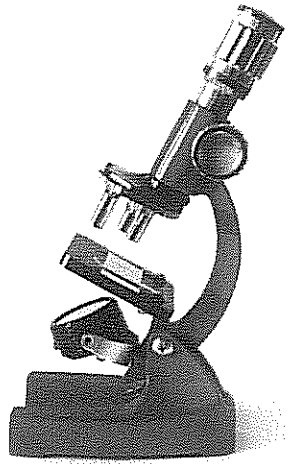
Standards	5.4, 5.6A1-3				
<b>January (Chemistry)</b>	<p>What is matter?</p> <p>How can we describe matter?</p> <p>What are three kinds of matter?</p> <p>How can matter change?</p> <p>Can we mix matter?</p>	<p>Matter – Solids, Liquids, and Gases</p> <p><b><u>Unit Vocabulary:</u></b> Change, describe, matter, observe, properties, air, gas, land, liquid, solid, water</p>	<p><b>SWBAT:</b> Know that all things are made of matter.</p> <p>Describe and compare properties of matter.</p> <p>Distinguish solids, liquids, and gases, and know the physical properties of each state.</p> <p>Talk about ways matter can change without changing the nature of the matter.</p> <p>Understand simple mixtures.</p>	<p>Read First Readers</p> <p>Lab: Properties of Water – Students explore water using a variety of materials, including straws, cups, and tongue depressors. Using these tools, students describe some properties of water – how it feels, smells, sounds, and looks.</p> <p>Activity Sheets</p> <p><u>Integration of Technology</u></p> <p>Internet Resources</p>	<p>Teacher observations</p> <p>Teacher Generated Tests</p> <p>Copy Masters</p>

Standards	5.4, 5.9A1-2, B1				
<p>February/March (Earth Science)</p>	<p>What can we see in the sky in the daytime?</p> <p>What can we see in the sky at night?</p> <p>Why do we have day and night?</p>	<p>Sky -Sun and Moon -Planets -Day and Night</p> <p><b><u>Unit Vocabulary:</u></b> Change, cycle, observe, phase, Earth, sky, Sun</p>	<p><b>SWBAT:</b> Compare and contrast day and night skies.</p> <p>Identify approximate times of day by the Sun's position in the sky.</p> <p>Model how day and night are caused by the Earth's rotation in relation to the Sun.</p> <p>Name the nine planets.</p>	<p>Read First Reader</p> <p>Lab: What is the Moon? – Students compare the elements of the daytime and nighttime skies and discuss the characteristics of the objects that appear in the sky. TO their surprise, they discover that the Moon can be seen both during the day and at night.</p> <p>Activity Sheets</p> <p><u>Integration of Technology</u></p> <p>Internet Resources</p>	<p>Teacher observations</p> <p>Teacher Generated Tests</p> <p>Copy Masters</p>

Standards	5.4, 5.5A1-2, B1, 5.10 A1				
<p style="text-align: center;"><b>April/May (Life)</b></p>	What is a plant?	Plants – Needs of Living Things	<b>SWBAT:</b> Understand that plants are living things.	Read First Readers	Teacher observations
	What do plants need?			Lab: What is a Seed – With magnifiers, they	Teacher Generated Tests
	Do plants have parts?	<b>Unit Vocabulary:</b> Change, grow, living, need, plant, space, air,	Identify different kinds of plants, what they look like, and where they live.	closely examine a variety of small objects – some of which are seeds and some of which are not – and	Copy Masters
	How do plants grow?	food, light, soil, water	Identify parts of a plant and their functions.  Consider how plants change as they grow.  Understand how animals depend on plants.	sort them according to their properties. They also try to decide which of the objects might be seeds.  Activity Sheets  <u>Integration of Technology</u>  Internet Resources	

<b>Standards</b>	5.4, 5.5, 5.6, 5.7, 5.8, 5.9. 5.10				
<b>June</b>	REVIEW				Teacher observations Teacher Generated Tests Copy Masters

Lyndhurst Public Schools  
Lyndhurst, NJ  
**Science Curriculum**  
Grade 2



Mr. Joseph Abate, Jr.  
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Supervisor of Science

Adopted: August 2008

**Lyndhurst School District  
Elementary School Map**

2 <sup>nd</sup> Grade Science	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards: 5.6. A-1,3</b>					
<b>September (Matter)</b>	What is matter?  What is a solid?  What is a liquid?  What is a gas?	Physical Properties of solids, liquids, and gases  <u><b>Unit Vocabulary:</b></u> Matter, physical property, mass, atoms, states, solid, liquid, gas	<u><b>SWBAT:</b></u> Discover facts about matter and atoms.  Identify properties of solids, liquids, and gases.	Hands on Activity: "What sinks? What floats?"  Teacher generated materials  Hands On Activity: "Bubbles& Buoyancy"  <u>Integration of Technology</u>	Teacher observations  Tests  Lab activities

**Lyndhurst School District  
Elementary School Map**

2 <sup>nd</sup> Grade Science	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards: 5.6.A,1</b>					
<b>October (Buoyancy)</b>	Why do some things float?  What objects sink?  What objects float?  Why do boats float?	Physical properties affect buoyancy  <u><b>Unit Vocabulary:</b></u> Float, sink, buoyancy	<u><b>SWBAT:</b></u> Predict whether various objects will sink or float.  Conclude that an object's physical properties affect its buoyancy.  Infer why some liquids and gases can float.	Teacher Generated Activities  "Same Size, Same Shape"  Same Size, Different Shape"  <u>Integration of Technology</u>	Teacher observations  Tests  Lab activities

**Lyndhurst School District  
Elementary School Map**

2 <sup>nd</sup> Grade Science	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards: 5.5.A,1</b>					
<b>November (Using Your Senses)</b>	What are the senses?  What body systems correspond to each sense?  What are the advantages and disadvantages?	Sight  Hearing  Touch  Smell  Taste  <u><b>Unit Vocabulary:</b></u> Senses, sight, hearing, touch, smell, taste, brain, iris, pupil, lens, retina, optic nerve, sound, vibrate, ear canal, eardrum, inner ear, auditory nerve, volume, pitch, touch, nerves, texture, nostrils, nasal cavity, olfactory nerve, taste buds	<u><b>SWBAT:</b></u> Define each of the senses.  Identify the part of the body and system that corresponds with each of the senses.	Teacher generated materials and activities.  <u>Integration of Technology</u>	Teacher observations  Tests  Lab activities

**Lyndhurst School District  
Elementary School Map**

2 <sup>nd</sup> Grade Science	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards: 5.5.A,1</b>					
<b>December (Using Your Senses con't)</b>	<p>How do we use our senses?</p> <p>Why do we need our senses?</p> <p>What are the advantages and disadvantages?</p>	<p>Sight</p> <p>Hearing</p> <p>Touch</p> <p>Smell</p> <p>Taste</p> <p><b><u>Unit Vocabulary:</u></b> Senses, sight, hearing, touch, smell, taste, brain, iris, pupil, lens, retina, optic nerve, sound, vibrate, ear canal, eardrum, inner ear, auditory nerve, volume, pitch, touch, nerves, texture, nostrils, nasal cavity, olfactory nerve, taste buds</p>	<p><b>SWBAT:</b> How do we use these senses?</p> <p>Why do we need our senses?</p> <p>What are the advantages and disadvantages?</p>	<p>Teacher generated materials and activities.</p> <p><u>Integration of Technology</u></p>	<p>Teacher observations</p> <p>Tests</p> <p>Lab activities</p>

