Eighth Grade Nature of Science
Grade Standards, Supporting Skills, and Examples

Indicator 1: Understand the nature and origin of scientific knowledge.

Standard	Bloom's Taxonomy Level	Supporting Skills and Examples	Assessments	Resources
8.N.1.1. Students are able to differentiate among facts, predictions, theory, and law/principles in scientific investigations	Comprehension	• Define fact, predictions, theory, and law/principle. • Discuss how theory can become law. ✓ Evaluate important contributions to the advancement of science from people of differing cultures, genders, and ethnicity. Examples: Marie Curie-radiation, Hess, Galileo- astronomy, Kepler-astronomy, Newton-physics, Neil Tice-astronomy, Mendeleev-physics	Daily assignment(worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Text book Computers Labs Videos Library materials Guest speakers

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Standard	Bloom's Taxonomy Level	Supporting Skills and Examples	Assessments	Resources
8.N.2.1. Students are able to design a replicable scientific investigation.	(Synthesis)	• Use appropriate supportive technologies. • Assess the limits of accuracy inherent in a particular measuring device or procedure. • Control variables to test hypotheses by repeated trials and by identifying sources of experimental error.	Daily assignment (worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research	Text book Computers Labs Videos

		• Interpret data to justify predictions or conclusions. • Use research methods to investigate practical and/or personal scientific problems and questions. • Select appropriate scientific equipment and technologies for investigations and experiments. • Use proper safety procedures in all investigations. • Wear appropriate attire. ✓ Evaluate the benefits and potential of scientific investigations**.**	assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Library materials Guest speakers

Eighth Grade Physical Science
Grade Standards, Supporting Skills, and Examples

After careful consideration of current research and input from educators throughout the state, the Committee revised former standards to facilitate effective instruction and student mastery. Grade eight standards emphasize Earth/Space Science.

Indicator 1: Describe structures and properties of, and changes in, matter.

Standard	Bloom's Taxonomy Level	Supporting Skills and Examples	Assessments	Resources
8.P.1.1. Students are able to classify matter as elements, compounds, or mixtures.	Analysis	**Example**: Na and Cl are elements that, chemically combined, form salt (NaCl) (compound). **Example**: Salt and water form a mixture that can be physically separated. ✓ Formulas	Daily assignment (worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs) Classroom Labs	Text book Computers Labs Videos Library materials Guest

			Groups and Individual presentations and projects Quizzes and Tests	speakers
8.P.1.2. Students are able to use the Periodic Table to compare and contrast families of elements and to classify elements as metals, metalloids, or non-metals.	Application	• Describe the relationship between the organization and the predictive nature of the Periodic Table. • Use the Bohr model to show the arrangement of the subatomic particles of atomic numbers 1 through 18. ✓ Compare and contrast other atomic models	Daily assignment(worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Text book Computers Labs Videos Library materials Guest speakers
8.P.1.3. Students are able to compare properties of matter resulting from physical and chemical changes.	Comprehension	**Examples**: weathering, burning, melting, acid rain ✓ Ionic/covalent bonding	Daily assignment(worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Text book Computers Labs Videos Library materials Guest speakers

Indicator 2: Analyze forces, their forms, and their effects on motions.

See note above.

Indicator 3: Analyze interactions of energy and matter.

See note above.

Eighth Grade Earth/Space Science
Grade Standards, Supporting Skills, and Examples

Indicator 1: Analyze the various structures and processes of the Earth system.

