

LIFE SCIENCE

MULTIMEDIA SCIENCE UNIT	LESSON NAME	TOPIC NAME
All About Cells		
	Discovering Cells	
		Animal Cell
		Robert Hooke
		Cork Cells
	Pause and Interact Activity	
		Animal Cell
		Animal Cell
	Pause and Interact Activity	
		Plant Cell
		Plant Cell
	Organization of Cells	
		One-Celled Organism-Amoeba
		Cell Tissues
		Organs and Organ Systems
	Pause and Interact Activity	
		Graphic Organizer
	Specialized Cells	
		Cell Types
		Cell Size
	Pause and Interact Activity	
		Graphic Organizer
	Vocabulary Review	
		Vocabulary Matching Review
	Virtual Investigation	
		Comparing Plant and Animal Cells
	Assessment	
		Cells
	Chromosomes	
		Chromosome Location
		Composition of Chromosomes
		Four Nitrogen Bases
		What Is a Gene?
		Number of Human Genes
		Chromosome Number in Humans
	Genes	
		Function of a Gene
		DNA Sequence
		What Is a Trait?
		Alleles
		Multiple Alleles
	DNA	
		DNA Shape and Composition
		Parts of a Nucleotide
		Complementary Base Pairs
		Role of DNA in Replication

Chromosomes, Genes and DNA

	Role of DNA in Transcription
Pause and Interact Activity	
Activity	
	Review
	Chromosome and DNA Structure
Overview: From DNA to Protein	
	Protein Formation
Pause and Interact Activity	
Activity	
	From DNA to Protein
DNA Transcription: DNA to RNA	
	Process of Transcription
	DNA Unwinds
	Formation of RNA
	RNA Contains Uracil, Not Thymine
	RNA Travels to the Cytoplasm
Translation: RNA to Protein	
	What Is Translation?
	Messenger RNA Attaches to a Ribosome
	Messenger RNA Codons
	Transfer RNA
	Anticodons
	Amino Acid Chain
	Transfer RNA Molecules Work Together
The Genetic Code	
	What Is the Genetic Code?
	UUC Codes for Phenylalanine
	Genetic Code Table
	Universal Nature of the Genetic Code
Pause and Interact Activity	
Activity	
	Review
	Deciphering the DNA Code
Mutations	
	What Is a Mutation?
	Types of Mutations
	Mutations During Meiosis
	Harmful and Helpful Mutations
Vocabulary Review	
	Chromosomes, Genes and DNA Vocabulary Matching
Virtual Investigation	
	Building DNA and RNA
Assessment	
	Chromosomes, Genes, and DNA
Energy Flow	
	What Is an Ecosystem?
	Organisms and Energy

Food Chains and Food Webs

	Producers
	Consumers
	Example of Energy Flow
	Decomposers
Food Chains	
	What Is a Food Chain?
	Snake Food Chain
	Trophic Levels
	Parts of a Food Chain
Pause and Interact Activity Activity	
	Review
Food Webs	
	What Is a Food Web?
	Producers and Herbivores
	Omnivores and Carnivores
	Decomposers
	Feeding from Different Trophic Levels
Owl Food Web	
	Owl Food Web Example
	Owl Pellet Formation
	Pellet Composition
	Examining an Owl Pellet
	Identifying Bones in an Owl Pellet
Pause and Interact Activity Activity	
	Review
Energy Pyramid	
	Energy in a Food Web
	What Is an Energy Pyramid?
	Energy Transfer between Levels
	Ecosystems and Number of Organisms
Food Web Balance	
	Changes in Population Size
	Alaskan Marine Ecosystem Example
	Killer Whales Feed on the Otters
	Sea Urchin Overpopulation
	Loss of Kelp Habitat
	Marine Ecosystem Is Altered
Pause and Interact Activity Activity	
	Review
Pause and Interact Activity Activity	
	Food Webs
Vocabulary Review	
	Food Chains Vocabulary Matching
Virtual Investigation	
	Owl Pellet Dissection
Assessment	
	Food Chains and Webs

Genetics: The Study of Heredity

How Traits Are Inherited	
	What Is Heredity?
	Fertilization
	Chromosomes Inherited from Each Parent
	Two Copies of Each Gene
	Alternate Gene Forms
	Homozygous and Heterozygous Alleles
Gregor Mendel	
	Significance of Mendel's Experiments
	Why Use the Pea Plant?
	Two Forms of Pea Plant Characteristics
Mendel's Experiments	
	True-Breeding Plants
	P Generation Cross
	F1 Offspring
	F1 Generation Cross
	F2 Generation
	Mendel's Hypothesis
	Modern Understanding of Mendel's Hypothesis
Dominant and Recessive	
	What Is an Allele?
	Notation of Alleles
	Alleles and Traits
	Alleles Determine Traits
Using a Punnett Square	
	What Is a Punnett Square?
	Information for a Punnett Square
	Drawing a Punnett Square
	Parental Alleles on a Punnett Square
	Filling in a Punnett Square
	Completed Punnett Square
	Allele Combinations and the Punnett Square
	Probability and the Punnett Square
Pause and Interact Activity Activity	
	Review
	Understanding a Punnett Square
Phenotypes and Genotypes	
	What Are Genotypes and Phenotypes?
	Dominant and Recessive Phenotypes
	BB x bb Cross
	BB x Bb Cross
	Bb x Bb Cross
	Probability for a Bb x Bb Cross
Making a Pedigree	
	What Is a Pedigree?
	Parts of a Pedigree
Codominance	
	Mendel's Pea Plant Characteristics
	What Are Codominant Alleles?
	Expression of Codominant Alleles

