



Scope & Sequence

Level A (Grade 1)

Lesson	Category	Topic/Focus	Objective
1	Life Science	Basic Needs	To explore basic needs of plants and animals
2	Life Science	Plant Structure/Function	To explore the structure and function of plant parts
3	Life Science	Animal Structure/Function	To explore the structure and function of animal coverings
4	Life Science	Life Cycles (larva)	To explore the larva stage of a moth's life cycle
5	Life Science	Life Cycles (pupa)	To explore the pupa stage of a moth's life cycle
6	Life Science	Life Cycles (adult)	To explore the adult stage of a moth's life cycle
7	Life Science	Camouflage	To explore how colorization and shape help survival
8	Life Science	Habitats	To explore how creatures interact with their environment
9	Life Science	Pollutants	To explore how pollutants impact environments
10	Earth Science	Earth Materials	To explore how "natural" and "manufactured" differ
11	Earth Science	Rocks	To explore basic characteristics of rocks
12	Earth Science	Fossils	To explore how "mold fossils" were created
13	Earth Science	Solar System	To explore relationships between solar system objects
14	Earth Science	Eclipses	To explore how solar and lunar eclipses occur
15	Earth Science	Solar Energy	To explore how color reflects or absorbs sunlight
16	Earth Science	Earth Rotation	To explore how Earth's rotation causes day and night
17	Earth Science	Moon Phases	To explore how the Moon's movement relates to months
18	Earth Science	Seasons	To explore how Earth's movement relates to seasons
19	Physical Science	States of Matter	To explore Earth's three most common states of matter
20	Physical Science	Changes in Matter	To explore how matter can change states
21	Physical Science	Bonds	To explore how bonds between atoms hold things together
22	Physical Science	Surface Tension	To explore how water molecules create surface tension
23	Physical Science	Properties of Matter	To explore mixing two colors to make a third color
24	Physical Science	Density	To explore how density affects matter
25	Physical Science	Sound	To explore how sound is created by vibration
26	Physical Science	Pitch	To explore how changing vibration changes sound
27	Physical Science	Sound & Density	To explore how density affects the speed of sound
28	Physical Science	Newton's 3rd Law	To explore the concept of action/reaction
29	Physical Science	Flight	To explore how forces relate to flight
30	Physical Science	Simple Machines	To explore how the direction of a force can be changed
31	Physical Science	Refraction	To explore how light can be bent by a lens
32	Physical Science	Refraction/Reflection	To compare and contrast refraction and reflection
33	Physical Science	Friction	To explore the relationship between friction and heat
34	Physical Science	Static Electricity	To explore how atoms relate to static electricity
35	Physical Science	Magnetism 1	To explore basic properties of magnets and magnetism
36	Physical Science	Magnetism 2	To explore practical applications of magnetism

Level B (Grade 2)

Lesson	Category	Topic/Focus	Objective
1	Life Science	Plant Structure/Function	To explore how materials move through a plant's system
2	Life Science	Camouflage	To explore how colors and patterns relate to survival
3	Life Science	Classification	To explore how creatures are sorted by characteristics
4	Life Science	Pollination/Germination	To explore some stages in a plant's life cycle
5	Life Science	Seed Dispersal	To explore ways seeds are spread to help plants survive
6	Life Science	Life Cycles	To understand that all living things have life cycles
7	Life Science	Environments	To explore how creatures interact with their environment
8	Life Science	Adaptation	To explore how creatures adapt to their environment
9	Life Science	Structure/Function	To explore how creatures' structure relates to environment
10	Earth Science	Earth Materials	To explore the properties of rocks, soil, water, and air
11	Earth Science	Soil Properties 1	To explore the properties of color and texture in soil
12	Earth Science	Soil Properties 2	To explore the properties of porosity and nutrient values
13	Earth Science	Planets	To explore the properties of the eight major planets
14	Earth Science	Stars	To explore some of the basic properties of stars
15	Earth Science	Earth's Surface	To explore major changes in the Earth's surface
16	Earth Science	Weather 1	To explore wind speed and direction
17	Earth Science	Weather 2	To explore how rainfall and temperature affect climate
18	Earth Science	Weather 3	To explore extreme changes in weather
19	Physical Science	Recycling 1	To explore how recycling helps conserve resources
20	Physical Science	Recycling 2	To further understand the importance of recycling
21	Physical Science	Density	To explore the concept of density
22	Physical Science	Physical Properties	To explore the idea that objects have physical properties
23	Physical Science	Surface Tension	To explore the concept of surface tension
24	Physical Science	Changes in Matter	To explore how matter changes from one state to another
25	Physical Science	Newton's 1st Law	To explore the concept and meaning of inertia
26	Physical Science	Newton's 2nd Law	To explore the relationship of motion, mass, and force
27	Physical Science	Newton's 3rd Law	To explore the concept of action/reaction
28	Physical Science	Air Resistance	To explore how air resistance affects motion
29	Physical Science	Spatial Relationships	To explore the concepts of position and motion
30	Physical Science	Air Pressure	To explore the relationship of air pressure to motion
31	Physical Science	Light Absorption	To explore what happens when light is absorbed
32	Physical Science	Heat Production	To explore two primary ways that heat is produced
33	Physical Science	Heat Movement	To explore the movement of heat
34	Physical Science	Static Electricity	To explore how atoms relate to static electricity
35	Physical Science	Electricity	To explore the difference between open & closed circuits
36	Physical Science	Magnetism	To explore the push and pull of magnetic forces

