Suggested Order for Using 5E Materials

Teachers often inquire about the "right" way to teach 5E lessons. There is no "correct way" to teach them. Every state and district has different topic sequencing suggestions, which is why every Kesler Science 5E lessons is designed independently of all others.

Kesler Science materials offer "guided flexibility" for your classroom. The many components of each 5E lesson give you the flexibility to accommodate different needs of your students.

The accompanying pages show a suggested sequence for teaching middle school and upper elementary topics. Please refer to your state and district standards when developing your own scope and sequence. The beginning of the year is a great time to focus on lab safety, classroom expectations, and topics like graphing, measurement, and the scientific method. There are station labs for those topics, but not full 5E lessons.

Each full 5E lesson takes about eight to ten days, if taught with fidelity. However, there are outliers on each end of that timetable. Not every student-choice project or inquiry lab will take two to three days, and some classes get faster at station labs as the year progresses.

A typical 5E lesson could be ordered like this, assuming 45-minute class periods.

Day 1		Engagement	activity, objectives, access prior knowledge
Day 2		Exploration	station lab day (input stations)
Day 3			station lab day (output stations)
Day 4		Explanation	notes, interactive activities, INB templates, journaling, formative assessments
Day 5			
Day 6		Elaboration	student choice projects (optional inquiry labs)
Day 7			
Day 8			
Day 9		Evaluation	summative test review (escape rooms work well here)
Day 10			summative test

Suggested Sequence of 5th Grade 5E Lessons

NGSS Topics

5th Grade NGSS Topics

There are 6 total lessons available for physical science, 2 total lessons for life science, and 5 total lessons for Earth science (grand total of 13 lessons.)

A typical year only has 40 weeks, with some weeks lost to testing. Use your local guidelines to choose those lessons that will address your standards in the time you have.

Physical Science

- 5-PS1-1: Particles of Matter
- 5-PS1-2: Conservation of Mass
- 5-PS1-3: Properties of Matter
- 5-PS1-4: Formation of New Substances
- 5-PS2-1: Gravitational Force
- 5-PS3-1: The Sun's Energy

Life Science

- 5-LS1-1: Plant Growth
- 5-LS2-1: Cycling of Matter in an Ecosystem

Earth Science

- 5-ESS1-1: Brightness of the Sun and Stars
- 5-ESS1-2: Observable Patterns of the Sky
- 5-ESS2-1: Earth's Spheres
- 5-ESS2-2: Distribution of Water on Earth
- 5-ESS3-1: Protect Earth's Resources

Suggested Sequence

- Properties of Matter
- Particles of Matter
- Formation of New Substances
- Conservation of Mass
- The Sun's Energy
- Plant Growth
- Cycling of Matter in an Ecosystem
- Gravitational Force
- Observable Patterns of the Sky
- Brightness of the Sun and Stars
- Earth's Spheres
- Distribution of Water on Earth
- Protect Earth's Resources

Suggested Sequence for 5th Grade 5E Lessons

TEKS Topics

5th Grade TEKS Topics

There are 7 total lessons available for physical science, 6 total lessons for life science, and 6 total lessons for Earth science (grand total of 19 lessons.)

A typical year only has 40 weeks, with some weeks lost to testing. Use your local guidelines to choose those lessons that will address your standards in the time you have.

Physical Science

- 5.5(A): Classifying Matter
- 5.6(B): Closed Circuits
- 5.5(B): Mixtures
- 5.6(C): Reflection and Refraction
- 5.5(C): Solutions
- 5.6(D): Testing Forces
- 5.6(A): Uses of Energy

Suggested Sequence

- Classifying Matter
- Mixtures
- Solutions
- Uses of Energy
- Closed Circuits
- Reflection and Refraction
- Testing Forces

Earth Science

- 5.7(B): Changes to Earth's Surface
- 5.8(C): Earth's Rotation
- 5.7(A): Sedimentary Rocks and Fossil Fuels
- 5.8(D): The Sun, Earth, and Moon
- 5.8(B): Water Cycle
- 5.8(A): Weather and Climate

- Sedimentary Rocks and Fossil Fuels
- Changes to Earth's Surface
- Weather and Climate
- Water Cycle
- Earth's Rotation
- The Sun, Earth, and Moon

