

Alabama Course of Study: Science (2005)	ESS Presentation
Kindergarten	
Physical Science	
1. Classify objects as solids or liquids.	Hot and Cold
2. Identify the sun as Earth's source of light and heat, predicting the effect of the sun on living and nonliving things, identifying relationships between light and shadows and predicting the occurrence of shadows.	Weather Shadows Light and Dark
3. Relate a variety of sounds to their sources, including weather, animal, and transportation sounds.	Senses
4. Identify properties of motion, including change of position and change of speed.	Feel the Force
5. Predict whether an object will be attracted by a magnet.	Mysterious Magnets
Life Science	
6. Compare size, shape, structure, and basic needs of living things, identifying similarities of offspring and their parents.	Animals and Plants Living Things Growing Plants Growing Up
7. Classify objects using the five senses, grouping objects according to color, shape, size, sound, taste, smell, texture, and temperature.	Senses Marvellous Materials Materials Matter
Earth and Space Science	
8. Identify features of Earth as landmasses or bodies of water.	
9. Identify seasons of the year, describing seasonal changes in the weather.	Weather
10. Identify objects observed in the day sky with the unaided eye, including the sun, clouds, moon, and rainbows.	Weather
First Grade	
Physical Science	
1. Select appropriate tools and technological resources needed to gather, analyze, and interpret data.	Weather Growing Plants
2. Identify basic properties of objects.	Marvellous Materials Materials Matter Mysterious Magnets Changing Materials
3. Describe effects of forces on objects, including change of speed, direction, and position.	Feel the Force Springs Magnets
Life Science	

K-2 Product
3-5 Product

4. Describe survival traits of living things, including color, shape, size, texture, and covering, classifying plants and animals according to physical traits; identifying developmental stages of plants and animals; describing a variety of habitats and natural homes of animals.	Animals and Plants Living Things Growing Plants Growing Up
5. Identify parts of the human body, including the head, neck, shoulders, arms, spine, and legs, recognizing the importance of a balanced diet for healthy bones; discussing the relationship of muscles and bones to locomotion; discussing the relationship of bones to protection of vital organs; identifying technology used by scientists to study the human body.	Body Systems
6. Recognize evidence of animals that no longer exist.	Fossils
Earth and Space Science	
7. Identify components of Earth's surface, including soil, rocks, and water.	Rocks Soil
8. Recognize daily changes in weather, including clouds, precipitation, and temperature, recognizing instruments used to observe weather and recording weather data using weather journals, charts, and maps.	Weather
9. Identify ways to conserve Earth's resources.	Pollution
10. Describe uses of recycled materials.	Pollution
11. Compare the day sky to the night sky as observed with the unaided eye.	Weather
Second Grade	
Physical Science	
1. Identify states of matter as solids, liquids, and gases, describing objects according to physical properties, including hardness, color, and flexibility, describing changes between states of matter, measuring quantities of solids and liquids.	Marvellous Materials Materials Matter Mysterious Magnets Changing Materials Hot and Cold Changing State
2. Identify vibration as the source of sound, identifying pitch and volume as properties of sound, distinguishing between pitch and volume of sound.	Sounds
3. Recognize that light travels in a straight line until it strikes an object, recognizing that light can be reflected.	Reflection and Refraction
4. Describe observable effects of forces, including buoyancy, gravity, and magnetism, identifying simple machines, including the inclined plane, lever, pulley, wedge, screw, and wheel and axle.	Magnets Feel the Force
Life Science	

5. Identify the relationship of structure to function in plants, including roots, stems, leaves, and flowers.	Growing Plants
6. Identify characteristics of animals, including behavior, size, and body covering, comparing existing animals to extinct animals, identifying migration and hibernation as survival strategies.	Animals and Plants Living Things Growing Up Habitats Fossils
Earth and Space Science	
7. Identify geological features as mountains, valleys, plains, deserts, lakes, rivers, and oceans, identifying local landforms and bodies of water, identifying components of soil, including sand, clay, and silt.	Soil
8. Identify evidence of erosion and weathering of rocks.	Erosion, Transportation and Deposition
9. Describe evaporation, condensation, and precipitation in the water cycle.	Water Cycle
10. Identify the impact of weather on agriculture, recreation, the economy, and society, recognizing the importance of science and technology to weather predictions.	
11. Identify basic components of our solar system, including the sun, planets, and Earth's moon.	Our Solar System
Third Grade	
Physical Science	
1. Classify substances as soluble or insoluble.	Separating Mixtures
2. Identify physical and chemical changes of matter.	Separating Mixtures
3. Describe ways energy from the sun is used.	Food Chains
4. Define force and motion.	Forces
5. Identify the relationship of simple machines to compound machines.	
Life Science	
6. Identify structures and functions of the muscular and skeletal systems of the human body.	Body Systems
7. Describe the life cycle of plants, including seed, seed germination, growth, and reproduction, describing the role of plants in a food chain; identifying plant and animal cells; describing how plants occupy space and use light, nutrients, water, and air; classifying plants according to their features; identifying helpful and harmful effects of plants; identifying how bees pollinate flowers; identifying photosynthesis as the method used by plants to produce food.	Plant Reproduction Food Chains
8. Identify how organisms are classified in the Animalia and Plantae kingdoms.	
9. Describe how fossils provide evidence of prehistoric plant life.	Fossils
10. Determine habitat conditions that support plant growth and survival.	Habitats

