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Mission Statement

Develop the highest quality science instruction and maximize student achievement by aligning grade-level benchmarks to appropriate instructional practices, materials, resources, and pacing.

Suggestions for Implementing Curriculum Guides

The role of the teacher is to:
- Teach students the Next Generation Standards as dictated by state law for their grade level.
- Provide learning-rich classroom activities that teach the benchmarks in depth.
- Enhance the curriculum by using resources and instructional technology.
- Differentiate instruction by varying methods of instruction and frequently offering relevant lab activities.
- Regularly administer assessment to include higher-level questions and performance task assessment.

In addition, teachers should:
- Collaborate with other grade-level teachers to maximize school resources and teacher expertise.
- Consult with other grade levels to define absolute skill goals for each grade level.
- Document questions and suggestions for improvement of the Curriculum Guide.
- Integrate science into math and reading curriculum.
- Consider applying for a grant to support project-based learning for their school.
- Visit the Okaloosa Science Central Website at: http://www.okaloosa.k12.fl.us/science

Days allotted to each benchmark are approximate and have been suggested based on the level of the complexity of the benchmark. To insure benchmarks are taught to mastery and completed by the conclusion of the school year, it is recommended that teachers not veer significantly from the suggested pacing.
Florida Department of Education ∞ Office of Math and Science Essential Website

Next Generation Sunshine State Standards:
http://www.floridastandards.org/homepage/index.aspx

OCSD Curriculum and Pacing Guide ∞ Overview

This document provides a science curriculum and pacing guide. It is designed to help teachers to efficiently pace the delivery of quality instruction for each nine-week period.

Purpose: This guide was created by a team of grade-level teachers to correlate to the Next Generation Standards with the goal of providing teachers ready access to resources for teaching those new standards and a pace for accomplishing benchmark mastery.

Description: The OCSD Science Curriculum Guide specifies the science content to be covered within each nine-week instructional period. Their guide identifies Next Generation Standards (NGS) Benchmarks. Furthermore, it allows teachers to input information specific to their students or school needs.

- **Top Block – Big Idea and Essential Questions**
  Identifies the Big Idea and the components of the Big Idea. Lists the Essential Questions addressed in the sections Benchmarks.

- **Column One – Benchmark**
  Lists the specific Benchmark by number and states the Benchmark.

- **Column Two – FCAT Info**
  Serves as a placeholder for future FCAT information; to include content limits, complexity, assessment status, and crosswalk correlation.
Column Three – Additional Resources/Activities
Suggests instructional activities, including media (DVD/Video/CD), websites, and student involvement tasks.

Column Four – Literacy Connection/Vocabulary/Reading
Lists specific literary resources, vocabulary words, and other books or stories connected to the Benchmark goals.

Column Five – Text Alignment
Cites the Houghton Mifflin Harcourt Textbook (Florida Science Fusion), and/or Activity Book, pages that correlate to the Benchmark.

Of note:
- Benchmarks drive instructional decisions; the text is a resource
- Results of assessment are used to adjust and revise instruction
- Hands-on science labs are an essential component of the science curriculum
- The inquiry process must be embedded within every big/supporting idea

NOTE:
Addendums to this curriculum guide, as well as additional information/forms (i.e. elementary lab templates) will be posted at http://www.okaloosaschools.com/OkaloosaSchools/SchoolDistrict/CurriculumInstruction/CurriculumGuides/tabid/378/Default.aspx.
Florida’s revised science standards emphasize teaching and learning the most important K-12 science concepts in depth at each grade level. After adoption of the new science standards, the Florida Center for Research in Science, Technology, Engineering and Mathematics (FCR-STEM) at Florida State University convened a group of Florida science teachers, district math supervisors, and science education faculty, and scientists to rate the cognitive demand of each benchmark. Meeting in teams for each body of knowledge, they reviewed and discussed each benchmark, then reached consensus on level of cognitive complexity using a classification system adapted from the “depth of knowledge” system developed by Dr. Norman Webb at the University of Wisconsin.

Cognitive complexity refers to the cognitive demand of tasks associated with the benchmark. The depth of knowledge levels (Webb, 1999) reflect the relative complexity of thinking that a given benchmark demands of students — what it requires the student to recall, understand, analyze, and do. Florida’s depth of knowledge rating system focuses on expectations of students at three levels:

**Low Complexity**
Science low complexity items rely heavily on the recall and recognition of previously learned concepts and principles. Items typically specify what the student is to do, which is often to carry out a procedure that can be preformed mechanically. It is not left to the student to come up with an original method or solution. Skills required to respond correctly to a low complexity item might include the following.

- Identify a common example or recognize a concept
- Retrieve information from a chart, table, diagram, or graph
- Recognize a standard scientific representation of a simple phenomenon
- Calculate or complete a familiar single-step procedure or equation using a reference sheet

**Moderate Complexity**
Items in the moderate complexity category involve more flexible thinking and choice among alternatives than low complexity items. They require a response that goes beyond the habitual, is not specified, and ordinarily has more than a single step or thought process. The student is expected to decide what to do – using informal methods of reasoning and problem solving strategies – and to bring together skill and knowledge from various domains. Skills required to respond correctly to moderate complexity items might include the following.

- Apply or infer relationships among facts, terms, properties, or variables
- Describe examples and non examples of scientific processes or concepts
- Predict or determine the logical next step or outcome
- Compare or contrast structures or functions of different organisms or systems
- Choose the appropriate formula or equation to solve a problem and then solve it
- Apply and use concepts from a standard scientific model or theory
High Complexity
High complexity items make heavy demands on student thinking. Students must engage in more abstract reasoning, planning, analysis, judgment, and creative thought. The items require that the student think in an abstract and sophisticated way often involving multiple steps. Skills required to respond to high complexity items might include the following.

- Construct models for research
- Generalize or draw conclusions
- Design an experiment, given data and condition
- Explain or solve a problem in more than one way
- Provide a justification for steps in a solution or process
- Analyze an experiment to identify a flaw and propose a method for correcting it
- Interpret, explain, or solve a problem involving complex spatial relationships
- Predict a long term effect, outcome, or result of a change within a system


Source: Cognitive Complexity Classification of FCAT SSS Test Items, July, 2006 and revised January, 2008; Florida Department of Education.
3rd Grade Science Standards

Big Idea 1 – The Practice of Science
Big Idea 3 – The Role of Theories, Laws, Hypotheses, and Models
Big Idea 5 – Earth in Space and Time
Big Idea 6 – Earth Structures
Big Idea 8 – Properties of Matter
Big Idea 9 – Changes in Matter
Big Idea 10 – Forms of Energy
Big Idea 11 – Energy Transfer and Transformations
Big Idea 14 – Organization and Development of Living Organisms
Big Idea 15 – Diversity and Evolution of Living Organisms
Big Idea 17 – Interdependence

The numbering for the big ideas is consistent throughout the document. Not all big ideas are addressed at each grade level, so the numbering scheme is not consecutive for each grade level.

