



## **Pre-Built Course: Conceptual Integrated Science, Full Textbook**

We offer pre-built courses for all of our titles. A pre-built course works well when using Conceptual Academy much like the video version of a traditional textbook. Your students will have access to all the content listed within this pre-built course (see below). This provides flexibility from one semester to the next. For each semester you might direct students to be responsible for only select lessons or chapter sections.

Once a pre-built course is uploaded to your instructor's account, you can modify it as you see fit to "make it your own". This includes updating the FYI pages and setting dates for each lesson so that students know what to study by when. You can also remove select chapter sections you are not wanting students to see.

For a Conceptual Academy course aligned more precisely to a particular class schedule, we recommend you contact us to request a customized course. To learn more about customizing your course, please look to the help documents within your instructor profile page.

### **Conceptual Integrated Science, 3e**

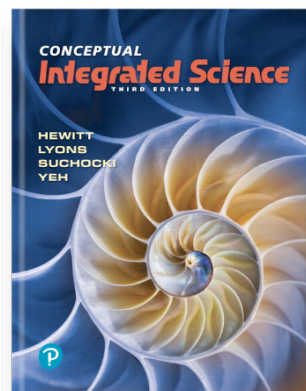
**Syllabus: Full Textbook**  
**5 Units; 29 Lessons**  
**388 Videos**

**Unit : A: Physics**  
**Unit : B: Chemistry**  
**Unit : C: Biology**  
**Unit : D: Earth Science**  
**Unit : E: Astronomy**

**Unit : A: Physics**  
Lesson 1 (your date)

FYI page

- 1.1 A Brief History of Advances in Science
- 1.2 Mathematics and Conceptual Integrated Science
- 1.3 The Scientific Method--a Classic Tool
- 1.4 The Scientific Hypothesis
- 1.5 The Scientific Experiment
- 1.6 Facts, Laws, and Theories
- 1.7 Science Has Limitations
- 1.8 Science, Art, and Religion
- 1.9 Technology: The Practical Use of Science
- 1.10 The Natural Sciences: Physics, Chemistry, Biology, Earth Science, and Astronomy



1.11 Integrated Science  
1.A An Investigation of Sea Butterfiles  
Lesson Reading Quiz  
Homework Practice Session

Lesson 2 (your date)

FYI page  
2.1 Aristotle on Motion  
2.2 Galileo's Concept of Inertia  
2.3 Mass--A Measure of Inertia  
2.4 Forces  
2.5 The Equilibrium Rule  
2.6 Support Force  
2.7 Equilibrium of Moving Things  
2.8 The Force of Friction  
2.A Friction Is Universal  
2.9 Speed and Velocity  
2.10 Acceleration  
2.B Hang Time  
Lesson Reading Quiz  
Homework Practice Session

Lesson 3 (your date)

FYI page  
3.1 Newton's First Law of Motion  
3.2 Newton's Second Law of Motion  
3.A Gliding  
3.3 Forces and Interactions  
3.4 Newton's Third Law of Motion  
3.B Animal Locomotion  
3.5 Vectors  
3.6 Summary of Newton's Laws  
Lesson Reading Quiz  
Homework Practice Session

Lesson 4 (your date)

FYI page  
4.1 Momentum  
4.2 Impulse  
4.3 Impulse-Momentum Relationship  
4.A The Impulse-Momentum Relationship in Sports  
4.4 Conservation of Momentum  
4.5 Energy  
4.6 Power  
4.7 Potential Energy  
4.8 Kinetic Energy  
4.9 The Work-Energy Theorem  
4.10 Conservation of Energy  
4.B Glucose: Energy for Life  
4.11 Machines



Lesson Reading Quiz  
Homework Practice Session

Lesson 5 (your date)

FYI page

- 5.1 The Legend of the Falling Apple
  - 5.2 The Fact of the Falling Moon
  - 5.3 Newton's Law of Universal Gravitation
  - 5.A Your Biological Gravity Detector
  - 5.4 Gravity and Distance: The Inverse-Square Law
  - 5.5 The Universal Gravitational Constant
  - 5.6 Weight and Weightlessness
  - 5.B Center of Gravity of People
  - 5.7 Gravity Can Be a Centripetal Force
  - 5.8 Projectile Motion
  - 5.9 Projectile Altitude and Range
  - 5.10 The Effect of Air Drag on Projectiles
  - 5.11 Fast-Moving Projectiles-Satellites
  - 5.12 Elliptical Orbits
  - 5.C Escape Speed
- Lesson Reading Quiz  
Homework Practice Session