**Lyndhurst School District  
Elementary School Map**

2 <sup>nd</sup> Grade Science	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards: 5.7. A 1</b>					
<b>January Force and Motion)</b>	What is force?  What is motion?  What is energy?	Gravity Weight  Direction Speed Distance  Energy and Work  <u><b>Unit Vocabulary:</b></u> Force, gravity, weight, friction, Motion, position, direction, distance, speed, work,	<u><b>SWBAT:</b></u> Define what a force is.  Discuss how force is related to work.  Define and identify different types of forces.  Discuss how changes in motion are caused by forces.	Teacher generated materials and activities.  Hands-on activities.    <u>Integration of Technology</u>	Teacher observations  Unit Tests  Teacher generated quizzes

**Lyndhurst School District  
Elementary School Map**

2 <sup>nd</sup> Grade Science	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards: 5.7.A 2</b>					
<b>February (Simple Machines)</b>	<p>What are simple machines?</p> <p>How does a waterwheel work?</p> <p>What is friction?</p>	<p>Lever Wheels &amp; Axels Inclined planes Wedges Screws</p> <p><b><u>Unit Vocabulary:</u></b> Machines, lever, pivots, fulcrum, effort, load, first class level, second class level, wheel and axel, wedge, screw, lubricant</p>	<p><b>SWBAT:</b> Identify different simple machines and how they work.</p> <p>Explain how gravity and friction effect motion.</p>	<p>Teacher generated materials and activities.</p> <p><u>Integration of Technology</u></p>	<p>Teacher observations</p> <p>Tests</p> <p>Lab activities</p>

**Lyndhurst School District  
Elementary School Map**

2 <sup>nd</sup> Grade Science	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards: 5.5 A,1-2;B 1</b>					
<b>March (Plant and Animal Populations)</b>	<p>What are some places plants and animals can live?</p> <p>What do plants and animals need to live?</p> <p>What is a population?</p>	<p>Plant and Animal Habitats</p> <p>Plant and Animal Populations</p> <p>Needs of Plants and Animals</p> <p><b><u>Unit Vocabulary:</u></b> Organisms, living, habitats, species, population, nutrients, adaptations</p>	<p><b>SWBAT:</b> Define what an organism is.</p> <p>Define what constitutes a population.</p> <p>Discuss animal and plant populations and where they live.</p> <p>Discuss what plants and animals need to live.</p> <p>Discuss adaptations plants and animals have made in order to survive.</p>	<p>Teacher generated materials and activities</p> <p>"Plant and Animal Populations Kit"</p> <p><u>Integration of Technology</u></p>	<p>Teacher observations</p> <p>Tests</p> <p>Lab activities</p>

**Lyndhurst School District  
Elementary School Map**

2 <sup>nd</sup> Grade Science	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards: 5.5 A1-2, B1</b>					
<b>April (Plant and Animal Populations)</b>	What is an ecosystem?  What are predators and preys?  What is a food chain?	Ecosystems  Predators and Prey  Food Chains  Producers, Consumers, and Decomposers  <u><b>Unit Vocabulary:</b></u> Community, living vs. non-living, ecosystem, interact, predator, prey, camouflage, mimicry, producers, consumers, decomposers	<u><b>SWBAT:</b></u> Define what an ecosystem is.  Give examples of ecosystems.  Define a community and give examples.  Discuss living vs. non-living things.  Discuss how organisms interact with their environment.  Define what a predator and prey is and give examples.  Explain how animals camouflage themselves for protection.  Discuss mimicry and how animals use this adaptation to protect themselves.  Discuss what a food chain is and give examples.  Define what a producer, consumer, and decomposer is and their role in a food chain	Teacher generated materials and activities.  "Plants and Animal Populations" Kit       <u>Integration of Technology</u>	Teacher observations  Tests  Lab activities

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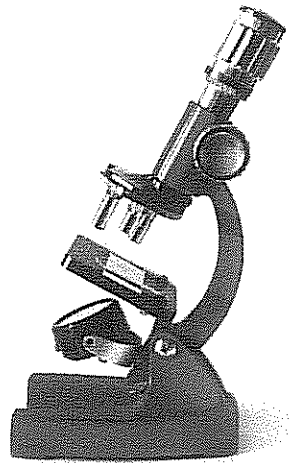
**Lyndhurst School District  
Elementary School Map**

2 <sup>nd</sup> Grade Science	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards: 5.5 B1</b>					
<b>May Classroom Plants</b>	What is a plant?  What are the parts of a plant?  What is soil?	Compare the similarities and differences of different plants  Functions of plant parts  <u><b>Unit Vocabulary:</b></u> Plant, organism, humus, soil, mineral, life cycle, life span, reproduce, seedling, sprout, nutrients, root, stem, leaves, flower	<u><b>SWBAT:</b></u> Identify the names and functions of plant parts.  Examine the materials that make up soil.  Infer what plants need in order to grow and survive.	Teacher generated materials.  Hands-on activities- "Plants in Our World" "What do plants need?"          <u>Integration of Technology</u>	Teacher observations  Tests          Lab activities

**Lyndhurst School District  
Elementary School Map**

2 <sup>nd</sup> Grade Science	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards: 5.5 B1</b>					
<b>June Classroom Plants (con't)</b>	What are plant life cycles?  What are other ways new plants grow?  Who is George Washington Carver?	Plant life cycles  Students meet George Washington Carver  Hydroponics <u><b>Unit Vocabulary:</b></u> carbon dioxide, chlorophyll, energy, oxygen, photosynthesis, respond, bud, conifer, petal, pollen, fruit, germinate, seed coat, bulb, cutting, tuber	<b>SWBAT:</b> Conclude that plants reproduce in different ways.  Read about stages in the life cycle of a plant.	Teacher generated materials  Activity- "New Plants from Old Parts"   <u>Integration of Technology</u>	Teacher observations  Tests  Lab activities

Lyndhurst Public Schools  
Lyndhurst, NJ  
**Science Curriculum**  
Grade 3



Mr. Joseph Abate, Jr.  
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Adopted: August 2008

**Lyndhurst School District  
Elementary School Map**

3 <sup>rd</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.2, 5.3, 5.5				
<b>September</b>	<p>How did dinosaurs live?</p> <p>What are the characteristics of dinosaurs?</p>	<p>Dinosaurs in Time</p> <p>How Dinosaurs Lived</p> <p>Physical Characteristics of Dinosaurs</p>	<p><b>SWBAT:</b> Understand the relationship between timelines and the dinosaur era</p> <p>Classify the physical characteristics of dinosaurs</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- Dinosaurs and Fossils</p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.2, 5.3, 5.5				
<b>October</b>	<p>How are the dinosaurs classified?</p> <p>Why did the dinosaurs become extinct?</p> <p>Why are fossils important?</p>	<p>How are the dinosaurs classified?</p> <p>Why did the dinosaurs become extinct?</p> <p>Why are fossils important?</p>	<p><b>SWBAT:</b> Make fossils</p> <p>Observe fossils</p> <p>Classify dinosaurs</p> <p>Understand the meaning of dinosaur names</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- Dinosaurs and Fossils</p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