		Symbols for Codominant Alleles
	Pause and Interact Activity	
		Review
	Vocabulary Review	
		Genetics Vocabulary Matching
	Virtual Investigation	
		Mendel's Pea Plant Experiments
	Assessment	
		Genetics
Meiosis		
	Sexual Reproduction	
		Sex Cells - Sperm and Eggs
		Egg Fertilization
		Sex Cell Chromosomes
		The Zygote
	Meiosis Overview	
		Meiosis Overview
		Meiosis I Overview
		Meiosis II Overview
	Meiosis I	
		DNA Replication
		Prophase I
		Synapsis
		Metaphase I
		Anaphase I
		Telophase I and Cell Division
		End of Meiosis I
		Entire Process of Meiosis I Animation
	Meiosis II	
		Beginning of Meiosis II
		Prophase II
		Metaphase II
		Anaphase II
		Telophase II and Cell Division
		End of Meiosis II
		Sex Cells and Polar Bodies
		Entire Process of Meiosis II Animation
	Pause and Interact Activity	
		Review
		Meiosis I Phases
		Meiosis II Phases
	Crossing-Over	
	Homologous Chromosomes	
	Crossing-Over	
	Crossed-Over Genes	
	Offspring Variation	
Comparing Mitosis and Meiosis		
	Mitosis and Meiosis Overview	

	Comparing Mitosis and Meiosis
	Number of Chromosomes
	Daughter Cells and Sex Cells
Pause and Interact Activity Activity	
	Review
Vocabulary Review	
	Meiosis Vocabulary Matching
Virtual Investigation	
	Build the Phases of Meiosis
Assessment	
	Meiosis

The Cell Cycle	
	Life Cycle of a Cell
	What Is the Cell Cycle?
	Two Steps of Cell Division
	Mitosis and Cytokinesis
Chromosomes	
	Location of Chromosomes
	Chromosomes Contain Genes
	Species and Chromosome Number
Pause and Interact Activity Activity	
	Review
Mitosis	
	Scientists Observe Mitosis
	What Is Mitosis?
	Production of Identical Daughter Cells
	Phases of Mitosis
Phases of Mitosis	
	Interphase
	Prophase
	Metaphase
	Anaphase
	Telophase
	Cytokinesis – Division of the Cytoplasm
Comparing Plant and Animal Cell Mitosis	
	Mitosis in Plants
	Plants Form Cell Plates
Pause and Interact Activity Activity	
	Review
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	Comparing Mitosis in Plant & Animal Cells
Assessment	
	Mitosis

Mitosis

**Osmosis and Diffusion:
Cell Transport**

Cell Transport	
	Cell Membrane
	Cell Membrane Composition
	Semi-Permeable Cell Membrane
Diffusion	
	Function of Diffusion
	What Is Diffusion?
	Oxygen Diffusion in the Lungs
Osmosis - The Diffusion of Water	
	Importance of Osmosis
	What Is Osmosis?
Pause and Interact Activity Activity	
	Review
Passive and Active Transport	
	What Is Passive Transport?
	Facilitated Diffusion
	What Is Active Transport?
	Active Transport in Plant Roots
Pause and Interact Activity Activity	
	Review
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	Viewing Osmosis in Action
Assessment	
	Osmosis

Cell Energy	
	The Sun Is the Main Source of Energy
	How Do Organisms Obtain Energy?
	Autotrophs and Heterotrophs
Overview of Photosynthesis	
	What Is Photosynthesis?
	Plants Need Water and Carbon Dioxide
	Plants Produce Oxygen and Food
Leaf Structure and Photosynthesis	
	Where Does Photosynthesis Occur?
	Chloroplasts
	Chlorophyll
	Water Movement to the Leaves
	Leaf Stomata and Carbon Dioxide
	Guard Cells Respond to the Environment
	Pore Is Open in Daylight
Process of Photosynthesis	
	Chemical Equation for Photosynthesis
	Stage One of Photosynthesis

Photosynthesis and Respiration

	Water and Oxygen in Stage One
	Stage Two of Photosynthesis
	How Does the Plant Use Glucose?
	Oxygen Produced and Released
Pause and Interact Activity	
	Review
	Chemical Equation for Photosynthesis
	Photosynthesis
Overview of Cellular Respiration	
	What Is Cellular Respiration?
	Who Uses Cellular Respiration?
	Cellular Respiration Equation
Process of Cellular Respiration	
	Two Stages of Cellular Respiration
	Stage One of Cellular Respiration
	Stage Two of Cellular Respiration
	Energy and Cellular Respiration
	What is ATP?
	Products of Cellular Respiration
Pause and Interact Activity	
	Review
	Chemical Equation for Cellular Respiration
	Cellular Respiration
Connection between Photosynthesis and Respiration	
	Opposite Processes
	Comparing Equations
	Cycle of Oxygen and Carbon Dioxide
Fermentation	
	What Is Fermentation?
	Alcoholic Fermentation
	What Does Yeast Do in Bread Dough?
	Lactic Acid Fermentation
	Lactic Acid and Sore Muscles
Pause and Interact Activity	
	Review
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	The Effects of Carbon Dioxide and Light on Photosynthesis
Assessment	
	Photosynthesis
What Is a Protist?	

Protists: Pond Microlife

	Kingdom Protista
	Protist Categories
Plant-Like Protists	
	Algae
	Algae Contain Chlorophyll
	Examples of Plant-Like Protists
Euglena	
	Euglena Characteristics
	Euglenas Have Chlorophyll
	Euglena Eyespot
	Euglena Nutrition
	Euglena Movement
Volvox	
	Volvox Characteristics
	Volvox Colony
	Volvox Habitat
	Volvox Reproduction
Spirogyra	
	Spirogyra Characteristics
	Spirogyra Filaments
	Spirogyra Reproduction
Pause and Interact Activity Activity	
	Review
	Euglena
	Volvox
	Spirogyra
Animal-Like Protists	
	Protozoa
	Characteristics of Animal-Like Protists
Amoeba	
	Amoeba Habitat
	Amoeba Movement
	Amoeba Nutrition
	Amoeba Food Vacuole and Lysosomes
	Amoeba Nucleus and Contractile Vacuole
	Amoeba Reproduction
Paramecium	
	Paramecium Characteristics
	Paramecium Movement
	Paramecium Nuclei
	Paramecium Nutrition
	Paramecium Reproduction
Pause and Interact Activity Activity	
	Review
	Amoeba
	Paramecium
Fungus-Like Protists	
	Characteristics of Fungus-Like Protists
	Fungus-Like Protist Feeding and Reproduction
	Types of Fungus-Like Protists

