

7th Grade Science Big Ideas

1. Scientific Inquiry Process
 - Scientific Method
 - Experimental Design
 - Data Analysis
 - Graphing
 - Scientific Theory
2. Living Systems
 - Cell Organization and Function (Structure)
 - Vertebrate System and Function
 - Plant System and Function
3. Identify the Human Body Systems and Functions
 - Skeletal Muscular
 - Circulatory
 - Respiratory
 - Excretory
 - Digestive
 - Nervous
 - Endocrine
 - Integumentary
4. Reproduction and Heredity
 - Structure and Function of Sperm and Egg
 - Cell Division
 - Homeostasis
5. Ecology
 - Population
 - Ecosystems
 - Continuation of Species
6. Matter
 - Elements
 - Mixtures
 - Compounds
 - Solutions
7. Motion
 - Forces
 - Newton's Laws
8. Energy
 - Types
 - Needs
 - Resources
 - Alternatives
- 9a. Weather
 - Properties of Atmosphere
 - Global Influence on Local Weather
 - Effects of Solar Energy
 - Effects of Oceans
 - Elements of _____
 - Use of Weather Instruments
 - Prediction of _____
 - Weather Related Phenomena
 - Safety Procedures
 - Global Climates
 - Effects of Acid Rain
- 8b. Cycles
 - Water Cycle
 - Cloud Formation
 - Green House Effects
 - Global Warming
 - Events that cause Climate Changes
9. Earth History
 - Analysis of Fossil Records
 - Magnetic Field
 - Evidence of Sea Floor Spreading
10. Objects in the Universe (Sun, Earth, Moon, Planets & Galaxies)
 - Cause of Day and Night
 - Cause of Year
 - Cause of Season

8th Grade Science Big Ideas

1. Life

- Structure/ Function
 - Body Organization
 - Cells - Multi and Single
 - Dichotomous Key
 - Taxa
 - Careers
- Life Cycles
 - Heredity
 - Genes
 - Traits
 - Punnett Squares
 - Embryo Development
 - Careers
- Regulation and Behavior
 - Biological Evolution
 - Fossil Record
 - Genetic Traits - Natural Selection
- Population and Ecosystems
 - Survival

2. Physical

- Properties of Matter
 - Atomic Theory
 - Structure of Atoms
 - Elements
 - Careers
- Motion and Force
 - Motion of Earth and Magnetic Fields
 - Electromagnets
 - Careers
- Energy
 - Electrical Circuits
 - Characteristics Of Waves
 - Waves - Reflection / Refraction / Absorption
 - Electromagnetic Spectrum
 - Careers

3. Earth

- Structure and Properties
 - Global And Properties
 - Global Patterns
 - Landforms
 - Arkansas
 - World
 - Topographic Maps
 - Agents of Erosion
 - River Models
 - Careers
- Cycles
 - Soil Profiles
 - Soil Formation
- Earth History
 - Sudden Events and Gradual Change
 - Geologic Laws
- Objects in the Universe
 - Solar System
 - Gravitational Constant
 - Ocean Tides
 - Galaxies
 - Careers

9th Grade Physical Science Big Ideas

1. Introduction
 - Scientific Method
 - Equipment and Safety
 - Pure and Applied Science
 - Careers
2. Composition and Structure of Matter
 - State of Matter
 - Physical Properties
 - Chemical Properties
 - Models of the Atom (Structure)
 - Periodic Table
 - Valence Elections
 - Chemical Bonds
 - Molar Mass
3. Energy in Chemistry
 - Kinetic Theory
 - Phase Changes
 - Gas Law
 - Nuclear Chemistry
4. Chemical Reactions
 - Chemical Compounds
 - Chemical Reaction Types
 - Laws of Conservation of Mass
 - Balancing Chemical Reaction
 - Reaction Rates
 - Fire
5. Organic Chemistry
 - Carbon Bonding
 - Structure
 - Formulas
 - Properties
 - Functional Groups
 - Hydrocarbons
 - Body Functions
6. Energy in Physics
 - Specific Heat
 - Heat
 - Temperature
7. Forces in Physics
 - Newton Laws
 - Motion
 - Kinetic Energy
 - Potential Energy
 - Fluid Forces
 - Graphing
8. Waves
 - Properties of Waves
 - Sound
 - Electromagnetic
 - Light
9. Electricity + Magnetism
 - OHM'S Law $V=IR$
 - Electrical Power $P= IV$
 - Circuits
 - Electromagnets

5th -10th Grade Life Science

Big Ideas

Cells

- Cell Parts -5th , 10th
- Photosynthesis -5th , 6th , 10th
- Levels of Organization -6th , 10th
- Function / Structure -8th , 10th
- Respiration -5th , 10th
- Cell Needs -6th , 10th
- Plant vs. Animal -5th , 8th , 10th
- Pro vs. Euk -8th
- Single vs. Multi -8th

Life Cycles

- Selective Breeding -6th , 8th
- Species (Extinction) -6th
- Adaptations -6th
- Behaviors -6th

Heredity

- Sex Cells -7th
- Mitosis -7th
- Genes -8th
- Dominant/Recessive -8th
- Punnett Squares -8th
- Embryo Dev -7th , 8th
- Pheno/Geno -8th
- Atomic Theory -8th
- Models -8th , 9th
- Common Elements -8th
- States of Matter -5th , 9th
- Periodic Table -9th

Motion and Force

- Simple and Compound Machines -5th , 6th
- 3 Types of Force -5th
- Effects of Force Weight/ Mass -6th
- Newton's Laws -7th
- Effect On Earth -8th
- Magnetic -6th , 8th
- Electromagnetic -8th

Energy

- Light and Matter -5th
- Travels and Interaction -5th
- Reflection, Refractions -5th , 8th
- Energy Forms- Classify - 6th
- Conservation of Energy -6th
- Transfer of Energy -6th
- Careers
- Need and Types -7th

Ecosystems

- Model -5th
- Energy Flow -5th
- Hierarchy of Ecosystems -5th , 7th
- Food Webs -5th
- Habitats -5th
- Cycles -5th , 7th
- Competition -6th , 7th , 8th
- Natural Selection -6th , 7th , 8th
- Evolution - 8th

Taxonomy

- Compare Species -8th
- Dichotomous Key -8th
- Vertebrates

Properties of Matter

- Physical Properties -5th
- Physical Changes -5th , 7th
- Heat-5th
- Chemical Properties -5th
- Acid/ Base -6th
- Conservation -6th
- Density -6th
- Homo/ Hetero Matter -7th