3 <sup>rd</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.2, 5.3, 5.6				
<b>November</b>	What are the characteristics of a solid, liquid, and gas?  Why are thermometers important?  How does matter change?	Solids, liquids, and gas  Tools of measurement- Thermometer  Matter	<b>SWBAT:</b> Understand the difference between a solid, liquid, and gas  Give examples of a solid, liquid, and gas  Interpret a thermometer  Define matter	Teacher generated materials  Teacher generated notes  Delta Readers-States of Matter  Integration of Technology	Teacher observations  Tests  Labs
<b>Standards</b>	5.1, 5.2, 5.3, 5.6				
<b>December</b>	Why are experiments important in science?  Why do some liquids freeze and melt?  What is evaporation?  What is condensation?  What is insulation	Experiments  Melting point  Boiling point  Evaporation  Condensation  Insulation	<b>SWBAT:</b> Measure experimental results Define and give examples of melting points Define and give examples of boiling points Compare and contrast evaporation and condensation Define and give examples of insulation	Teacher generated materials  Teacher generated notes  Delta Readers-States of Matter  Integration of Technology	Teacher observations  Tests  Labs

**Lyndhurst School District  
Elementary School Map**

3 <sup>rd</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.2, 5.3, 5.8				
<b>January</b>	Why is the sun important to humans?  How are the planets different from one another?  Why are there stars in the sky?	Sun  Planets  Stars	<b>SWBAT:</b> Understand why the sun is important to humans  Compare and contrast the planets  Understand why stars exist	Teacher generated materials  Teacher generated notes  Delta Readers-Solar System  Integration of Technology	Teacher observations  Tests  Labs
<b>Standards</b>	5.1, 5.2, 5.3, 5.8				
<b>February</b>	What are the characteristics of the moon? How does the Earth orbit? What is a light-year? How are days and years made? What is the difference between asteroids, meteors, and comets?	Moon  Earth's orbit  Light-year  Asteroids  Meteors  Comets	<b>SWBAT:</b> List the characteristics of the moon  Diagram the Earth's orbit  Define a light-year  Relate days to years Compare asteroids, meteors, and comets	Teacher generated materials  Teacher generated notes  Delta Readers-Solar System  Integration of Technology	Teacher observations  Tests  Labs

**Lyndhurst School District  
Elementary School Map**

3 <sup>rd</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.2, 5.3, 5.5				
<b>March</b>	<p>What are the differences between living and nonliving?</p> <p>What are the characteristics of life?</p> <p>How are plant and animal cells different?</p>	<p>Living</p> <p>Nonliving</p> <p>Plant Cell</p> <p>Animal C</p>	<p><b>SWBAT:</b> Compare and contrast living and nonliving things</p> <p>Identify the basic parts of a plant cell</p> <p>Identify the basic parts of an animal cell</p> <p>Compare and contrast the animal and plant cell</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- Plant and Animal Life Cycles</p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.2, 5.3, 5.5				
<b>April</b>	<p>Why is the plant life cycle important?</p> <p>What is the best environment for plants to grow in?</p> <p>Why is the animal life cycle important?</p> <p>How are plants and animals different? Similar?</p>	<p>Plant life cycle</p> <p>Plant Growth</p> <p>Animal life cycle</p> <p>Comparison of plants and animals</p>	<p><b>SWBAT:</b> Trace the plant life cycle</p> <p>Trace the animal life cycle</p> <p>Give examples of the plant and animal life cycle</p> <p>Observe plant growth</p> <p>Compare and contrast plants and animals</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- Plant and Animal Life Cycles</p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

3 <sup>rd</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.2, 5.3, 5.5				
<b>May</b>	What are the life stages of butterflies?  What are the life stages of moths?  How are the stages similar and different of a butterfly and moth	Life stages of butterflies  Life stages of moths	<b>SWBAT:</b> Observe the life stages of butterflies  Observe the life stages of moths  Compare and contrast the life stages of butterflies and moths	Teacher generated materials  Teacher generated notes  Delta Readers- Butterflies and Moths  Integration of Technology	Teacher observations  Tests  Labs
<b>Standards</b>	5.1, 5.2, 5.3, 5.5				
<b>June</b>	How do animals survive?  What types of adaptations do animals have?  How does behavior affect the survival of animals?	Survival  Adaptations  Behavior	<b>SWBAT:</b> Give examples of how adaptations help animals survive  List animal adaptations  Give examples of mimicry  Give examples of camouflage	Teacher generated materials  Teacher generated notes  Delta Readers- Butterflies and Moths  Integration of Technology	Teacher observations  Tests  Labs

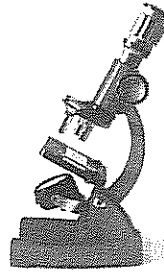


Lyndhurst Public Schools

Lyndhurst, NJ

# Science Curriculum

## Grade 4



Mr. Joseph Abate, Jr.  
Superintendent  
School Business Administrator  
Board Secretary

Tracey L. Stellato Ed.D  
Assistant Superintendent

Madalena Zak  
Supervisor of Science

Adopted: September 2007

**Lyndhurst School District  
Elementary School Map**

Fourth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
Standards	5.1, 5.4, 5.5				
September	<p>What nutrients are necessary to sustain life?</p> <p>What is in soil?</p> <p>What are primary, secondary, and tertiary consumers?</p>	<p><b>Food Chains and Webs- Soil Sustaining life</b></p> <p><u>Unit Vocabulary:</u> Food web, food chain, producer, consumer, ecosystem, decomposer, relationships, experiment, energy, interaction</p>	<p><b>SWBAT:</b> Discuss the different types and components of soil.</p> <p>List the needs of plants to grow.</p> <p>Explain how sunlight affects growth.</p> <p>Identify plants as producers.</p> <p>Define primary, secondary, and tertiary consumers.</p>	<p>Delta Science Kit- <i>Food Chains and Webs</i>"</p> <p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- <i>Food Chains and Webs</i></p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
Standards	5.1, 5.4, 5.5				
October	<p>What relationships do plants and animals form?</p> <p>What are their roles in the food webs of nature?</p>	<p><b>Food Chains and Webs- Plant &amp; Animal Relationships</b></p> <p><u>Unit Vocabulary:</u> Food web, food chain, producer, consumer, ecosystem, decomposer, relationships, experiment, energy, interaction</p>	<p><b>SWBAT:</b> Observe and record behaviors of animals in an ecosystem.</p> <p>Compare different animal behaviors.</p>	<p>Delta Science Kit- <i>Food Chains and Webs</i>"</p> <p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- <i>Food Chains and Webs</i></p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