	Slime Mold	
		Slime Mold
		Slime Mold Reproduction and Feeding
		Slime Mold Movement and Habitat
	Pause and Interact Activity	
		Review
	Vocabulary Review	
		Vocabulary Matching Review
	Virtual Investigation	
		Comparing Algae & Protozoa
Assessment		
	Protists	

Six Kingdoms of Life		
	Classification	
		Why Do Scientists Classify Organisms?
		How Are Organisms Classified?
		DNA Technology and Classification
		Levels of Classification
		Scientific Name
	Six Kingdoms Overview	
		What Are the Six Kingdoms?
		Archaeobacteria and Eubacteria
		Protists
		Fungi, Plants and Animals
	Archaeobacteria and Eubacteria	
		Characteristics of Bacteria
		Two Bacterial Groups
		Where Are Archaeobacteria Found?
		Where Are Eubacteria Found?
		Beneficial and Harmful Bacteria
	Protists	
		Characteristics of Protists
		Variety of Protists
		Protist Groups
		Protozoa
		Algae
		Fungus-Like Protists
	Pause and Interact Activity	
		Review
	Fungi	
		Characteristics of Fungi
		Parts of a Fungus
		Fungus Reproduction
		Beneficial Fungi
		Harmful Fungi
Plants		
	Plant Characteristics	
	Cellulose and Chloroplasts	

	How Are Plants Classified?
	Nonvascular Plants
	Seedless Vascular Plants
	Gymnosperms
	Angiosperms
Pause and Interact Activity Activity	
	Review
Animals	
	Animal Characteristics
	Major Animal Groups
	Invertebrates
	Invertebrate Groups
	Vertebrates
Pause and Interact Activity Activity	
	Kingdom Identification
Vocabulary Review	
	Six Kingdoms of Life Vocabulary Matching
Virtual Investigation	
	Classifying Organisms
Assessment	
	Six Kingdoms of Life

HUMAN BIOLOGY

MULTIMEDIA SCIENCE UNIT	LESSON NAME	TOPIC NAME
	Body Organization	
		Levels of Organization - Organ Systems
		Levels of Organization - Organs.
		Levels of Organization - Tissues
		Levels of Organization - Cells
		Homeostasis Principle
		Homeostasis Example - Temperature Regulation
	Body Organization:Pause and Interact Activity Activity	
		Review
		Body Organization
	Skeletal System	
		Functions of the Skeletal System
		The Axial Skeleton
		The Appendicular Skeleton
		Bone Structure
		Bone Formation
		Common Bone Fractures
		Types of Joints Between Bones
		Freely Moving Joints - Synovial Joints
		Sprains and Strains
		Taking Care of Your Bones

Systems of the Human Body 1: Moving and Controlling the Body

Pause and Interact Activity	
	Review
	The Skeletal System
	Types of Joints
Muscular System	
	Muscle Action
	Types of Muscles
	Structure of Muscle
	Principles of Muscle Contraction
	Special Features of Heart Muscle
Pause and Interact Activity	
	Review
	Types of Muscles
Nervous System	
	Functions of Nervous System
	Organs of the Nervous System
	Structure of Neurons
	Types of Neurons
	The Nerve Impulse
	Central Nervous System
	Structure of the Brain
	Peripheral Nervous System
	Senses: Vision, Hearing and Balance, Smell, Taste
	How We See
	How We Hear
	How We Taste and Smell
	Drug and Alcohol Abuse
Pause and Interact Activity	
	Review
	Nervous System
Endocrine System	
	The Role of the Endocrine System
	How the Endocrine System Functions
	Endocrine Glands
	Function and Control of Endocrine Glands
	Hormones
	Negative Feedback Mechanism
Pause and Interact Activity	
	Review
	The Endocrine System
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	Nerve Conduction
Assessment	
	Human Body 1

Food and Nutrients	
	Food and Cellular Energy
	Nutrients
Types of Nutrients	
	Simple Carbohydrates
	Complex Carbohydrates
	Fats
	Cholesterol
	Saturated and Unsaturated Fat
	Proteins
	Proteins are Composed of Amino Acids
	Vitamins
	Water-Soluble Vitamins
	Fat-Soluble Vitamins
	Minerals
	Water and the Human Body
	Healthy Diets and Food Labels
Pause and Interact Activity	
Activity	
	Review
Digestive System - Fuel from Food	
	Digestive System Functions
	Organs of the Digestive System
	Mouth and Oral Cavity
	Esophagus
	Stomach
	Pancreas
	Liver
	Small Intestine
	Large Intestine
Process of Digestion	
	Mechanical Digestion
	Chemical Digestion
	Digestive Enzymes
	Pancreatic Enzymes
	Absorption of Nutrients
Pause and Interact Activity	
Activity	
	Review
	Digestive System
Respiratory System - The Need for Oxygen	
	Functions of the Respiratory Tract
	The Need for Oxygen
	Organs of the Respiratory Tract – From Mouth to Lungs
	Lung Structure
	Organs of the Respiratory Tract – The Lungs
	Process of Respiration – How You Breathe
	Smoking and Health
	Emphysema