Life Science

- 5.9(B): Energy in Ecosystems
- 5.9(D): Fossil Evidence
- 5.9(C): Impacts on Ecosystem
- 5.10(B): Inherited Traits and Learned Behaviors
- 5.9(A): Living vs. Nonliving
- 5.10(A): Structures and Behaviors

- Living vs. Nonliving
- Energy in Ecosystems
- Impacts on Ecosystem
- Structures and Behaviors
- Inherited Traits and Learned Behaviors
- Fossil Evidence

Suggested Sequence for Middle School 5E Lessons

Physical Science

There are 30 total lessons available for physical science; a typical year only has 40 weeks, with some weeks lost to testing. Use your local guidelines to choose those lessons that will address your standards in the time you have.

Force and Motion
- Unbalanced and Balanced Forces
- Net Force
- Motion Graphing
- Speed, Velocity, and Acceleration
- Simple Machines
- Work
- Newton's Laws

Chemistry
- Solids, Liquids, and Gases
- Properties of Water
- Elements and Compounds
- Metals, Nonmetals, and Metalloids
- Periodic Table Trends
- Structure of Atoms
- Molecules
- Counting Atoms and Elements
- Balancing Chemical Equations
- Evidence of Chemical Changes
- Chemical Bonding
- Organic Compounds
- Acids and Bases

Energy
- Advantages and Disadvantages of Renewable Energy Sources
- Advantages and Disadvantages of Non-Renewable Energy Sources
- Conduction, Convection, and Radiation
- Potential and Kinetic Energy
- Energy Transformations
- Properties of Waves
- Sound Waves
- Visible Light (Reflection, Refraction, Diffraction, Absorption)
- Electric and Magnetic Forces
- Photosynthesis (could also be integrated into life science or chemistry)

Suggested Sequence for Middle School 5E Lessons

Earth and Space Science

There are 32 total lessons available for Earth and space science; a typical year only has 40 weeks, with some weeks lost to testing. Use your local guidelines to choose those lessons that will address your standards in the time you have.

Space

- Day/Night, Seasons
- Tides
- The Lunar Cycle
- Eclipses
- Solar System Arrangement and Planets
- Asteroids, Meteors, and Comets
- Galaxies and Light Years
- H-R Diagram
- Electromagnetic Spectrum
- Life Cycle of a Star
- Big Bang Theory

Earth

- Continental Drift Theory
- Plate Boundaries
- Earth's Layers
- Properties of Minerals
- Rock Cycle
- Earthquakes
- Volcanoes
- Erosion and Deposition
- Density of an Irregular-shaped Object
- Density of a Regular-shaped Object
- Oceans
- Geologic Time Scale
- Fossil Records
- Topographic Maps

Weather

- Water Cycle
- Convection Currents
- Weather Maps and High and Low Pressure
- Atmosphere
- Catastrophic Events
- Hurricane Formation

Suggested Sequence for Middle School 5E Lessons

Life Science

There are 32 total lessons available for life science; a typical year only has 40 weeks, with some weeks lost to testing. Use your local guidelines to choose those lessons that will address your standards in the time you have.

Structure of Life
- Characteristics of Organisms
- Cell Theory
- Plant Cells and Animal Cells
- Prokaryotic and Eukaryotic Cells
- Mitosis and Meiosis
- Inherited Traits
- Dichotomous Keys
- Sexual and Asexual Reproduction
- Genetics: Dominant and Recessive Genes, Punnett Squares

Body Systems
- Skeletal System
- Circulatory System
- Muscular System
- Respiratory System
- Digestive System
- Nervous System
- Excretory System
- Endocrine System

Interactions in an Ecosystem
- Biomes
- Abiotic and Biotic Factors
- Food Chains and Food Webs
- Energy Pyramids
- Organism Relationships (parasite/host, predator/prey, consumer/producer, decomposer)
- Classification
- Biodiversity
- Symbiosis - Mutualism, Commensalism, Parasitism
- Natural Selection
- Succession
- Nitrogen Cycle
- Carbon Cycle
- Human Impact on Groundwater and Freshwater (watersheds)
- Short- and Long-Term Environmental Impacts
- Turgor Pressure and Tropisms