

CURRICULUM GUIDE
8th Grade Science
4th and 5th Six Weeks

| Unit of Study— Climate | | | | | |
|---|---|--|--|--------------------------------|---|
| Objective 2: Living Systems and the Environment: Objective 5: Earth and Space Systems (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 |
| 8.10 A | The students know that complex interactions occur between matter and energy. | Illustrate interactions between matter and energy | Climate Tropic Zone Temperate Zone Polar Zone | Activity Box – Human Impact | <ol style="list-style-type: none"> 1. Climate Types and Classification PowerPoint and Notes 2. Climate – El Nino and La Nina – PowerPoint and Notes 3. Quiz 4. Climate- Carbon Cycle – PowerPoint and Notes 5. Climate changes and the effect on survival Activity |
| 8.10 B | | Describe interactions among solar, weather and ocean systems. | Latitude Longitude Rain Shadow Effect Biome | | |
| 8.11 B | The students know that traits of species can change through generations and that the instructions for traits are contained in the genetic material of the organism. | Distinguish between inherited traits and other characteristics that result from interactions with the environment. | Arid Limiting Factor Vegetation Environment Habitat Adaptations | | |
| 8.12 B | The student knows that cycles exist in Earth systems. | Relate the role of the ocean to climatic changes | Behavioral- adaptations | | |
| 8.12 C | | Predict the results of modifying the Earth’s nitrogen, water and carbon cycle. | Structural adaptations Hibernation Estivation Seasons | | |

| Unit of Study— | | | | | |
|----------------|---|--|--|-------|------------------------------------|
| TEKS # | Knowledge and Skill TEK | Student Expectation | Vocabulary | Tools | Instructional/Assessment Resources |
| 8.14 B | The student knows that natural events and human activities can alter Earth systems. | Analyze how natural and human events may have contributed to the extinction of some species. | Trade Winds Particulate matter Ozone Greenhouse effect Global warming Biosphere Carbon Dioxide Radiation Emission-absorption cycle Nitrous oxide Methane CFC's Deforestation Emissions Carbon Cycle Biogeochemical Geosphere Hydrosphere Tiaga Temperate Rainforest Deciduous Forest Tundra | | |
| 8.14 C | | Describe how human activities have modified soil, water, and air quality | | | |

CURRICULUM GUIDE
8th Grade Science

| Unit of Study— Oceans Objective 2: Living Systems and the Environment: Objective 5: Earth and Space Systems (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 | | |
| 8.10 A | The students know that complex interactions occur between matter and energy. | Illustrate interactions between matter and energy | El Nino | Buckets, water, 3 entire containers of salt, Styrofoam cups for each class, push pins, food coloring | <ol style="list-style-type: none"> 1. Ocean water characteristics - PowerPoint 2. Ocean floor features - PowerPoint 3. Ocean waves and tides - PowerPoint 4. <i>Quiz</i> 5. Density Currents - PowerPoint 6. Density Current activities 7. Study Guide 8. Test using CPS system | | |
| 8.10 B | | Describe interactions among solar, weather and ocean systems. | La Nina Ocean Pacific Atlantic Continental Land mass Sea Mount | | | | |
| 8.12 B | The student knows that cycles exist in Earth systems. | Relate the role of the ocean to climatic changes | Continental Shelf Abyssal Plain Trench Guyot | | | | |
| 8.12 C | | Predict the results of modifying the Earth's nitrogen, water and carbon cycle. | Mid-Oceanic Ridges Subduction Zone Estuaries Brackish Cliffs Valleys Rifts Salinity Ocean Basins Oceanographer Density Current Convection Current | | | | |
| 8.14 C | The student knows that natural events and human activities can alter Earth systems | Describe how human activities have modified soil, water, and air quality | | | | | |

4th and 5th Six Weeks

Unit of Study—

| TEKS # | Knowledge and Skill TEK | Student Expectation | Vocabulary | Tools | Instructional/Assessment Resources |
|--------|-------------------------|---------------------|--|-------|------------------------------------|
| | | | Waves Crest Trough Wave-length Wave height Whitecaps Breakers Tides Spring Tides Neap Tides | | |

CURRICULUM GUIDE

| Unit of Study— Human Impact Objective 2: Living Systems and the Environment: Objective 5: Earth and Space Systems (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 |
| 8.10 B | The student knows that complex interactions occur between matter and energy. | Describe interactions among solar, weather and ocean systems. | Air pollution Water Pollution Land Pollution Fossil Fuels | | 1. Chapter 19 – sections 2 and 3 - Teaching assignment for human impact – activity |
| 8.11A | The students know that traits of species can change through generations and that the instructions for traits are contained in the genetic material of an organism. | Identify that changes in environmental conditions can affect the survival of individuals of species | Electricity Smog Ozone Acid Rain Carbon Monoxide | Population More is Less background, Population more is less worksheets | 2. Chapter 19 section 1 class discussion and notes 3. Population More is Less Activity |
| 8.12 C | The students know that cycles exist in Earth systems. | Predict the results of modifying the Earth’s nitrogen, water and carbon cycle. | Resources Renewable Nonrenewable Conserve Reduce Reuse Recycle | Population more is less activity box | |
| 8.14 C | The students know that natural events and human activities can alter Earth systems. | Describe how human activities have modified the soil, water, and air quality | Ore Bauxite Nitrogen Cycle Sediments Pesticides Fertilizers Point Source Non-point source Sediments Pesticides | Project paper for recycling activity | 4. <i>Quiz</i> 5. Presentation of Teaching Activity Sections 2 and 3. 6. Recycling Activity – proposal. |