Standard	Bloom's Taxonomy Level	Supporting Skills and Examples	Assessments	Resources
8.E.1.1. Students are able to identify and classify minerals and rocks.	Application	**Examples:** luster, streak, fracture/cleavage, hardness (Mohs Scale), specific gravity, color, magnetism, acid test, flame test, fluorescence • Rocks as sedimentary, igneous, or metamorphic. • Rock Cycle ✓ Law of ✓ Conservation of Energy and Matter ✓ Minerals as carbonates (CO3) or Silicates (SiO2) ✓ Minerals as oxides, sulfides, halides, sulfates	Daily assignment(worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Text book Computers Labs Videos Library materials Guest speakers
8.E.1.2. Students are able to explain the role of plate tectonics in shaping	Analysis	• Plates boundaries • boundaries • Volcanoes	Daily assignment(worksheets, diagrams, and content reading) In Class review of previous material	Text book Computers Labs

Earth.		• Earthquakes • Seismic waves • Mountains • Convection currents in the mantle • Changes over time • **Examples:** adaptations, extinction, geologic time (relative and absolute), extinct species, fossils, surface features	Computer Labs (research assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Videos Library materials Guest speakers
8.E.1.3. Students are able to explain the factors that create weather and the instruments and technologies that assess it.	Analysis	**Examples**: NOAA, AMS • Differentiate between climate and climate zones. Examples: air masses, fronts, pressure systems, Coriolis effect, wind systems, humidity, storms ✓ Effects of the ocean on weather ✓ Condensation ✓ Evaporation ✓ Cloud Formation	Daily assignment(worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Text book Computers Labs Videos Library materials Guest speakers
8.E.1.4. Students are able to examine the chemical and physical properties of the ocean to determine causes and effects of currents and waves.	Application	**Examples**: density, temperature, salinity ✓ El Niño ✓ Ocean zones ✓ Ocean floor features	Daily assignment(worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Text book Computers Labs Videos Library materials Guest speakers

8.E.1.5. Students are able to explain the impact of weathering and erosion on the Earth.	Analysis	• Soil formation • Deposition (deltas) • Land transformations (Grand Canyon) • Glaciation ✓ Use geospatial technologies to investigate natural phenomena. Examples: GPS, GIS, remote sensing	Daily assignment(worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Text book Computers Labs Videos Library materials Guest speakers

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

Standard	Bloom's Taxonomy Level	Supporting Skills and Examples	Assessments	Resources
8.E.2.1. Students are able to compare celestial bodies within the solar system using composition, size, and orbital motion.	Analysis	• Describe the composition of the sun, the planets, asteroids, and comets. ✓ Use of spectroscopic analysis of celestial bodies ✓ Measurement in space ✓ Constellations ✓ Galaxies ✓ Life cycle of a star ✓ HR Diagram ✓ Law of Gravitation ✓ Big Bang Theory	Daily assignment (worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Text book Computers Labs Videos Library materials Guest speakers

		✓ Doppler Effect		
8.E.2.2. Students are able to differentiate the influences of the relative positions of the Earth, Moon, and Sun.	Analysis	• Lunar and solar eclipses, moon phases, tides, seasons	Daily assignment (worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Text book Computers Labs Videos Library materials Guest speakers

Eighth Grade Science, Technology, Environment, and Society
Grade Standards, Supporting Skills, and Examples

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

Standard	Bloom's Taxonomy Level	Supporting Skills and Examples	Assessments	Resources
8.E.2.2. Students are able to differentiate the influences of the relative positions of the Earth, Moon, and Sun.	Comprehension	**Examples**: GPS, GIS, remote sensing, Corps of Engineers (dams), NOAA (weather satellites), NASA (earth and space exploration), USGS (mapping)	Daily assignment (worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs)	Text book Computers Labs Videos Library materials

			Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Guest speakers

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

Standard	Bloom's Taxonomy Level	Supporting Skills and Examples	Assessments	Resources
8.S.2.1. Students are able, given a scenario, to offer solutions to problems created by human activity on the local, regional, or global environment.	Synthesis	**Examples:** global warming, deforestation	Daily assignment(worksheets, diagrams, and content reading) In Class review of previous material Computer Labs (research assessment and virtual labs) Classroom Labs Groups and Individual presentations and projects Quizzes and Tests	Text book Computers Labs Videos Library materials Guest speakers