

**City School District of Albany  
Science Curriculum Pacing Map  
Grade 7**

**\*Indicates mandatory lab**

MONTH	CONTENT/TOPIC(S)	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	LABS	SKILLS	ASSESSMENTS
<b>September – Mid-September</b>	<b>Lab Safety</b> <b>Lab Skills</b> <b>Study Skills</b> <b>Metric System –Nanoscale science</b> <b>Graphing</b> <b>Microscopes</b>	Standard 1 Skills Math/Science/Tech M1.1a 2.1ab 3.1c  Science Skills S1.1 a-c  S2.1 a, b, d S3.1 a-b S3.2a S3.2f S3.2h	Station Rotations/Timed Activities  Graduated cylinder  Metric measuring  <i>Measuring at the Nanoscale</i>  Triple Balance  Graphs  <b>*Microscope Use (field of view, measurement)</b>	Safety & equipment Metric ruler/system Triple beam balance Stopwatch Graduated cylinder Breakers Thermometer  Labeling answers with correct units of measure  Recognize/analyze patterns & trends  Sequence events Identify cause & effect relationships  ID parts and function of Microscope Use microscope  ID and measure objects & organisms  Using data tables to create graphs	Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test Questions  Performance Tasks (timed)  Chapter & Unit Assessments  Student/group projects, Reports, presentations, role playing, models, demonstrations  Science fairs/contests

**City School District of Albany  
Science Curriculum Pacing Map  
Grade 7**

**\*Indicates mandatory lab**

MONTH	CONTENT/TOPIC(S) LIVING ENVIRONMENT	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	LABS	SKILLS	ASSESSMENTS
<b>Mid-September to Thanksgiving Break</b>	<p><b>Cells &amp; Cell Organelles: Structure &amp; Function</b> Cell membrane, cell wall, cytoplasm, ribosomes, chloroplasts, mitochondria, vacuoles Nucleus-genetic material, chromosomes, DNA, genes</p> <p><b>Photosynthesis</b> <b>Respiration</b> <b>Cell division</b> Mitosis Asexual vs. sexual reproduction Cancer-uncontrolled mitosis <i>Nanomedicine</i></p> <p><b>Intro to Genetics</b> Mendel Probability Inheritance DNA</p> <p><b>Modern Genetics</b> Human Inheritance Advances in Genetics Cloning, selective breeding <i>Nanobiology</i></p>	<p>Living Environment 1.1a-d 6.2a-b 1.2d 2.1a-e 4.4a-d 2.2a-c 4.2a-b 3.1a-c 4.1a-c</p>	<p>Station Rotations/Timed Activities</p> <p>Look at cells: (slides) Cheek Onion Preparing and staining slide specimens Plant vs. animal cell structure/organelles</p> <p><b>*Microscopic measurement: Animal cell</b></p> <p>Examine cells in phases of mitosis</p> <p>Probability Lab Dice, coin Punnett Squares Chromosome Inheritance</p> <p><b>*Grouping Living Things Lab</b></p>	<p>Using a compound microscope Measuring with a compound microscope Preparing a wet mount slide Using appropriate staining techniques to view specimens with a microscope</p> <p>Construct and use a Punnett Square or a pedigree chart to predict probability of traits</p>	<p>Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test Questions</p> <p>Performance Tasks (timed)</p> <p>Chapter &amp; Unit Assessments</p> <p>Student/group projects, Reports, presentations, role playing, models, demonstrations</p> <p>Science fairs/contests</p>

**City School District of Albany  
Science Curriculum Pacing Map  
Grade 7**

**\*Indicates mandatory lab**

MONTH	CONTENT/TOPIC(S) PHYSICAL SETTING	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	LABS	SKILLS	ASSESSMENTS
<b>After Thanksgiving to Mid-January</b>	<p><b>Introduction to matter</b> Describing matter Measuring matter and density Particles of matter-Atoms, <i>nanoparticles</i></p> <p><b>Changes in Matter</b> Solids, liquids, gases Phase changes Physical vs. chemical changes</p> <p><b>Elements and Periodic Table</b> Understanding &amp; using the periodic table Organizing Elements Metals, nonmetals, noble gases</p> <p><b>Chemical Reactions</b> Bonding (ionic vs. covalent) Basic chemical formulas Law of Conservation of Mass (reactants &amp; products) Models of molecules &amp; compounds</p> <p><b>Acids/Bases/Solutions</b> Using chemical indicators to identify substances pH paper &amp; scale, litmus test, phenolphthalein, etc.</p>	<p>Physical Setting 3.2 a-e 3.1 a, c, d, e, f, g, h, i 3.3 a-g 4.2 c,d</p>	<p>Station Rotations/Timed Activities</p> <p>Classify &amp; compare atoms, molecules, elements, compounds, mixtures</p> <p><b>*Density – density &amp; buoyancy</b> <b>*Candy Bar Lab</b></p> <p>Physical vs. Chemical Change (freezing point, melting point, boiling, evaporation, condensation, tearing, crushing, etc.)</p> <p>Element activity I.D. and locate on periodic table (Top 20)</p> <p>Chemical reaction labs – endothermic vs. exothermic reactions</p> <p>Models of molecules &amp; compounds</p> <p>Chemical indicator labs</p>	<p>Classification Finding &amp; Describing density of different objects/substances Determine density of liquids, regular, irregular shaped solids Determine volume of regular &amp; irregular- shaped solids using water displacement</p> <p>Identifying matter</p> <p>Identify Physical vs. chemical changes</p> <p>Describing Changes in matter</p> <p>Use periodic table to distinguish between metals, nonmetals, or noble gases</p> <p>Recognize and identify chemical reactions</p> <p>Use and apply chemical indicators to identify substances</p>	<p>Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test Questions</p> <p>Performance Tasks (timed)</p> <p>Chapter &amp; Unit Assessments</p> <p>Student/group projects, Reports, presentations, role playing, models, demonstrations</p> <p>Science fairs/contests</p>