Fourth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.4, 5.5				
<b>November</b>	<p>What is an ecosystem?</p> <p>How do living things get energy?</p> <p>How do living things interact?</p> <p>How do ecosystems change?</p>	<p><b>Food Chains and Webs- Ecosystems Energy for Life Interactions of Living Things</b></p> <p><b>Unit Vocabulary:</b> Food web, food chain, producer, consumer, ecosystem, decomposer, relationships, experiment, energy, interaction</p>	<p><b>SWBAT:</b> Define what an ecosystem is.</p> <p>Discuss some common ecosystems.</p> <p>Discuss how living things obtain energy.</p> <p>Observe how living things interact.</p> <p>Create food webs and compare to food chains.</p>	<p>Delta Science Kit- <i>Food Chains and Webs</i>.</p> <p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- <i>Food Chains and Webs</i> Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.4, 5.8				
<b>December</b>	<p>What is constantly shaping our Earth?</p> <p>How can rocks provide clues to Earth's past history?</p>	<p><b>Earth's Movements- Earth's Crust Rock Cycle</b></p> <p><b>Unit Vocabulary:</b> Rock cycle, continental drift, plate tectonics, magma, convection, volcanism, earthquake, erosion, Ring of Fire, seismology, Richter Scale, ocean floor spreading, subduction, granite, basalt</p>	<p><b>SWBAT:</b> Identify the layers of Earth's crust.</p> <p>Discuss the properties of each layer.</p> <p>Compare different types of rocks.</p> <p>Discuss the rock cycle.</p> <p>Infer how rocks provide clues to Earth's past history.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- <i>Earth Movements</i></p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

Fourth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.4, 5.8				
<b>January</b>	<p>What is the Continental Drift Theory?</p> <p>What are plate tectonics?</p> <p>What causes earthquakes and volcanoes?</p>	<p><b>Earth Movements- Plate Tectonics Continental Drift Volcanoes &amp; Earthquakes</b></p> <p><u>Unit Vocabulary:</u> Rock cycle, continental drift, plate tectonics, magma, convection, volcanism, earthquake, erosion, Ring of Fire, seismology, Richter Scale ocean floor spreading, subduction, granite, basalt</p>	<p><b>SWBAT:</b> Observe the behavior of a solid floating on a liquid. Predict the consequences of plate movement. Infer how mid-ocean ridges form from ocean-floor spreading. Learn how mountains form between two continental plates. Construct a model volcano and observe its eruption. Plot the Ring of Fire.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- <i>Earth Movements</i></p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.3, 5.4, 5.8				
<b>February</b>	<p>How do we measure weather conditions? How can we predict weather?</p> <p>What instruments re used to predict weather?</p> <p>What causes weather to change? How do we classify clouds?</p>	<p><b>Weather Instruments- Air Temperature Air Pressure Barometric Changes Wind Temperature Changes</b></p> <p><u>Unit Vocabulary:</u> Celsius, Fahrenheit, thermometer, barometric pressure, condensation</p>	<p><b>SWBAT:</b> Discuss the Celsius and Fahrenheit scales. Use thermometers to measure air temperature. Chart local weather conditions. Infer relationships between weather changes and barometric pressure. Discuss how wind direction can help predict the weather</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- <i>Weather Instruments</i></p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

Lyndhurst School District  
Elementary School Map

Fourth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.3, 5.4, 5.8				
<b>March</b>	<p>How do we measure weather conditions? How can we predict weather?</p> <p>What instruments re used to predict weather?</p> <p>What causes weather to change? How do we classify clouds?</p>	<p><b>Weather Instruments- Changes in Water Humidity Clouds Precipitation Our Local Weather</b></p> <p><u><b>Unit Vocabulary</b></u> <u>con't:</u> Evaporation, precipitation, humidity, Anemometer, hygrometer, rain gauge, barometer</p>	<p><b>SWBAT:</b> Infer that evaporation and condensation involve water and are inverse processes. Observe the effect of humidity. Describe how clouds form and the different types. Observe and define precipitation. Discover relationships among weather factors. Observe local weather patterns.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- <i>Weather Instruments</i></p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.3, 5.4, 5.8				
<b>April</b>	<p>How does water change forms?</p> <p>How is Earth's weather affected by the water cycle? How is heat energy related to the water cycle?</p> <p>Why is water considered a natural resource? What are the major bodies of Earth's water?</p>	<p><b>Water Cycle</b></p> <p><u><b>Unit Vocabulary:</b></u> Transpiration, environment, closed system, absorb</p>	<p>List the bodies of water. Predict what happens to precipitation after it falls. Design an experiment to model evaporation and condensation. Diagram water cycle. Discuss what happens to water in the soil. Discuss what happens to water in plants. Discuss how temperature affects water.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- <i>Water Cycle</i></p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

Lyndhurst School District  
Elementary School Map

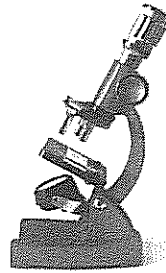
Fourth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
Standards	5.1, 5.4, 5.7				
May	<p>How are magnets made?</p> <p>How do magnets create electricity?</p> <p>How is the Earth like a magnet?</p>	<p><b>Magnets</b></p> <p><u>Unit Vocabulary:</u> Magnet, force, electricity, magnetic poles, electric current, Metals, non-metals, compass, electromagnet, static electricity</p>	<p><b>SWBAT:</b> Investigate magnetic attractions. Discover what types of objects magnets attract. Discover which materials block magnetic attraction and which allow the force to pass through. Discover how the earth acts like a giant magnet.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers-<i>Magnets</i></p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
Standards	5.1, 5.4, 5.7				
June	<p>How do magnets create electricity?</p> <p>How can magnets be applied to everyday life?</p>	<p><b>Magnets &amp; Electricity</b></p> <p><u>Unit Vocabulary:</u> Magnet, force, electricity, magnetic poles, electric current, Metals, non-metals, compass, electromagnet, static electricity</p>	<p><b>SWBAT:</b> Infer a relationship between electric current and magnetism. Discuss how magnets on Earth interact with those in space.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers-<i>Magnets</i></p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

Lyndhurst Public Schools

Lyndhurst, NJ

# Science Curriculum

## Grade 5



Mr. Joseph Abate, Jr.  
Superintendent  
School Business Administrator  
Board Secretary

Tracey L. Stellato Ed.D  
Assistant Superintendent

Madalena Zak  
Supervisor of Science

Adopted: September 2007

**Lyndhurst School District  
Elementary School Map**

<b>Fifth Grade</b>	<b>Essential Questions</b>	<b>Concept/Content</b>	<b>Skills</b>	<b>Core Activities</b>	<b>Assessment</b>
<b>Standards</b>	5.1,5.2,5.3				
<b>September</b>	Why study science?  How do I use the scientific method?  How do I use and understand the metric system?	Scientific Method  Metric system	<b>SWBAT:</b> Define science. Understand the scientific process. Distinguish between hypothesis and theory. Analyze data. Understand that scientific investigations use common process. Identify the Metric System and units. Distinguish between the Metric System and English System. Record data. Measure mass using a balance.	Teacher generated materials  Teacher generated notes  Washer/string lab  Integration of Technology	Teacher observations  Tests  Labs
<b>Standards</b>	5.1,5.2				
<b>October</b>	How do scientists classify things?  What are the parts of the microscope?  How does the microscope work?  What is the basic unit of life?	Characteristics of life  Use of the microscope  Cells	<b>SWBAT:</b> Define the term life. List the properties that make something living or nonliving. Identify the parts of the microscope. Understand how the microscope works. Label the basic parts of a cell. Explain why the cell is the basic unit of life.	Walk around the school in groups and list living and nonliving things.  Cheek cell lab  Onion cell lab  Teacher generated materials	Teacher observations  Tests  Labs

