

## Alabama Fourth Grade Course of Study

### Alignment to Science Modules

Course of Study Objective	Science Module, Lesson
1. Describe how electrical circuits can be used to produce light, heat, sound, and magnetic fields.	Electric Circuits - Lessons 1,3,4,5,6,8,13,15
• Identifying ways to use and conserve electrical energy.	Electric Circuits - Lesson 1
• Identifying characteristics of parallel and series circuits	Electric Circuits - Lesson 11 Teacher's Guide
• Classifying materials as conductors, nonconductors, and insulators of electricity and heat	Electric Circuits Lesson 7 Teacher's Guide Nonconductor needs to be added. GLOBE Year 2 Lesson 8 Teacher Guide and Presenter's Guide
• Identifying relationships among charge, current, and potential energy	Electric Circuits Lesson 4
• Identifying components of a circuit	Electric Circuits Lessons 3, 6-16
2. Compare different pitches of sound produced by changing the size, tension, amount, or type of vibrating material.	Physics of Sound - Investigation 2, Parts 1-3, Investigation 3 Parts, 1-3, Investigation 4 Parts 1-2
• Describing the relationship between the structure of the ear and hearing	Physics of Sound - Investigation 1 "Your Sound Source" Science Story Teacher's Guide and Presenter's Guide.
3. Recognize how light interacts with transparent, translucent, and opaque materials. Examples: transparent-most light passes through, translucent-some light passes through, opaque-no light passes through	
• Predicting the reflection or absorption of light by various objects	
4. Describe effects of friction on moving objects.	Motion and Design - Lessons 3-16
• Identifying momentum and inertia as properties of moving objects	Motion and Design - Lessons 3-16 need to add terms momentum and inertia
• Identifying ways to increase or decrease friction	Motion and Design - Lesson 8

5. Describe the interdependence of plants and animals.	Animal Studies - Lessons 2-16 Teacher's Guide
<ul style="list-style-type: none"> <li>Describing behaviors and body structures that help animals survive in particular habitats Examples: behaviors-migration, hibernation, mimicry; body structures-quills, fangs, stingers, webbed feet</li> </ul>	Animal Studies - Lessons 4,6,7,9-16 Teacher's Guide
<ul style="list-style-type: none"> <li>Describing life cycles of various animals to include incomplete and complete metamorphosis Examples: damsel fly, mealworms</li> </ul>	Animal Studies - Lesson 7 Teacher's Guide and Presenter's Guide
<ul style="list-style-type: none"> <li>Tracing the flow of energy through a food chain Example: producer, first-level consumer, second-level consumer, and third-level consumer</li> </ul>	
<ul style="list-style-type: none"> <li>Identifying characteristics of organisms, including growth and development, reproduction, acquisition and use of energy, and response to the environment</li> </ul>	Animal Studies - Lessons 6,7,9,10,11,15-16 Teacher's Guide Reproduction is not taught.
6. Classify animals as vertebrates or invertebrates and as endotherms or ectotherms.	
<ul style="list-style-type: none"> <li>Describing the organization of cells into tissues, organs, and organ systems</li> </ul>	
<ul style="list-style-type: none"> <li>Describing the grouping of organisms into populations, communities, and ecosystems</li> </ul>	
<ul style="list-style-type: none"> <li>Classifying common organisms into kingdoms, including Animalia, Plantae, Protista, Fungie, Archaeobacteria, and Eubacteria</li> </ul>	
7. Describe geological features of Earth, including bodies of water, beaches, ocean ridges, continental shelves, plateaus, faults, canyons, sand dunes, and ice caps.	
8. Identify technological advances and other benefits of space exploration. Examples: laser, pacemaker, dehydrated food, flame-retardant clothing, global positioning system (GPS), satellite imagery, global weather information, diagnostic imagery	
<ul style="list-style-type: none"> <li>Listing highlights of space exploration, including satellites, manned moon missions, the unmanned Mars mission, and an inhabited space station</li> </ul>	
<ul style="list-style-type: none"> <li>Identifying Alabama's contribution to the space industry</li> </ul>	

9. Describe the appearance and movement of Earth and its moon.	
<ul style="list-style-type: none"> <li>Identifying the waxing and waning of the moon in the night sky.</li> </ul>	
<ul style="list-style-type: none"> <li>Identifying lunar and solar eclipses</li> </ul>	
10. Describe components of our solar system.	
<ul style="list-style-type: none"> <li>Defining comets, asteroids, and meteors</li> </ul>	