

KnowAtom's K-8 Alignment Guide to the **Georgia** Standards of Excellence (GSE) for Science

This alignment guide shows how KnowAtom's integrated model of science curriculum is aligned with for the Georgia Standards of Excellence (GSE) for Science in Grades K-8.

The curriculum uses storylines that introduce anchor phenomena to provide the purpose and opportunity for students' engagement and learning. Hands-on, student-centered, and inquiry-based learning are an integral part of every unit. With KnowAtom, students learn as scientists through active participation in science and engineering practices, mastering the GA standards by answering questions and solving problems related to real-world phenomena.

Through this process, students develop the creative, evaluative, and analytical skills that are foundational to mastery of Georgia's science standards and to prepare students for college and career opportunities.

Concepts are scaffolded within a grade band, providing students with multiple contexts and opportunities for mastery of Georgia's science standards. For that reason, you may see standards from one grade level brought into both earlier and later grade levels within K-2, 3-5, and 6-8. This is intentional for concept introduction and reinforcement and prevents systemic gaps in instruction for transient or absent students.



Grades K-5 Unit Sequence

	Core Topics	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Earth & Space Science	Matter, Space and Motion	Unit 1: Weather In Our World*	Unit 1: Patterns in the Sky	Unit 1: Matter All Around Us	Unit 1: Earth in Motion	Unit 1: Matter and Energy	Unit 1: Matter in Motion
	Earth's Interacting Systems		Unit 2: Changing Seasons	Unit 2: A Changing Planet* Unit 3: Land and Water	Unit 2: Weather and Water*	Unit 2: Shaping Earth's Surface Unit 3: Earth and Human Activity*	Unit 2: Earth's Materials Unit 3: Water on Earth*
Life Science	Energy and Ecosystem Dynamics	Unit 2: Living Things Change	Unit 3: Seed and Leaves Unit 4: Animals on Earth Unit 5: Mimicking Plants and Animals* Unit 6: Animal Behaviors*	Unit 4: Living Earth Unit 5: Growing Plants Unit 6: Plant and Animal Relationships*	Unit 3: Life on Earth Unit 4: Life Cycles and Traits	Unit 4: Plant and Animal Structures Unit 5: Organisms and their Environment	Unit 4: Matter and Energy Cycles Unit 5: Ecosystem Interactions
Physical Science	Forces, Motion, and Forms of Energy	Unit 3: Making Things Move*	Unit 7: Hearing and Sound Unit 8: Sight and Light* Unit 9: Communicating Over Distances*	Unit 7: Engineering Homes* Unit 8: Actions and Reactions Unit 9: Balancing Boats*	Unit 5: Energy in Motion Unit 6: Forces in Our Environment Unit 7: Magnetism and Electricity* Unit 8: Patterns in Sound* Unit 9: Patterns in Light*	Unit 6: Energy Transfers* Unit 7: Electrical Energy* Unit 8: Sound Waves Unit 9: Light and Communication*	Unit 6: Energy and Forces on Earth* Unit 7: Matter and Electricity Unit 8: Matter and Sound* Unit 9: Light Energy and Matter*

* Contains Engineering Lessons



Grades 6-8 Unit Sequence

		Core Topics	Grade 6	Grade 7	Grade 8
Earth & Space Science	Physical Science	Energy and Matter	Unit 1: Gravity and Motion Unit 2: Atoms and Molecules	Unit 1: Discovering Matter*	Unit 1: Matter and Movement
		Earth's Place in the Universe and Earth System	Unit 3: Satellites* Unit 4: Climate and Human Activity*	Unit 2: Energy and Earth Materials Unit 3: Glaciers and Earth's Past	Unit 2: Earth and the Solar System* Unit 3: Earth's Changing Climate*
	Life Science	Biological Structure and Function	Unit 5: Landforms Unit 6: Biodiversity Unit 7: Cells to Systems	Unit 4: Cell Functions Unit 5: Cell Division	Unit 4: From Molecules to Organisms Unit 5: Inheriting Traits Unit 6: Human Genetics
		Ecosystem Dynamics	Unit 8: Forests	Unit 6: Rocky Shores Unit 7: Environmental Science*	Unit 7: Changing Environments*
Earth & Space Science	Physical Science	Motion and Stability: Forces and Interactions	Unit 9: Civil Engineering*	Unit 8: Mechanical Engineering*	Unit 8: Transforming Energy*
		Engineering, Technology, and Applications of Science		Unit 9: Communication Technology*	Unit 9: Waves and Information Transfer*