**Lyndhurst School District  
Elementary School Map**

Fifth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1,5.5				
<b>November</b>	What are the parts of a plant cell?	Plant cell and function	<b>SWBAT:</b> Identify the parts of the plant cell.	Teacher generated materials	Teacher observations
	How does the plant cell function?	Animal cell and function	Discuss how the plant cell functions.	Teacher generated notes	Tests
	What are the parts of an animal cell?		Identify the parts of the animal cell.	Identify the parts of the plant cell.	Labs
	How does the animal cell function?		Discuss how the animal cell functions.	Discuss how the plant cell functions.	
<b>Standards</b>	5.1, 5.5				
<b>December</b>	Why are there different types of plants?	Importance and types of plants	<b>SWBAT:</b> Distinguish between a monocot and dicot.	Teacher generated materials	Teacher observations
	Why are plants important to the needs of humans?	Characteristics, growth, and response	Define what a conifer, fern, and moss are and give examples.	Teacher generated notes	Tests
	What are the characteristics of plants?	Parts, functions, and adaptations	Define what a fern is and give an example.	Integration of Technology	Labs
	How do plants respond to their environment?	<b>SWBAT: con't</b> Label the parts of a plant.	Define what a moss is and give an example.	Explore different types of seeds	
	What are the parts of a plant?	Define each part of a plant.	Define what a flowering plant is and give an example.	Observe surrounding plants around school	
	What are the functions of each part of the plant?	Describe how each part functions separately.	Explain why humans need plants in order to survive.	EVAN MOOR: Living Things pg. 5, 25, 27, 31	

**Lyndhurst School District  
Elementary School Map**

Fifth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1,5.5				
<b>January</b>	<p>What are the characteristics of an invertebrate?</p> <p>What are the subgroups of invertebrates?</p> <p>What are the characteristics of a vertebrate?</p> <p>What are the subgroups of vertebrates?</p>	<p>Invertebrates Vertebrates</p> <p><b>SWBAT: con't</b> Describe how fish get oxygen under water. List the main characteristics of an amphibian. Trace the main stages in the life cycle of a frog. Describe the main characteristics of a reptile and main groups. Describe the characteristics of birds. Explain the function of a bird's feathers. Define warm-blooded. Describe the characteristics of mammals.</p>	<p><b>SWBAT:</b> Define what an invertebrate is and give examples. Describe the structure of a sponge. Identify animals with stinging cells. List the three main groups of worms and their traits. Identify an echinoderm based on body structure. Explain the function of various body parts of mollusks. Name the main groups of arthropods and classify. Define a vertebrate. List the main characteristics of fish. Describe the characteristics of a cold-blooded animal</p>	<p>EVAN-MOOR: Living Things pg. 65</p> <p>Invertebrate mobile</p> <p>Vertebrate mobile</p> <p>Dissect a fish</p> <p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1,5.5,5.10				
<b>February</b>	<p>Explain how living things and nonliving things interact with each other to form communities.</p> <p>What are some changes that can occur in a community overtime?</p> <p>What are the characteristics of the different biomes?</p> <p>Why is it important to have so many different types of biomes?</p>	<p>Living Communities Biomes</p> <p><b>SWBAT: con't</b> Identify the pioneer and climax stages of succession. Define the term biosphere &amp; Biome. List the characteristics of the land biomes. Distinguish among a freshwater habitat, marine habitat, and an estuary.</p>	<p><b>SWBAT:</b> Define environment, ecology, and ecosystem. Describe how living and nonliving things interact. Describe what makes up a community. Identify populations of living things. Distinguish between a habitat and niche. Define succession.</p>	<p>EVAN MOOR: Living Things pgs. 43, 46, 50, 52, 59</p> <p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

Fifth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1,5.8				
<b>March</b>	<p>What is weather?</p> <p>Why is weather important?</p> <p>How are the tools used in meteorology?</p>	Weather and Forecasting	<p><b>SWBAT:</b> Define weather. Identify the different weather instruments.</p> <p>Discuss how the weather instruments help meteorologists in understanding the weather.</p> <p>Identify why severe weather has the potentials to cause death and destruction in the environment. Define meteorology.</p>	<p>FOSS: Weather and Water pgs 43-47, 48-56</p> <p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1,5.8				
<b>April</b>	<p>Why is weather important to humans?</p> <p>What is the difference between weather and climate?</p> <p>Explain some basic weather terminology.</p> <p>How does global warming effect humans?</p>	<p>Weather Climate Global Warming</p> <p><b>SWBAT: con't</b> Identify resources which are living and nonliving, renewable, and nonrenewable. Identify energy produced from renewable resources and from nonrenewable resources.</p>	<p><b>SWBAT:</b> Distinguish between renewable and nonrenewable resources. Identify some living and nonliving renewable resources. Trace the water, carbon dioxide/oxygen, and soil cycles. List some nonrenewable resources. Describe how materials are recycled. Discuss uses, origins, and ways to obtain fossil fuels.</p>	<p>EVAN MOOR: Planet Earth pgs. 7, 73, 79</p> <p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers- Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

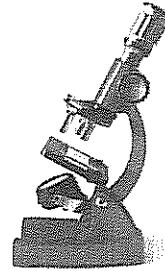
Fifth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1,5.8				
<b>May</b>	<p>Why are renewable and nonrenewable sources important to humans?</p> <p>Why is the water cycle important?</p> <p>Why is recycling important to do in order to take care of the Earth?</p>	<p>Renewable and Nonrenewable resources</p> <p>Water Cycle</p> <p>Recycling</p> <p><b>SWBAT: con't</b> Identify resources which are living and nonliving, renewable, and nonrenewable. Identify energy produced from renewable resources and from nonrenewable</p>	<p><b>SWBAT:</b> Distinguish between renewable and nonrenewable resources. Identify some living and nonliving renewable resources. Trace the water, carbon dioxide/oxygen, and soil cycles. List some nonrenewable resources. Describe how materials are recycled. Discuss uses, origins, and ways to obtain fossil fuels. Identify natural resources obtained from oceans.</p>	<p>EVAN MOOR: Planet Earth pgs. 7, 73, 79</p> <p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.8				
<b>June</b>	<p>What are some characteristics of the Earth's crust?</p> <p>What are some important theories about the crustal movement?</p> <p>What impact does natural disasters have on humans</p>	<p>Earth's Crust</p> <p>Continental Drift Theory</p> <p>Plate Tectonic Theory</p> <p>Mountains</p> <p>Earthquakes</p> <p>Volcanoes</p>	<p><b>SWBAT:</b> Compare different theories about crustal movements. Give evidence supporting the continental drift theory. Discuss the plate tectonic theory and evidence for it. Explain how earthquakes are related to plate tectonics. Explain how various volcanoes form. Compare and contrast folded, fault-block, and dome mountains. Explain why earthquakes and volcanoes might occur in the same area. Describe how earthquakes and volcanoes change the Earth's crust.</p>	<p>EVAN MOOR: Planet Earth pgs. 23, 25, 29, 35, 43, 45</p> <p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

Lyndhurst Public Schools

Lyndhurst, NJ

# Science Curriculum

## Grade 6



Mr. Joseph Abate, Jr.  
Superintendent  
School Business Administrator  
Board Secretary

