

Huntsville City Schools

2017 – 2018 Pacing Guide

Sixth Grade Science and Honors Science

First Nine Weeks

Vocabulary

water cycle
relative humidity
pollution
tornadoes
evaporation
water
instruments
recycling
hurricanes

transpiration
thermometers
biodegradable
thunderstorms
precipitation
barometers
air mass
hazardous waste
condensation

anemometers
tropical
environmental science
surface water
wet bulbs
polar fronts
tributary
maritime weather
technology

watershed
continental
radar
reservoir
global warming computer
simulations
eutrophication
natural resource

**May not include all vocabulary words

Standard	Resources	Approximate Pacing Number of Days
The Scientific Method ALCOS 14 Analyze and interpret data (e.g., tables, graphs, maps of global and regional temperatures; atmospheric levels of gases such as carbon dioxide and methane; rates of human activities) to describe how various human activities (e.g., use of fossil fuels, creation of urban heat islands, agricultural practices) and natural processes (e.g., solar radiation, greenhouse effect, volcanic activity) may cause changes in local and global temperatures over time.	Pearson: 8.4, 10.4	7
The Greenhouse Effect Layers of the Atmosphere	Pearson: 3.1, 6.1, 6.3, 7.2, 10.4, 13.2, 13.4, 13.5, 13.6	10

<p>ALCOS 16 Implement scientific principles to design processes for monitoring and minimizing human impact on the environment (e.g., water usage, including withdrawal of water from streams and aquifers or construction of dams and levees; land usage, including urban development, agriculture, or removal of wetlands; pollution of air, water, and land).*</p>	<p>Pearson Realize - Energy Resources Power Point</p>	
<p>Clouds Water Cycle Air Masses Storms- Tornadoes, Hurricanes, Thunderstorms</p> <p>ALCOS 12 Integrate qualitative scientific and technical information (e.g., weather maps; diagrams; other visualizations, including radar and computer simulations) to support the claim that motions and complex interactions of air masses result in changes in weather conditions.</p> <p>a. Use various instruments (e.g., thermometers, barometers, anemometers, wet bulbs) to monitor local weather and examine weather patterns to predict various weather events, especially the impact of severe weather (e.g., fronts, hurricanes, tornados, blizzards, ice storms, droughts).</p> <p>ALCOS 7 Use models to construct explanations of the various biogeochemical cycles of Earth (e.g., water, carbon, nitrogen) and the flow of energy that drives these processes.</p>	<p>Pearson: 8.1, 8.2, 9.1, 9.3, 9.4, 9.6 Pearson: 7.1, 7.2</p> <p>AMSTI Weather and Climate Lessons 1-7</p> <p>LTF: Blowing in the Wind LTF: Evaporation and Condensation</p> <p>*Honors Science will be working on an independent research project such as a science fair and/or a hurricane project.</p>	<p>20</p>
<p>The Greenhouse Effect Layers of the Atmosphere ALCOS 15 Analyze evidence (e.g., databases on human populations, rates of consumption of food and other natural resources) to explain how changes in human population, per capita consumption of natural resources, and other human activities (e.g., land use, resource development, water and air pollution, urbanization) affect Earth's systems.</p>	<p>Pearson: 13.1, 13.3, 13.4, 13.5</p>	<p>5</p>
<p>Review and Assessment</p>		<p>3</p>

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Second Nine Weeks

Vocabulary			
continental drift	stress	Richter scale	shield volcano
Pangea	tension	moment magnitude scale	glacial erosion
fossil	shearing	seismogram	water erosion
mid-ocean ridge	compassion	magma	wind erosion
deep-ocean trench	normal fault	lava	deposition
subduction	reverse fault	Ring of Fire	mineral
sea-floor spreading	strike-slip fault	magma chamber	inorganic
plate	Focus	pipe	crystal
divergent boundary	Epicenter	vent	luster
convergent boundary	P wave	silica	Mohs hardness scale
transform boundary	S wave	pyroclastic flow	cleavage
plate tectonics	surface wave	dormant	fracture
faults	Seismograph	caldera	geode
rift valley	Modified Mercalli scale	cinder cone	crystallization
stress	Magnitude	composite volcano	weathering
May not include all vocabulary words.			