* Contains Engineering Lessons



KnowAtom Grades K-8 Unit Map

Georgia Science Standards

Kindergarten

Domain	Georgia Science Standards of Excellence	Where Standard is Integrated in KnowAtom		
		Kindergarten	Grade 1	Grade 2
Earth & Space Science	SKE1. Obtain, evaluate, and communicate observations about time patterns (day to night and night to day) and objects (sun, moon, stars) in the day and night sky.	Unit 1	Units 1-2	
	SKE2. Obtain, evaluate, and communicate information to describe the physical attributes of earth materials (soil, rocks, water, and air).	Unit 1		Unit 3
Physical Science	SKP1. Obtain, evaluate, and communicate information to describe objects in terms of the materials they are made of and their physical attributes.	Units 1 & 3	Units 8-9	Units 1, 8-9
	SKP2. Obtain, evaluate, and communicate information to compare and describe different types of motion.	Units 3		Units 8-9
Life Science	SKL1. Obtain, evaluate, and communicate information about how organisms (alive and not alive) and non-living objects are grouped.	Unit 2	Units 3-4	Units 4-6
	SKL2. Obtain, evaluate, and communicate information to compare the similarities and differences in groups of organisms.	*May be integrated into Unit 2	Units 5-6	Units 4-7



First Grade

Domain	Georgia Science Standards of Excellence	Where Standard is Integrated in KnowAtom		
		Kindergarten	Grade 1	Grade 2
Earth & Space Science	S1E1. Obtain, evaluate, and communicate weather data to identify weather patterns.	Unit 1	Units 1-2	Unit 3
Physical Science	S1P1. Obtain, evaluate, and communicate information to investigate light and sound.		Units 7-9	
	S1P2. Obtain, evaluate, and communicate information to demonstrate the effects of magnets on other magnets and other objects.		*This standard is addressed in Grade 3	
Life Science	S1L1. Obtain, evaluate, and communicate information about the basic needs of plants and animals.	Unit 2	Units 3-6	Units 4-7



Second Grade

Domain	Georgia Science Standards of Excellence	Where Standard is Integrated in KnowAtom		
		Kindergarten	Grade 1	Grade 2
Earth & Space Science	S2E1. Obtain, evaluate, and communicate information about stars having different sizes and brightness.		Unit 1	
	S2E2. Obtain, evaluate, and communicate information to develop an understanding of the patterns of the sun and the moon and the sun's effect on Earth.	Unit 1	Units 1-2	
	S2E3. Obtain, evaluate, and communicate information about how weather, plants, animals, and humans cause changes to the environment.		*May be integrated into Unit 2	Units 2-3
Physical Science	S2P1. Obtain, evaluate, and communicate information about the properties of matter and changes that occur in objects.	Units 1, 3	*May be integrated into Units 7-9	Units 1, 7-9
	S2P2. Obtain, evaluate, and communicate information to explain the effect of a force (a push or a pull) in the movement of an object (changes in speed and direction).	Unit 3		Units 8-9
Life Science	S2L1. Obtain, evaluate, and communicate information about the life cycles of different living organisms.		Units 3-6	Units 4-6



Third Grade

Domain	Georgia Science Standards of Excellence	Where Standard is Integrated in KnowAtom		
		Grade 3	Grade 4	Grade 5
Earth & Space Science	S3E1. Obtain, evaluate, and communicate information about the physical attributes of rocks and soils.	Unit 3	Unit 2	Unit 2
	S3E2. Obtain, evaluate, and communicate information on how fossils provide evidence of past organisms.	Unit 3	Unit 2	Unit 2
Physical Science	S3P1. Obtain, evaluate, and communicate information about the ways heat energy is transferred and measured.	Units 1-2	Unit 1	Units 6-7
Life Science	S3L1. Obtain, evaluate, and communicate information about the similarities and differences between plants, animals, and habitats found within geographic regions (Blue Ridge Mountains, Piedmont, Coastal Plains, Valley and Ridge, and Appalachian Plateau) of Georgia.	*May be integrated into Units 3-4	*May be integrated into Units 4-5	*May be integrated into Units 4-5
	S3L2. Obtain, evaluate, and communicate information about the effects of pollution (air, land, and water) and humans on the environment.	Unit 3	Units 3-5	Unit 5



Fourth Grade

Domain	Georgia Science Standards of Excellence	Where Standard is Integrated in KnowAtom		
		Grade 3	Grade 4	Grade 5
Earth & Space Science	S4E1. Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.	Unit 1	Unit 1	Unit 1
	S4E2. Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from the Earth.	Units 1-2		Unit 1
	S4E3. Obtain, evaluate, and communicate information to demonstrate the water cycle.	Unit 2	Units 2-3	Unit 3
	S4E4. Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data.	Unit 2	Unit 3	
Physical Science	S4P1. Obtain, evaluate, and communicate information about the nature of light and how light interacts with objects.	Unit 9	Unit 9	Unit 9
	S4P2. Obtain, evaluate, and communicate information about how sound is produced and changed and how sound and/or light can be used to communicate.	Unit 8	Units 8-9	Unit 8
	S4P3. Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.	Units 5-6	Units 1, 6 <i>*May be integrated in Unit 7</i>	Unit 6
Life Science	S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.	Units 3-4	Units 3-5	Units 4-5