Systems of the Human Body 2: Providing Fuel and Transportation

	Lung Cancer
Pause and Interact Activity	
Activity	
	Review
	Respiratory System
Cardiovascular System - Transporting Fuel and Waste	
	Functions of the Cardiovascular System
	Organs of the Circulatory System
	Anatomy of the Heart
	Heart Atria and Ventricles
	How the Heart Works
	Blood Circulation Loops
	Arteries
	Capillaries
	Veins
	Blood Pressure
Pause and Interact Activity	
Activity	
	Review
	Cardiovascular System
Blood	
	Components of Blood
	White Blood Cells
	White Blood Cells with Granules
	White Blood Cells without Granules
	Red Blood Cells and Platelets
	Blood Types
	Blood Donation and Transfusion
	The Lymphatic System of Vessels and Nodes
	Lymph Nodes
Pause and Interact Activity	
Activity	
	Review
Heart Health	
	Heart Disease
	Hypertension – High Blood Pressure
	Keeping the Heart Healthy
Excretory System - Transporting Waste	
	Functions of the Excretory System
	Organs of the Excretory System
	Kidney Structure
	Formation of Urine
	Urinalysis and Kidney Disease
	Excretion by Skin, Lungs and Digestive Tract
Pause and Interact Activity	
Activity	
	Review
	Excretory System
Vocabulary Review	
	Vocabulary Matching Review

	Virtual Investigation	
		Blood Typing
	Assessment	
		Human Body 2
	Disease and the Body's Defense	
		Pathogens and Disease
		How Diseases Spread
		Body Defense against Pathogens
		Natural Barriers to Disease
		Inflammation
		Inflammation and Repair
		Specific Protection from Disease
	Pause and Interact Activity	
	Activity	
		Review
	The Immune Response	
		What Is an Antigen?
		How Does the Immune System Work?
		Antibodies
		B Lymphocytes
		T Lymphocytes
		Lymphocyte Location
		Lymph Node Protection
		Role of the Spleen
	Pause and Interact Activity	
	Activity	
		Review
		The Immune System
	Illness, Immunity and Allergies	
		When the Immune System Is Overwhelmed
		Immunization: Passive Immunity
		Immunization: Active Immunity
		Allergic Response
		Staying Healthy and Preventing Disease
	Pause and Interact Activity	
	Activity	
		Review
	Skin - Physical Protection	
		Skin Barrier and Production of Vitamin D
		Skin and Temperature
		Cell Structure of the Skin
		The Epidermis
		Skin Growth and Repair
		Skin Support: The Dermis
		Skin Cancer
		Importance of Healthy Skin
	Pause and Interact Activity	
	Activity	

Systems of the Human Body 3: Protection, Reproduction and Cooperation

	Review
	The Skin
Reproduction--Continuing the Species	
	Sex Cells
	Fertilization
	Sperm Production
	Testes
	Female Reproductive System
	Female Reproductive Hormones
	Menstruation
	Egg Fertilization
	Human Implantation and Early Development
	Human Fetal Development and Birth
Pause and Interact Activity Activity	
	Review
	The Male Reproductive System
	The Female Reproductive System
Systems Working Together	
	Link between Cardiovascular and Respiratory Systems
	Links between Digestive, Nervous and Muscular Systems
	Organ Systems During Exercise
	Healthy Habits, Healthy Organs
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	Infection and Inflammation
Assessment	
	Human Body 3

EARTH SCIENCE

MULTIMEDIA SCIENCE UNIT	LESSON NAME	TOPIC NAME
	Atmosphere Overview	
		Composition of the Atmosphere
		Importance of the Atmosphere
		Atmospheric Pressure
		Air Pollution
	Layers of the Atmosphere	
		Five Atmospheric Layers
		Troposphere
		Stratosphere
		Mesosphere
		Thermosphere
		Exosphere

Atmosphere and Weather

Pause and Interact Activity	
	Review
Weather	
	What is Weather?
	Weather and the Sun
	Global Winds
	Water Cycle
	Humidity
Clouds and Precipitation	
	Cloud Formation
	Three Main Types of Clouds
	Other Types of Clouds
	What is Precipitation?
	Rain, Sleet, Snow and Hail
Weather Patterns	
	Air Masses
	Types of Air Masses
	Movement of Air Masses
	Cold and Warm Fronts
	Stationary and Occluded Fronts
Pause and Interact Activity	
	Review
	Cloud Types
Severe Weather	
	Thunderstorms
	Tornadoes
	Hurricanes
	Winter Storms
Pause and Interact Activity	
	Types of Severe Weather
Predicting Weather	
	Forecasting the Weather
	Weather Technology
	Weather Maps
Vocabulary Review	
	Atmosphere and Weather Vocabulary Matching
Virtual Investigation	
	Weather Forecasting
Assessment	
	Atmosphere and Weather
Climate and Its Causes	
	What Is Climate?
	Causes of Climate
	Latitude Affects Temperature
	Altitude Affects Temperature
	Oceans and Lakes Affect Temperature
	Ocean Currents Affect Temperature
	Prevailing Wind Affects Moisture
	Mountains Affect Precipitation
	Seasons and the Earth's Tilt
Pause and Interact Activity	

Earth's Climate

	Review
Climate Zones and Biomes	
	Climate Zones
	Biomes
The Tropical Zone	
	Tropical Zone
	Tropical Rain Forest
	Tropical Savannah and Desert
The Temperate Zone	
	Temperate Zone
	Temperate Forest and Grassland
	Temperate Chaparral and Desert
The Polar Zone	
	Polar Zone
	Tundra
	Taiga
Pause and Interact Activity	
	Review
	Biomes
Climate Change	
	Ice Ages
	Glacial and Interglacial Periods
	What Caused the Ice Ages?
Global Warming	
	The Earth is Getting Warmer
	Greenhouse Effect
	Increased Atmospheric Carbon Dioxide
	The Impact of Global Warming
Ozone depletion	
	A Thinning Ozone Layer
	Ozone Layer Recovery
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	Earth's Seasons
Assessment	
	Earth's Climate
Weathering and Erosion Overview	
	Weathering and Erosion
	Mechanical and Chemical Weathering
	How Is Rock Eroded?
The Erosion and Deposition Cycle	
	Steps of the Erosion and Deposition Cycle
	Sediment Deposited in the Ocean
Mechanical and Chemical Weathering	
	Abrasion and Plant Growth
	Exfoliation and Frost Wedging