Benchmark Coding Scheme

<table>
<thead>
<tr>
<th>SC.</th>
<th>5.</th>
<th>N.</th>
<th>1.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>Grade Level</td>
<td>Body of Knowledge</td>
<td>Big Idea</td>
<td>Benchmark</td>
</tr>
</tbody>
</table>
**Quarterly Benchmarks**

<table>
<thead>
<tr>
<th>Unit 1: Investigating Questions: 6 weeks and on-going through the entire year</th>
<th>Quarter 1</th>
<th>Quarter 1 (cont.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC.3.N.1.1 High</td>
<td>Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye.</td>
<td>SC.3.E.5.5 Moderate</td>
</tr>
<tr>
<td>SC.3.N.1.2 High</td>
<td>Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome.</td>
<td>SC.3.E.5.4 High</td>
</tr>
<tr>
<td>SC.3.N.1.3 Moderate</td>
<td>Keep records as appropriate, such as pictorial, written, or simple charts and graphs, of investigations conducted.</td>
<td>SC.3.P.8.1 Moderate</td>
</tr>
<tr>
<td>SC.3.N.1.4 Moderate</td>
<td>Recognize the importance of communication among scientists.</td>
<td>SC.3.P.8.2 Moderate</td>
</tr>
<tr>
<td>SC.3.N.1.5 Moderate</td>
<td>Compare the observations made by different groups using the same tools and seek reasons to explain the differences across groups.</td>
<td>SC.3.P.8.3 Moderate</td>
</tr>
<tr>
<td>SC.3.N.1.6 High</td>
<td>Infer based on observation.</td>
<td>SC.3.P.9.1 Moderate</td>
</tr>
<tr>
<td>SC.3.N.1.7 High</td>
<td>Explain that empirical evidence is information, such as observations or measurements, that is used to help validate explanations of natural phenomena.</td>
<td>SC.3.P.9.3 Moderate</td>
</tr>
<tr>
<td>SC.3.N.3.1 Moderate</td>
<td>Recognize that words in science can have different or more specific meanings than their use in everyday language; for example, energy, cell, heat/cold, and evidence.</td>
<td>SC.3.E.6.1 High</td>
</tr>
<tr>
<td>SC.3.N.3.2 Low</td>
<td>Recognize that scientists use models to help understand and explain how things work.</td>
<td>MACC.3.MD.2.4</td>
</tr>
<tr>
<td>SC.3.N.3.3 Moderate</td>
<td>Recognize that all models are approximations of natural phenomena; as such, they do not perfectly account for all observations.</td>
<td>MACC.3.MD.1.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit 2: Earth and Stars: 3 weeks</th>
<th>Unit 4: Forms of Energy: 4 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC.3.E.5.1 High</td>
<td>Explain that stars can be different; some are smaller, some are larger, &amp; some appear brighter than others; all except the Sun are so far away that they look like points of light.</td>
</tr>
<tr>
<td>SC.3.E.5.2 Moderate</td>
<td>Identify the Sun as a star that emits energy; some of it in the form of light.</td>
</tr>
<tr>
<td>SC.3.E.5.3 High</td>
<td>Recognize that the Sun appears large and bright because it is the closest star to Earth.</td>
</tr>
</tbody>
</table>

<p>| SC.3.P.10.4 Moderate | Demonstrate that light can be reflected, refracted, and absorbed. |</p>
<table>
<thead>
<tr>
<th>Quarter 3</th>
<th>Quarter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit 5: Heat Sources</strong></td>
<td><strong>Unit 8: Living Things Change</strong></td>
</tr>
<tr>
<td>2 weeks</td>
<td>4 weeks</td>
</tr>
<tr>
<td>SC.3.P.11.1 <strong>High</strong></td>
<td>SC.3.L.17.1 <strong>Moderate</strong></td>
</tr>
<tr>
<td>Investigate, observe, and explain that things that give off light often also give off heat</td>
<td>Describe how animals and plants respond to changing seasons.</td>
</tr>
<tr>
<td>SC.3.P.11.2 <strong>High</strong></td>
<td>SC.3.L.17.2 <strong>Low</strong></td>
</tr>
<tr>
<td>Investigate, observe, and explain that heat is produced when one object rubs against another, such as rubbing one's hands together</td>
<td>Recognize that plants use energy from the Sun, air, and water to make their own food.</td>
</tr>
<tr>
<td><strong>Unit 6: Plants and the Environment</strong></td>
<td><strong>Unit 9: Health</strong></td>
</tr>
<tr>
<td>3 weeks</td>
<td>5 weeks</td>
</tr>
<tr>
<td>SC.3.L.14.1 <strong>Moderate</strong></td>
<td>HE.3.C.1.4 <strong>Describe common childhood health conditions.</strong></td>
</tr>
<tr>
<td>Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction</td>
<td></td>
</tr>
<tr>
<td>SC.3.L.14.2 <strong>Moderate</strong></td>
<td>HE.3.C.1.6 <strong>Recognize that body parts and organs work together to form human body systems.</strong></td>
</tr>
<tr>
<td>Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity</td>
<td></td>
</tr>
<tr>
<td><strong>Unit 7: Classifying Plants and Animals</strong></td>
<td><strong>Yearlong Benchmarks</strong></td>
</tr>
<tr>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>SC.3.I.15.1 <strong>Moderate</strong></td>
<td><strong>LACC.3.SL.1.1</strong> Engage effectively in a range of collaborative discussion (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.</td>
</tr>
<tr>
<td>Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors</td>
<td><strong>LACC.3.RI.1.3</strong> Describe the relationship between a series of historical events, scientific idea, or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.</td>
</tr>
<tr>
<td>SC.3.I.15.2 <strong>Moderate</strong></td>
<td><strong>LACC.3.RI.2.4</strong> Determine the meaning of general academic and domain-specific word and phrase in a text relevant to a grade 3 topic or subject area.</td>
</tr>
<tr>
<td>Classify flowering and non-flowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics</td>
<td><strong>LACC.3.W.3.8</strong> Recall information from experience or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.</td>
</tr>
<tr>
<td><strong>Yearlong Benchmarks</strong></td>
<td><strong>LACC.3.RI.4.10</strong> By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the end of the grades 2-3 text complexity band independently and proficiently.</td>
</tr>
</tbody>
</table>

**Okaloosa County School District**

**Curriculum Guide for Science**

**Third Grade Science**

REV 062012

Page 10
Reading Standards for Informational Text Grade 3

<table>
<thead>
<tr>
<th>Grade 3 Students</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key Ideas and Details</strong></td>
</tr>
<tr>
<td>1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</td>
</tr>
<tr>
<td>2. Determine the main idea of a text; recount the key details and explain how they support the main idea.</td>
</tr>
<tr>
<td>3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.</td>
</tr>
<tr>
<td><strong>Craft and Structure</strong></td>
</tr>
<tr>
<td>4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.</td>
</tr>
<tr>
<td>5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</td>
</tr>
<tr>
<td>6. Distinguish their own point of view from that of the author of a text.</td>
</tr>
<tr>
<td><strong>Integration of Knowledge and Ideas</strong></td>
</tr>
<tr>
<td>7. Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).</td>
</tr>
<tr>
<td>8. Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).</td>
</tr>
<tr>
<td>9. Compare and contrast the most important points and key details presented in two texts on the same topic.</td>
</tr>
<tr>
<td><strong>Range of Reading and Level of Text Complexity</strong></td>
</tr>
<tr>
<td>10. By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2–3 text complexity band independently and proficiently.</td>
</tr>
</tbody>
</table>

Standard 10, “Range, Quality and Complexity of Text,” will be implemented through all grades K-12 with professional development offered across the school year to support this standard.
# Writing Standards - Grade 3

## Grade 3 Students

### Text Types and Purposes

1. **Write opinion pieces on topics or texts, supporting a point of view with reasons.**
   - Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons.
   - Provide reasons that support the opinion.
   - Use linking words and phrases (e.g., because, therefore, since, for example) to connect opinion and reasons.
   - Provide a concluding statement or section.

2. **Write informative/explanatory texts to examine a topic and convey ideas and information clearly.**
   - Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.
   - Develop the topic with facts, definitions, and details.
   - Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information.
   - Provide a concluding statement or section.