Level C (Grade 3)

Lesson	Category	Topic/Focus	Objective
1	Life Science	Germination	To explore how seeds germinate/grow
2	Life Science	Water Conservation	To explore how body coverings conserve water
3	Life Science	Eye Function	To explore a simple eye
4	Life Science	Seed Dispersal	To explore ways plants spread seeds
5	Life Science	Plant Structure	To explore how leaves direct rain
6	Life Science	Dehydration	To explore one method of preserving food
7	Life Science	Nervous System	To explore human reaction time
8	Life Science	Circulatory System	To explore the movement of blood
9	Life Science	Skeletal System	To explore the human skeleton
10	Physical Science (Forces)	States of Matter	To explore three basic states of matter
11	Physical Science (Forces)	Surface Tension	To discover how water molecules attract each other
12	Physical Science (Forces)	Absorption	To explore how water is held or absorbed by materials
13	Physical Science (Forces)	Gravity	To discover how gravity affects everything
14	Physical Science (Forces)	Newton's Laws	To explore inertia and action/reaction
15	Physical Science (Forces)	Balance	To explore balance
16	Physical Science (Forces)	Pressure	To explore how force moves objects
17	Physical Science (Forces)	Air Pressure	To explore the force of air pressure
18	Physical Science (Forces)	Torque	To explore how forces change direction
19	Earth Science	Matter	To discover that air is a form of matter
20	Earth Science	Air Pressure	To explore air pressure
21	Earth Science	States of Matter	To explore the three states of matter
22	Earth Science	Waves	To explore the action of waves
23	Earth Science	Erosion	To explore how erosion occurs
24	Earth Science	Sediments	To explore how water separates materials
25	Earth Science	Atmosphere	To explore how light scatters
26	Earth Science	Fossils	To explore how fossils are made
27	Earth Science	Constellations	To explore the concept of star groups
28	Physical Science (Energy/Matter)	Transfer of Energy	To explore how energy moves in waves
29	Physical Science (Energy/Matter)	Sound Waves	To explore how sound waves are amplified
30	Physical Science (Energy/Matter)	Energy Conservation	To explore how energy changes form
31	Physical Science (Energy/Matter)	Images	To explore how a lens affects an image
32	Physical Science (Energy/Matter)	Magnetism	To explore some properties of matter
33	Physical Science (Energy/Matter)	Electromagnetism	To build and use an electromagnet
34	Physical Science (Energy/Matter)	Properties of Matter	To explore the interaction of matter
35	Physical Science (Energy/Matter)	Combustion	To explore the "fire triangle"
36	Physical Science (Energy/Matter)	Indicators	To explore the action of indicators

Level D (Grade 4)