Earth's Surface

	What is Chemical Weathering?
	Natural Chemical Weathering
	Chemical Weathering and Pollution
Forces of Erosion and Deposition	
	Natural Forces of Erosion and Deposition
	Gravity and Mass Movements of Rock
	Moving Water Carries Sediment
	Deltas and Alluvial Fans
	Glaciers Shape the Land
	Glacier Landforms
	Waves and Rock Formations
	Waves and Deposition
	Wind Erosion and Deposition
Pause and Interact Activity	
	Review
	Forces of Erosion and Deposition
Soil	
	What Is Soil?
	Types of Soil
	Climates with Thin Soil Layers
	Soil in Temperate Climates
	Life in the Soil
	Soil Conservation
	Topsoil and Farming
Pause and Interact Activity	
	Review
	Soil Profile
Landforms and Topographic Maps	
	Types of Landforms
	What Is a Topographic Map?
	Topographic Map Contour Lines
	Topographic Map Rules
Vocabulary Review	
	Earth's Surface Vocabulary Matching
Virtual Investigation	
	Topographic Maps
Assessment	
	Earth's Surface
How an Earthquake Occurs	
	Rock Experiences Stress
	Rock Releases Energy
	Earthquake Focus and Epicenter
	Earthquake Aftershocks
Types of Stress in Crustal Rock	
	Three Types of Stress
	Tension
	Compression

Earthquakes

	Shearing
Faults in the Earth's Crust	
	What is a Fault?
	Hanging Wall and Footwall
	Normal Fault
	Reverse Fault
	Strike-Slip Fault
Pause and Interact Activity	
	Review
How Earth's Surface Changes	
	Folding Rock
	Stretching Rock
	Uplifting Rock
Seismic Waves	
	What is a Seismic Wave?
	Types of Seismic Waves
	P Waves
	S Waves
	Surface Waves
Measuring Earthquakes	
	Seismographs
	Distance to Epicenter
	Epicenter Location
	Richter Scale
	Richter Scale is Logarithmic
	Mercalli Scale
Pause and Interact Activity	
	Review
	Earthquake and Seismogram
Earthquake Safety	
	Potential Earthquake Destruction
	Risk of Earthquake
	Safer Buildings in Earthquake Zones
	Individual Safety During an Earthquake
Vocabulary Review	
	Earth Quakes Vocabulary Matching
Virtual Investigation	
	Earthquake Simulator
Assessment	
	Earthquakes
What Is a Mineral?	
	Minerals Are Naturally Occurring
	Minerals Are Inorganic
	Minerals Are Solid Substances
	Minerals Have a Crystal Structure
	Is a Rock a Mineral?
Properties of Minerals	
	How Are Minerals Identified?
	Mineral Hardness
	Mineral Color

Minerals

	Mineral Streak Color
	Mineral Luster
	Specific Gravity of a Mineral
	Mineral Crystal System
	Cleavage or Fracture of a Mineral
	Mineral Special Properties
	Mineral Properties Table
Pause and Interact Activity	
	Review
	Sequence: Mohs Hardness Scale
How Do Minerals Form?	
	Where Do Minerals Form?
	Mineral Metamorphism
	Cooling Magma Forms Minerals
	Evaporation and Precipitation Form Minerals
	Hot Water Solutions Form Minerals
Mineral Resources	
	Ore Deposits
	Mining Methods
	Shaft Mines
	Processing Ore
Mining and the Environment	
	Mining and Environmental Issues
	Mining and Land Reclamation
	Mineral Reserves and Recycling
Use of Minerals	
	Importance of Minerals
	Using Minerals in Homes
	Using Minerals in a Television
	Gemstones
Pause and Interact Activity	
	Review
	Mineral Uses
Vocabulary Review	
	Minerals Vocabulary Matching
Virtual Investigation	
	Mineral Identification
Assessment	
	Minerals
Formation of Our Solar System	
	Nebulae
	Planetesimals
	Rocky and Gaseous Planet Formation
Geocentric and Heliocentric Systems	
	Geocentric Universe Concept
	Heliocentric Universe Concept
	A Heliocentric Solar System
	Parts of Our Solar System

Our Solar System

The Sun	
	What Is the Sun Made of?
	Structure of the Sun
	The Sun's Core and Nuclear Fusion
	The Sun's Radiative Zone
	The Sun's Convective Zone
	The Sun's Photosphere
	The Sun's Chromosphere
	The Sun's Corona
	Sunspots
	Solar Flares
Pause and Interact Activity	
	Review
	The Sun
Measuring Distances in Space	
	Astronomical Units
	Distance Between the Planets and Sun
The Inner Planets	
	What Are the Inner Planets?
	Mercury
	Venus
	Atmosphere and Surface of Venus
	Earth
	Mars
	Atmosphere and Surface of Mars
Pause and Interact Activity	
	Review
The Outer Planets	
	What Are the Outer Planets?
	Jupiter
	Saturn
	Uranus
	Rotation and Tilt of Uranus
	Neptune
Pause and Interact Activity	
	Review
Comets, Asteroids, and Meteors	
	Comets
	Asteroids
	Meteoroids
Pluto	
	Pluto and the Kuiper Belt
Pause and Interact Activity	
	The Solar System
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	Planet Exploration
Assessment	
	Our Solar System

Plate Tectonics

Earth's Interior	
	Seismograms and the Earth's Structure
	Layers of the Earth
	The Earth's Crust
	Oceanic Crust
	Continental Crust
	The Earth's Mantle
	Upper and Lower Mantle
	The Earth's Core
Heat Transfer and Convection Currents	
	Types of Heat Transfer
	What Causes Convection?
	Hot Mantle Rises
	Cool Mantle Sinks
	Mantle Convection Currents
	Core Convection Currents
Pause and Interact Activity	
	Earth's Interior
Continental Drift	
	What Is the Continental Drift Theory?
	Basis of the Continental Drift Theory
	Evidence for Continental Drift
	Pangaea
	Laurasia and Gondwana
	Modern Continents
	Theory History
Sea-Floor Spreading	
	Mid-Ocean Ridges
	How Sea-Floor Spreading Occurs
	New and Old Oceanic Crust
	Supports Plate Tectonics Theory
Theory of Plate Tectonics	
	What Is the Theory of Plate Tectonics?
	Tectonic Plates in Motion
	Tectonic Plate Boundaries
	Divergent Plate Boundaries
	Convergent Plate Boundaries
	Subduction Zone
	Mountain Range Formation
	Transform Boundary
Pause and Interact Activity	
	Review
	Continent Movement Over Time
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	Tectonic Plate Boundaries
Assessment	
	Plate Tectonics