3. **Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.**
   - Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally.
   - Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations.
   - Use temporal words and phrases to signal event order.
   - Provide a sense of closure.

### Production and Distribution of Writing

4. **With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose.** (Grade-specific expectations for writing types are defined in standards 1–3 above.)

5. **With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.**

6. **With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.**

### Research to Build and Present Knowledge

7. **Conduct short research projects that build knowledge about a topic.**

8. **Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.**

9. **Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.**

### Range of Writing

10. **Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.**
Suggested Pacing and Assessment

Need to spend approximately one week per lesson, including hands-on activities and experiments.

The Benchmark Reviews in the Student Book are available online and therefore should NOT be used as a Summative Grade.

Suggested Grading Categories

Practice/Weekly Grades
- “Sum It Up” and “Brain Check” pages from the Student Book
- Benchmark Review from Student Book (as review for Unit Benchmark Tests)
- Other materials at teacher’s discretion

Progress Monitoring Grades
- Lesson Quizzes from Assessment Guide (combine two or more assessments for one grade)
- Short Option or Long Option Unit Performance Assessments (done in groups or individually)
- Other materials or teacher-made tests at teacher’s discretion

Summative Grades
- Unit Benchmark Tests from Assessment Guide
- Teachers have the option of waiting to give Unit 1 Benchmark Test until the end of the first 9 weeks to allow students more time to develop science process skills.
- Short Option or Long Option Unit Performance Assessments (done individually, not in groups)
- Benchmark Practice Tests at the end of the year
- Other materials or teacher-made tests at teacher’s discretion
Grade-level Curriculum Guide

Quarter 1

**Big Idea 1: The Practice of Science**
A. Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.
B. The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."
C. Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.
D. Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.

**Essential Questions:**
- How do scientists investigate questions?
- How do scientists use tools?
- How do scientists record data?
- How do your results compare?
- How can you measure length?

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>FCAT Info: Content limits, Item specs, other assessments</th>
<th>Additional Resources/Activities</th>
<th>Lit. Connection Vocabulary Reading</th>
<th>Textbook Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC.3.N.1.1</td>
<td>Raise questions about the natural world, investigate them individually and in teams through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.</td>
<td>High complexity Refer to suggested Science Assessments listed in this guide. Daily science journal writing and hands-on activities with all topics throughout the year. “A Sense of Wonder” More Picture Perfect Science Lessons Flip Charts: 2, 3, 4, 5, 7, 10, 14</td>
<td>Vocabulary: investigate hypothesis experiment variable infer predict investigation model observation scientist</td>
<td>Unit 1: Lessons 1, 2, 3, 4, 5, 6 Unit 2: Lesson 3 Unit 3: Lesson 3 Unit 4: Lesson 3 Unit 6: Lesson 2</td>
</tr>
</tbody>
</table>

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**Daily science journal writing and hands-on activities with all topics throughout the year.**

**“A Sense of Wonder” More Picture Perfect Science Lessons**

**Flip Charts:** 2, 3, 4, 5, 7, 10, 14
### SC.3.N.1.2
Compare the observations made by different groups using the same tools and seek reasons to explain the differences across groups.

**Common Core Standards:**
- [MACC.3.MD.2.4](#)
  - Represent and interpret data. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

**High complexity**
- Whole class discussion following experiments throughout the year.
- Flip Charts: 4, 5, 7, 9, 13, 19, 21, 30

**Vocabulary:**
- microscope
- graduated cylinder
- temperature
data
evidence
data table
bar graph

- Unit 1: Lessons 3, 4, 5, 6
- Unit 2: Lesson 2
- Unit 3: Lesson 2, 3
- Unit 4: Lesson 3
- Unit 5: Lesson 2
- Unit 8: Lesson 3

### SC.3.N.1.3
Keep records as appropriate, such as pictorial, written, or simple charts and graphs, of investigations.

**Common Core Standards:**
- [LACC.3.W.3.8](#)
  - Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
- [LACC.3.RI.3.3](#)
  - Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

**Moderate complexity**
- Daily science journal writing and hands-on activities with all topics throughout the year.
- Flip Charts: 2, 3, 54, 5, 6, 7, 13, 16, 19

- Unit 1: Lessons 1, 2, 3, 4, 6
- Unit 2: Lessons 2, 3
- Unit 3: Lessons 2, 3, 5
- Unit 4: Lesson 3
- Unit 5: Lesson 2
- Unit 6: Lesson 2
- Unit 7: Lesson 4
- Unit 8: Lesson 2
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<tr>
<th>Standard</th>
<th>Complexity</th>
<th>Instruction</th>
<th>Vocabulary</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC.3.N.1.4</td>
<td>Moderate</td>
<td>Whole class discussion following experiments throughout the year. Flip Charts: 6, 7</td>
<td>communicate</td>
<td>Unit 1: Lesson 4, 5</td>
</tr>
<tr>
<td>Recognize the importance of communication among scientists.</td>
<td></td>
<td></td>
<td></td>
<td>Unit 6: Lesson 2</td>
</tr>
<tr>
<td>SC.3.N.1.5</td>
<td>Moderate</td>
<td>Whole class discussion following experiments throughout the year. Flip Charts: 7</td>
<td></td>
<td>Unit 1: Lesson 5</td>
</tr>
<tr>
<td>Recognize that scientists question, discuss, and check each others’ evidence and explanation.</td>
<td></td>
<td></td>
<td></td>
<td>Unit 6: lesson 2</td>
</tr>
<tr>
<td>SC.3.N.1.6</td>
<td>High</td>
<td>Daily science journal writing and hands-on activities with all topics throughout the year. Whole class discussion following experiments throughout the year. Flip Charts: 3, 4, 14, 15, 19, 21, 23, 24</td>
<td>infer</td>
<td>Unit 1: Lessons 1, 2, 3</td>
</tr>
<tr>
<td>Infer based on observation.</td>
<td></td>
<td></td>
<td></td>
<td>Unit 3: Lesson 3, 4</td>
</tr>
<tr>
<td>SC.3.N.1.7</td>
<td>High</td>
<td>Daily science journal writing and hands-on activities with all topics throughout the year. “Earthlets”, Picture Perfect Science Lessons Excellent introduction to scientific method at the beginning of the year Flip Charts: 5, 7</td>
<td>evidence phenomena</td>
<td>Unit 4: Lesson 3</td>
</tr>
<tr>
<td>Explain that empirical evidence is information, such as observations or measurements that is used to help validate explanations of natural phenomena.</td>
<td></td>
<td></td>
<td></td>
<td>Unit 5: Lesson 2</td>
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<td>Unit 6: Lesson 3</td>
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<td>Unit 8: Lesson 2</td>
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</tbody>
</table>
### Big Idea 3: The Role of Theories, Laws, Hypotheses, and Models

The terms that describe examples of scientific knowledge, for example; "theory," "law," "hypothesis," and "model" have very specific meanings and functions within science.

#### Essential Questions:
- How does scientific language differ from everyday language?
- How do models help explain how things work?
- How does a model differ from the real object?
- How can you use a model?

