Texas Biology Scope & Sequence

◈ Unit 1: Scientific and Engineering Practices (Weeks 1–2)

- ❑ Lab safety and procedures
- ❑ Scientific methods and experimental design
- ❑ Using models and technology in investigations
- ❑ TEKS: B.1A–B.1J

◈ Unit 2: Biomolecules and Cell Structure (Weeks 3–5)

- ❑ Structure and function of carbohydrates, proteins, lipids, nucleic acids
- ❑ Compare prokaryotic vs. eukaryotic cells
- ❑ Cell structures and their functions
- ❑ TEKS: B.3A–B.3D, B.4A

◈ Unit 3: Cellular Processes – Energy & Transport (Weeks 6–8)

- ❑ Photosynthesis and cellular respiration
- ❑ ATP production and energy flow
- ❑ Passive and active transport
- ❑ Homeostasis at the cellular level
- ❑ TEKS: B.5A–B.5E

◈ Unit 4: Cell Cycle and Mitosis (Week 9)

- ❑ Cell cycle stages and checkpoints
- ❑ Purpose and process of mitosis
- ❑ Regulation of cell division
- ❑ TEKS: B.6A

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◈ Unit 5: DNA, Protein Synthesis, and Mutations (Weeks 10–12)

- ❑ DNA structure and replication
- ❑ Transcription and translation
- ❑ Types and effects of mutations
- ❑ Gene regulation and expression
- ❑ TEKS: B.7A–B.7D

◈ Unit 6: Genetics and Heredity (Weeks 13–15)

- ❑ Mendelian genetics and Punnett squares
- ❑ Genotype vs. phenotype
- ❑ Monohybrid and dihybrid crosses
- ❑ Complex inheritance patterns
- ❑ TEKS: B.8A–B.8C

◈ Unit 7: Biotechnology and Human Impact (Week 16)

- ❑ Genetic engineering and CRISPR
- ❑ GMOs and bioethics
- ❑ Real-world applications of biotechnology
- ❑ TEKS: B.9A

◈ Unit 8: Theory of Evolution (Weeks 17–19)

- ❑ Natural selection and adaptation
- ❑ Evidence of evolution (fossils, DNA, anatomy)
- ❑ Speciation and genetic variation
- ❑ TEKS: B.10A–B.10D

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◈ Unit 9: Classification and Taxonomy (Weeks 20–21)

- ❑ Modern classification systems
- ❑ Domains and kingdoms of life
- ❑ Dichotomous keys and phylogenetic trees
- ❑ TEKS: B.11A–B.11C

◈ Unit 10: Viruses and Infectious Agents (Week 22)

- ❑ Structure and reproduction of viruses
- ❑ Compare viruses and cells
- ❑ Effects on organisms and ecosystems
- ❑ TEKS: B.11D

◈ Unit 11: Ecology – Energy Flow (Weeks 23–24)

- ❑ Food chains, food webs, and trophic levels
- ❑ Producers, consumers, decomposers
- ❑ 10% energy rule
- ❑ TEKS: B.12A–B.12B

◈ Unit 12: Cycles in Nature (Week 25)

- ❑ Water, carbon, and nitrogen cycles
- ❑ Human influence on cycles
- ❑ TEKS: B.12C

◈ Unit 13: Interactions in Ecosystems (Weeks 26–27)

- ❑ Biotic and abiotic factors
- ❑ Population dynamics and carrying capacity
- ❑ Symbiosis and ecological relationships
- ❑ TEKS: B.12D–B.12F

◈ Unit 14: Biodiversity and Environmental Change (Weeks 28–29)

- ❑ Ecological succession
- ❑ Human activities affecting biodiversity
- ❑ Conservation and sustainability

- ❑ TEKS: B.12G

◈ Unit 15: Plant and Animal Systems (Weeks 30–32)

- ❑ Plant structures and systems
- ❑ Animal body systems and homeostasis
- ❑ Interactions between body systems
- ❑ TEKS: B.13A–B.13C

◈ Unit 16: Feedback and Regulation (Week 33)

- ❑ Positive vs. negative feedback
- ❑ Examples in plants and animals
- ❑ Maintaining internal balance
- ❑ TEKS: B.13D

◈ Unit 17: Cumulative Review & STAAR Prep (Weeks 34–36)

- ❑ Spiral review of all TEKS
- ❑ Practice assessments and data analysis
- ❑ Final project, performance task, or exam
- ❑ TEKS: Review of B.1–B.13

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Ongoing Throughout the Year

- ❑ Data interpretation, lab reporting, and modeling
- ❑ Vocabulary and academic language
- ❑ Cross-curricular connections with math and environmental science
- ❑ Scientific reading and writing skills