**City School District of Albany  
Science Curriculum Pacing Map  
Grade 7**

**\*Indicates mandatory lab**

MONTH	CONTENT/TOPIC(S) PHYSICAL SETTING	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	LABS	SKILLS	ASSESSMENTS
<b>2<sup>nd</sup> week of Feb. to end of March</b>	<p><b>Forces</b> Nature of force Force, mass and acceleration Friction and Gravity Action and Reaction</p> <p><b>Forms of Energy</b> Nature of Energy Energy conversion and conservation Potential vs. Kinetic Energy</p> <p><b>Thermal energy and Heat</b> Nature of heat</p>	<p>Physical Setting</p> <p>4.1d,e 4.4d 4.5a,b 4.2a,b 5.2d</p>	<p>Station Rotations/Timed Activities</p> <p>Forces and friction labs</p> <p>Measuring times/distance/mass labs</p> <p>Speed and acceleration of moving objects lab</p> <p>Pendulum Lab</p> <p>Heath transfer Lab</p>	<p>Measuring time, distance and mass</p> <p>ID Different forces</p> <p>ID and describe Newton’s Laws, Archimedes principle</p> <p>Determine speed and acceleration of a moving object</p> <p>Compare and contrast Potential vs. kinetic energy</p> <p>Explain conservation of energy</p> <p>Measuring temperature Calculating specific heat</p>	<p>Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test Questions</p> <p>Performance Tasks (timed)</p> <p>Chapter &amp; Unit Assessments</p> <p>Student/group projects, Reports, presentations, role playing, models, demonstrations</p> <p>Science fairs/contests</p>

**City School District of Albany  
Science Curriculum Pacing Map  
Grade 7**

**\*Indicates mandatory lab**

MONTH	CONTENT/TOPIC(S) PHYSICAL SETTING	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	LABS	SKILLS	ASSESSMENTS
<b>April - May</b>	<p><b>Astronomy</b> Review of exploring the universe (life cycle of a star, galaxies, space exploration) Shape of earth, planets, stars Sun &amp; solar system (celestial bodies, gravity)</p> <p>Earth's Motions – rotation vs. revolution, tilt, orbit, eastern vs. western horizon, sunrise/sunset, seasons, day, year, system of time, latitude vs. longitude, magnetic north, magnetic compass, cardinal directions Phases of the moon Eclipses Tides Meteor showers Comets</p>	Physical Setting 1.1a-j	<p>Station Rotations/Timed Activities</p> <p>Latitude &amp; Longitude lab</p> <p>Sunrise/sunset lab- Eastern &amp; Western Horizons</p> <p>Gravity and planetary orbits lab</p> <p>Magnetic Compass and cardinal directions lab</p> <p>Reflection of light and phases of the moon lab</p> <p>Seasons: Tilt &amp; Rotation of the Earth</p>	<p>Understanding and applying latitude and longitude based on celestial observations</p> <p>Understanding and applying our system of time based on celestial observations (sunrise/sunset)</p> <p>Recognize the role of gravity in planetary orbits</p> <p>Use a magnetic compass to find cardinal directions</p> <p>Understand and apply phases of the moon (light reflection, eclipses, tides, etc.)</p> <p>Understand how tilt and rotation of the Earth cause seasons</p>	<p>Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test Questions</p> <p>Performance Tasks (timed)</p> <p>Chapter &amp; Unit Assessments</p> <p>Student/group projects, Reports, presentations, role playing, models, demonstrations</p> <p>Science fairs/contests</p>

**City School District of Albany  
Science Curriculum Pacing Map  
Grade 7**

**\*Indicates mandatory lab**

MONTH	CONTENT/TOPIC(S) PHYSICAL SETTING	NYS STANDARD/KEY IDEA/PERFORMANCE INDICATOR	LABS	SKILLS	ASSESSMENTS
<b>June</b>	<b>Earth's Changing Surface</b>  The Water Cycle  Weathering & Erosion	Physical Setting  2.1 a-d  2.1 g-j 3.2a	Station Rotations/Timed Activities  Water Cycle lab- Evaporation, condensation, precipitation, transpiration  Weathering & Erosion lab	Understand interactions between Earth's atmosphere (air), hydrosphere (water), and lithosphere (land)	Assessments should utilize previous NYS Grade 8 Intermediate Level Science (ILS) Test Questions  Performance Tasks (timed)  Chapter & Unit Assessments  Student/group projects, Reports, presentations, role playing, models, demonstrations  Science fairs/contests

**City School District of Albany  
Science Curriculum Pacing Map  
Grade 7**

**\*Indicates mandatory lab**