Rocks

Classifying Rocks	
	Rock Definition
	Igneous Rocks
	Sedimentary Rocks
	Metamorphic Rocks
Igneous Rocks	
	Formation and Classification of Igneous Rocks
	Origin of Igneous Rocks
	Igneous Rock Texture
	Igneous Rock Composition
	Basalt
	Obsidian
	Pumice
	Granite
	Igneous Rock Uses
Pause and Interact Activity	
	Review
Sedimentary Rocks	
	Formation of Sedimentary Rocks
	Sedimentary Rock Categories
	Clastic Sedimentary Rock
	Clastic Sedimentary Rock Examples
	Organic Sedimentary Rock
	Chemical Sedimentary Rock
	Sedimentary Rock Uses
Pause and Interact Activity	
	Review
Metamorphic Rocks	
	Formation of Metamorphic Rocks
	Shale Metamorphism
	Contact and Regional Metamorphism
	Foliated Metamorphic Rock
	Nonfoliated Metamorphic Rock
	Metamorphic Rock Uses
The Rock Cycle	
	Rock Cycle Diagram
	Sedimentary Rock Formation
	Metamorphic Rock Formation
	Igneous Rock Formation
Pause and Interact Activity	
	Rock Uses
	Rock Cycle
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	Rock Identification
Assessment	
	Rocks

The Sun-Earth-Moon System

How the Earth Moves	
	Earth's Rotation
	Rotation Causes Day and Night
	Earth's Period of Rotation
	Earth's Revolution
Seasons on Earth	
	Earth's Tilt Causes Seasons
	Latitude and the Sun's Rays
	Solstice
	Equinox
	Seasons in Tropical Regions
	Seasons in Temperate Regions
	Seasons in Polar Regions
Pause and Interact Activity	
	Review
Gravity and Motion	
	Strength of Gravity
	Gravity of the Earth and Moon
	Earth and Moon Have Inertia
	Gravity, Inertia and Orbit
Earth's Moon	
	Theory of Moon's Origin
	Synchronous Rotation
	Moon Composition and Surface
	Moon Facts
Pause and Interact Activity	
	Review
Phases, Eclipses and Tides	
	Cause of phases, eclipses and tides
	What are moon phases?
	Moon Phases
	What is an Eclipse?
	Solar Eclipse
	The Moon's Umbra and Penumbra
	Lunar Eclipse
	Moon's Orbit is Tilted
	What Causes Ocean Tides?
	Spring Tides
	Neap Tides
Pause and Interact Activity	
	Review
	Moon Phases
Missions to the Moon	
	NASA and the First Man on the Moon
	Apollo Missions
	Current Moon Exploration
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	Moon Phases, Eclipses and Tides
Assessment	
	The Sun-Earth-Moon System

Volcanoes

Introduction to Volcanoes	
	Magma Formation
	What Is a Volcano?
Volcanoes and Plate Boundaries	
	Volcanoes at Plate Boundaries
	Ring of Fire
	Volcanoes at Divergent Boundaries
	Volcanoes at Convergent Boundaries
	Hot Spot Volcanoes
Properties of Magma	
	Magma Properties Can Vary
	Magma Composition
	Magma Viscosity
	Different Types of Lava
	Temperature Affects Magma and Lava
Pause and Interact Activity	
	Review
Volcanic Eruptions	
	Inside a Volcano
	Vents and Craters
	Why Does a Volcano Erupt?
	Quiet Eruptions
	Explosive Eruptions
	Pyroclastic Flow and Lahar
	Volcanic Material and Rocks
Volcano Classification	
	Volcano Classification
	Composite Volcano
	Cinder Cone Volcano
	Shield Volcano
Life Cycle of a Volcano	
	Stages of Activity
	Monitoring Volcanoes
	Destruction Caused by Volcanoes
Pause and Interact Activity	
	Review
	Structure of a Volcano
	Types of Volcanoes
Volcanic Landforms, Hot Springs and Geysers	
	Caldera
	Volcanic Necks and Dome Mountains
	Hot Springs and Geysers
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	Volcano Simulator
Assesment	
	Voclanoes

PHYSICAL SCIENCE

MULTIMEDIA SCIENCE UNIT	LESSON NAME	TOPIC NAME
Atoms and Chemical Bonding	Models of the Atom	
		Atomic Models
		Dalton's Atomic Theory
		Thomson's Model of the Atom
		Rutherford's Experiment
		Bohr's Model of the Atom
		The Modern Atomic Theory
	Pause and Interact Activity	
		Review
		Scientists and their model of the atom
	Atomic Configuration and Bonding	
		Electron Configuration
		Valence Electrons and Bonding
		Electron Dot Diagram
		Stability of Atoms
		Chemical Bonds
	Pause and Interact Activity	
		Review
		Electron Configuration
	Ionic Bonding	
		Charged Particles
		Forming Ions
		Ionic Bonds
		Ionic Compounds
		Naming Ionic Compounds
		Writing Formulas for Ionic Compounds
	Pause and Interact Activity	
		Review
	Covalent and Metallic Bonding	
		Covalent Bonds
		Nonpolar and Polar Covalent Bonding
		Covalent Compounds
		Covalent Formulas and Names of Covalent Compounds
		Metallic Bonding
	Pause and Interact Activity	
		Review
		Chemical Bonding
	Vocabulary Review	
		Atoms and Chemical Bonding Vocabulary Matching Review
	Virtual Investigation	
	Atoms and Chemical Bonding	

