

Science 10

Designed to help students achieve the Saskatchewan curricular outcomes for Science 10 in an individualized learning system, this resource includes six workbooks, score keys, tests, and test keys.

The texts required for successful completion of each workbook are:

- ***Earth Science***, 4th Edition, Terrance Egolf and Rachel Santopietro, Bob Jones University Press
- ***Life Science***, 4th Edition, Elizabeth A. Lacy, Bob Jones University Press
- ***Physical Science***, 4th Edition, Terrance Egolf and Rachel Santopietro, Bob Jones University Press

Science 10 provides an introduction into specific fields of science dealing with:

Unit 1A: Climate and Ecosystem Dynamics I

- ❖ Energy in the Atmosphere
 - What is Weather
 - The Radiant Sun
 - The Solar Constant
 - The Greenhouse Effect
 - Factors Affecting the Absorption of Energy
 - The Role of Water in Transferring Energy in the Atmosphere
 - Wind and Weather
 - Weather Data
- ❖ Storms and Weather Prediction
 - Air Masses, Fronts, and Precipitation
 - Severe Weather
 - Winter Storms
 - Thunderstorms
 - Hurricanes
 - Tornadoes
- ❖ What is Climate
 - Environmentalism and Stewardship
 - Climate versus Weather
 - Factors that Affect Climate
 - Classifying Climates
 - Climate Change and Global Warming

Unit 1B: Climate and Ecosystem Dynamics II

- ❖ Relationships in Ecosystems
 - Ecology and Ecosystems
 - Abiotic and Biotic Environments
 - Succession in Ecosystems
 - Limiting Factors
- ❖ Interactions Among Populations
 - Biotic Interactions and Sustainability
 - Carrying Capacity
 - Threats to Biodiversity and Sustainability
 - Human Effects on Sustainability
 - Biomes
- ❖ Environmental Systems
 - Feedback Mechanisms
 - Biochemical Cycles

- Carbon Cycle
- Nitrogen Cycle

Unit 2A: Chemical Reactions I

- ❖ Chemical Compounds
 - Safety in the Laboratory
 - Understanding the Rules and Safety Hazard Symbols
 - Chemical, Molecular, and Ionic Compounds
- ❖ Chemical Formulas
 - Oxidation Numbers
 - Writing Chemical Formulas
 - Naming Compounds
- ❖ Chemical Changes
 - Evidences for Chemical Changes
 - Chemical Equations
 - Reaction Helpers: Catalysts and Enzymes
 - Types of Chemical Reactions
 - Chemical Thermodynamics

Unit 2B: Chemical Reactions II

- ❖ Rates of Chemical Reactions
 - Forces that Affect the Rate of a Reaction
 - Temperature
 - Surface Area
 - Concentration
 - Catalysts
- ❖ Acids and Bases
 - Acids
 - Bases
 - Identifying Acids and Bases
 - The pH Scale
 - Differences in pH Values
 - Names and Chemical Formulas of Acids and Bases
 - Acids in the Atmosphere and waterways
 - Effects of Acid Precipitation
 - Neutralization Reactions
 - Neutralizing Heartburn
 - Neutralizing Waterways
- ❖ Acids and Bases

Unit 3A: Uniform Motion

- ❖ Describing Motion
 - One-Dimensional and Two-Dimensional Motion
 - Understanding Uniform Motion
 - Graphing Motion
 - Distance, Time, and Speed
 - Position, Displacement, and Velocity

Unit 3B: Acceleration, Force, and Motion

- ❖ Acceleration, Force, and Motion
 - Graphing Accelerated Motion
 - Analyzing Graphs to Determine the Type of Acceleration
 - Experiencing Acceleration

- Calculating Acceleration
- Direction of Acceleration
- Converting Measurements to Like Units
- Graphing Accelerated Motion
- Force and Motion
- Measuring Forces
- Newton's Laws of Motion
- Balanced and Unbalanced Forces
- Friction
- Diagramming Balanced and Unbalanced Forces
- Newton's Third Law of Motion