

## Pre-Formatted Reports: Benchmark Test Item Analysis - New Format

### Data Selections

**Institution(s):** All School Types, All Schools  
**Benchmark Administration:** 09/03/14, 2014-2015 Baselines Biology  
**Trend Profile:** 2014-2015  
**Subject:** Life and Physical Sciences  
**Test Focus:** Life and Physical Sciences  
**Test Level:** All Benchmark Test Levels  
**Test Category:** District Benchmark  
**Grade:** All Grade Levels  
**Enrollment:** Total for 2014-2015

Number of questions: 50  
 Number of test-taking students: 726

### Student Responses

Question - Type	Correct		Incorrect	Most Common Mistake		Point Value	Points Achieved / Possible	P-Value/Item Mean	Discrimination
	Rate	Value	Total Rate	Rate	Value				
1 - Multiple Choice	24%	C	76%	40%	A	1	173 / 726	0.24	0.04
2 - Multiple Choice	31%	D	69%	28%	A	1	224 / 726	0.38	0.12
3 - Multiple Choice	65%	D	35%	17%	B	1	474 / 726	0.81	0.39
4 - Multiple Choice	64%	C	36%	16%	A	1	463 / 726	0.80	0.33
5 - Multiple Choice	38%	C	62%	28%	B	1	275 / 726	0.40	0.26
6 - Multiple Choice	26%	C	74%	30%	A	1	188 / 726	0.29	0.18
7 - Multiple Choice	56%	B	44%	30%	A	1	407 / 726	0.71	0.43
8 - Multiple Choice	21%	D	79%	29%	C	1	150 / 726	0.15	-0.15
9 - Multiple Choice	30%	B	70%	27%	C	1	220 / 726	0.40	0.18
10 - Multiple Choice	31%	C	69%	33%	A	1	222 / 726	0.31	0.02
11 - Multiple Choice	36%	A	64%	25%	B	1	259 / 726	0.49	0.27
12 - Multiple Choice	80%	B	20%	7%	C	1	582 / 726	0.96	0.33
13 - Multiple Choice	64%	A	36%	13%	C	1	467 / 726	0.82	0.49
14 - Multiple Choice	32%	C	68%	25%	B	1	234 / 726	0.35	0.33
15 - Multiple Choice	31%	D	69%	30%	B	1	227 / 726	0.41	0.40
16 - Multiple Choice	25%	A	75%	28%	D	1	183 / 726	0.31	-0.03
17 - Multiple Choice	15%	B	85%	36%	A	1	110 / 726	0.03	0.19
18 - Multiple Choice	18%	A	82%	34%	C	1	134 / 726	0.14	0.29
19 - Multiple Choice	24%	C	76%	28%	A	1	175 / 726	0.27	0.19
20 - Multiple Choice	38%	C	62%	24%	B	1	275 / 726	0.35	0.01

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21 - Multiple Choice	30%	C	70%	31%	B	1	218 / 726	0.41	0.37
22 - Multiple Choice	30%	B	70%	28%	D	1	216 / 726	0.33	0.28
23 - Multiple Choice	37%	A	63%	30%	B	1	269 / 726	0.52	0.32
24 - Multiple Choice	67%	C	33%	13%	B	1	486 / 726	0.89	0.40
25 - Multiple Choice	43%	D	57%	19%	A	1	311 / 726	0.70	0.47
26 - Multiple Choice	23%	D	77%	44%	C	1	165 / 726	0.28	0.23
27 - Multiple Choice	29%	D	71%	31%	A	1	207 / 726	0.31	0.14
28 - Multiple Choice	34%	B	66%	30%	C	1	246 / 726	0.47	0.08
29 - Multiple Choice	36%	D	64%	28%	B	1	262 / 726	0.53	0.24
30 - Multiple Choice	42%	C	58%	24%	B	1	306 / 726	0.52	0.33
31 - Multiple Choice	23%	C	77%	34%	B	1	168 / 726	0.19	0.11
32 - Multiple Choice	22%	B	78%	53%	A	1	163 / 726	0.15	0.03
33 - Multiple Choice	28%	A	72%	25%	B	1	201 / 726	0.43	0.38
34 - Multiple Choice	32%	A	68%	37%	B	1	235 / 726	0.35	0.30
35 - Multiple Choice	39%	A	61%	25%	C	1	281 / 726	0.64	0.27
36 - Multiple Choice	58%	C	42%	15%	A	1	421 / 726	0.93	0.27
37 - Multiple Choice	52%	C	48%	18%	B	1	380 / 726	0.70	0.32
38 - Multiple Choice	44%	A	56%	21%	D	1	323 / 726	0.68	0.42
39 - Multiple Choice	47%	D	53%	19%	C	1	340 / 726	0.66	0.47
40 - Multiple Choice	35%	C	65%	27%	B	1	251 / 726	0.34	0.04
41 - Multiple Choice	32%	B	68%	37%	C	1	231 / 726	0.48	0.06
42 - Multiple Choice	75%	C	25%	8%	B	1	543 / 726	0.93	0.45
43 - Multiple Choice	47%	C	53%	21%	A	1	344 / 726	0.53	0.39
44 - Multiple Choice	27%	B	73%	29%	A	1	196 / 726	0.32	0.21
45 - Multiple Choice	55%	D	45%	18%	B	1	397 / 726	0.74	0.60
46 - Multiple Choice	54%	B	46%	18%	D	1	390 / 726	0.76	0.45
47 - Multiple Choice	66%	D	34%	13%	A	1	480 / 726	0.86	0.31
48 - Multiple Choice	58%	C	42%	19%	B	1	421 / 726	0.80	0.35
49 - Multiple Choice	63%	B	37%	17%	A	1	458 / 726	0.93	0.17
50 - Multiple Choice	38%	D	62%	26%	A	1	277 / 726	0.52	0.31
<b>Summary</b>	<b>40%</b>		<b>60%</b>				<b>293 / 726</b>		

