

CURRICULUM GUIDE
8th Grade Science
First Six Weeks

Unit of Study— Nature of Science					
TEKS #	Knowledge and Skill TEK	Student Expectation	Vocabulary	Tools	Instructional/Assessment Resources
8.1 A 8.1 B	The student conducts field and laboratory investigations using safe, environmentally appropriate and ethical practices.	<i>Demonstrate an understanding of safe practices during field and laboratory investigations;</i> <i>make wise choices in the use and conservation of resources and the disposal or recycling of materials</i>	Safety Equipment Procedure Dissecting Equipment Hand lens, Goggles, Forceps, Scalpel Triple beam balance Graduated cylinder Test tube Test tube rack Beaker, Dropper Microscope Petri dish	Dissecting equipment Goggles, hand lens, forceps, triple beam balance Graduated cylinder Test tube Test tube rack Beaker Dropper Microscope Petri dish Slide, slip cover, thermometer	1. Safety and Equipment Pre-Test 2. Review of Scientific Method 3. <i>Symbols Quiz</i> 4. Observation and Inference Definition and Candle Activity 5. Dichotomous Key – Teddy Grahams Lab 6. Review of Measurements, Graduated Cylinder, Balance Beams, Conversion f to c, metric 7. Graphing Notes; variables, independent, dependent variable, title, X axis, Y axis, Labels, Rules for graphing 8. <i>Graphing Skill Quiz</i> 9. Candy Bar Analysis - graphing 10. Mass, Volume and Density Notes
8.2 A 8.2 B 8.2 C 8.2 D 8.2 E	The student uses scientific inquiry methods during field and laboratory investigations.	<i>Perform tasks using the scientific method;</i> <i>Collect data by making observations and measurements;</i> <i>Organize, analyze, infer,;</i> <i>Communicate valid conclusions;</i> <i>Construct graphs, tables, maps, charts using a wide variety of tools</i>	Slide, Slip cover Pipette, Ruler, Thermometer, Funnel, safety symbols, observation Inference, hypothesis, experiment, data, conclusion, problem, control, conclusion, control, constant, dependent variable, independent variable, analysis, quantitative, qualitative		

Unit of Study— - Equipment and Science Processes					
TEKS #	Knowledge and Skill TEK	Student Expectation	Vocabulary	Tools	Instructional/Assessment Resources
8.3 A	The student uses critical thinking and scientific problem solving to make informed decisions	Analyze, review and critique scientific explanations, including hypothesis and theories, as to their strengths and weaknesses using scientific evidence;			11. Mini-lab evaluation (MVD) 12. Gummy Bear Lab (MVD and Graphing) 13. Assessment on Equipment, Scientific Processes, Graphing, Mass, Volume and Density
8.3 B		Draw inferences based on data related to promotional materials for products and services;			
8.3 C		Represent the natural world using models and identifying their limitations;			
8.3 D		Evaluate the impact of research on scientific thought, society, and the environment;			
8.3 E		Connect 8 th grade science concepts with the history of science and contributions of scientists			
8.4 A	The student knows how to use a variety of tools and methods to conduct scientific inquiry.	Collect, record and analyze information using a wide variety of tools including but not limited to triple beam balance, metric ruler, beaker, graduated cylinder, forceps, scissors, calculators, computers, goggles, thermometers, and weather equipment;			

Unit of Study— Nature of Science

TEKS #	Knowledge and Skill TEK	Student Expectation	Vocabulary	Tools	Instructional/Assessment Resources
--------	-------------------------	---------------------	------------	-------	------------------------------------

8.4 B		extrapolate from collected information to make predictions			
-------	--	--	--	--	--

CURRICULUM GUIDE

Unit of Study— Weather					
Objective 3: Structure and Properties of Matter; Objective 5: Earth and Space systems (Each Concept will include the use of various Science Processes TEKS 7.1 to 7.5)					
TEKS #	Knowledge and Skill TEK	Student Expectation	Vocabulary	Tools	Instructional/Assessment Resources
8.10 A	The student knows the complex interactions between matter and energy.	Illustrates interactions between matter and energy including specific heat	Atmosphere	Thermometer Barometer Anemometer Hygrometer Psychrometer Computer	<ol style="list-style-type: none"> 1. Weather Packet 2. Atmospheric Layer activity 3. Weather Video 4. Weather Notes 5. <i>Quiz on Atmospheric layers</i> 6. Weather Card Activity – major project 7. Presentation of weather project 8. Weather maps 9. Study Guide 10. Weather Test
8.10 B		Describe interactions among solar, weather and ocean systems	Troposphere Stratosphere Mesosphere Thermosphere Exosphere Magnetosphere Ionosphere Ozone Aurora borealis Solar Wind Chlorofluorocarbons		
8.12 B	The student knows that cycles exist in Earth Systems.	Relate the role of oceans to climatic changes	Wind chill Atmospheric pressure, Dew point, Precipitation, Anemometer, Sling Psychrometer (Hygrometer), Barometer, Humidity, Front, Air Mass, Relative Humidity, Cumulonimbus, Stratus, Cumulus, Altostratus, Cirrus, Cirrocumulus		
8.12 C		Predict the results of modifying the Earth’s nitrogen, water, and carbon cycles.			