Lesson 6 (your date)

FYI page

- 6.1 The Kinetic Molecular Theory of Matter
  - 6.2 Temperature
  - 6.3 Absolute Zero
  - 6.4 What Is Heat?
  - 6.5 The Laws of Thermodynamics
  - 6.A Entropy: The Universal Tendency Toward Disorder
  - 6.6 Specific Heat Capacity
  - 6.B The Specific Heat Capacity of Water Affects Global Temperature
  - 6.7 Thermal Expansion
  - 6.10 Heat Transfer: Radiation
  - 6.8 Heat Transfer: Conduction
  - 6.9 Heat Transfer: Convection
- Lesson Reading Quiz  
Homework Practice Session

Lesson 7 (your date)

FYI page

- 7.1 Electric Force and Charge
- 7.2 Coulomb's Law
- 7.3 Electric Field
- 7.4 Electric Potential
- 7.5 Conductors and Insulators
- 7.6 Voltage Sources
- 7.7 Electric Current
- 7.8 Electrical Resistance



7.9 Ohm's Law  
7.10 Electric Circuits  
7.A Electric Shock  
7.11 Electric Power  
7.12 The Magnetic Force  
7.13 Magnetic Fields  
7.B Earth's Magnetic Field and the Ability of Organisms to Sense It  
7.14 Magnetic Forces on Moving Charges  
7.15 Electromagnetic Induction  
Lesson Reading Quiz  
Homework Practice Session

#### Lesson 8 (your date)

FYI page  
8.1 Vibrations and Waves  
8.2 Wave Motion  
8.3 Transverse and Longitudinal Waves  
8.4 The Nature of Sound  
8.A Sensing Pitch  
8.5 Resonance  
8.6 The Nature of Light  
8.7 Reflection  
8.8 Transparent and Opaque Materials  
8.9 Color  
8.B Mixing Colored Lights  
8.10 Refraction  
8.11 Diffraction  
8.12 Interference  
8.13 The Doppler Effect  
8.C The Doppler Shift and the Expanding Universe  
8.14 The Wave-Particle Duality  
Lesson Reading Quiz  
Homework Practice Session

#### **Unit : B: Chemistry**

##### Lesson 1 (your date)

FYI page  
9.A Atoms Are Ancient and Empty  
9.1 The Elements  
9.2 Protons and Neutrons  
9.3 The Periodic Table  
9.B Physical and Conceptual Models  
9.4 Identifying Atoms Using the Spectroscope  
9.5 The Quantum Hypothesis  
9.6 Electron Waves  
9.7 The Noble Gas Shell Model  
Lesson Reading Quiz  
Homework Practice Session

##### Lesson 2 (your date)



FYI page  
10.1 Radioactivity  
10.A Radiation Dosage  
10.2 The Strong Nuclear Force  
10.3 Half-Life and Transmutation  
10.B Radiometric Dating  
10.4 Nuclear Fission  
10.5 Mass-Energy Equivalence  
10.C Nuclear Fusion  
Lesson Reading Quiz  
Homework Practice Session

### Lesson 3 (your date)

FYI page  
11.1 Chemistry: The Central Science  
11.2 The Submicroscopic View of Matter  
11.3 Phase Changes  
11.4 Physical and Chemical Properties  
11.5 Determining Physical and Chemical Changes  
11.6 Elements to Compounds  
11.7 Naming Compounds  
11.A The Advent of Nanotechnology  
Lesson Reading Quiz  
Homework Practice Session

### Lesson 4 (your date)

FYI page  
12.1 Electron-Dot Structures  
12.2 The Ionic Bond  
12.A Metals from Earth  
12.3 The Covalent Bond  
12.4 Polar Covalent Bonds  
12.5 Molecular Polarity  
12.6 Molecular Attractions  
12.B Mixtures  
12.7 Describing Solutions  
12.8 Solubility  
Lesson Reading Quiz  
Homework Practice Session

### Lesson 5 (your date)

FYI page  
13.1 Chemical Equations  
13.2 Energy and Chemical Reactions  
13.3 Reaction Rates  
13.A Catalysts (Earth Science, Biology)  
13.4 Acids Donate Protons; Bases Accept Them  
13.5 Acidic, Basic, and Neutral Solutions  
13.B Acid Rain  
13.6 Losing and Gaining Electrons



