ISTEP+: Grade 10 Science
2015-16 Blueprint

The grade 10 science assessment is divided into four categories for reporting student achievement. Age-appropriate concepts are assessed within each category.

Reporting Category	Description	Percent Range*
1 – The Nature of Science	Questions may include developing explanations based on observations and data from investigations, communicating results in multiple forms, evaluating the work of others for reasonableness, understanding basic data gathering techniques in an investigation, understanding the use and limitations of models, understanding how theories are developed and changed based on the results of multiple investigations, describing how scientific discoveries may lead to new technologies, and explaining how scientific knowledge can be used to solve environmental and social issues. *Note: High school-level Biology content will NOT be used as context in any nature of science items on the grade 10 science ISTEP+ assessment.*	45-55%
2 – Cellular Structure, Chemistry, and Reproduction	Questions may include understanding the major categories of organic compounds and how the shape of the molecules determines its role in cellular processes, understanding the role of various cell structures, understanding why different cells have different proportions of organelles, understanding the processes of mitosis and meiosis, and explaining how sexual reproduction leads to offspring genetically different from their parents.	15-25%
3 – Matter Cycles, Energy Transfer, and Interdependence	Questions may include understanding and describing the processes of photosynthesis, cellular respiration, and metabolism, describing the ways in which matter and energy flow through ecosystems, and describing how natural phenomena and human activities can impact the short-term and long-term stability of an ecosystem.	5-15%
4 – Genetics, Molecular Basis of Heredity, and Evolution	Questions may include understanding the structure and function of DNA and chromosomes, understanding how hereditary information is passed from parents to offspring, understanding the basis and types of traits, determining the likelihood of the appearance of a trait, understanding how DNA may be damaged and how that damage may affect the organism, understanding the evidence that can be used to show evolutionary relationships among species, understanding how mutations cause genetic variation, and describing how organisms with beneficial traits are more likely to survive and reproduce.	15-25%

* This range represents the approximate emphasis for each reporting category on the assessment.