Lesson	Category	Topic/Focus	Objective
1	Life Science	Germination	To explore growth in plants
2	Life Science	Classification	To explore how characteristics are used for identification
3	Life Science	Animal Characteristics	To explore how a bird's feathers repel water
4	Life Science	Ecosystems	To explore the predator/prey relationship
5	Life Science	Plant Structure	To explore images as a scientific tool
6	Life Science	Food Preservation	To explore how water affects spoilage
7	Life Science	Body Function	To explore the sense of touch
8	Life Science	Body Function	To explore the nervous system
9	Life Science	Body Structure	To explore the major bones of the body
10	Physical Science (Forces)	Crystals	To explore changes in matter and forces that cause them
11	Physical Science (Forces)	Surface Tension	To explore water molecule attraction
12	Physical Science (Forces)	Air Pressure	To explore air as a form of matter
13	Physical Science (Forces)	Gravity	To explore how gravity works
14	Physical Science (Forces)	Inertia	To explore inertia and movement
15	Physical Science (Forces)	Torque	To explore how torque can change the direction of force
16	Physical Science (Forces)	Buoyancy	To explore how things float
17	Physical Science (Forces)	Force Transfer	To explore how forces can be moved
18	Physical Science (Forces)	Flight	To explore how forces allow flight
19	Earth Science	Air Pressure	To explore air pressure as a force
20	Earth Science	Air Pressure	To explore the effects of air pressure
21	Earth Science	Barometers	To explore how air pressure is measured
22	Earth Science	Water Cycle	To explore physical changes in water
23	Earth Science	Geology	To explore sedimentary rock
24	Earth Science	Earth's Structure	To explore core sampling
25	Earth Science	Volcanoes	To explore the action of volcanoes
26	Earth Science	Fossils	To explore fossilization
27	Earth Science	Crystallization	To explore how groundwater forms cave formations
28	Physical Science (Energy/Matter)	Wave Structure	To explore the parts and functions of waves
29	Physical Science (Energy/Matter)	Refraction	To explore properties of light
30	Physical Science (Energy/Matter)	Lenses	To explore how lenses affect images
31	Physical Science (Energy/Matter)	Sound	To explore how sound is made
32	Physical Science (Energy/Matter)	Static Electricity	To explore static electricity
33	Physical Science (Energy/Matter)	States of Matter	To explore changes in states of matter
34	Physical Science (Energy/Matter)	Endothermic Change	To explore endothermic change
35	Physical Science (Energy/Matter)	Exothermic Change	To explore exothermic change
36	Physical Science (Energy/Matter)	Indicators	To explore how an acid or base affects an indicator

Level E (Grade 5)

Lesson	Category	Topic/Focus	Objective
1	Life Science	Life Cycles	To explore the life cycle of yeast
2	Life Science	Growth	To explore one aspect of a life cycle
3	Life Science	Stimulus/Response	To explore how plants respond to their environment
4	Life Science	Transpiration	To explore how water moves through plants
5	Life Science	Plant Reproduction	To explore reproduction by dissecting a flower
6	Life Science	Diffusion	To explore how materials cross membranes
7	Life Science	Eye Structure	To explore how an image is created in your eye
8	Life Science	Vision	To explore how the brain and eyes work together
9	Life Science	Joint Structure	To explore how our joints function
10	Physical Science (Forces)	Molecules	To explore the structure of molecules
11	Physical Science (Forces)	Surface Tension	To explore how water molecules behave
12	Physical Science (Forces)	Composition of Matter	To explore the space inside matter
13	Physical Science (Forces)	Velocity	To explore how gravity can be defeated
14	Physical Science (Forces)	Inertia	To explore how inertia relates to moving objects
15	Physical Science (Forces)	Torque	To explore how “center of gravity” affects motion
16	Physical Science (Forces)	The Bernoulli Principle	To explore air pressure and lift
17	Physical Science (Forces)	Lamination	To explore how structural changes increase strength
18	Physical Science (Forces)	Simple Machines	To explore the operation of a pulley
19	Earth Science	Air Pressure	To explore what causes air pressure
20	Earth Science	Water Cycle	To explore different states of water
21	Earth Science	Glaciers	To explore one way glaciers affect Earth’s surface
22	Earth Science	Weather Patterns	To explore why deserts mostly occur on one side of mountains
23	Earth Science	Geology	To explore the properties of an Earth material
24	Earth Science	Geology	To explore how Earth forces change materials
25	Earth Science	Geology	To explore another Earth material
26	Earth Science	Convection	To explore how convection currents create circulation
27	Earth Science	Planetary Movement	To explore Earth’s spin
28	Physical Science (Energy/Matter)	Waves	To explore the characteristics of waves
29	Physical Science (Energy/Matter)	Reflection	To explore one characteristic of light
30	Physical Science (Energy/Matter)	Sound	To explore how sound travels
31	Physical Science (Energy/Matter)	Magnetism	To explore how a compass works
32	Physical Science (Energy/Matter)	Electricity	To explore the movement of electrons
33	Physical Science (Energy/Matter)	Crystals	To explore the formation of crystals
34	Physical Science (Energy/Matter)	Chemical Reactions	To explore a chemical reaction
35	Physical Science (Energy/Matter)	Lenses	To explore how a lens affects light
36	Physical Science (Energy/Matter)	Indicators	To explore how indicators show changes