Tracey L. Stellato Ed.D  
Assistant Superintendent

Madalena Zak  
Supervisor of Science

Adopted: September 2007

**Lyndhurst School District  
Elementary School Map**

Sixth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1,5.2,5.3				
<b>September</b>	<p>Why study science?</p> <p>How do I use the scientific method?</p> <p>How do I use and understand the metric system?</p>	<p>Scientific Method</p> <p>Metric system</p> <p><b>SWBAT:</b> con't Distinguish between the Metric System and English System. Record data using the metric system. Measure mass using a balance</p>	<p><b>SWBAT:</b> Define science. Understand that asking questions is the start of the scientific process. Distinguish between hypothesis and theory. Justify predictions and conclusions based on data. Understand that scientific investigations use common process. List the steps of the scientific method. Identify the Metric System. Identify the standard units of measurement in science.</p>	<p>Teacher generated materials</p> <p>Washer/string lab</p> <p>Teacher generated notes</p> <p>Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.7				
<b>October</b>	<p>How is sound made?</p> <p>How does sound travel?</p> <p>What are the characteristics of light?</p>	<p>Sound</p> <p>Light</p>	<p><b>SWBAT:</b> Explore how sound is produced. Learn the difference between reflection and refraction of sound. Become familiar with the decibel scale. Discover what light is. Use vocabulary to identify characteristics of light waves. Learn the difference between reflected and refracted light. The electromagnetic spectrum and how it relates to light.</p>	<p>Use musical instruments to illustrate different sounds.</p> <p>Use different light sources to explain light.</p> <p>Demonstrate the spectrum using a prism</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

Sixth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.2, 5.3, 5.6				
<b>November</b>	Why study chemistry?	Introduction to chemistry	<b>SWBAT:</b> Discuss how learning about the makeup of substances lets us know how things go together and can be taken apart.  Experience the concepts of mixtures and solutions.  Discover the difference between concentration and saturation.	Teacher generated materials  Teacher generated materials  FOSS: Mixtures and Solutions Activities 1, 2, 3	Teacher observations  Tests  Labs
<b>Standards</b>	5.1, 5.6				
<b>December</b>	How is the world made up of atoms?  How do atoms form molecules?	Atoms  Matter	<b>SWBAT:</b> Define matter and its properties.  Discuss how atoms are the smallest part of matter.	Teacher generated materials  Teacher generated notes Integration of Technology Discussion  Delta Education: Chemical Interactions "Atoms"	Teacher observations  Tests  Labs

**Lyndhurst School District  
Elementary School Map**

Sixth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.6				
<b>January</b>	<p>How are models used in science?</p> <p>How do you use the periodic table?</p> <p>How are elements, compounds, and mixtures different?</p> <p>How are the four states of matter used in the world?</p>	<p>Atomic structure Matter properties Changes in matter</p> <p><b>SWBAT: con't</b> Compare and identify elements, compounds, and mixtures. Distinguish the differences in the 4 states of matter and illustrate examples</p>	<p><b>SWBAT:</b> Describe the structure of an atom and how the model of it has changed over the years. Identify atomic number, mass number, and atomic mass. Relate atoms to elements. Explain how the placement of an element on the periodic table depends on the characteristics and behavior of the element. Define matter and its properties.</p>	<p>Delta Education: Chemical Interactions "Making Molecules"</p> <p>Students spell out names using the periodic table.</p> <p>Research 3 elements.</p> <p>Zip lock bag ice cream.</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.6				
<b>February</b>	<p>How are physical and chemical properties different from one another?</p> <p>What are the four types of chemical reactions?</p>	<p>Physical and chemical changes/reactions</p>	<p><b>SWBAT:</b> Describe the difference between physical and chemical reactions. Explain the difference in the 4 types of chemical reactions. Illustrate how energy is involved in chemical reactions. Show how chemical reactions can be shown by chemical equations.</p>	<p>Have students act out the 4 types of chemical reactions</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

Sixth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.7				
<b>March</b>	<p>How has our world become more technology oriented?</p> <p>What is the relationship between work and effort when using simple machines</p>	<p>Levers and pulleys</p> <p><b>SWBAT:</b> can't</p> <p>Learn vocabulary associated with levers and pulleys.</p> <p>Use scientific processes to conduct investigations.</p>	<p><b>SWBAT:</b></p> <p>Gain experience with the idea of force and using force to do work.</p> <p>Become familiar with all components of the lever and pulley systems.</p> <p>Gain experience with the concept of advantage as it relates to simple machines.</p> <p>Examine tools and machines and discover the simple machines that make them work.</p>	<p>FOSS: Levers and Pulley Investigations 1, 2, 3, 4</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.7				
<b>April</b>	<p>How are our daily actions governed by Sir Isaac Newton's laws of motion?</p> <p>How does heat affect matter?</p> <p>How are heat and temperature different?</p>	<p>Energy sources</p> <p>Heat</p>	<p><b>SWBAT:</b></p> <p>Identify and illustrate Newton's Law of Motion. Describe the relationship between mass and weight. Observe the relationship between force and acceleration. Illustrate kinetic and potential energy.</p> <p>Explore temperature readings using Fahrenheit and Celsius scale. Learn the concept of expansion and contraction in terms of heat and matter. Discover how matter is heated by conduction.</p> <p>Explore energy transference through radiation</p>	<p>Delta Kit- Newton's Toy Box Activities</p> <p>Demonstrate how matter expands when heated by having a student hold a beaker half filled with water in their hands and watch the water rise</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

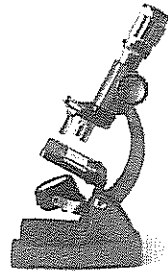
Sixth Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.9				
<b>May</b>	<p>How does the Earth measure up compared to the rest of the solar system?</p> <p>What is the evidence that the Earth is round?</p> <p>How does day and night work</p>	Exploring the universe.	<p><b>SWBAT:</b>            Introduce map skills, be able to establish location in terms of frame of reference.            Discuss elevations, and the difference between man-made and natural structures.            Discuss the horizon, and how objects appear to disappear over it.            Use models and simulations to observe ships sailing on Model sunlight shining on the poles to show the spherical shape of Earth.            Use light sources and spheres to model day and night mechanics of the rotation of Earth.            Use maps and globes to investigate time zones.</p>	FOSS: Planetary Science Investigations 1, 2, 3	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.9				
<b>June</b>	<p>How is our moon unique?</p> <p>What characteristics make up the other planets?</p>	The moon and planets	<p><b>SWBAT:</b>            Study images of the Moon to discover major features.            Simulate impact events to discover how craters of different sizes and shapes might have been formed.            Identify and measure craters on a moon photo.            Use models of Sun, Moon, and Earth to explain moon phases and eclipses.            Simulate a photographic technique to determine the difference between stars and planets in the night sky.            Review current knowledge about the planets.</p>	FOSS: Planetary Science Investigations 4, 5, 6, 9, 10	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