	Assessment	
		Atoms and Chemical Bonding
Chemical and Physical Changes of Matter		
	Chemical Reactions	
		Chemical and Physical Changes of Matter
		Chemical Reactions
		Evidence of Chemical Reactions
		Chemical Bonds
		Chemical Formulas
		Chemical Equations
	Pause and Interact Activity	
		Review
		Chemical and Physical Changes
	Balancing Equations	
		Conservation of Mass
		Balancing Chemical Equations
		Example of Balancing a Chemical Equation
	Pause and Interact Activity	
		Review
	Reactions and Reaction Rates	
		Types of Chemical Reactions
		Synthesis Reactions
		Decomposition Reactions
		Single-Replacement Reactions
		Double-Replacement Reactions
		Combustion Reactions
	Pause and Interact Activity	
		Review
		Types of Reactions
	Energy in Reactions	
		Collision Theory
		Activation Energy
		Exothermic Reactions
		Endothermic Reactions
		Energy in Reactions
	Reaction Rates	
	Catalysts	
Vocabulary Review		
	Chemical Reactions Vocabulary Matching Review	
Virtual Investigation		
	Evidence of Chemical Reactions	
Assessment		
	Chemical Reactions	
	Introduction to Electricity	
		Atoms and Electric Charges
		Interaction of Charged Particles
		Electric Fields
		Multiple Charged Particles
		The Movement of Electric Charges
		How Objects Become Charged

Electricity and Magnetism

	Static Electricity
	Electroscope
Pause and Interact Activity	
	Review
Electric Current	
	What is Electric Current?
	Current Is Measured in Amps
	Two Types of Electrical Current
	Direct Current vs. Alternating Current
	Electricity in Circuits
	Voltage
	Electrical Resistance
	Resistance Factors-Material
	Resistance Factors-Temperature
	Resistance Factors-Length and Thickness
	Ohms Law
	Electric Power
	Electricity: Measurements, Units and Symbols
Pause and Interact Activity	
	Review
	Review
	Review
Electric Circuits	
	Parts of an Electric Circuit
	Circuit Diagram
	Series Circuit
	Parallel Circuit
Pause and Interact Activity	
	Circuit
Batteries	
	Volta and the First Battery
	Electrochemical Cell
	Wet Cells and Dry Cells
Pause and Interact Activity	
	Electrochemical Cell
	History of Electricity
Electrical Safety	
	Electrical Safety at Home
	Lightning and Power Lines
Magnetism	
	What Is a Magnet?
	Magnetic Forces, Poles and Fields
	Inside a Magnet
	Earths Magnetic Field
	Electromagnetism
Pause and Interact Activity	
	Review
Vocabulary Review	
	Electricity and Magnetism Vocabulary Matching
Virtual Investigation	
	Circuit Building
Assessment	

Elements and the Periodic Table

	Electricity and Magnetism
Introduction to Elements	
	Elements
	Compounds
	Atomic Number
	Isotopes
	Atomic Mass
	Electron Configuration
	Electrons and Bonding
Pause and Interact Activity	
	Review
	Identifying Elements
Classes of Elements	
	Classes of Elements
	Metals
	Nonmetals
	Metalloids
Pause and Interact Activity	
	Review
	Metals, Nonmetals and Metalloids
The Periodic Table of Elements	
	Arranging the Elements
	Changing the Arrangement of the Periodic Table
	The Modern Periodic Table
	Element Key
	Periods of the Periodic Table
	Groups of the Periodic Table
Pause and Interact Activity	
	Review
	Review
Groups on the Periodic Table	
	Group 1- Alkali Metals
	Group 2- Alkaline-Earth Metals
	Groups 3 to 12 - Transition Metals
	Transition Metals - Lanthanides and Actinides
	Group 13- Boron Group
	Group 14- Carbon Group
	Group 15- Nitrogen Group
	Group 16- Oxygen Group
	Group 17- Halogens
	Group 18- Noble Gases
	Hydrogen
Vocabulary Review	
	Elements and the Periodic Table Vocabulary Matching Review
Virtual Investigation	
	Flame Test
Assessment	
	Elements and the Periodic Table

Energy: Forms and Changes

Introduction to Energy	
	What Is Energy?
	Energy, Work and Power
	Types of Energy
Pause and Interact Activity	
	Review: Energy, Work, Power
Potential and Kinetic Energy	
	Potential Energy
	Potential Energy and Gravity
	Calculating Gravitational Potential Energy
	Kinetic Energy
	Calculating Kinetic Energy
Pause and Interact Activity	
	Review: Potential Energy
	Review: Kinetic Energy
Forms of Energy	
	Different Forms of Energy
	Mechanical Energy
	Thermal Energy
	Chemical Energy
	Electrical Energy
	Nuclear Energy
	Electromagnetic Energy
Pause and Interact Activity	
	Review: Forms of Energy
	Forms of Energy
Energy Transformation and Conservation	
	Energy Transformation
	Friction and Thermal Energy
	Conservation of Energy
Pause and Interact Activity	
	Review: Energy Transformation
Heat and Heat Technology	
	Temperature and Heat
	Types of Heat Transfer
	Using Heat to Produce Electricity
	Heat Technology
Pause and Interact Activity	
	Review
Sources of Energy	
	Nonrenewable and Renewable Resources
	Fossil Fuels
	Use of Fossil Fuels
	Nuclear Energy
	Renewable Resources
Pause and Interact Activity	
	Review: Energy Resources
Vocabulary Review	
	Energy: Forms and Changes Vocabulary Matching