Level F (Grade 6)

Lesson	Category	Topic/Focus	Objective
1	Life Science	Seed Structure	To explore the structure and purpose of seeds
2	Life Science	Seed Dispersal	To explore how seeds are scattered around
3	Life Science	Chlorophyll	To explore the chemical responsible for photosynthesis
4	Life Science	Decomposition	To explore how organisms decompose after death
5	Life Science	Preservatives	To explore how preservatives affect decomposition
6	Life Science	Classification	To explore grouping objects by characteristics
7	Life Science	Camouflage	To explore how color affects survival of prey animals
8	Life Science	Eye Dominance	To explore brain function through eye dominance
9	Life Science	Eye Structure	To explore similarities between the eye and a camera
10	Physical Science (Forces)	Half Life	To explore how radioactive elements break down
11	Physical Science (Forces)	Cohesion	To explore how elements are held together
12	Physical Science (Forces)	Stress	To explore how stress affects materials
13	Physical Science (Forces)	Gravity	To explore how gravity affects objects
14	Physical Science (Forces)	Momentum	To explore how forces are transferred
15	Physical Science (Forces)	Torque	To explore center of gravity and torque
16	Physical Science (Forces)	Buoyancy	To explore why some objects float
17	Physical Science (Forces)	Compression	To explore compression and how force is transferred
18	Physical Science (Forces)	Machines	To explore how machines multiply force and change its direction
19	Earth Science	Air Pressure	To explore air pressure
20	Earth Science	Air Pressure	To explore changes in air pressure
21	Earth Science	Weather	To explore an important weather instrument
22	Earth Science	Geology	To explore properties of igneous rock
23	Earth Science	Chemical Weathering	To explore a unique form of erosion
24	Earth Science	Groundwater	To explore how water is filtered underground
25	Earth Science	Glaciers	To explore how glaciers are formed
26	Earth Science	Planets	To make a model of a planet
27	Earth Science	Earth Structure	To explore Earth's layers
28	Physical Science (Energy/Matter)	Light	To explore light waves and color
29	Physical Science (Energy/Matter)	Lenses	To explore how a lens bends light
30	Physical Science (Energy/Matter)	Sound	To explore how sound is made
31	Physical Science (Energy/Matter)	Magnetism	To explore magnets and magnetic fields
32	Physical Science (Energy/Matter)	Static Electricity	To explore some properties of electricity
33	Physical Science (Energy/Matter)	Thermodynamics	To explore a physical change
34	Physical Science (Energy/Matter)	Chemical Change	To explore a chemical change using a hand warmer
35	Physical Science (Energy/Matter)	Corrosion	To explore the speed of chemical reactions
36	Physical Science (Energy/Matter)	Indicators	To explore how indicators show changes

Level G (Grade 7)