Unit of Study—					
TEKS #	Knowledge and Skill TEK	Student Expectation	Vocabulary	Tools	Instructional/Assessment Resources
			Hurricane, Flood, Tornado, Fujita Scale, Condensation, Evaporation, lightening, latitude, longitude, weather map		

CURRICULUM GUIDE
8th Grade Science

Unit of Study— Chemistry					
Objective 2: Structure and Properties of Matter					
(Activities and Unit includes various Science processes TEKS 8.1 to 8.5)					
TEKS #	Knowledge and Skill TEK	Student Expectation	Vocabulary	Tools	Instructional/Assessment Resources
8.8 A	The student knows that substances have chemical and physical properties	Describe the structure and parts of an atom	Matter	Paper, confetti Marshmallows Toothpicks Saran wrap Periodic table Highlighters	<ol style="list-style-type: none"> 1. Foldable with basic notes on Chemistry Chapter 2 2. Chapter 2 parts of the atoms 3. <i>Quiz on Chapter 2</i> 4. Electrons and electron shells 5. Activity – making a model – confetti models 6. Marshmallow Lab 7. Discussion of Atom Project – assignment of project to students 8. Chapter 3 Periodic table PowerPoint 9. Color Coding Activity 10. <i>Quiz – periodic table</i> 11. Notes on Mixture, solution and compound 12. Activity on Mixture, Solution and compound
8.8 B		Identify the properties of an atom including mass and electrical charge.	Nucleus Atom Proton Neutron Electron Atomic Number Atomic Mass		
8.9 A		Demonstrate that substances may react to chemically form new substances.	Element Isotope Substance Positive Negative Neutral		
8.9 B		Interpret information on the periodic table to understand that physical properties are used to group elements	Ion Alpha Particle Beta Particle Cathode Ray Tube		
8.9 C		Recognize the importance of formulas and equations to express what happens in a chemical reaction	Dalton Thomson Bohr Rutherford Sublevel Energy Level Metals Metalloids		

First and Second Six Weeks

Unit of Study—					
TEKS #	Knowledge and Skill TEK	Student Expectation	Vocabulary	Tools	Instructional/Assessment Resources
8.9 D		Identify that physical and chemical properties influence the development and application of everyday materials including but not limited to cooking surfaces, insulation, adhesives, and plastics	Periodic table Transition elements Valence Noble Gas Families Groups Periods Dmitri Mendeleev	Marshmallows Toothpicks, Various Items for physical and chemical changes	13. Mixture, Solution, Compound Lab 14. <i>Quiz</i> 15. Physical Vs Chemical Change Notes 16. Marshmallow Bob Lab 17. <i>Quiz</i> 18. Chemical Reactions Notes and PowerPoint 19. Chemical Reactions
8.10 A	The student knows that complex interactions occur between matter and energy.	Illustrate interactions between matter and energy including specific heat.	Alkali Alkali Earth Reactive Density Oxygen Boron Carbon Nitrogen Compound Ionic Bond Covalent Bond Ions	Test tubes Test tube racks, Epsom salt, washing soda, distilled water.	20. Exothermic and Endothermic Lab 21. Study Guide
8.10 C		Identify and demonstrate that loss or gain of heat energy occurs during exothermic and endothermic chemical reactions.	Physical Property Chemical Property Mixture Solution Compound Activation energy Dissolved Saturation Model	Chemical Formulas	22. Review of states of matter 23. Elements in Everyday life – notes and class discussion on Balancing Chemical Equations

Unit of Study—					
TEKS #	Knowledge and Skill TEK	Student Expectation	Vocabulary	Tools	Instructional/Assessment Resources
			Half-life Exothermic Endothermic Composition Substance Chemical Reaction Catalyst Inhibitor Enzymes Precipitate Solid Liquid Gas Plasma Matter Subscript Coefficient Chemical Formula Chemical Equation Reactants Products Yield Law of Conservations of mass and energy Synthesis Decomposition Acid Base Litmus pH	Vinegar, soap solution, litmus paper both red and blue, distilled water, bryomothomal blue	24. <i>Quiz</i> 25. Practice Balancing Chemical Equations 26. Review of Acids and Bases 27. Bryomothomal blue - rainbow in a bottle class demonstration 28. Study Guide and Review 29. Test using CPS system