	Virtual Investigation	
		Energy Transformation
	Assessment	
		Energy: Forms and Changes
	Motion	
		What Is Motion?
		Speed
		Calculating Speed
		Graphing the Speed of an Object
		Velocity
	Pause and Interact Activity	
		Review
		Acceleration and Momentum
	Acceleration and Momentum	
		Acceleration
		Calculating Acceleration
		Acceleration on a Distance vs. Time Graph
		Graphing Acceleration-Speed vs. Time
		Momentum
		Conservation of Momentum
	Pause and Interact Activity	
		Review
	Force	
		What Is a Force?
		Combining Forces
		Friction
		Types of Friction
	Pause and Interact Activity	
		Review
		Forces - Friction
	Gravity	
		Law of Universal Gravitation
		Mass and Weight
		Gravity and Motion
	Pause and Interact Activity	
		Review
	Newton's Laws	
		Sir Isaac Newton
		Newton's First Law of Motion
		Newton's Second Law of Motion
		Second Law of Motion Equation
	Vocabulary Review	
		Forces and Motion Vocabulary Matching
	Virtual Investigation	
		Forces and Motion
	Assessment	
		Forces and Motion

Light and Optics

Light	
	Electromagnetic Waves
	Light: Wave or Particle
	Electromagnetic Spectrum
	Radio Waves and Microwaves
	Infrared
	Visible Light
	Ultraviolet Light
	X-rays and Gamma Rays
Pause and Interact Activity	
	Review
	Electromagnetic Spectrum
Wave Interactions	
	Transmission of Light
	Color for Opaque Objects
	Color with Transparent or Translucent Objects
	Combining Colors of Light
	Colors of Pigments
Pause and Interact Activity	
	Review
	Transmission of Light
Interactions of Light	
	Reflection of Light
	Refraction of Light
	Diffraction of Light
	Polarized Light
Pause and Interact Activity	
	Review
	Interactions of Light
Reflection and Mirrors	
	Plane Mirrors
	Curved Mirrors
	Ray Diagram of a Mirror
	Concave Mirrors
	Convex Mirrors
Pause and Interact Activity	
	Review
	Reflection and Mirrors
Refraction and lenses	
	Lenses
	Convex Lenses
	Concave Lenses
	Light and the Human Eye
	Uses of light in technology
Pause and Interact Activity	
	Review
	Reflection and Lenses
Vocabulary Review	
	Light and Optics Vocabulary Matching
Virtual Investigation	
	Mirrors and Lenses
Assessment	

		Light
Properties and States of Matter	Introduction to Matter	
		What Is Matter?
		Matter and Substances
		Properties of Matter
		Physical Properties
		Chemical Properties
	Pause and Interact Activity	
		Review
	Classes of Matter	
		Elements
		Atoms
		Molecules
		Compounds
		Mixtures
		Solutions
		Concentrations of Solutions
		Suspensions and Colloids
		Separating Mixtures
	Pause and Interact Activity	
		Review
	States of Matter	
		States of Matter
		Solids
		Crystalline and Amorphous Solids
		Liquids
		Surface Tension
		Viscosity
		Gases
		Boyle's Law
		Charles's Law
	Pause and Interact Activity	
		Review
		States of Matter
	Changes of State	
		What Is a Change of State?
		Physical States and Thermal Energy
		Adding and Removing Thermal Energy
		Changing States of Water
		Melting
		Freezing
		Vaporization
		What Affects the Boiling Point?
	Condensation	
	Sublimation	
Pause and Interact Activity		
	Review	
Measuring Matter		
	International System of Units	
	Mass and Weight	

		Volume
		Density
	Pause and Interact Activity	
		Review: Pulley Types
	Vocabulary Review	
		Properties and States of Matter Vocabulary Matching
	Virtual Investigation	
		Gas Laws
	Assessment	
		Properties and States of Matter
Sound		
	Waves	
		What Is a Wave?
		Energy and Waves
		Transverse Waves
		Longitudinal Waves
		Amplitude
		Wavelength
		Frequency
		Calculating Wave Speed
	Pause and Interact Activity	
		Sound Waves
		Longitudinal Waves
		Review
	Wave Interactions	
		Reflection
		Refraction
		Diffraction
		Interference
		Standing Waves
	Pause and Interact Activity	
		Wave Interactions
		Review: Wave Interactions
	Sound and Sound Waves	
		Sound
		Wave Interactions and Sound
		Speed of Sound
		Loudness and Amplitude
		Pitch and Frequency
		Doppler Effect
	Pause and Interact Activity	
		Review
		Review
	Musical Sounds	
		Quality of Sound
		Music and Instruments
		Fundamental Tones and Overtones
		Resonance
	Pause and Interact Activity	
		Tones and Overtones

	Review
Practical Applications of Sound	
	Hearing
	Echolocation
	Ultrasound
	Sonar
Vocabulary Review	
	Sound Vocabulary Matching
Virtual Investigation	
	Speed of Sound
Assessment	
	Sound

What Is Work?	
	Definition of Work
	Work and Motion
	Work and Direction
	Calculating Work
	A Joule Is a Unit of Work
Pause and Interact Activity	
	Review
Power	
	Work and Power
	Definition of Power
	Calculating Power
	Power Example
	A Watt Is a Unit of Power
Pause and Interact Activity	
	Review
Machines and Work	
	What Is a Machine?
	Input and Output Forces and Work
	Calculating Work Input and Output
	How Machines Make Work Easier
	Decreasing Input Force
	Increasing the Input Force
	Changing the Direction of the Force
Pause and Interact Activity	
	Review
Mechanical Advantage and Efficiency	
	Mechanical Advantage
	Calculating Mechanical Advantage
	Efficiency of Machines
	Calculating Mechanical Efficiency
Pause and Interact Activity	
	Review
Types of Simple Machines	
	Types of Simple Machines
	Inclined Plane

Work, Power & Simple Machines

	Wedge
	Screw
	Lever
	Classes of Levers
	Wheel and Axle
	Pulley
	Types of Pulleys
Pause and Interact Activity	
	Review: Pulley Types
	Review: Mechanical Advantage
	Simple Machines
Simple Machines in the Body	
	Simple Machines in the Body
Compound Machines	
	Compound Machines
Vocabulary Review	
	Vocabulary Matching Review
Virtual Investigation	
	Exploring Pulleys
Assessment	
	Work, Power & Simple Machines