Lesson	Category	Topic/Focus	Objective
1	Life Science	Respiration	To explore how seeds use energy and oxygen
2	Life Science	Plant Reproduction	To explore how plants reproduce
3	Life Science	Food Energy	To discover that energy is stored in food
4	Life Science	Nutrients	To explore testing food for a nutrient
5	Life Science	Diffusion	To explore how materials pass through a cell's membrane
6	Life Science	Blood	To explore blood composition
7	Life Science	Classification	To classify animals by eye location
8	Life Science	Human Anatomy	To explore the structure of the spine
9	Life Science	Disease Transmission	To explore how disease can spread so fast and so far
10	Physical Science (Forces)	Magnetism	To explore magnetic fields
11	Physical Science (Forces)	Scientific Experiments	To explore how experiments enhance understanding
12	Physical Science (Forces)	Center of Gravity	To explore how objects balance
13	Physical Science (Forces)	Torque & Equilibrium	To explore how forces can balance
14	Physical Science (Forces)	Kinetic Energy	To explore how forces affect objects
15	Physical Science (Forces)	Buoyancy	To explore why some objects float
16	Physical Science (Forces)	Transfer of Forces I	To explore how strength is related to structure
17	Physical Science (Forces)	Transfer of Forces II	To explore how strength is related to shape
18	Physical Science (Forces)	Flight	To explore factors that affect flight
19	Earth Science	Atmospheric Pressure	To explore the force of air pressure
20	Earth Science	Weather	To explore clouds' relationship to weather
21	Earth Science	Remote Sensing	To explore how inaccessible locations are mapped
22	Earth Science	Earth Materials	To explore the properties of coal
23	Earth Science	Solar System I	To explore relative distances between planets
24	Earth Science	Solar System II	To explore relative sizes of planets
25	Earth Science	Constellations	To explore the star patterns seen from Earth
26	Earth Science	Gravitational Fields	To explore how gravity affects objects
27	Earth Science	Earth Structure	To explore the layers of the Earth
28	Physical Science (Energy/Matter)	Light Spectrum	To explore different types of light
29	Physical Science (Energy/Matter)	Sound	To explore how sound is made
30	Physical Science (Energy/Matter)	Properties of Light	To explore how materials affect light
31	Physical Science (Energy/Matter)	Periodic Table	To explore the periodic table
32	Physical Science (Energy/Matter)	Electricity	To explore circuits, conductors, and insulators
33	Physical Science (Energy/Matter)	States of Matter	To compare physical and chemical change
34	Physical Science (Energy/Matter)	Combustion	Explore the basic principles of combustion and fire
35	Physical Science (Energy/Matter)	Chemical Change	To explore how surface area affects oxidation
36	Physical Science (Energy/Matter)	Indicators	To explore how indicators work

Level H (Grade 8)

Lesson	Category	Topic/Focus	Objective
1	Life Science	Life Cycles	To conduct a controlled experiment
2	Life Science	Plant Preservation	To explore how plants are preserved for future study
3	Life Science	Classification	To explore grouping by characteristics
4	Life Science	Genetics	To examine a sample of DNA
5	Life Science	Mitosis	To explore how chromosomes stay constant when cells divide
6	Life Science	Meiosis	To explore how cell division creates gametes, determining gender
7	Life Science	Fertilization	To explore how fertilization restores the right # of chromosomes
8	Life Science	Biological Uniqueness	To explore human differences by observing fingerprints
9	Life Science	Genetics	To explore how gene combinations create unique individuals
10	Physical Science (Forces)	Scientific Models	To explore changes in our understanding of the atom
11	Physical Science (Forces)	Surface Tension	To explore how water molecules attract each other
12	Physical Science (Forces)	Energy Conversion	To explore converting kinetic energy to potential energy
13	Physical Science (Forces)	Forces and Energy	To explore the energy efficiency of a force
14	Physical Science (Forces)	Energy Conversion	To explore converting kinetic energy to potential energy
15	Physical Science (Forces)	Gravity	To explore an object's center of gravity
16	Physical Science (Forces)	Buoyancy	To explore how density affects buoyancy
17	Physical Science (Forces)	Transfer of Forces	To explore how structure can transfer forces
18	Physical Science (Forces)	Inertia	To explore how design affects force
19	Earth Science	Air Pressure I	To explore the balance of forces
20	Earth Science	Air Pressure II	To explore how heat affects air pressure
21	Earth Science	Global Magnetism	To explore magnetic fields
22	Earth Science	Geosynchronous Orbit	To explore ways objects move in space
23	Earth Science	Topography	To explore topographic maps
24	Earth Science	Identifying rocks & minerals I	To explore testing methods for rocks and minerals
25	Earth Science	Identifying rocks & minerals II	To explore more testing methods for rocks and minerals
26	Earth Science	Natural Resources	To explore the challenges of recovering natural resources
27	Earth Science	Fossils	To explore how scientists map a "dig"
28	Physical Science (Energy/Matter)	Ultraviolet Light	To explore properties of ultraviolet light
29	Physical Science (Energy/Matter)	Refraction	To explore how refraction affects light
30	Physical Science (Energy/Matter)	Sound	To explore sound using homemade instruments
31	Physical Science (Energy/Matter)	Density	To explore how displacing matter creates buoyancy
32	Physical Science (Energy/Matter)	Electricity	To explore circuits and conductivity
33	Physical Science (Energy/Matter)	Laws of Matter	To explore two primary laws of matter
34	Physical Science (Energy/Matter)	Types of Energy	To explore how energy converts to motion
35	Physical Science (Energy/Matter)	Changes in Matter	To explore chemical and physical change
36	Physical Science (Energy/Matter)	Indicators	To explore how indicators work