13.C Batteries and Fuel Cells (Physics)  
13.7 Corrosion and Combustion  
Lesson Reading Quiz  
Homework Practice Session

Lesson 6 (your date)

FYI page  
14.1 Hydrocarbons  
14.2 Unsaturated Hydrocarbons  
14.3 Functional Groups  
14.4 Alcohols, Phenols, and Ethers  
14.5 Amines and Alkaloids  
14.6 Carbonyl Compounds  
14.A Drug Action  
14.7 Polymers  
Lesson Reading Quiz  
Homework Practice Session

**Unit : C: Biology**

Lesson 1 (your date)

FYI page  
15.1 Characteristics of Life  
15.A Macromolecules Needed for Life  
15.2 Cell Types: Prokaryotic and Eukaryotic  
15.B The Microscope  
15.3 Tour of a Eukaryotic Cell  
15.4 The Cell Membrane  
15.5 Transport In and Out of Cells  
15.6 Cell Communication  
15.7 How Cells Reproduce  
15.8 How Cells Use Energy  
15.C ATP and Chemical Reactions in Cells  
15.9 Photosynthesis  
15.10 Cellular Respiration and Fermentation  
Lesson Reading Quiz  
Homework Practice Session

Lesson 2 (your date)

FYI page  
16.1 What Is a Gene?  
16.2 Chromosomes: Packages of Genetic Information  
16.A The Structure of DNA  
16.3 DNA Replication  
16.4 How Proteins Are Built  
16.5 Genetic Mutations  
16.B How Radioactivity Causes Genetic Mutations  
16.6 Meiosis and Genetic Diversity  
16.7 Mendelian Genetics  
16.8 More Wrinkles: Beyond Mendelian Genetics  
16.9 The Human Genome



16.10 Cancer: Genes Gone Awry  
16.C Environmental Causes of Cancer  
16.11 Transgenic Organisms and Cloning  
16.12 DNA Technology-What Could Possibly Go Wrong?  
Lesson Reading Quiz  
Homework Practice Session

Lesson 3 (your date)

FYI page  
17.1 The Origin of Life  
17.2 Early Life on Earth  
17.3 Charles Darwin and The Origin of Species  
17.4 How Natural Selection Works  
17.5 Adaptation  
17.6 Evolution and Genetics  
17.7 How Species Form  
17.8 Evidence of Evolution  
17.9 The Evolution of Humans  
17.A Did Life on Earth Originate on Mars?  
17.B Staying Warm and Keeping Cool  
17.C Fossils: Earth's Tangible Evidence of Evolution  
Lesson Reading Quiz  
Homework Practice Session

Lesson 4 (your date)

FYI page  
18.1 Classifying Life  
18.2 The Three Domains of Life  
18.3 Bacteria  
18.4 Archaea  
18.5 Protists  
18.6 Plants  
18.A Moving Water Up a Tree  
18.7 Fungi  
18.8 Animals  
18.B Coral Bleaching and Ocean Acidification  
18.C How Birds Fly  
18.9 Viruses and Prions  
Lesson Reading Quiz  
Homework Practice Session

Lesson 5 (your date)

FYI page  
19.1 Organization of the Human Body  
19.2 Homeostasis  
19.3 The Brain  
19.4 The Nervous System  
19.5 How Neurons Work  
19.A How Fast Can Action Potentials Travel?  
19.B Endorphins



19.6 The Senses  
19.7 Hormones  
19.8 Reproduction and Development  
19.9 The Skeleton and Muscles  
Lesson Reading Quiz  
Homework Practice Session

#### Lesson 6 (your date)

FYI page  
20.1 Integration of Body Systems  
20.2 The Circulatory System  
20.A Hemoglobin  
20.3 Respiration  
20.4 Digestion  
20.5 Nutrition, Exercise, and Health  
20.B Low-Carb Versus Low-Cal Diets  
20.6 Excretion and Water Balance  
20.7 Keeping the Body Safe: Defense Systems  
Lesson Reading Quiz  
Homework Practice Session

