

PACING GUIDE

SBI4U (GRADE 12 BIOLOGY)

WEEK ONE

UNIT 1: BIOCHEMISTRY AND MOLECULAR GENETICS

- Scientific Method & Lab Report

Lab Report

- Functional groups
- Macromolecules: Carbs
- Macromolecules: Lipids
- Macromolecules: Proteins
- Macromolecules: Nucleic acids

Quiz: Scientific Method

Assignment: SFA & UFA

- Types of Biochemical Reactions
- Cell Structure
- Fluid mosaic model
- Membrane transport
- Human DNA organization & replication

ISP: The structure of SARS-CoV-2 and entering the cell

WEEK TWO

UNIT 2: MOLECULAR GENETICS

- DNA Repair
- Mutations

Lab: Test for Macromolecules

- Transcription
- Regulation of Gene Expression
- Biochemistry

Assignment: Protein Synthesis (STEM Case)

ISP: Replication, Translation and Making Viral Particles

UNIT 3: METABOLISM

- Metabolism and Energy
- Glycolysis and Fermentation

Assignment: Enzymes (STEM Case)

WEEK THREE

UNIT 3 (CONTINUED)

- Aerobic Respiration: Krebs, ETC, ATP Synthase
- **Lab:** Respiration
- Photosynthesis

Quiz: Respiration

Assignment: Photosynthesis

UNIT 4: HOMEOSTASIS

- Homeostasis & Feedback Mechanism
- Water & Glucose Homeostasis
- Structure & Functions of the Nervous System
- Neurons & Electric Signals
- Hypothalamus & Pituitary

Assignment: Homeostasis

Quiz: Nervous System

WEEK FOUR

UNIT 4 (CONTINUED)

ISP: Homeostasis Affected by SARS-CoV-2

Quiz: Hypothalamus & Pituitary

UNIT 5: POPULATIONS

- Population Characteristics
- Sampling Techniques
- Population Growth
- Human Populations

Assignment: Sampling Technique

Quiz: Population Characteristics

ISP: Country Population Analysis and Infection Rates

ISP: Economy, Society & Policies

ISP Presentations