Standard	Resources	Approximate Pacing Number of Days
Layers of the Earth		
ALCOS 11 Develop and use models of Earth's interior composition to illustrate the resulting magnetic field (e.g., magnetic poles) and to explain its measurable effects (e.g., protection from cosmic radiation).	AMSTI Plate Tectonic Lesson: 8 Pearson Realize - Plate Tectonics Power Point	2
Pangaea		
Continental Drift		

Sea Floor Spreading		
<p>ALCOS 5 Use evidence to explain how different geologic processes shape Earth's history over widely varying scales of space and time (e.g., chemical and physical erosion; tectonic plate processes; volcanic eruptions; meteor impacts; regional geographical features, including Alabama fault lines, Rickwood Caverns, and Wetumpka Impact Crater).</p>	<p>Pearson Lessons: 1.1, 4.1, 4.2, 4.3, 4.4, 4.5, and 5.5 AMSTI Plate Tectonic Lesson: 13 AMSTI Plate Tectonic Lessons: 9, 11, 12, and 14</p>	13
<p>ALCOS 4 Construct explanations from geologic evidence (e.g., change or extinction of living organisms; field evidence or representations, including models of geologic cross-sections; sedimentary layering) to identify patterns of Earth's major historical events (e.g., formation of mountain chains and ocean basins, significant volcanic eruptions, fossilization, folding, faulting, igneous intrusion, erosion).</p>	<p>Pearson Lessons: 5.1, 5.2, and 5.4 * Honors Science will complete AMSTI Plate Tectonics Exploration Activity Lesson 10.</p>	5
<p>ALCOS 6 Provide evidence from data of the distribution of fossils and rocks, continental shapes, and seafloor structures to explain past plate motions.</p>	<p>Pearson Lessons: 1.1 and 1.2 AMSTI Plate Tectonic Lessons: See ALCOS 9</p>	1
Stress Crust Changes (Volcanoes, Earthquakes)		
<p>ALCOS 9 Use models to explain how the flow of Earth's internal energy drives a cycling of matter between Earth's surface and deep interior causing plate movements (e.g., mid-ocean ridges, ocean trenches, volcanoes, earthquakes, mountains, rift valleys, volcanic islands).</p>	<p>Pearson Lessons: 1.1, 1.2, 1.3 AMSTI Plate Tectonic Lessons: 5 and 6 Pearson Lessons: 2.1, 2.2, 2.3 AMSTI Plate Tectonic Lessons: 2-4, and 7 LTF: Mineral Masters LTF: Rock-N- Roll LTF: We will Rock You LTF: Dynamic Earth LTF: Mapping an Epicenter</p>	13
Rock Cycle Weathering		
<p>ALCOS 8 Plan and carry out investigations that demonstrate the chemical and physical processes that form rocks and cycle Earth's materials (e.g., processes of crystallization, heating and cooling, weathering, deformation, and sedimentation).</p>	<p>Pearson: 3.1, 3.4, 3.5, 3.6 Pearson Realize - Minerals and Rocks Power Point *Honors Science will be developing more independent skills during labs.</p>	2
<p>ALCOS 10 Use research-based evidence to propose a scientific explanation regarding how the distribution of Earth's resources such as minerals, fossil fuels, and groundwater are the result of ongoing geoscience</p>	<p>Pearson Lessons: 6.1 and 7.1</p>	2

processes (e.g., past volcanic and hydrothermal activity, burial of organic sediments, active weathering of rock).		
Benchmark Review		3

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Third Nine Weeks

<p>Rotation</p> <p>Solstice</p> <p>Tide</p> <p>neap tide</p> <p>lunar eclipse</p> <p>**May not include all vocabulary words. **</p>	<p>umbra</p> <p>climate</p> <p>radiation</p> <p>Ultraviolet radiation</p>	<p style="text-align: center;">Vocabulary</p> <p>Revolution</p> <p>Equinox</p> <p>spring tide</p> <p>solar eclipse</p>	<p>penumbra</p> <p>Electromagnetic wave</p> <p>Infrared radiation</p>
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Standard	Resources	Approximate Pacing Number of Days
Features of the Earth, Sun, and Moon		
<p>ALCOS 13 Use models (e.g., diagrams, maps, globes, digital representations) to explain how the rotation of Earth and unequal heating of its surface create patterns of atmospheric and oceanic circulation that determine regional climates.</p> <p>a. Use experiments to investigate how energy from the sun is distributed between Earth's surface and its atmosphere by convection and radiation (e.g., warmer water in a pan rising as cooler water sinks, warming one's hands by a campfire).</p>	<p>Pearson: 11.2, 11.5, 11.4</p> <p>SmaLLab: Sunshine Earth, Earth's Orbit Exploration</p>	18
Seasons		
Tides		
Revolution/Rotation		
Phases of the Moon		
<p>ALCOS 1 Create and manipulate models (e.g., physical, graphical, conceptual)</p>	<p>Pearson: 10.1, 10.2, 8.4, 8.5</p>	20

