

## Lowndes County Science Pacing Guide

### MS Frameworks Pacing Guide Worksheet for Science

Grade Level: 2nd

Grading Period: 1st – 9 Wks

| Chapter/<br>Unit | Lesson<br>Topic  | Objective Number   | Approximate<br>Days Needed | Suggested Teaching<br>Strategies   |
|------------------|--|--|----------------------------|--|
| Week 1           | Formulating questions in order to conduct a simple investigation | <b>1. Develop abilities necessary to conduct scientific investigations.</b><br>a. Formulate questions about objects and organisms and predict outcomes in order to conduct a simple investigation.   | 5 days                     | ●Students will create KWL chart conducting simple investigations.  |
| Week 2           | Comparing, sorting, and grouping objects according to attributes | <b>1. Develop abilities necessary to conduct scientific investigations.</b><br>b. Compare, sort, and group objects according to two or more attributes.  | 5 days                     | ●Create a Venn Diagram using pictures of plants, animals, people, etc. (cut from magazines).                       |
| Week 3           | Determining the function of technological products               | <b>1. Develop abilities necessary to conduct scientific investigations.</b><br>d. Collect and display technological products (e.g., zipper, coat hook, ceiling fan pull chain, can opener, bridge, apple peeler, wheel barrow, nut cracker, etc.) to determine their function. | 5 days                     | ●SW research simple machines (pulleys, levers, wedges, wheel and axle) and identify which category objects are in. |
| Week 4           | Do science investigations work the same in different places?     | <b>1. Develop abilities necessary to conduct scientific investigations.</b><br>f. Infer that science investigations generally work the same way in different places.   | 5 days                     | ●Conduct experiments in different places around the school.<br>(DOK 2)   |

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| Week 5  | The amount of water is the same frozen or unfrozen | <p><b>2. Apply an understanding of properties of objects and materials, position and motion of objects, and properties of magnetism.</b></p> <p>a. Investigate to conclude that when water changes to ice and then melts, the amount of water is the same as it was before freezing.</p> <p>1 f. Infer that science investigations generally work the same way in different places.</p>   | 5 days | <ul style="list-style-type: none"> <li>●Students will conduct an experiment with frozen water both inside and outside. After 5 minutes students will observe the frozen water and tell why one melts faster than the other.</li> </ul>  |
| Week 6  |  | <p><b>2. Apply an understanding of objects and materials, position and motion of objects, and properties of magnetism.</b></p> <p>f. Compare and classify solids, liquids, and gases.</p>   | 5 days | <ul style="list-style-type: none"> <li>●Read, “The Big Balloon Race” by Eleanor Coerr</li> <li>●Students will bring items from home and classify objects as a solid, liquid or gas and by their geometric shapes.</li> </ul>  |
| Weeks 7 | What changes matter?                               | <p><b>2. Apply an understanding of properties of objects and materials, position and motion of objects, and properties of magnetism.</b></p> <p>b. Investigate and describe properties and changes of matter.</p> <p>*Unique properties of states of matter (Gases are easily compressed while solids and liquids are not; the shape of a solid is independent of its container; liquids and gases take the shape of their containers.)</p> <p>* Physical changes (e.g. boiling liquids, freezing ice, tearing paper)</p> <p>* Chemical changes (e.g. burning wood, making ice cream, cooking an egg)</p> | 5 days | <ul style="list-style-type: none"> <li>●Students will use different size and shape containers to show how liquid takes the shape of that container.</li> <li>●Students will blow up balloons to represent gas taking up space.</li> <li>●Students will make ice cream to show chemical changes from a liquid to a solid.</li> </ul> |

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| Weeks 8 -9 | What effects do different forces have on objects? | <p><b>2. Apply an understanding of properties of objects and materials, position and motion of objects, and properties of magnetism.</b></p> <p>c. Describe observable effects of forces, including buoyancy, gravity, and magnetism.</p> <p>d. Classify materials that are or are not attracted to magnets and cite examples of useful magnetic tools in everyday living (e.g., can opener, compass, refrigerator door seal).</p> | 10 days | <ul style="list-style-type: none"> <li>●Read, “Who Sank the Boat” by Pamela Allen</li> <li>●Students will form a hypothesis whether items will sink or float. Then they will test their hypothesis.</li> <li>●Students will form a hypothesis whether items will be attracted to the magnet. Then they will test their hypothesis.</li> </ul> |
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### MS Frameworks Pacing Guide Worksheet for Science

