Blueprint for the Indiana Assessment
Grade 10 Science
(Beginning 2018-19 School Year)

Blueprints serve as a foundational resource in the assessment development process. Blueprints identify the point values and relative weight of each of the Indiana Academic Standards assessed. Panels of content teachers at each grade level, representative of Indiana student populations, in partnership with the Department of Education recommended the priorities and associated point values noted within the blueprints.

The 2016 Indiana Science Standards increased the breadth and scope of the 2010 standards by adding a new component: process standards. Students are expected to identify and explain content, as well as understand how the data was collected and analyzed to reach those conclusions (scientific and engineering process). The Indiana assessment is designed to test students' understanding of science and engineering processes in conjunction with content. They are expected to integrate both into their understanding and answers.

Overview

The columns of the blueprint highlight key features of test design including: reporting categories, Indiana Academic Standards, standard allocations, reporting category allocations and the total operational points possible.

Reporting Category: The broad content category for the standard representing a segment or domain of content approved by educators as key for reporting. Examples across content areas may include: Number Sense in Mathematics (7.NS); Physical Science in Science (4.PS); and Writing in English/Language Arts (9-10.W).

The reporting category column also includes the overall percentage of the assessment characterized by the specific category. The overall percentage of the assessment is considered 100%.

Standard: The Indiana Academic Standard noting the reporting category code and a *brief* description. The full language of the standard can be accessed here.

Standard Allocation: The allocation defines the point range possible for that standard and the percentage of that standard *based on the total points for the assessment.* A standard with a range that starts at zero may not be assessed each year.

Reporting Category Allocation: The point range possible for all of the standards in that category combined.

Total Points Possible: The range for the total number of points possible on the assessment each year. The total possible points may vary slightly year to year due to the nature of how test questions are developed for each standard. *Note: Field test items do not contribute to the operational points possible noted.*

2018-19 Blueprint for the Indiana Assessment
Grade 10 Science
(Beginning 2018-19 School Year)

Reporting Category[1]	Standard	Standard Allocations[2]		Reporting Category Allocation
		Point Range	% Range[1]	Total Point Range
Cellular Structure and Function (14-18%)	**B.1.1** Shape and function of biological macromolecules	1-3	2-5%	8-10
	B.1.2 Shape and role of molecules in life processes	0-2	0-4%	
	B.1.3 Model the structure and function of cell membrane	1-3	2-5%	
	B.1.4 Model protein production and transport	1-3	2-5%	
	B.1.5 Model the hierarchical organization of interacting systems	0-2	0-4%	
Matter Cycles & Energy Transfer	**B.2.1** Model photosynthesis	1-3	2-5%	13-15
	B.2.2 Model cellular respiration	1-3	2-5%	
	B.2.3 Mathematical model of matter and energy flow in a system	1-3	2-5%	
	B.2.4 Model the carbon cycle	1-3	2-5%	
Interdependence	**B.3.1** Mathematical model of carrying capacity	0-2	0-4%	
Total: (24-27%)	**B.3.2** Model how humans and environment impact ecosystems	1-3	2-5%	
	B.3.3 Ecosystem stability and the impact of invasive species	0-2	0-4%	
Inheritance & Variation in Traits (13-16%)	**B.4.1** Model the relationship between DNA and inherited traits	0-2	0-4%	7-9
	B.4.2 DNA determination of the structure of proteins	0-2	0-4%	
	B.4.3 Model how protein shape is determined by amino acid sequencing	1-4	2-7%	
	B.4.4 Model the role of cellular division in complex organisms	0-2	0-4%	
	B.4.5 Construct claims for how inheritable genetic variations occur	0-2	0-4%	
	B.4.6 Use statistics to explain the variation of traits in a population	0-2	0-4%	

Evolution (18-22%)	**B.5.1** Organisms are classified based on evolutionary relationships	1-3	2-5%	10-12
	B.5.2 Evolution is supported by empirical evidence	0-2	0-4%	
	B.5.3 Advantageous heritable traits increase in a population over time	0-2	0-4%	
	B.5.4 Evaluate evidence to explain the role of natural selection	1-3	2-5%	
	B.5.5 Evolution primarily results from specific factors	1-3	2-5%	
	B.5.6 Analyze data that document life throughout the history of Earth	0-2	0-4%	
Science & Engineering Process Standards (22-25%)	**SEPS.1** Posing questions and defining problems	0-3	0-5%	12-14
	SEPS.2 Developing and using models and tools	1-4	2-7%	
	SEPS.3 Constructing and performing investigations	1-4	2-7%	
	SEPS.4 Analyzing and interpreting data	0-3	0-5%	
	SEPS.5 Using mathematics and computational thinking	0-3	0-5%	
	SEPS.6 Constructing explanations and designing solutions	0-3	0-5%	
	SEPS.7 Engaging in argument from evidence	1-4	2-7%	
	SEPS.8 Obtaining, evaluating, and communicating information	0-3	0-5%	
Total Points Possible				54-56

[1]Percentages are based on the total points for the test, not the points for the reporting category.

[2]Standards with ranges that start at zero may not be tested every year.