

**City School District of Albany
Science Curriculum Pacing Map
Grade 6**

Text: Harcourt Science

***Indicates mandatory lab**

MONTH	CONTENT/TOPIC(S)	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	VOCABULARY	SKILLS	ASSESSMENTS
September – October	UNIT A LIVING ENVIRONMENT				
	<p>Identifying & using tools of a scientist Lab Safety & Skills</p> <p><i>What is Nanoscience? What is a nanometer?</i></p> <p>(approx. 1-2 weeks)</p> <p>Cells, Genetics, and Heredity How Do Plant and Animal Cells Differ? How Do Cells Reproduce? How Are Traits Inherited?</p> <p>Review of Classification Kingdoms & subdivisions</p>	<p>Living Environment</p> <p>1.1 a – e 1.1 f – h 1.1c – f 4.1 c – d 2.1 a – e 2.2 a - c</p> <p>1.1h</p>	<p><i>Nanoscience, nanometer, nanotechnology</i></p> <p>Cell membrane Cell wall Cytoplasm Mitochondria Chloroplast Vacuole Nucleus Chromosome Nuclear membrane DNA Genes Mitosis Meiosis Sexual reproduction Dominant Recessive Punnett Square</p> <p>Classification Linnaean System Animalia Plantae Fungi Protista Monera Adaptation Genus Species Dichotomous Key</p>	<p>Safety, metric ruler, mass balance, stopwatch, graduated cylinder, thermometer</p> <p>Labeling answers with correct units of measure</p> <p>Recognize/analyze patterns and trends</p> <p>Sequence events</p> <p>Identify cause & effect relationships</p> <p>*Using a compound microscope</p> <p>Measuring with a compound microscope</p> <p>Introduction and practice using punnett squares to predict probability of traits</p> <p>*Classify objects according to trends-observable characteristics</p> <p>Develop & use a dichotomous key</p> <p>Classify living things according to a scheme</p>	<p>Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test questions</p> <p>Performance Tasks</p> <p>Chapter & Unit Assessments</p> <p>Student/group projects, reports, presentations, role playing, models, demonstrations</p> <p>Science fairs/contests</p>

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Mid October to December	UNIT B LIVING ENVIRONMENT				
	<p>Plant Growth and Responses How plants meet their needs How plants respond to their environments</p> <p>Types of Plants What are mosses, ferns, and gymnosperms? Angiosperms vs. other plants Angiosperm Reproduction</p> <p>Invertebrates Vertebrates vs. invertebrates</p> <p>Sponges, cnidarians, and worms</p>	<p>Living Environment 1.1 a – h</p> <p>4.3 a – c, e-f</p> <p>1.1 a –h</p> <p>4.1 a-b</p> <p>7.1 a-c 7.2 a-c</p> <p>1.1 a-h</p> <p>5.1 a – d 5.2 a</p>	<p>Vascular plant Xylem Phloem Nonvascular plant Tropism Phototropism Gravitropism Long-day plant Short-day plant</p> <p>Mass Asexual reproduction Spore Fern Gymnosperm Conifer Angiosperm Stamen Anther Pistil Stigma Petal Style Ovary Pollination Dicotyledon Monocotyledon Fertilization Embryo Runner Grafting</p> <p>Vertebrate Invertebrate Endoskeleton Exoskeleton Sponge Cnidarians flat worm Roundworm parasite segmented worm</p>	<p>Identify and control variables Observe, compare, record data, draw conclusions Hypothesize Simple investigations Classify, measure, infer</p> <p>Develop & use a dichotomous key</p> <p>Identify structure & function relationships in organisms</p> <p>Classify living things according to a scheme</p>	<p>Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test questions</p> <p>Performance Tasks</p> <p>Chapter & Unit Assessments</p> <p>Student/group projects, reports, presentations, role playing, models, demonstrations</p> <p>Science fairs/contests</p>

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Mid-October to December cont.	Mollusks, arthropods, and echinoderms Vertebrates Fish and amphibians Reptiles, birds and mammals	Living Environment 1.2 a – i 5.1 a – g 1.2 a - i 5.1a –g 4.1c-d 4.2a-b 4.3a-d	Mollusk Anthropod Archnid Insect Echinoderm Fish Amphibian Cold-blooded Reptile Bird Warm-blooded Mammal Mammary gland	Identify and control variables Observe, compare, record data, draw conclusions Hypothesize Simple investigations Classify, measure, infer Develop & use a dichotomous key Identify structure & function relationships in organisms Classify living things according to a scheme	Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test questions Performance Tasks Chapter & Unit Assessments Student/group projects, reports, presentations, role playing, models, demonstrations Science fairs/contests

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MONTH	CONTENT/TOPIC(S) UNIT E CON'T PHYSICAL SETTING	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	VOCABULARY	SKILLS	ASSESSMENTS
January-February	<p>Chemical and nuclear energy</p> <p>Sound and light</p> <p>Properties of waves</p> <p>Characteristics of a sound wave</p> <p>Characteristics of light</p>	<p>Physical Setting 4.4 a,b,c</p>	<p>Chemical energy Nuclear energy Fusion</p> <p>Wave Amplitude Wavelength Transverse wave Longitudinal wave Frequency</p> <p>Pitch Loudness</p> <p>Electromagnetic waves Radiant energy Reflection Refraction Transparent Opaque Translucent</p>	<p>Identify/Apply Scientific Method: Question, hypothesis, problem, procedure, results, conclusion</p> <p>How to write a hypothesis/question vs. hypothesis</p> <p>Identifying variables (independent, dependent, constants)</p> <p>Control groups</p> <p>How to write a conclusion/results vs. conclusion</p>	<p>Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test questions</p> <p>Performance Tasks</p> <p>Chapter & Unit Assessments</p> <p>Student/group projects, reports, presentations, role playing, models, demonstrations</p> <p>Science fairs/contests</p>