8th Grade Science
4th and 5th Six Weeks

Unit of Study—

| TEKS # | Knowledge and Skill TEK | Student Expectation | Vocabulary | Tools | Instructional/Assessment Resources |
|--------|-------------------------|---------------------|-------------|----------------------------|--|
| | | | Fertilizers | Chalk Plates Vinegar | 7. Chapter 20 Class discussion, notes, PowerPoint 8. <i>Quiz</i> 9. Study Guide 10. Model water pollution 11. Begin Acid Rain Activity – chalk and vinegar 12. Test using CPS system |

CURRICULUM GUIDE

| Unit of Study— Genetics Objective 2: Living Systems and the Environment: Objective 3: 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 |
| 8.11 A | The student knows that traits of species can change through generations and that the instructions for traits are contained in the genetic material of the organism. | Identify that changes in environmental conditions can affect the survival of individuals and of species | Genetics Genes Chromosomes Deoxyribonucleic acid Allele Homozygous Heterozygous | Practice Page | <ol style="list-style-type: none"> 1. Introduction to Genetics – notes 2. Genetics PowerPoint 3. <i>Quiz</i> 4. Genetics Discussion and Activity 5. Punnet Squares 6. Practice Punnet Squares 7. Genetic Disorders 8. <i>Quiz</i> 9. Study Guide 10. Review 11. Test on Genetics |
| 8.11 B | | Distinguished between inherited traits and other characteristics that result from interactions with the environment | Homozygous-Dominant Homozygous-recessive | | |
| 8.11 C | | Make predictions about possible outcomes of various genetic combinations | Heterozygous Gregor Mendel Punnet Square Nucleus Phenotype Genotype Karyotyping Probability Trait | | |

CURRICULUM GUIDE

| Unit of Study— Human Systems Objective 2: Living Systems and the Environment: Objective 3: 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 |
| 8.6 A | The student knows that interdependence occurs among living systems. | Describe interactions among systems in the human organism. | Elements | Lab Papers | <ol style="list-style-type: none"> 1. Pre-test 2. Human systems Notes and discussion – 3. <i>Quiz</i> 4. Human systems Notes and discussion of interaction within the body 5. Escheria’s Day Activity 6. Post-test |
| 8.6 B | | Identify feedback mechanisms that maintains equilibrium of systems such as body temperature, turgor pressure, and chemical reactions | Lipids Molecule Organism Respiratory System Circulatory System Urinary System, Digestive System Glucose Insulin Protein Cell Inorganic Lungs Nephron Carbohydrates Capillaries Alveoli Villi Transpiration Feedback Pancreas Heart Tissue Organs Organ systems | | |

Unit of Study—

| TEKS # | Knowledge and Skill TEK | Student Expectation | Vocabulary | Tools | Instructional/Assessment Resources |
|--------|-------------------------|---------------------|--|-------|------------------------------------|
| | | | Positive Feedback Mechanism Negative Feedback Mechanism | | |

Unit of Study— Astronomy
Objective 5 Earth and Space Systems

| TEKS # | Knowledge and Skill TEK | Student Expectation | Vocabulary | Tools | Instructional/Assessment Resources |
|--------|--|--|---|-------|---|
| 8.13 | Students know the characteristics of the universe. | <p>A: Describe the characteristics of the Universe such as stars and galaxies.</p> <p>B: Explain the use of light years to describe distances in the universe.</p> <p>C: Research and describe historical scientific theories of the origin of the universe.</p> | <p>Core Crust Mantle Atmosphere Universe Galaxy Spiral Elliptical Irregular Milky way galaxy Light speed Main sequence Constellations Absolute Apparent Parallax Nebula Luminosity Fusion Fission h-r diagram super nova black hole radiation zone convection current photosphere Chromosphere Corona Sun spots Solar prominences Solar flares Coronal mass Ejections</p> | | <ol style="list-style-type: none"> 1. recycling activity 2. chapter 20 section 1 3. class discuss notes and worksheet 4. power point 5. model water pollution 6. human impact on the Earth 7. chapter 20 sec 2 8. air pollution 9. human impact on the environment 10. acid rain activity 11. weathering chalk with vinegar-write up this activity 12. refresher on the Earth properties 13. review moon phases 14. refresh solar system 15. chapter 23, sec 1,2,3 16. question on Astronomy project 17. chapter 23 power point notes on the universe 18. chapter 24 power point 19. parts 1-5 activities repeat these activities for the week. 20. review for quiz 21. grade quiz 22. review 23. test |

CURRICULUM GUIDE
8th Grade Science

| Unit of Study— Physics Objective 4: Motion, Force and Energy (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 |
| 8.7 A | The student knows that there is a relationship between force and motion. | Demonstrate how unbalanced forces cause changes in speed or direction of an object's motion | Sir Isaac Newton Mass Weight Velocity Acceleration Inertia Force Newton's First Law Newton's Second Law Newton's Third Law Balanced forces Unbalanced forces Action force Reaction force Pressure Buoyancy Work Speed Distance Displacement Air resistance | Ramp Timers Cars Weights – large and small Beakers 3 x 5 cards Objects Sandpaper | <ol style="list-style-type: none"> 1. Physics Notes 2. Class Discussion and PowerPoint 3. Activity Lab 4. <i>Quiz</i> 5. Activity Lab 6. Formula Practice – manipulation of formula's for TAKS 7. Study guide 8. Physics Test using CPS system 9. Benchmark 10. Review of 6th, 7th and 8th grade TEKS which appear on the TAKS test. |
| 8.7 B | | Recognize that waves are generated and can travel through different media | | | |

Fifth Six Weeks