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Additional Resources/Activities</th>
<th>Lit. Connection</th>
<th>Textbook Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC.3.N.3.1</td>
<td>Moderate complexity Refer to suggested Science Assessments listed in this guide.</td>
<td>Initiate every activity with vocabulary and building background activities. Daily science journal writing and hands-on activities with all topics throughout the year.</td>
<td>Vocabulary: energy cell heat/cold evidence volume property</td>
<td>- Unit 1: Lesson 1</td>
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<tr>
<td>Common Core Standards:</td>
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<td>- Unit 4: Lesson 1</td>
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<td>LACC.3.RI.3.4</td>
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<td>LACC.3.RI.3.10</td>
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<tr>
<td>SC.3.N.3.2</td>
<td>Low complexity Daily science journal writing and hands-on activities with all topics throughout the year. Flip Charts: 3, 9, 22, 26, 27</td>
<td></td>
<td>Vocabulary: model</td>
<td>- Unit 1: Lesson 1,2</td>
</tr>
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<tr>
<td>SC.3.N.3.3</td>
<td>Moderate complexity</td>
<td>Daily science journal writing and hands-on activities with all topics throughout the year. Whole class discussion following experiments throughout the year. Flip Charts: 3, 22 Examples:</td>
<td>Unit 1: Lesson 1, 2, Unit 6: Lesson 1</td>
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<tr>
<td>Recognize that all models are approximations of natural phenomena; as such, they do not perfectly account for all observations.</td>
<td></td>
<td>“Make a Thermometer” (during Energy unit) “The Mini Water Cycle” (during Water Cycle unit) How can you make a model of a backbone?, (during Animal unit)</td>
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</tbody>
</table>

Examples:
- “Make a Thermometer” (during Energy unit)
- “The Mini Water Cycle” (during Water Cycle unit)
- How can you make a model of a backbone?, (during Animal unit)
Big Idea 5: Earth in Space and Time
Humans continue to explore Earth's place in space. Gravity and energy influence the formation of galaxies, including our own Milky Way Galaxy, stars, the Solar System, and Earth. Humankind's need to explore continues to lead to the development of knowledge and understanding of our Solar System.

Essential Questions:
- What are the sun and stars?
- How many stars do you see?
- How does the sun heat the earth?
- What is gravity?

<table>
<thead>
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<th>Lit. Connection</th>
<th>Textbook Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC.3.E.5.1</td>
<td>Explain that stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of light.</td>
<td>High complexity Refer to suggested Science Assessments listed in this guide.</td>
<td>Scott Foresman Science Leveled Readers: The Sun, Patterns in the Sky</td>
<td>Unit 2: Lesson 1, 2</td>
</tr>
</tbody>
</table>

- “Daytime Stars” page 14, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Streaks” page 14, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Light Meter” page 18, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Apparent Sizes”, AIMS Out of this World, pg. 8-12.

BrainPop:
- Sun

UnitedStreaming:
- The Magic School Bus Sees Stars
- The Sky Above: A First Look

Flip Charts: 8, 9

Vocabulary:
radiant energy
heat
sun
star
telescope
force
gravity
### SC.3.E.5.2
Identify the Sun as a star that emits energy; some of it in the form of light.

**Moderate complexity**

- “Too Close” page 2, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Sunsational Changes”, *AIMS Earth Book*, pages 329-335
- “Twinkle, Twinkle, Little Star”, *Read and Understand Science Grades 2-3*, pages 40-44.
- BrainPop: Sun.

**Internet Resources:**

- Animate the Sun! Is It Hot in the Light? http://www.uen.org/Lessonplan/preview.cgi?LPid=9757
- In this lesson plan, students will make observations that things in direct sunlight are warmer than things that are not in as much sunlight. Also, they may notice that there may be more heat near asphalt, brick, or cement because heat can be stored and radiated from these, also.
- It's Hot http://www.uen.org/Lessonplan/preview.cgi?LPid=9761
- Classroom activities help students understand the effect of sunlight on the Earth.
- Here Comes the Sun http://www.uen.org/Lessonplan/preview.cgi?LPid=16281
- This activity will have students provide evidence showing that the sun is the source of heat and light for Earth.
- In this lesson, students will perform simple experiments that will help them to explore unseen energy produced by the sun.

**Flip Charts:** 8

**Unit 2:** Lesson 1

**Scott Foresman Science Leveled Readers: The Sun**


**Vocabulary:**
### SC.3.E.5.3
Recognize that the Sun appears large and bright because it is the closest star to Earth.

**High complexity**
- "Apparent Sizes", *AIMS Out of this World*, pages 8-12.

“Day and Night” *Picture Perfect Science Lessons*

**BrainPop:**
- Sun

**Internet Resources:**
- How Big Are the Earth, Sun, and Moon? [http://www.uen.org/Lessonplan/preview.cgi?LPid=10987](http://www.uen.org/Lessonplan/preview.cgi?LPid=10987)
  This lesson plan will help students understand where the sun is in the solar system and how big the earth, moon, and sun are.

**Flip Charts:** 8

### SC.3.E.5.4
Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome.

**High complexity**
- “Shapely” page 94, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Up Hill” page 94, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Over the Edge”, page 95, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Balancing Act” page 96, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Sheep in a Jeep”, *Picture Perfect Science Lessons*, pages 181-204

**BrainPop:**
- Gravity

**Internet Resources:**
- It’s a Weighty Matter [http://www.uen.org/Lessonplan/preview.cgi?LPid=11031](http://www.uen.org/Lessonplan/preview.cgi?LPid=11031)

**UnitedStreaming:**
- The Magic School Bus Gains Weight
- Getting to Know Gravity

**Vocabulary:**
- gravity
  - force
  - overcome

### Scott Foresman Science Levelled Readers: The Sun

**Unit 2: Lesson 1**

### High complexity
- "Apparent Sizes", *AIMS Out of this World*, pages 8-12.

“Day and Night” *Picture Perfect Science Lessons*

**BrainPop:**
- Sun

**Internet Resources:**
- How Big Are the Earth, Sun, and Moon? [http://www.uen.org/Lessonplan/preview.cgi?LPid=10987](http://www.uen.org/Lessonplan/preview.cgi?LPid=10987)
  This lesson plan will help students understand where the sun is in the solar system and how big the earth, moon, and sun are.

**Flip Charts:** 8

### SC.3.E.5.4
Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome.

**High complexity**
- “Shapely’ page 94, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Up Hill” page 94, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Over the Edge”, page 95, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Balancing Act” page 96, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.
- “Sheep in a Jeep”, *Picture Perfect Science Lessons*, pages 181-204

**BrainPop:**
- Gravity

**Internet Resources:**
- It’s a Weighty Matter [http://www.uen.org/Lessonplan/preview.cgi?LPid=11031](http://www.uen.org/Lessonplan/preview.cgi?LPid=11031)

**UnitedStreaming:**
- The Magic School Bus Gains Weight
- Getting to Know Gravity

**Vocabulary:**
- gravity
  - force
  - overcome

### Scott Foresman Science Levelled Readers: The Sun

**Unit 2: Lesson 4**


- This activity will help students understand weight, mass and gravity.
- I'm Falling For You http://www.uen.org/Lessonplan/preview.cgi?LPid=10046
- In this activity, students will experience gravity just like Galileo did during his experiments.
- Jump http://www.uen.org/Lessonplan/preview.cgi?LPid=10047
  This activity has students jump with and without weights. Their data should reveal that gravity has more of a pulling force with heavy objects that are on the ground than light objects on the ground.

**Flip Charts: 11**

<table>
<thead>
<tr>
<th>SC.3.E.5.5</th>
<th>Moderate complexity</th>
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<tbody>
<tr>
<td><strong>Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye.</strong></td>
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<tr>
<td><strong>Internet Resources</strong></td>
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<tr>
<td><strong>UnitedStreaming:</strong></td>
<td></td>
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</tbody>
</table>
| - The Magic School Bus sees Stars  
- The Sky Above Us: A First Look |
| **Vocabulary:** telescope  
constellation |

**Scott Foresman Science Leveled Readers: Patterns in the Sky**  
**Unit 2: Lesson 1, 2**
Big Idea 6: Earth Structures
Humans continue to explore the composition and structure of the surface of Earth. External sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earth’s water and natural resources.