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MONTH	CONTENT/TOPIC(S) UNIT F PHYSICAL SETTING	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	VOCABULARY	SKILLS	ASSESSMENTS
March	<p>Forces and Motion Gravity Motion Forces Interaction of forces</p> <p>Work and Machines Levers Inclined Planes Compound Machines</p> <p><i>Nanotechnology in our lives</i></p>	<p>Physical Setting 5.1 a –e</p> <p>5.2 a,c,d,e,f,g</p>	<p>Force Gravity Newton Speed Average speed Velocity Friction Balanced forces Unbalanced forces</p> <p>Work Machine Level Fulcrum Effort arm Resistance arm Pulley Wheel and axle Inclined plane Wedge Screw Compound machine Efficiency</p> <p><i>Nanotechnology</i></p>	<p>Identify/Apply Scientific Method: Question, hypothesis, problem, procedure, results, conclusion How to write a hypothesis/question vs. hypothesis Identifying variables (independent, dependent, constants) Control groups How to write a conclusion/results vs. conclusion</p> <p>Using a spring scale Labeling answers with correct units of measure Identifying cause & effect relationships</p> <p>*Inclined plane lab controlling variables friction, height, distance)</p>	<p>Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test questions</p> <p>Performance Tasks</p> <p>Chapter & Unit Assessments</p> <p>Student/group projects, reports, presentations, role playing, models, demonstrations</p> <p>Science fairs/contests</p>

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MONTH	CONTENT/TOPIC(S) UNIT C LIVING ENVIRONMENT	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	VOCABULARY	SKILLS	ASSESSMENTS
March – April	<p>Ecosystems Characteristics of an ecosystem Land ecosystems The role of natural cycles in ecosystems</p> <p>Interactions in Ecosystems Organisms & Energy Food chains vs. food webs Energy Pyramid Symbiosis</p>	<p>Living Environment 7.1 a – e 7.2 a-c</p>	<p>Environment Biotic Abiotic Habitat Population Community Ecosystem Niche Biome Deciduous forest Grassland Taipa Evaporation Water cycle Transpiration Condensation</p> <p>Precipitation Ground water Carbon cycle Nitrogen cycle Reusable resources Renewable resources Nonrenewable resources Producer Consumer Decomposer Predator Prey Scavenger Symbiosis Parasitism Mutualism Commensalisms Food chain Food web Energy Pyramid</p>	<p>Recognize/analyze patterns and trends Latitude and longitude in biomes Interpret and/or be able to illustrate energy flow in a food chain, energy pyramid, or food web</p>	<p>Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test questions</p> <p>Performance Tasks</p> <p>Chapter & Unit Assessments</p> <p>Student/group projects, reports, presentations, role playing, models, demonstrations</p> <p>Science fairs/contests</p>

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MONTH	CONTENT/TOPIC(S) UNIT C & D PHYSICAL SETTING	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	VOCABULARY	SKILLS	ASSESSMENTS
April	Weather Changes The Atmosphere Weather fronts Predicting weather Factors causing severe storms	Physical Setting 2.1a,b 2.1j 2.2 I-q	Thermosphere, Mesosphere Stratosphere, troposphere Air mass Air pressure Relative humidity Front Forecast Station model Surface map Weather balloon Weather map Thunderstorm Hurricane Tropical storm, Tornado	Generate/interpret field maps (topographic, weather) Predict characteristics of an air mass based on origin Measure weather variables (wind speed, direction, relative humidity, barometric pressure, etc.) Understanding & applying station models	Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test questions Performance Tasks Chapter & Unit Assessments Student/group projects, reports, presentations, role playing, models, demonstrations
	Movement of Earth's Crust Earth's Layers Plate movement Earthquakes & Volcanoes	2.2 a-f	Crust Mantle Core Lithosphere Athenosphere Plate tectonics Divergent boundary Convergent boundary Transform fault boundary, Mid-ocean ridge, Rift Sea-floor spreading Earthquake Focus Epicenter, P wave S wave, Surface wave Richter scale, Volcano	Flood lab Plot location of recent earthquake and volcanic activity on a map and identify patterns of distribution	Science fairs/contests

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May	Rocks and The Rock Cycle Igneous Rocks Sedimentary Rocks Metamorphic Rocks The Rock Cycle	Physical Setting 2.1 e,f,h,i 2.2 g - h	Mineral, Magma Igneous rock Lava Weathering Erosion Deposition Sedimentation Cementation Clastic rock Chemical rock Metamorphism Rock cycle	Classify objects according to a scheme Identify minerals using identification tests and flow charts MOHS Hardness scale test Use diagrams of the rock cycle to determine geologic processes/events that led to the formation of specific rock types	Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test questions Performance Tasks Chapter & Unit Assessments Student/group projects, reports, presentations, role playing, models, demonstrations Science fairs/contests

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