Lyndhurst Public Schools

Lyndhurst, NJ

# Science Curriculum

## Grade 7



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Adopted: September 2007

**Lyndhurst School District  
Elementary School Map**

7 <sup>th</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1,5.3, 5.6				
<b>September</b>	<p>Why study science?</p> <p>How do I use the scientific method?</p> <p>How do I use and understand the metric system?</p>	<p>Scientific Method</p> <p>Metric system</p>	<p><b>SWBAT:</b>            Define science.            Understand the scientific process.            Distinguish between hypothesis and theory.            Justify predictions and conclusions based on data.            List the steps of the scientific method.            Identify the Metric System and units.            Distinguish between the Metric System and English System.            Record data using the metric system.            Measure mass using a balance.</p>	<p>Teacher generated materials</p> <p>Washer/string lab</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.2, 5.4, 5.5				
<b>October</b>	<p>What is the origin of the Earth?</p> <p>How has the Earth evolved overtime?</p> <p>What were the first life forms?</p> <p>Why do species evolve overtime?</p> <p>What do all living things have in common?</p>	<p>Origin of the Earth</p> <p>Earth's History</p> <p>First life forms</p> <p>Evolution</p> <p>Theories</p> <p>Adaptations to Environment</p> <p>Fossil evidence</p> <p><b>SWBAT: con't</b>            Define an organism.            Explain how fossils provide evidence of how life and environmental conditions have evolved.            Identify that both genetic variation and environmental factors are causes of evolution and diversity of organisms.</p>	<p><b>SWBAT:</b>            Make a timeline of Earth's history.            Understand how organisms interact with their physical environment to meet their needs.            Outline the major developments that allowed for the existence of life on Earth.            Describe the different types of organisms that arose after Earth was formed.            Identify that life begins with cells.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Delta Readers-Integration of Technology</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

7 <sup>th</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.2, 5.3, 5.4, 5.5				
<b>November</b>	What are the characteristics of all living organisms?	Classification Viruses	<b>SWBAT:</b> Distinguish objects that are living from those that are nonliving. List characteristics of life. Define organism. Discuss evidence of life. Identify methods organisms use to obtain food. Restate the cell theory. Identify some common viruses. Explain the causes and effect of viruses. Recognize some characteristics of viruses. Explain how viruses reproduce.	Bread mold lab  Teacher generated materials	Teacher observations  Tests  Labs
	What are viruses?	5 Kingdoms <b>SWBAT:</b> con't			
	Do viruses help or harm humans?	Name some diseases caused by viruses			
	How are things classified in the five kingdoms?	List and define the five kingdoms. Explain the basis for the modern classification system.			
How are the 5 kingdoms important to life?					
<b>Standards</b>	5.1, 5.3, 5.4, 5.5				
<b>December</b>	What classifies a monera and protista?	Classification of Monera	<b>SWBAT:</b> Discuss cells as the basic unit of life. Recognize that all life is aquatic at the cellular level. Identify the parts of a cell. Define prokaryotic and eukaryotic. List major traits of Monera and Protista. Give examples of Monera and Protista. Discuss bacteria and algae. Identify their role in the food chain.	FOSS: Diversity of Life- CD-Rom "Protista"  FOSS: Diversity of Life- Investigation 3 (Part 2,3)	Teacher observations  Tests  Labs
	How is a monera important to the scheme of life?	Classification of Protista			
	How is a protista important to the scheme of life?				

**Lyndhurst School District  
Elementary School Map**

7 <sup>th</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.3, 5.4, 5.5				
<b>January</b>	<p>What classifies a plant?</p> <p>How are plants important to the scheme of life?</p>	Classification of Plants	<p><b>SWBAT:</b>            Recognize that seeds are living organisms in a dormant state.            Describe the first developmental stages of a plant.            Define photosynthesis.            Explain the function of pollination.            Describe the production of seeds in terms of sexual reproduction.            Explain how seed-dispersal mechanisms contribute to a plant's survival.            Compare the process of respiration and photosynthesis.            Identify their role in the food chain.</p>	<p>FOSS: Diversity of Life- Investigation 5 (part 1, 2, 3)</p> <p>Investigation 7 (Part 1, 2)</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.3, 5.4, 5.5				
<b>February</b>	<p>What classifies an animal?</p> <p>How are animals important to the scheme of life?</p>	Classification of animals	<p><b>SWBAT:</b>            Distinguish between plant and animal cell.</p> <p>Examine major animal cell organelles and identify their functions.</p> <p>Sequence a series of diagrams depicting the stages of cell division in animal cells.</p> <p>List traits of the animal kingdom.</p> <p>Identify their role in the food chain.</p>	<p>Life – Investigation 4 (Part 1, 2)</p> <p>Investigation 9 (Part 1, 2, 3)</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

7 <sup>th</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.3, 5.4, 5.5				
<b>March</b>	<p>What classifies a fungus?</p> <p>How are fungi important to the scheme of life?</p>	<p>Characteristics of fungi</p>	<p><b>SWBAT:</b>                      Define and identify the function of fungi.                      List major traits of a fungus.                      Describe how fungi digest their food.                      Explain that fungi are found on all surfaces as well as in the water and air around us.                      Identify their role in the food chain.</p>	<p>FOSS: Diversity of Life- Investigation 10 (Part 1, 2, 3)</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.2, 5.3, 5.6				
<b>April</b>	<p>What is matter?</p> <p>How is matter important to us?</p> <p>What is an atom made up of?</p> <p>How does the structure help the atom?</p> <p>How can we interpret the Periodic Table into life?</p>	<p>Matter and its properties</p> <p>Atomic structure</p> <p>Periodic Table</p> <p><b>SWBAT: con't</b>                      Describe and identify the structures of atoms how the atomic structure explains the behavior and characteristics of elements.                      Relate atoms to elements.                      Cite key scientists in the discovery of atomic structure and the Periodic Chart.                      Identify the elements in the Periodic Chart along with corresponding symbols.                      Calculate atomic mass of elements as a result of protons and neutrons.</p>	<p><b>SWBAT:</b>                      Define matter.                      Describe the phases of matter and illustrate examples.                      Observe how a change of phase is accompanied by either an absorption or release of energy.                      Discuss that all matter has physical and chemical properties.                      Discuss density, mass, and volume as properties of matter.                      Calculate densities of different matters.                      Discuss the differences between homogenous and heterogeneous mixtures and give examples.</p>	<p>DELTA SCIENCE-                      Chemical Interactions                      Activities 1, 2, 3, 4</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

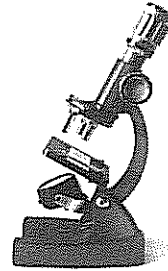
7 <sup>th</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.3, 5.6				
<b>May</b>	<p>How do elements bind together?</p> <p>Why is bonding important to elements?</p> <p>Why is water the most important compound?</p> <p>Why is water imperative for sustaining life?</p>	<p>Bonding Making Molecules Water</p> <p><b>SWBAT:</b> Describe the structure of water. Explain how water's polar nature affects its ability to dissolve substances. Associate why water is considered to be the "universal solvent" and how it is necessary for the survival of living things. Discuss diffusion and osmosis.</p>	<p><b>SWBAT:</b> Explain how elements can combine to form compounds. Distinguish between covalent and ionic bonding. Illustrate examples of covalent and ionic bonding. Identify some covalent and ionic compounds that are Define chemical reaction. Identify the reactants and products in a chemical reaction. Explain the importance of a chemical formula. Balance simple equations in relation to bonding.</p>	<p>DELTA SCIENCE- Chemical Interactions Activities 5, 6, 7, 8</p> <p>Teacher generated materials</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.3, 5.6				
<b>June</b>	<p>What are the properties of an acid and base?</p> <p>Are acids and bases harmful or helpful to living things?</p> <p>Why is chemistry of carbon the chemistry of life?</p> <p>How are organic compounds used in the process of life?</p>	<p>Acids and Bases Organic chemistry</p> <p><b>SWBAT: con't</b> List the four main classes of organic compounds. Discuss the four main classes of organic compounds. Distinguish between saturated and unsaturated fats and correlate melting points. Explain how living things use and need these organic compounds. Discuss food sources that supply these nutrients</p>	<p><b>SWBAT:</b> Define properties of an acid and base. Discuss the pH scale. Discuss the use of an indicator to measure acids and bases. Test common everyday house products to determine their acidity or alkalinity. Discuss what acids and bases are used for and how they can helpful or harmful to living and non-living things. Illustrate how to neutralize an acid or base. Distinguish between an inorganic and organic compound.</p>	<p>DELTA SCIENCE- Chemical Interactions Activities 8, 9, 10, 11</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