#### Lesson 7 (your date)

FYI page  
21.1 Organisms and Their Environment  
21.2 Population Ecology  
21.3 Human Population Growth  
21.4 Species Interactions  
21.5 Kinds of Ecosystem  
21.A Materials Cycling in Ecosystems  
21.6 Energy Flow in Ecosystems  
21.B Energy Leaks When Organisms Eat  
21.7 Change in an Ecosystem  
Lesson Reading Quiz  
Homework Practice Session

### **Unit : D: Earth Science**

#### Lesson 1 (your date)

FYI page  
22.1 Earth Science Is an Integrated Science  
22.2 Earth's Compositional Layers  
22.A Earth Developed Layers When It Was Young, Hot, and Molten  
22.3 Earth's Structural Layers  
22.4 Continental Drift-An Idea Before Its Time  
22.5 Seafloor Spreading  
22.C Magnetic Stripes Are Evidence of Seafloor Spreading  
22.6 The Theory of Plate Tectonics  
22.D What Forces Drive the Plates?  
22.7 Plate Boundaries  
22.E Life In the Trenches  
Lesson Reading Quiz





Homework Practice Session  
22.B Using Seismology to Explore Earth's Interior

Lesson 2 (your date)

FYI page  
23.1 What Is a Mineral?  
23.2 Mineral Properties  
23.3 Types of Minerals  
23.A The Silicate Tetrahedron  
23.4 How Do Minerals Form?  
23.5 What Is Rock?  
23.6 Igneous Rock  
23.7 Sedimentary Rock  
23.B Coal  
23.8 Metamorphic Rock  
23.9 The Rock Cycle  
23.C Earth's History Is Written In Its Rocks  
Lesson Reading Quiz  
Homework Practice Session

Lesson 3 (your date)

FYI page  
24.1 A Survey of the Earth  
24.2 Folds and Faults  
24.3 Mountains  
24.4 Plains and Plateaus  
24.5 Earth's Waters  
24.6 The Ocean  
24.A The Composition of Ocean Water  
24.7 Fresh Water  
24.8 Glaciers  
24.B Water Pollution  
Lesson Reading Quiz  
Homework Practice Session

Lesson 4 (your date)

FYI page  
25.1 Processes That Sculpt the Earth: Weathering, Erosion, and Deposition  
25.A Weathering  
25.B Soil  
25.2 The Impact of Running Water  
25.3 Glaciers-Earth's Bulldozers  
25.4 The Effects of Gravity Alone-Mass Movement  
25.5 Groundwater Erodes Rock Making Caves and Caverns  
25.6 Wave Effects  
25.7 Wind-Agent of Change  
Lesson Reading Quiz  
Homework Practice Session

Lesson 5 (your date)



FYI page  
26.1 The Atmosphere  
26.A Atmospheric Pressure  
26.2 The Structure of the Atmosphere  
26.B Heating the Atmosphere: Solar Radiation  
26.3 Temperature Depends on Latitude  
26.4 Earth's Tilted Axis: The Seasons  
26.5 Flow of the Atmosphere: Wind  
26.C Wind Chill  
26.6 Local and Global Wind Patterns  
26.D The Coriolis Effect  
26.7 Ocean Currents Distribute Heat  
26.8 Water In the Atmosphere  
26.9 Changing Weather-Air Masses, Fronts, and Cyclones  
Lesson Reading Quiz  
Homework Practice Session

Lesson 6 (your date)

FYI page  
27.1 Earthquakes  
27.2 Tsunami  
27.3 Volcanoes  
27.4 Hurricanes  
27.A Climate Change  
Lesson Reading Quiz  
Homework Practice Session

### **Unit : E: Astronomy**

Lesson 1 (your date)

FYI page  
28.1 The Solar System and Its Formation  
28.2 The Sun  
28.3 The Inner Planets  
28.4 The Outer Planets  
28.A What Makes a Planet Suitable For Life?  
28.5 Earth's Moon  
28.6 Failed Planet Formation  
Lesson Reading Quiz  
Homework Practice Session

Lesson 2 (your date)

FYI page  
29.1 Observing the Night Sky  
29.2 The Brightness and Color of Stars  
29.3 The Hertzsprung-Russell Diagram  
29.4 The Life Cycles of Stars  
29.5 Black Holes  
29.6 Galaxies  
29.A The Search for Extraterrestrial Life



29.7 Looking Back In Time  
29.8 Dark Matter and Dark Energy  
Lesson Reading Quiz  
Homework Practice Session