Grade Level: 2nd

Grading Period: 2nd– 9 Wks

| Chapter/<br>Unit | Lesson<br>Topic        | Objective Number  | Approximate<br>Days Needed | Suggested Teaching<br>Strategies  |
|------------------|------------------------|---|----------------------------|---|
| Week 10          | How do we see objects? | <b>2. Apply an understanding of properties of objects and materials, position and motion of objects, and properties of magnetism</b><br>e. Recognize that an object can be seen only if either light falls on it or it emits light, and that color is a property of light.  | 5 days                     | ●Read, “Spectacles” by Ellen Raskin   |
| Week 11 -<br>13  | Human Body             | <b>3. Develop and demonstrate an understanding of the characteristics, structures, life cycles, and environments of organisms.</b><br>b. Describe the human body systems with their basic functions and major organs (e.g. brain-nervous, bones-skeletal, muscles- muscular).   | 15 days                    | ●Watch <u>Magic School Bus/The Human Body</u><br>●Students will construct human body with different materials.<br>●Students will chart heart rates after running in place for one minute. |
| Weeks 14<br>- 15 | How is sound made?     | <b>2. Apply an understanding of properties of objects and materials, position and motion of objects, and properties of magnetism.</b><br>g. Identify vibration as the source of sound and categorize different types of media (e.g. wood, plastic, water, air, metal, glass) according to how easily vibrations travel. | 10 days                    | ●Students will close eyes and identify different sounds that they hear made by teacher.<br>●Read, “I Have a Sister, My Sister is Deaf” by Jeanne W. Peterson                              |

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| Week 16       | Animals               | <p><b>3. Develop and demonstrate an understanding of the characteristics, structures, life cycles, and environments of organisms.</b></p> <p>a. Describe and categorize the characteristics of plants and animals.<br/> *Animals (vertebrates or invertebrates, cold blooded or warm blooded)</p> <p>c. Identify the cause/effect relationship when basic needs of plants and animals are met and when they are not met.</p> | 5 days  | <ul style="list-style-type: none"> <li>●Read, "I See Animals Hiding" by Jim Arnosky, "In the Small Pond" and "In the Tall, Tall Grass" by Denise Fleming</li> <li>●Students will classify animals as vertebrates or invertebrates, cold blooded or warm blooded.</li> <li>●Students will use encyclopedia/computers to research animals.</li> </ul> |
| Weeks 17 - 18 | Life Cycle of Animals | <p><b>3. Develop and demonstrate an understanding of the characteristics, structures, life cycles, and environments of organisms.</b></p> <p>d. Compare the life cycles of plants and animals.</p> <p>e. Investigate and explain the interdependence of plants and animals.<br/> * Herbivore, carnivore, or omnivore<br/> *Predator - prey relationships</p>   | 10 days | <ul style="list-style-type: none"> <li>●Read, "Who Eats What? Food Chains and Food Webs" by Patricia Lauber</li> <li>●Students will create a food chain representing the life cycle of animals.</li> </ul>  |
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### MS Frameworks Pacing Guide Worksheet for Science

**Grade Level: 2nd**

**Grading Period: 3rd– 9 Wks**

| <b>Chapter/Unit</b> | <b>Lesson Topic</b>          | <b>Objective Number</b>   | <b>Approximate Days Needed</b> | <b>Suggested Teaching Strategies</b>  |
|---------------------|------------------------------|---|--------------------------------|---|
| Week 19 - 20        | Weather                      | <b>4. Develop an understanding of the properties of Earth materials, objects in the sky, and changes in Earth and sky.</b><br>c. Collect, organize, and graph weather data obtained by using simple weather instruments (wind vane, rain gauge, thermometer) and explain the components of the water cycle. | 10 days                        | <ul style="list-style-type: none"><li>●Read, “Cloudy With a Chance of Meatballs” Judi Barrett, “The Cloud Book” by Tomie de Paola</li><li>●Students will construct wind vane and determine direction of the wind.</li><li>●Students will monitor rain gauge and thermometer for 10 days and graph results.</li><li>●Students will draw and label water cycle.</li></ul> |
| Week 21             | Categorize Earth’s materials | <b>4. Develop an understanding of the properties of Earth materials, objects in the sky, and changes in Earth and sky.</b><br>a. categorize different types of Earth materials, (e.g. rocks, minerals, soils, water, atmospheric gases).  | 5 days                         | <ul style="list-style-type: none"><li>●Read, “Everybody Needs a Rock” by Byrd Baylor</li><li>●Students will divide into groups. Each group will research a type of Earth’s materials.</li></ul>   |