Essential Questions:
- How does the Sun heat the earth?

<table>
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<th>Textbook Alignment</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>BrainPop: Sun, Energy Sources, Solar Energy.</td>
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<td></td>
<td>ScienceATHon Challenge: Catching Sunlight <a href="http://scithon.terc.edu/catchingsunshine/">http://scithon.terc.edu/catchingsunshine/</a></td>
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<td>How much can you make the air temperature inside a solar collector go up?</td>
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<td>Flip Charts: 8, 10</td>
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Quarter 2

Big Idea 8: Properties of Matter
A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass.
B. Objects and substances can be classified by their physical and chemical properties. Mass is the amount of matter (or "stuff") in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.

The concepts of mass and weight are complicated and potentially confusing to elementary students. Hence, the more familiar term of "weight" is recommended for use to stand for both mass and weight in grades K-5. By grades 6-8, students are expected to understand the distinction between mass and weight, and use them appropriately.

Essential Questions:
- What are some physical properties of matter?
- How are mass and volume measured?
- How is temperature measured?
- What are the states of matter?

<table>
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<tbody>
<tr>
<td>SC.3.P.8.1</td>
<td>Moderate complexity Refer to suggested Science Assessments listed in this guide.</td>
<td>&quot;Up and Down&quot; page 81, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.</td>
<td>Basal Reading Story: Cook-a-doodle-doo</td>
<td>Unit 3: Lesson 3</td>
</tr>
<tr>
<td>Common Core Correlation: MACC.3.MD.1.2</td>
<td>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using</td>
<td>&quot;Hot Pockets&quot;, AIMS Magazine 2005, pages 2-9.</td>
<td>Vocabulary: matter temperature physical property mass temperature volume solid liquid gas</td>
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<td></td>
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<td>&quot;What's the Temperature?&quot;, AIMS Primarily Physics, pages 134-143.</td>
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<td>&quot;Heat and Color&quot;, AIMS Primarily Physics, pages 154-159.</td>
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<td>&quot;Temperature Told Hot or Cold&quot;, AIMS Winter Wonders, pages 82-86.</td>
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<td></td>
<td>&quot;What is Hot and What is Cold&quot;, AIMS Primarily Physics, pages 121-125.</td>
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<td>&quot;Make a Thermometer&quot;, AIMS Primarily Physics&quot;, pages 144-147.</td>
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<td></td>
<td>BrainPop: Temperature, Heat.</td>
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</tbody>
</table>
| MACC.3.MD.2.4 | BrainPopJr: Heat  
UnitedStreaming: Properties of Matter, Part 1  
Internet Resources:  
- ScienceATHon Challenge: Catching Sunlight [http://scithon.terc.edu/catchingsunshine](http://scithon.terc.edu/catchingsunshine)  
- How much can you make the air temperature inside a solar collector go up?  
Flip Charts: 14 |  |  |
| --- | --- | --- | --- |
| SC.3.P.8.2  
Measure and compare the mass and volume of solids and liquids.  
BrainPop: Measuring Matter  
Internet Resources:  
It’s a Weighty Matter [http://www.uen.org/Lessonplan/preview.cgi?LPid=11031](http://www.uen.org/Lessonplan/preview.cgi?LPid=11031)  
This activity will help students understand weight, mass and gravity.  
Flip Charts: 12, 13 | Basal Reading Story: Cook-a-doodle-doo  
Vocabulary:  
- mass  
- volume | Unit 3: Lesson 1, 2 |
| SC.3.P.8.3  
Compare materials and objects according to properties such as size, shape, color, texture, and hardness.  
Moderate complexity | “Seed Sort”, AIMS Primarily Plants, pages 43-49.  
“Properties”, Read and Understand Science Grades 3-4, pages 25-29.  
“How Big is a Foot?”, More Picture Perfect Science Lessons  
UnitedStreaming:  
- Matter and Its Properties: Observing the Properties of Matter  
Scott Foresman Science Leveled Readers: Matter and Its Properties  
Vocabulary:  
- matter  
- property  
- pressure  
- texture | Unit 3: Lesson 1, 4 |
<table>
<thead>
<tr>
<th>Matter</th>
<th>hardness</th>
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<tbody>
<tr>
<td>Flip Charts: 12, 15</td>
<td></td>
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</table>
**Big Idea 9: Changes in Matter**
A. Matter can undergo a variety of changes.
B. Matter can be changed physically or chemically.

**Essential Question:**
- How can the state of matter change?

<table>
<thead>
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<th>Lit. Connection Vocabulary Reading</th>
<th>Textbook Alignment</th>
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</thead>
</table>

**Vocabulary:**
- water vapor
- groundwater
- evaporation
- condensation
- water cycle
- precipitation
- solid
- liquid
- gas
- boil
- freeze
- melt
### Internet Resource:
- Round and Round It Goes [http://www.dnr.state.wi.us/org/caer-ceeek/earth/groundwater/watercycle.htm](http://www.dnr.state.wi.us/org/caer-ceeek/earth/groundwater/watercycle.htm)
- KidZone Water Cycle
  Don't miss the printable activity pages at the bottom of the page! [http://www.kidzone.ws/water/](http://www.kidzone.ws/water/)

### THE WATER CYCLE
Lesson plan to help students understand the continuous cycle that water undergoes as it changes form.


Flip Charts: 5, 16
Big Idea 10: Forms of Energy
A. Energy is involved in all physical processes and is a unifying concept in many areas of science.
B. Energy exists in many forms and has the ability to do work or cause a change

Essential Questions:
- What are some basic forms of energy?
- How does light move?
- What surfaces reflect light best?

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<thead>
<tr>
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<th>Additional Resources/Activities</th>
<th>Lit. Connection Vocabulary Reading</th>
<th>Textbook Alignment</th>
</tr>
</thead>
</table>
| SC.3.P.10.1 | Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical. | Low complexity  
“Keeping Warm”, *Read and Understand Science Grades 2-3*, pages 100-104.  
“The Miracle of Light”, *Read and Understand Science Grades 3-4*, pages 100-104.  
“Sounds of Science” *Picture Perfect Science Lessons*  
BrainPop:  
Forms of Energy, Electricity, Light, Sound  
BrainPop Jr:  
Light  
United Streaming:  
Getting to Know Energy  
Exploring Energy  
Electricity: A First Look  
Internet Resources:  
Heat Experiments | Reading Basal Story: Carousel of Dreams; The Printer; What's in Store for the Future?  
Scott Foresman Science Leveled Readers: Light, Sound, Sonic Boom  
Vocabulary:  
energy  
mechanical energy  
potential energy  
kinetic energy  
thermal energy | Unit 4: Lesson 1 |
### SC.3.P.10.2
Recognize that energy has the ability to cause motion or create change.