Earth and Space Science	
11. Describe Earth's layers, including inner and outer cores, mantle, and crust. classifying rocks and minerals by characteristics, including streak, color, hardness, magnetism, luster, and texture.	Rocks
12. Identify conditions that result in specific weather phenomena, including thunderstorms, tornadoes, and hurricanes, identifying cloud types associated with specific weather patterns; identifying positive and negative effects of weather phenomena; identifying technology used to record and predict weather, including thermometers, barometers, rain gauges, anemometers, and satellites; explaining symbols shown on a weather map; organizing weather data into tables or charts.	Predicting the Weather
13. Describe ways to sustain natural resources, including recycling, reusing, conserving, and protecting the environment, recognizing the impact of society on human health and environmental conditions.	Pollution Habitats
14. Describe the position of Earth, the moon, and the sun during the course of a day or month, describing various forms of technology used in observing Earth and its moon.	Days and Seasons The Moon
Fourth Grade	
Physical Science	
1. Describe how electrical circuits can be used to produce light, heat, sound, and magnetic fields, identifying ways to use and conserve electrical energy; identifying characteristics of parallel and series circuits; classifying materials as conductors, nonconductors, and insulators of electricity and heat; identifying relationships among charge, current, and potential energy; identifying components of a circuit.	Circuits Energy Forms Electromagnets Insulators and Conductors
2. Compare different pitches of sound produced by changing the size, tension, amount, or type of vibrating material, describing the relationship between the structure of the ear and hearing.	Sounds
3. Recognize how light interacts with transparent, translucent, and opaque materials, predicting the reflection or absorption of light by various objects.	Shadows Reflection and Refraction
4. Describe effects of friction on moving objects, identifying momentum and inertia as properties of moving objects; identifying ways to increase or decrease friction.	Friction
Life Science	
5. Describe the interdependence of plants and animals, describing behaviors and body structures that help animals survive in particular habitats; describing life cycles of various animals to include incomplete and complete metamorphosis; tracing the flow of energy through a food chain; identifying characteristics of organisms, including growth and development, reproduction, acquisition and use of energy, and response to the environment.	Habitats Adaptations Interdependence Food Chains

6. Classify animals as vertebrates or invertebrates and as endotherms or ectotherms, describing the organization of cells into tissues, organs, and organ systems; describing the grouping of organisms into populations, communities, and ecosystems; classifying common organisms into kingdoms, including Animalia, Plantae, Protista, Fungi, Archaeobacteria, and Eubacteria.	Habitats Adaptations Interdependence Body Systems
Earth and Space Science	
7. Describe geological features of Earth, including bodies of water, beaches, ocean ridges, continental shelves, plateaus, faults, canyons, sand dunes, and ice caps.	Erosion, Transportation and Deposition
8. Identify technological advances and other benefits of space exploration, listing highlights of space exploration, including satellites, manned moon missions, the unmanned Mars mission, and an inhabited space station, identifying Alabama's contribution to the space industry.	
9. Describe the appearance and movement of Earth and its moon, identifying the waxing and waning of the moon in the night sky; identifying lunar and solar eclipses.	The Moon
10. Describe components of our solar system, defining comets, asteroids, and meteors.	Our Solar System
Fifth Grade	
Physical Science	
1. Identify evidence of chemical changes through color, gas formation, solid formation, and temperature change.	Separating Mixtures
2. Define mass, volume, and density, identifying the atom as the basic building block of matter; relating temperature changes to particle motion; relating density to the sinking or floating of an object in a liquid.	
3. Use everyday indicators to identify common acids and bases.	
4. Describe forms of energy, including chemical, heat, light, and mechanical, identifying types of potential and kinetic energy; describing alternatives to the use of fossil fuels; identifying the transfer of energy by conduction, convection, and radiation.	Energy Forms Predicting the Weather
5. Contrast ways in which light rays are bent by concave and convex lenses, describing how a prism forms a visible spectrum; explaining why different objects have different colors; describing how mirrors reflect light; describing the relationship between the structure of the eye and sight; identifying types of corrective lenses used to correct different sight problems; identifying the contribution of van Leeuwenhoek to the development of the microscope.	Reflection and Refraction
6. Compare effects of gravitational force on Earth, on the moon, and within space, identifying contributions of Newton to the study of gravity; describing how a spring scale is used to measure weight; explaining how air resistance affects falling objects.	Gravity Forces
Life Science	

7. Identify common parts of plant and animal cells, including the nucleus, cytoplasm, and cell membrane, comparing unicellular and multicellular organisms; comparing plant and animal cells.	
8. Identify major body systems and their functions, including the circulatory system, respiratory system, excretory system, and reproductive system.	Body Systems
9. Describe the relationship of populations within a habitat to various communities and ecosystems, describing the relationship between food chains and food webs; describing symbiotic relationships.	Food Chains Interdependence
Earth and Space Science	
10. Identify spheres of Earth, including the geosphere, atmosphere, and hydrosphere, describing technology used to investigate Earth; describing the rock cycle.	
11. Compare distances from the sun to planets in our solar system, relating the size of Earth to the size of other planets in our solar system; identifying technology used to study planets.	Our Solar System