<p>to explain the occurrences of day/night cycles, length of year, seasons, tides, eclipses, and lunar phases based on patterns of the observed motions of celestial bodies.</p>	<p>LTF: Reasons for the Seasons Moon Watch</p> <p>SmaLLab: Sunshine Earth, Geolocation and Temperature Exploration</p> <p>Sunshine Earth, The North Pole – Seasons of Light and Dark</p> <p>Sunshine Earth, The South Pole – Seasons of Light and Dark</p> <p>* Honors Science will create a constellation / moon myth.</p>	
<p>Review and Assessment</p>		<p>3</p>

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Fourth Nine Weeks

Vocabulary			
Gravity	law of universal gravitation	geocentric	heliocentric
solar system	astronomical unit	planetesimal	asteroid belt
Kuiper belt	meteoroid	meteor	meteorite
terrestrial planet			
**May not include all vocabulary words. **			

Standard	Resources	Approximate Pacing Number of Days
Solar System		
ALCOS 3 Develop and use models to determine scale properties of objects in the solar system (e.g., scale model representing sizes and distances of the sun, Earth, moon system based on a one-meter diameter sun).	Pearson: 12.2, 12.4, 12.5 AMSTI Planetary Systems: Lesson 2 LTF: Not so Lost in Space	20
ALCOS 2 Construct models and use simulations (e.g., diagrams of the relationship between Earth and man-made satellites, rocket launch, International Space Station, elliptical orbits, black holes, life cycles of stars, orbital periods of objects within the solar system, astronomical units and light years) to explain the role of gravity in affecting the motions of celestial bodies (e.g., planets, moons, comets, asteroids, meteors) within galaxies and the solar system.	Pearson: 11.3, 12.1, 12.2, 12.6 AMSTI Planetary Systems: Lesson 3, 5, 7, 8, 9 SmaLLab: Inner vs. Outer Planets Sands of Time LTF: Relative Dating LTF: Beyond the Black Hole *Honors science will complete an independent planet research project for example a planet Prezi.	30
Review and Assessment		3

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<https://alex.state.al.us>

Additional SmaLLab are available.

Listed below are the technology standards for grades six through eight. You are to make every effort to incorporate the applicable standards into your daily classroom lessons. These standards should be noted in your lesson plans.

Alabama Technology Standards Sixth – Eighth Grade

Technology Operations and Concepts

Students will:

1. Appraise technology systems to determine software and hardware compatibility.
2. Publish digital products that communicate curriculum concepts.
Examples: Web pages, videos, podcasts, multimedia presentations
3. Explain how network systems are connected and used.
Examples: file sharing, collaborating, wireless networking
4. Determine basic troubleshooting strategies to correct common hardware and software problems.
Examples: checking connections, restarting equipment, creating a backup copy of digital data
Describing the importance of antivirus and security software
5. Use basic features of word processing, spreadsheets, databases, and presentation software.
Examples: word processing—reports, letters, brochures
spreadsheets—discovering patterns, tracking spending, creating budgets
databases—contact list of addresses and telephone numbers
presentation software—slideshow
6. Select specific digital tools for completing curriculum-related tasks.
Examples: spreadsheet for budgets, word processing software for essays, probes for data collection
7. Demonstrate correct keyboarding techniques.

Digital Citizenship

8. Identify safe uses of social networking and electronic communication.

Recognizing dangers of online predators
Protecting personal information online

9. Practice responsible and legal use of technology systems and digital content.
Examples: avoiding plagiarism; complying with acceptable-use policies, copyright laws, and fair use standards; recognizing secure Web sites
Identifying examples of computer crime and related penalties
Examples: computer crime—phishing, spoofing, virus and worm dissemination, cyberbullying penalties—fines, incarceration
Citing sources of digital content
10. Describe advances in technology and effects of each on the workplace and society.
Examples: agriculture, manufacturing, medicine, warfare, transportation, communication, education

Research and Information Fluency

11. Use digital tools and strategies to locate, collect, organize, evaluate, and synthesize information.
Examples: locating—Boolean searches, graphic organizers, spreadsheets, databases collecting—probe ware, graphing calculators organizing—graphic organizers, spreadsheets evaluating—reviewing publication dates, determining credibility synthesizing—word processing software, concept-mapping software

Communication and Collaboration

12. Use digital tools to communicate and collaborate at all levels from interpersonal to global.
Examples: instant messages, e-mail, blogs, wikis, collaborative authoring tools, online learning communities
Demonstrating digital file transfer
Examples: attaching, uploading, downloading

Critical Thinking, Problem Solving, and Decision Making

13. Use digital tools to formulate solutions to authentic problems.
Examples: electronic graphing tools, probes, spreadsheets

Creativity and Innovation

14. Use digital tools to generate new ideas, products, or processes.
Examples: ideas—predictions, trends products—animation, video processes—models, simulations