<table>
<thead>
<tr>
<th>Low complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Bump” page 85, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.</td>
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<tr>
<td>“Oops!” page 100, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.</td>
</tr>
<tr>
<td>“Moving On” page 101, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.</td>
</tr>
<tr>
<td>“Hot Band” page 107, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.</td>
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</table>

**UnitedStreaming**: Exploring Energy

**Internet Resources**:  
ScienceATHon Challenge: How Quickly Can You Melt a Chocolate Chip Inside a Solar Cooker?  
[http://scithon.terc.edu/Chocolate_Melt/](http://scithon.terc.edu/Chocolate_Melt/)

Flip Charts: 17

**Reading Basal Story**: Carousel of Dreams; The Printer; What’s in Store for the Future?  
Scott Foresman Science Leveled Readers: Forces and Motion, Energy


**Vocabulary**: motion

**Unit 4**: Lesson 1
### SC.3.P.10.3
Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another.

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<tbody>
<tr>
<td></td>
<td>&quot;Mirrors Reflect&quot;, AIMS Primarily Physics, pages 85-91.</td>
</tr>
<tr>
<td>BrainPop:</td>
<td>Rainbows, Light</td>
</tr>
<tr>
<td>BrainPopJr.:</td>
<td>Light</td>
</tr>
<tr>
<td><strong>Internet Resources:</strong></td>
<td>- Doing the Splits! -- Get a sneak preview of what light is made up of.</td>
</tr>
<tr>
<td>Flip Charts:</td>
<td>18, 19</td>
</tr>
</tbody>
</table>

### SC.3.P.10.4
Demonstrate that light can be reflected, refracted, and absorbed.

<table>
<thead>
<tr>
<th>Moderate complexity</th>
<th>&quot;Backwards&quot; page 106, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;Swirls of Color&quot; page 106, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.</td>
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<tr>
<td></td>
<td>&quot;Mirrors Reflect&quot;, AIMS Primarily Physics, pages 85-91.</td>
</tr>
</tbody>
</table>

**Vocabulary:**
- reflect
- refract
- absorb

|---------------------|--------------------------------------------------------------------------------------------------|
- “Rainbows”, *Read and Understand Science Grades 2-3* pages 65-69.

**BrainPop:**
- Rainbows, Light

**BrainPop Jr:**
- Light

**United Streaming:**
- What’s in a Rainbow

**Internet Resources:**
- Bending Light Experiments  
  Look for the box on the right side of the screen for a list of experiments.
- Bouncing and Reflecting Light Experiments  
  Look for the box on the right side of the screen for a list of experiments.
- Mind-Bending Refraction  
  Create a spectacular but simple illusion using water and light trickery.

Flip Charts: 18, 19
Quarter 3

**Big Idea 11: Energy Transfer and Transformations**

A. Waves involve a transfer of energy without a transfer of matter.
B. Water and sound waves transfer energy through a material.
C. Light waves can travel through a vacuum and through matter.

**Essential Questions**

- What are some heat sources?
- Where can heat come from?

<table>
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<tbody>
<tr>
<td></td>
<td>Refer to suggested Science Assessments listed in this guide.</td>
<td>• “Heat and Color”, <em>AIMS Primarily Physics</em>, pages 154-159.</td>
<td></td>
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<td></td>
<td></td>
<td>• “Sunsational Changes”, <em>AIMS Earth Book</em>, pages 329-335.</td>
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<td></td>
<td></td>
<td>BrainPop: Heat, Light, Sun</td>
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<td><strong>Internet Resources:</strong></td>
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<td></td>
<td>• Heating Up!</td>
<td></td>
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<td></td>
<td></td>
<td><a href="http://www.uen.org/Lessonplan/preview.cgi?LPid=14861">http://www.uen.org/Lessonplan/preview.cgi?LPid=14861</a></td>
<td>In this lesson plan, students discover that things that give off light often give off heat.</td>
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<td>• ScienceAThon Challenge: How Quickly Can You Melt a Chocolate Chip Inside a Solar Cooker?</td>
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<td><a href="http://scithon.terc.edu/Chocolate_Melt/">http://scithon.terc.edu/Chocolate_Melt/</a></td>
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<td>• ScienceAThon Challenge: Catching Sunlight</td>
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<td><a href="http://scithon.terc.edu/catchingsunshine/">http://scithon.terc.edu/catchingsunshine/</a></td>
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<td></td>
<td></td>
<td>• How much can you make the air temperature inside a solar collector go up?</td>
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<tr>
<td></td>
<td></td>
<td>• Things are heating up.</td>
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</tr>
</tbody>
</table>
**SC.3.P.11.2**
Investigate, observe, and explain that heat is produced when one object rubs against another, such as rubbing one's hands together.

<table>
<thead>
<tr>
<th></th>
<th>High complexity</th>
</tr>
</thead>
</table>

**Internet Resources:**
- Hot Stuff
  [http://www.uen.org/Lessonplan/preview.cgi?LPid=2299](http://www.uen.org/Lessonplan/preview.cgi?LPid=2299)
  This lesson plan will have students predict, measure and record temperatures produced from friction.
- Rubbing Objects Together
  [http://www.uen.org/Lessonplan/preview.cgi?LPid=9772](http://www.uen.org/Lessonplan/preview.cgi?LPid=9772)
  Classroom activities help students understand that heat may be produced when objects are rubbed together.
- The Force of Gravity
  [http://www.uen.org/Lessonplan/preview.cgi?LPid=11032](http://www.uen.org/Lessonplan/preview.cgi?LPid=11032)
  The activities in this lesson will allow students to observe and analyze the forces of gravity.
- When Things Start Heating Up
  This lesson is intended to give students a general idea of how heat is produced from human-based activities and mechanical and electrical machines.

**Flip Charts:** 20, 21

**Vocabulary:** friction

**Unit:** 5
**Lesson:** 1, 2
**Big Idea 14: Organization and Development of Living Organisms**

A. All plants and animals, including humans, are alike in some ways and different in others.
B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce.
C. Humans can better understand the natural world through careful observation.

**Essential Questions:**
- What are some plant structures?
- How do plants respond to light?
- How do plants respond to their environment?

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>FCAT Info: Content limits, Item specs, other assessments</th>
<th>Additional Resources/Activities</th>
<th>Lit. Connection Vocabulary Reading</th>
<th>Textbook Alignment</th>
</tr>
</thead>
</table>
| SC.3.L.14.1 | Moderate complexity Refer to suggested Science Assessments listed in this guide. | - "Leaf Straw" page 25, Jan VanCleave's 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.  
- "What's Stomata?", page 26, Jan VanCleave's 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.  
- "Water Loss", page 26, Jan VanCleave's 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.  
- "Independence", page 27, Jan VanCleave's 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.  
- "It's in the Bag", AIMS Primarily Plants, pages 24-29.  
- "Cactus", AIMS Budding Botanist, pages 87-89.  
- "This is My Flower", AIMS Primarily Plants, pages 184-189.  
- "What Do Plants Need to Grow?", AIMS Primarily Plants, pages 120-125.  
- "Spores: A Special Seed", AIMS Primarily Plants, pages 83-86.  
Unit 8: Lesson 3 |
<table>
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<tbody>
<tr>
<td>“Rice is Life” <em>Picture Perfect Science Lessons</em></td>
</tr>
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</table>

BrainPop:
Photosynthesis

BrainPopJr:
Parts of Plant

UnitedStreaming:
- How Plants Grow
- Plant Parts and Their Uses
- Plants: Green, Growing, Giving Life

**Internet Resources:**
- The Great Plant Escape [http://urbanext.illinois.edu/gpe/index.html](http://urbanext.illinois.edu/gpe/index.html)
  Help Detective LePlant and his partners Bud and Sprout unlock the amazing mysteries of plant life.
  Identify different parts of a plant, what seeds need to grow, and the stages of a plant's life cycle.
  Interdependence and adaptation: plants needs and parts. You will learn about different parts of a plant and what it needs to survive.
- Animals & Plants
  - Animal Adaptations
  - Birdsongs for Beginners
  - Gopher Tortoises
  - Marine Mammals

Flip Charts: 22, 23, 31
| SC.3.L.14.2 | Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity. | High complexity | “Light Seekers”, page 28, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.  
“Up or down?” page 27, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.  
“What Temperature is Best?”, AIMS Primarily Plants, pages 126-129.  
BrainPop:  
Photosynthesis  
BrainPopJr:  
Parts of Plant  
**Internet Resources:**  
How Plants Grow  
**Vocabulary:**  
Season respond | Unit 6: Lesson 3 |
Big Idea 15: Diversity and Evolution of Living Organisms

A. Earth is home to a great diversity of living things, but changes in the environment can affect their survival.

B. Individuals of the same kind often differ in their characteristics and sometimes the differences give individuals an advantage in surviving and reproducing.