Lyndhurst Public Schools

Lyndhurst, NJ

# Science Curriculum

## Grade 8



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Adopted: September 2007

**Lyndhurst School District  
Elementary School Map**

8 <sup>th</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.3, 5.6				
<p style="text-align: center;"><b>September</b></p> <p style="text-align: center;">Introduction to Science 1-2 weeks</p>	<p>What is Science? How is the Scientific Method utilized? Why is the metric system important?</p> <p>What is the purpose, structure, and function of cells?</p> <p>What is the difference between Animal and Plant cells?</p>	<p>Processes of Science: <i>Systems and Science</i></p> <p>The Cell and Organelle functions</p> <p>Animal and Plant Cells</p>	<p><b>SWBAT:</b></p> <p>1. Define Science. 2. Understand that asking questions is the start of the scientific process. 3. Distinguish between hypothesis and theory. 4. Define hypothesis. 5. Identify the structures of the cell. 6. List the function of the organelles. 7. Identify the differences of plant and animal cells.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology Measuring Up- GEPA work book Unit 1.</p> <p>Lab activities.</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.4, 5.5				
<p style="text-align: center;"><b>October</b></p> <p style="text-align: center;">Cell Reproduction</p>	<p>How do cells reproduce?</p> <p>Why do they reproduce?</p>	<p>Cell Reproduction <i>Mitosis and Meiosis</i></p>	<p><b>SWBAT:</b></p> <p>Discuss how and why cells reproduce.</p> <p>Discuss the stages of the cell (cell cycle).</p> <p>Define mitosis as the division of the nucleus and identify the stages.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p> <p>Measuring Up- GEPA work book Unit 1.</p> <p>Lab activities.</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

8 <sup>th</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1,5.2, 5.4, 5.5				
<b>November Human Body</b>	<p>What are the essential body systems?</p> <p>How do these systems interact with each other?</p>	Human Body Systems	<b>SWBAT:</b> Discuss the overview of all human body systems.	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p> <p>Human Brain and Senses activities 3,4, and 6.</p> <p>Measuring Up GEPA Unit 2 Life Science.</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1,5.2, 5.4, 5.5				
<b>December Human Body &amp; Genetics</b>	<p>What are the specific functions of organs and organ systems?</p> <p>What are the basic principals of human genetics?</p>	<p>Functions of organ systems</p> <p>Human genetics DNA, RNA and chromosomes</p>	<p><b>SWBAT:</b> Discuss the specific structures and functions of the following systems: Nervous, Circulatory, Endocrine, Digestive, Respiratory, Skeletal.</p> <p>Discuss Mendel's experiments with pea plants and how it led to the basis of genetics.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p> <p>Delta DNA- From Genes to Proteins activities 1, 2 and 5.</p> <p>Measuring Up Unit 2.</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

8 <sup>th</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1,5.2, 5.4, 5.5				
<b>January Genetics</b>	What are the basic principles of human genetics?	Human genetics, DNA, RNA and chromosomes	<b>SWBAT:</b> Discuss the variation in a species due to exchange of information and interaction of genes as it is passed from parent to offspring.	Teacher generated materials  Teacher generated notes Integration of Technology  <i>Delta DNA- From Genes to Proteins</i> activities 8, 9, and 10. Measuring Up Unit 2  Teacher generated activities.	Teacher observations  Tests  Labs
<b>Standards</b>	5.1, 5.2, 5.8, 5.10				
<b>February Earth Science</b>	What are the origins of the Earth? What are the components and structure of the Earth's atmosphere?	Earth Origins  Components and structure of the atmosphere	<b>SWBAT:</b> Identify the most current theory of the origin of the Earth.  Discuss previous theories of the origin of the Earth.  Understand that the atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water.	Teacher generated materials Teacher generated notes Integration of Technology  Measuring Up Unit 4 Teacher generated activities.	Teacher observations  Tests  Labs

**Lyndhurst School District  
Elementary School Map**

8 <sup>th</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.2, 5.8, 5.10				
<b>March Earth Science</b>	<p>What is the basic structure of the Earth's crust?</p> <p>What is the rock cycle?</p> <p>How do volcanoes form?</p> <p>What causes earthquakes?</p>	<p>Structure of the Earth's crust</p> <p>Volcanoes and Earthquakes</p>	<p><b>SWBAT:</b> Illustrate the constant changing nature of the Earth's crust.</p> <p>Illustrate that the major geologic events are a function of plate tectonics.</p> <p>Illustrate the dynamic nature of Volcanoes and earthquakes.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p> <p>Teacher generated activities.</p> <p>Delta Earth Processes Activities 1-4</p> <p>Delta Earth Processes Activities 5-8</p> <p>Measuring Up Unit 4</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.2, 5.7 5.9				
<b>April Physics</b>	<p>What are the basic properties of matter?</p> <p>What are the basic principles of force, energy, and work?</p> <p>How can these principles be applied on to daily activities?</p>	<p>Matter and Energy</p> <p>Force, Energy and Work</p>	<p><b>SWBAT:</b> Identify and define the major characteristics of matter.</p> <p>Describe the states of matter and illustrate examples.</p> <p>Describe the relationship between gravity, mass and weight.</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p> <p>Foss Levers and Pulleys activities 3-8</p> <p>Measuring Up Unit 3</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>

**Lyndhurst School District  
Elementary School Map**

8 <sup>th</sup> Grade	Essential Questions	Concept/Content	Skills	Core Activities	Assessment
<b>Standards</b>	5.1, 5.2, 5.7 5.9				
<b>May Physics</b>	<p>What are the basic properties of heat?</p> <p>How does heat impact the states of matter?</p> <p>What is the difference between speed, velocity and acceleration?</p>	<p>Heat / Temperature</p> <p>Motion</p>	<p><b>SWBAT:</b> Identify the basic properties of heat. What is the relationship between heat, the environment, and global warming.</p> <p>Illustrate the difference between speed, velocity and motion</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p> <p>Teacher generated activities.</p> <p>Newton's Toy Box Activities 3-6</p> <p>Measuring Up Unit 3</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>
<b>Standards</b>	5.1, 5.2, 5.7 5.9				
<b>June Physics</b>	<p>What are the basic principals of waves in relation to sound?</p> <p>Is sound a type of energy?</p>	<p>Waves/Sound</p>	<p><b>SWBAT:</b> Discuss the different types of waves and the parts of a wave.</p> <p>Define reflection, refraction, and diffusion.</p> <p>Define the Doppler Effect</p>	<p>Teacher generated materials</p> <p>Teacher generated notes</p> <p>Integration of Technology</p> <p>Newton's Toy Box Activities 7 and 8</p> <p>Measuring Up Unit 3</p>	<p>Teacher observations</p> <p>Tests</p> <p>Labs</p>