Fifth Grade

Domain	Georgia Science Standards of Excellence	Where Standard is Integrated in KnowAtom		
		Grade 3	Grade 4	Grade 5
Earth & Space Science	S5E1. Obtain, evaluate, and communicate information to identify surface features on the Earth caused by constructive and/or destructive processes.	Unit 2	Units 2-3	Units 2-3
Physical Science	S5P1. Obtain, evaluate, and communicate information to explain the differences between a physical change and a chemical change.		Units 1, 6-8	Units 1-2, 6-7
	S5P2. Obtain, evaluate, and communicate information to investigate electricity.	Unit 7	Unit 7	Unit 7
	S5P3. Obtain, evaluate, and communicate information about magnetism and its relationship to electricity.	Unit 7		Unit 7
Life Science	S5L1. Obtain, evaluate, and communicate information to group organisms using scientific classification procedures.	Unit 3	*May be integrated into Unit 5	Unit 4
	S5L2. Obtain, evaluate, and communicate information showing that some characteristics of organisms are inherited and other characteristics are acquired.	Unit 4	Units 4-5	Unit 5
	S5L3. Obtain, evaluate, and communicate information to compare and contrast the parts of plant and animal cells.		Units 4-5	Unit 4
	S5L4. Obtain, evaluate, and communicate information about how microorganisms benefit or harm larger organisms.		*May be integrated into Units 4-5	*May be integrated into Units 4-5



Sixth Grade

Domain	Georgia Science Standards of Excellence	Where Standard is Integrated in KnowAtom		
		Grade 6	Grade 7	Grade 8
Earth & Space Science	S6E1. Obtain, evaluate, and communicate information about current scientific views of the universe and how those views evolved.	Units 4-5	Unit 3	Unit 2
	S6E2. Obtain, evaluate, and communicate information about the effects of the relative positions of the sun, Earth, and moon.	Unit 3		Units 2-3
	S6E3. Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes.	Units 4-5	Units 2-3, 7	
	S6E4. Obtain, evaluate, and communicate information about how the sun, land, and water affect climate and weather.	Unit 4	Units 3, 7	Units 2-3
	S6E5. Obtain, evaluate, and communicate information to show how Earth's surface is formed.	Unit 5	Unit 2	
	S6E6. Obtain, evaluate, and communicate information about the uses and conservation of various natural resources and how they impact the Earth.	Unit 4	Units 2, 7	



Seventh Grade

Domain	Georgia Science Standards of Excellence	Where Standard is Integrated in KnowAtom		
		Grade 6	Grade 7	Grade 8
Life Science	S7L1. Obtain, evaluate, and communicate information to investigate the diversity of living organisms and how they can be compared scientifically.	Units 6, 8	Unit 5	Units 4-5
	S7L2. Obtain, evaluate, and communicate information to describe how cell structures, cells, tissues, organs, and organ systems interact to maintain the basic needs of organisms.	Units 6-7	Units 4-5	Unit 4
	S7L3. Obtain, evaluate, and communicate information to explain how organisms reproduce either sexually or asexually and transfer genetic information to determine the traits of their offspring.	Unit 6	Units 5-6	Units 5-6
	S7L4. Obtain, evaluate, and communicate information to examine the interdependence of organisms with one another and their environments.	Unit 8	Units 4, 6	Units 6-7
	S7L5. Obtain, evaluate, and communicate information from multiple sources to explain the theory of evolution of living organisms through inherited characteristics.	Unit 6	Units 5-6	Units 5-6



Eighth Grade

Domain	Georgia Science Standards of Excellence	Where Standard is Integrated in KnowAtom		
		Grade 6	Grade 7	Grade 8
Physical Science	S8P1. Obtain, evaluate, and communicate information about the structure and properties of matter.	Units 2, 4, 9	Units 1-2	Units 1, 9
	S8P2. Obtain, evaluate, and communicate information about the law of conservation of energy to develop arguments that energy can transform from one form to another within a system.	Units 1-3	Units 1-2, 8	Units 1, 7-9
	S8P3. Obtain, evaluate, and communicate information about cause and effect relationships between force, mass, and the motion of objects.	Units 1-2	Unit 8	Unit 1-2, 8
	S8P4. Obtain, evaluate, and communicate information to support the claim that electromagnetic (light) waves behave differently than mechanical (sound) waves.	Unit 3	Unit 9	Unit 9 <i>*May be integrated into Unit 8</i>
	S8P5. Obtain, evaluate, and communicate information about gravity, electricity, and magnetism as major forces acting in nature.	Unit 1		Units 1-2, 8