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| Week 22 | Three layers of the Earth   | <p><b>4. Develop an understanding of the properties of Earth materials, objects in the sky, and changes in Earth and sky.</b></p> <p>b. Describe the three layers of the Earth.</p>   | 5 days | <ul style="list-style-type: none"> <li>●Students will compare layers of an apple to the layers of the Earth.</li> <li>●Students will use playdough to construct the different layers of the Earth.</li> </ul>  |
| Week 23 | Harming Earth's environment | <p><b>4. Develop an understanding of the properties of Earth materials, objects in the sky, and changes in Earth and sky.</b></p> <p>d. Distinguish how actions or events related to the Earth's environment may be harmful or helpful.</p>   | 5 days | <ul style="list-style-type: none"> <li>●Read, "The Wartville Wizard" by Don Madden</li> <li>●Students will make conservation posters to place around the school.</li> <li>●Students will classify actions as harmful or helpful to the Earth's environment.</li> </ul> |
| Week 24 | Earth's rotation            | <p><b>4. Develop an understanding of the properties of Earth materials, objects in the sky, and changes in Earth and sky.</b></p> <p>e. Model and explain the concept of Earth's rotation as it relates to day and night and infer why it is usually cooler at night than in the day.</p> | 5 days | <ul style="list-style-type: none"> <li>●Read, "Shadows" by Blaise Cendrars</li> <li>●Students will use a flashlight and a globe to represent day and night as the earth rotates around the sun.</li> </ul>   |

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| Week 25 - 26 |  | <p><b>4. Develop an understanding of the properties of Earth materials, objects in the sky, and changes in Earth and sky.</b></p> <p>f. Describe characteristics and effects of objects in the universe.</p> <ul style="list-style-type: none"> <li>* Position of the sun in relation to a fixed object on Earth at various times (day and night).</li> <li>* The major characteristics of planets (revolution and rotation periods, size, number of moons).</li> <li>* Change in the appearance of the moon.</li> </ul> | 10 days | <ul style="list-style-type: none"> <li>● Watch <u>The Magic School and the Solar System</u></li> <li>● Read, "Dining on a Sunbeam" by Phyllis Busch</li> <li>● Students can research a chosen planet and make a replica using paper mache.</li> <li>● Students will observe and draw the moon each night for 10 days.</li> </ul> |
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### MS Frameworks Pacing Guide Worksheet for Science

**Grade Level: 2nd**

**Grading Period: 4th – 9 Wks**

| <b>Chapter/Unit</b> | <b>Lesson Topic</b> | <b>Objective Number</b>  | <b>Approximate Days Needed</b> | <b>Suggested Teaching Strategies</b>   |
|---------------------|---------------------|--|--------------------------------|--|
| Week 27             | Plant Parts         | <b>3. Develop and demonstrate an understanding of the characteristics, structures, life cycles, and environments of organisms.</b><br>a. Describe and categorize the characteristics of plants and animals.<br>* Plant parts (leaves, stems, roots, and flowers) | 5 days                         | <ul style="list-style-type: none"><li>●Read, “The Tiny Seed” Eric Carle, “From Seed to Plant” by Gail Gibbons,</li><li>●Students will draw and label parts of a plant.</li></ul> |

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| Week 28 - 29  |        | <p><b>3. Develop and demonstrate an understanding of the characteristics, structures, life cycles, and environments of organisms.</b></p> <p>c. Identify the cause/effect relationships when basic needs of plants and animals are met and when they are not met.</p> <p>d. Compare the life cycles of plants and animals.</p> | 10 days | <ul style="list-style-type: none"> <li>●Students will plant seeds. Students will water some seeds and not others and place some planted seeds by the window and some in a dark place. Students will chart the growth of the plants.</li> </ul>   |
| Weeks 30 - 31 | Length | <p><b>1. Develop abilities necessary to conduct scientific investigations.</b></p> <p>c. Use simple tools (e.g. rulers, thermometers, scales, hand lenses, microscopes, balances, clocks) to gather information</p> <p>*Length, to the nearest inch, foot, yard, centimeter, and meter</p>                                     | 10 days | <ul style="list-style-type: none"> <li>●Read, "Inch By Inch" by Leo Lionni, "How Big is a Foot?" by Rolf Myller</li> <li>●Students will trace their foot and use rulers to measure in inches and centimeters.</li> <li>●Students will choose the correct unit to measure different items.</li> </ul> |

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| Weeks 32 - 33 | Capacity | <p><b>1. Develop abilities necessary to conduct scientific investigations.</b></p> <p>c. Use simple tools (e.g. rulers, thermometers, scales, hand lenses, microscopes, balances, clocks) to gather information</p> <p>*Capacity to the nearest ounce, cup, pint, quart, gallon, and liter</p> | 10 days | <p>●Students will pour colored water into clear measuring cups comparing the difference between ounces, cups, pints, quarts, gallons and liters.</p> |
| Week 34 - 35  | Weight   | <p><b>1. Develop abilities necessary to conduct scientific investigations.</b></p> <p>c. Use simple tools (e.g. rulers, thermometers, scales, hand lenses, microscopes, balances, clocks) to gather information</p> <p>*Weight to the nearest ounce, pound, gram, and kilogram</p>             | 10 days | <p>●Students will use scales to measure and compare the weight of different objects.</p>   |

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