TCAP Alternate End-of-Course Biology

Alternate Science Testing Structure

The testing structure for science reflects both the number of operational assessment items and the number of field test assessment items.

Course	Administration Window*
Biology	Multiple untimed sessions • 24 multiple choice items (20 operational items and 4 field test items)

* Teachers may administer the assessment in as many sessions as necessary throughout the entire administration window.

TCAP Alternate Biology End-of-Course Blueprint

The blueprints reflect only operational assessment items.

Biology			
Content		**# of items**	**% of test**
LS1 – From Molecules to Organisms: Structures and Processes		**7-9**	**35%-45%**
BIO1.LS1.1	Compare and contrast existing models, identify patterns, and use structural and functional evidence to analyze the characteristics of life. Engage in argument about the designation of viruses as nonliving based on these characteristics.		
BIO1.LS1.3	Integrate evidence to develop a structural model of a DNA molecule. Using the model, develop and communicate an explanation for how DNA serves as a template for self-replication and encodes biological information.		
BIO1.LS1.6	Create a model for the major events of the eukaryotic cell cycle, including mitosis. Compare and contrast the rates of cell division in various eukaryotic cell types in multicellular organisms.		
BIO1.LS1.8	Create a model of photosynthesis demonstrating the net flow of matter and energy into a cell. Use the model to explain energy transfer from light energy into stored chemical energy in the product.		
LS2 – Ecosystems: Interactions, Energy and Dynamics		**7-9**	**35%-45%**
BIO1.LS2.2	Create a model tracking carbon atoms between inorganic and organic molecules in an ecosystem. Explain human impacts on climate based on this model.		
BIO1.LS2.3	Analyze through research the cycling of matter in our biosphere and explain how biogeochemical cycles are critical for ecosystem function.		
BIO1.LS2.4	Analyze data demonstrating the decrease in biomass observed in each successive trophic levels. Construct an explanation considering the laws of conservation of energy and matter and represent this phenomenon in a mathematical model to describe the transfer of energy and matter between trophic levels		
BIO1.LS2.5	Analyze examples of ecological succession, identifying and explaining the order of events responsible for the formation of a new ecosystem in response to extreme fluctuations in environmental conditions or catastrophic events.		
LS3 – Heredity: Inheritance and Variation of Traits & LS4 – Biological Change: Unity and Diversity		**3-5**	**15%-25%**
BIO1.LS3.3	Through pedigree analysis, identify patterns of trait inheritance to predict family member genotypes. Use mathematical thinking to predict the likelihood of various types of trait transmission.		
BIO1.LS4.1	Evaluate scientific data collected from analysis of molecular sequences, fossil records, biogeography, and embryology. Identify chronological patterns of change and communicate that biological evolution is supported by multiple lines of empirical evidence that identify similarities inherited from a common ancestor (homologies).		