Essential Questions:
- How can we classify plants?
- How can we classify vertebrates?
- How can we classify invertebrates?
- How do we classify things?

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>FCAT Info: Content limits, Item specs, other assessment</th>
<th>Additional Resources/Activities</th>
<th>Lit. Connection Vocabulary Reading</th>
<th>Textbook Alignment</th>
</tr>
</thead>
</table>
| SC.3.L.15.1 | Moderate complexity Refer to suggested Science Assessments listed in this guide. | • “Fly Trap” page 32, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.  
• “Fish Rings” page 33, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.  
• “Holding On.” Page 33, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.  
• “Heads or Tails” page 35, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.  
• “Water Breath” page 35, Jan VanCleave’s 200 Gooey, Slippery, Slimy Weird, and Fun Experiments.  
• “Animal Antics”, AIMS Critters, pages 8-16.  
• “Mammals on My Mind”, AIMS Bats Incredible, pages 10-17.  
• “Animals of a Sort”, AIMS, pages 1-9.  
• “Animals without a Backbone”, Read and Understand Science Grades 2-3, pages 90-94.  
• “In a Class by Itself”, Read and Understand Science Grades 3-4, pages 105-109.  
Vocabulary: mammal reptile amphibian arthropod insect | Unit 7: Lesson 2, 3, 4 |
### Third Grade Science

<table>
<thead>
<tr>
<th>Topic</th>
<th>United Streaming</th>
<th>Internet Resource</th>
</tr>
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<tbody>
<tr>
<td>Fish</td>
<td>UnitedStreaming:</td>
<td>- Animals Groups: Beginning Classification</td>
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<tr>
<td></td>
<td></td>
<td>- Animals with Backbones</td>
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<tr>
<td></td>
<td></td>
<td>- Animals Around Us: Invertebrates:What are they?</td>
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<tr>
<td></td>
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<td>- Mammals:What are they?</td>
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<tr>
<td></td>
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<td>- Reptiles: What are they?</td>
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<td></td>
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<td>- Birds: What are they?</td>
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<tr>
<td></td>
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<td>- Amphibians: Amazing Animals</td>
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<tr>
<td></td>
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<td>- Fish: What are they?</td>
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<td>![image]</td>
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</table>

**Internet Resource:**
- Magic School Bus Guided Tour: Animals
- Classifying Animals: A Touch of Class On-line Activity
  - [http://www.sciencenetlinks.com/interactives/class.html](http://www.sciencenetlinks.com/interactives/class.html)
- Lesson Plan:

**Flip Charts:** 26, 27, 28

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<table>
<thead>
<tr>
<th>SC.3.L.15.2</th>
<th>Classify flowering and non-flowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics.</th>
<th>Scott Foresman Science Leveled Readers: Plants and How they Grow.</th>
</tr>
</thead>
</table>
  - “Hungry Fungus.” Page 31, Jan VanCleave’s 200 Gooy, Slippery, Slimy Weird, and Fun Experiments.  
  - “This is My Flower”, *AIMS Primarily Plants*, pages 184-189.  
  - “Spores: A Special Seed”, *AIMS Primarily Plants*, pages 83-86.  
  - BrainPop: Photosynthesis  
  - BrainPopJr: Parts of Plant  
  - Flip Charts: 25, 28 | Reading Basal Story: Washington Weed Whackers |

**Vocabulary:**
- spore  
- non-flowering  
- flowering  
- insect  

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**Unit 7:** Lesson 1
### Quarter 4

**Big Idea 17: Interdependence**

- A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.
- B. Human activities and natural events can have major impacts on the environment.
- C. Energy flows from the sun through producers to consumers.

**Essential Questions:**
- How do living things respond to changing seasons?
- What do plants need?
- How do plants and animals get energy?

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>FCAT Info: Content limits, item specs, other assessments</th>
<th>Additional Resources/Activities</th>
<th>Lit. Connection Vocabulary Reading</th>
<th>Textbook Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC.3.L.17.1</td>
<td>Describe how animals and plants respond to changing seasons.</td>
<td>Moderate complexity</td>
<td>Refer to suggested Science Assessments listed in this guide.</td>
<td>Vocabulary: germination migrate hibernate producer consumer food chain</td>
</tr>
</tbody>
</table>


**Internet Resources:**
- Green Apples: [http://www.uen.org/Lessonplan/preview.cgi?Lpid=9759](http://www.uen.org/Lessonplan/preview.cgi?Lpid=9759)
- Classroom lesson plan to help students understand the effect of light on the growth of seeds and plants.
- Flip Charts: 29, 30, 31
## Related Standards/Benchmarks

### Health

#### Essential Questions:
- How can you help your body stay healthy?
- How do your body parts and organs work together?

#### Benchmark

<table>
<thead>
<tr>
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<th>Lit. Connection</th>
<th>Textbook Alignment</th>
</tr>
</thead>
</table>
| HE.3.C.1.4 | Describe common childhood health conditions. | ThinkCentral.com  
- Go to Teacher Resource Book  
- Then click Health Activities to find “Human Body Handbook” and scroll down for activities and reading passages  
- Also click on Graphic Organizers and Body System Diagrams. | *Good Enough to Eat* by Lizzy Rockwell (1999)  
*Showdown at the Food Pyramid* by Rex Barron (2004)  
**Vocabulary:**  
- Asthma  
- Allergy  
- Dental  
- Cavity  
- Healthy | ThinkCentral.com  
- Go to Teacher Resource Book  
- Then click Health Activities to find “Human Body Handbook” and scroll down for activities and reading passages.  
- Also click on Graphic Organizers and Body System Diagrams. |

#### Discovery Education Videos:
- Me and Only Me  
- Tooth Wisdom: Your Teeth and How to take Care of Them  
- Good Food for Good Health  
- Magic Schoolbus Works Out

#### BrainPop Jr. (see Health movies)
- Allergies  
- Asthma  
- Bones  
- Caring for Teeth  
- Colds and Flu  
- Eating Right  
- Going to the Dentist  
- Going to the Doctor  
- Washing Hands

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<thead>
<tr>
<th>Benchmark</th>
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<th>Additional Resources/Activities</th>
<th>Lit. Connection</th>
<th>Textbook Alignment</th>
</tr>
</thead>
</table>
| HE.3.C.1.6 | Recognize that body parts and organs work together to form human body systems. | ThinkCentral.com:  
- Go to Teacher Resource Book  
- Then click Health Activities to find “Human Body Handbook” and scroll down for activities and reading passages.  
- Also click on Graphic Organizers and Body System Diagrams. | *What Happens to a Hamburger* by Paul Showers (1985)  
*The Digestive System* by Christine Taylor-Butler (2008)  
*The Digestive System* by Rebecca L. Johnson (2006)  
*The Digestive System* by Kristin | ThinkCentral.com  
- Go to Teacher Resource Book  
- Then click Health Activities to find “Human Body Handbook” and scroll down for activities and reading passages.  
- Also click on Graphic Organizers and Body System Diagrams. |
<table>
<thead>
<tr>
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<tr>
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<td>Magic Schoolbus Works Out</td>
<td>• Muscles by Seymour Simon (1998)</td>
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<td></td>
<td>Magic Schoolbus Inside Ralphie</td>
<td>• Bones by Seymour Simon (1998)</td>
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<td></td>
<td>Inside Story with Slim Goodbody</td>
<td>• The Astounding Nervous System Crabtree Publishing (2009)</td>
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<td></td>
<td>BrainPopJr: (see Health movies)</td>
<td>• The Nervous System by Joelle Riley (2004)</td>
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<td>Digestive System</td>
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<td>Heart</td>
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<td></td>
<td>Lungs</td>
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<tr>
<td></td>
<td>Muscles</td>
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</tbody>
</table>

Vocabulary:
- Organs
- Digestive
- Muscular
- Skeletal
- Nervous
- System

scroll down for activities and reading passages.
- Also click on Graphic Organizers and Body System Diagrams.
Textbook Correlation to Florida Science Standards

Houghton Mifflin Harcourt Science Fusion Correlation - See TE T19-T25
Teacher Resources for Third Grade Science


AIMS activities available from www.aimsedu.org. (for minimal fee per activity)


Read and Understand Science Grades 2-3 by Jo Ellen Moor. Evan Moor, 2002.

Read and Understand Science Grades 3-4 by Jo Martha Cheney, Joanne Mattern, and Susan Guthrie. Evan Moor, 2002.
Science Resources Guide

- **Read and Understand Science Series**
  Grades 1-2, Grades 2-3, Grades 3-4, Grades 4-6; Evan-Moor Publishers

- **Project Wild Activity Guide**
  Project Wild, PO Box 18060, Boulder, CO 80308, (303)444-2390
  [http://www.projectwild.org/educators.htm](http://www.projectwild.org/educators.htm)

- **Digging Into FCAT Science – Inquiry Based Activities**
  Florida Educational Tools, (904) 998-1918 or (800) 586-9940
  [www.fledtools.com](http://www.fledtools.com)

- **Integrating Science with Reading Instruction Grades 5&6**
  By Trisha Callella and Marilyn Marks, Creative Teaching Press

- **AIMS Education Foundation On-line Store**
  Books, Free Resources and $1-2 E-Activities

- **Picture-Perfect Science Lessons: Using Children's Books to Guide Inquiry**

- **More Picture-Perfect Science Lessons: Using Children's Books to Guide Inquiry, K-4**

- **More Than Magnets: Exploring the Wonders of Science in Preschool and Kindergarten**
## Science Literature by Grade Level with Benchmarks

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Science Concept or Skill</th>
<th>Grade Level</th>
<th>Benchmark</th>
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</thead>
<tbody>
<tr>
<td>I Wonder If I'll See a Whale</td>
<td>Frances Ward Weller</td>
<td>Observing the natural world/questioning</td>
<td>3rd</td>
<td>SC.3.N.1.1</td>
</tr>
<tr>
<td>Owl Moon</td>
<td>Jane Yolen</td>
<td>Observing the natural world/questioning</td>
<td>3rd</td>
<td>SC.3.N.1.1</td>
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<tr>
<td>Big Tracks, Little Tracks: Following Animal Prints</td>
<td>M.E. Selsam</td>
<td>Observation/inference</td>
<td>3rd</td>
<td>SC.3.N.1.1</td>
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<tr>
<td>The New Way Things Work</td>
<td>David Macaulay</td>
<td>Models</td>
<td>3rd</td>
<td>SC.3.N.3.2</td>
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<td>Telescopes</td>
<td>Adele Richardson</td>
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<td>3rd</td>
<td>SC.3.E.5.5</td>
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<td>The Sun</td>
<td>Seymour Simon</td>
<td>Sun</td>
<td>3rd</td>
<td>SC.3.E.6.1</td>
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<td>Temperature</td>
<td>Chris Woodford</td>
<td>Measuring temperature</td>
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<td>Loreen Leedy</td>
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<td>Sun Up, Sun Down</td>
<td>Gail Gibbons</td>
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**NOTE:** Duplicate titles listed in red, and are appropriate for each grade level.

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## Science Literature by Grade Level

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<thead>
<tr>
<th>Title</th>
<th>Author</th>
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<tbody>
<tr>
<td>Who Made These Holes?</td>
<td>Published by Newbridge</td>
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<td>A Drop Around the World</td>
<td>McKinney</td>
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<tr>
<td>Big Tracks, Little Tracks: Following Animal Prints</td>
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<td>Day Light, Night Light</td>
<td>Branley</td>
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<td>Energy Makes Things Happen*</td>
<td>Bradley</td>
<td>3</td>
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<td>Gravity Is A Mystery</td>
<td>Branley</td>
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<td>How a Plant Grows</td>
<td>Kalman</td>
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<td>I Fall Down</td>
<td>Cobb, V.</td>
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<tr>
<td>I See Myself</td>
<td>Cobb, V.</td>
<td>3</td>
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<td>I Wonder If I'll See a Whale</td>
<td>Weller</td>
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<td>Magic School Bus and the Electric Field Trip</td>
<td>Cole</td>
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<td>Magic School Bus Gets a Bright Idea</td>
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<td>Magic School Bus Gets Cold Feet</td>
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<td>Magic School Bus Gets Planted</td>
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<td>Magic School bus in the Arctic</td>
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<td>Magic School Bus in the Haunted Museum</td>
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<td>Magic School Bus Makes a Rainbow</td>
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<td>Magic School Bus Plants a Seed*</td>
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<td>Magic School Bus Plays Ball</td>
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<td>Magic School Bus Sees Stars</td>
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<td>Magic School Bus Wet All Over</td>
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<td>Sheep In a Jeep</td>
<td>Shaw</td>
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<td>Rau and Shea</td>
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<td>Sun Up, Sun Down</td>
<td>Gibbons</td>
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<td>Sunshine: A Book About Sunlight</td>
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<td>The New Way Things Work</td>
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<td>The Sky is Full of Stars</td>
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<td>The Snowflake: A Water Cycle Story</td>
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<td>The Sun</td>
<td>Simon</td>
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<td>Water Dance</td>
<td>Locker</td>
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<td>What is a Bird?</td>
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<td>What is a Fish?</td>
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<td>What is a Mammal?</td>
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<td>What is a Plant?</td>
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<td>What is a Reptile?</td>
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<tr>
<td>What is an Amphibian?</td>
<td>Kalman</td>
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<td>What is the Animal Kingdom?</td>
<td>Kalman</td>
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<tr>
<td>Where are the Stars During the Day?</td>
<td>Berger</td>
<td>3</td>
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</tbody>
</table>
Research

- As students progress through the three stages of inquiry, support from the teacher diminishes and student ownership increases.
- This developmental process is crucial for students to reach the ultimate goal of conducting science investigations independently—engaging in Full Inquiry.
- Inquiry prepares students to answer visual analysis and critical interpretation questions.
5 Questions to Deeper Understanding

- Direct Data - *a question that requires the student to look at his/her data/measurements*
- Mathematical Interpretation - *requires the student to compare, contrast or make a calculate using two or more of his/her measurements*
- Hypothesis Revisit – *student is asked to infer from observations, measurements, and results*
- Application to Other Context - *question that requires the students to apply knowledge to a different context/setting*
- World Connection - *requires the students to consider the impact of human/social system*
Standards-Based Instruction

- Standards-Based Instruction means designing instruction to help students understand the science outlined in the standards
- It is NOT linking a standard to what you already do or to a favorite lesson.

Backward by Design

- A way to design lessons/units of instruction consistent with standards-based instruction
- Consists of three main steps…
  1. Identify what students need to know or what they need to be able to do (What is worthy of understanding?)
  2. Identify assessment (What is evidence of this understanding?)
  3. Design instruction (What learning experiences and teaching will promote this type of understanding?)