P-value represents an item's difficulty as evaluated by dividing the total number of correct responses by the total number of students tested. P-value is calculated for true/false, multiple choice, gridded or hot spot-single response items.

Item Mean is the average score for student responses to an open response question or to a multi-part question. Item Mean is calculated for inline response, matching or hot spot-multiple selections items.

Discrimination or Item Total Score Correlation is the correlation between the question score and the overall test score and indicates the extent to which success on an item corresponds to success on the test.

Standards Alignment to NC Standards		
Question	ID	Standard Description
1 - Multiple Choice	NCES.Bio.4.1.1	Compare the structures and functions of the major biological molecules (carbohydrates, proteins, lipids, and nucleic acids) as related to the survival of living organisms.
2 - Multiple Choice	NCES.Bio.1.1.1	Summarize the structure and function of organelles in eukaryotic cells (including the nucleus, plasma membrane, cell wall, mitochondria, vacuoles, chloroplasts, and ribosomes) and ways that these organelles interact with each other to perform the function of the cell.
3 - Multiple Choice	NCES.Bio.1.1.1	Summarize the structure and function of organelles in eukaryotic cells (including the nucleus, plasma membrane, cell wall, mitochondria, vacuoles, chloroplasts, and ribosomes) and ways that these organelles interact with each other to perform the function of the cell.
4 - Multiple Choice	NCES.Bio.1.2.1	Explain how homeostasis is maintained in the cell and within an organism in various environments (including temperature and pH).
5 - Multiple Choice	NCES.Bio.1.2.1	Explain how homeostasis is maintained in the cell and within an organism in various environments (including temperature and pH).
6 - Multiple Choice	NCES.Bio.4.1.3	Explain how enzymes act as catalysts for biological reactions.
7 - Multiple Choice	NCES.Bio.4.2.1	Analyze photosynthesis and cellular respiration in terms of how energy is stored, released, and transferred within and between these systems.
8 - Multiple Choice	NCES.Bio.4.1.1	Compare the structures and functions of the major biological molecules (carbohydrates, proteins, lipids, and nucleic acids) as related to the survival of living organisms.
9 - Multiple Choice	NCES.Bio.4.2.1	Analyze photosynthesis and cellular respiration in terms of how energy is stored, released, and transferred within and between these systems.
10 - Multiple Choice	NCES.Bio.4.2.1	Analyze photosynthesis and cellular respiration in terms of how energy is stored, released, and transferred within and between these systems.
11 - Multiple Choice	NCES.Bio.4.1.3	Explain how enzymes act as catalysts for biological reactions.
12 - Multiple Choice	NCES.Bio.4.2.1	Analyze photosynthesis and cellular respiration in terms of how energy is stored, released, and transferred within and between these systems.
13 - Multiple Choice	NCES.Bio.1.1.3	Explain how instructions in DNA lead to cell differentiation and result in cells specialized to perform specific functions in multicellular organisms.
14 - Multiple Choice	NCES.Bio.3.1.2	Explain how DNA and RNA code for proteins and determine traits.
15 - Multiple Choice	NCES.Bio.1.2.2	Analyze how cells grow and reproduce in terms of interphase, mitosis and cytokinesis.
16 - Multiple Choice	NCES.Bio.3.1.2	Explain how DNA and RNA code for proteins and determine traits.
17 - Multiple Choice	NCES.Bio.3.2.2	Predict offspring ratios based on a variety of inheritance patterns (including dominance, co-dominance, incomplete dominance, multiple alleles, and sex-linked traits).
18 - Multiple Choice	NCES.Bio.3.1.2	Explain how DNA and RNA code for proteins and determine traits.
19 - Multiple Choice	NCES.Bio.3.1.2	Explain how DNA and RNA code for proteins and determine traits.
20 - Multiple Choice	NCES.Bio.3.3.2	Summarize how transgenic organisms are engineered to benefit society.
21 - Multiple Choice	NCES.Bio.3.2.2	Predict offspring ratios based on a variety of inheritance patterns (including dominance, co-dominance, incomplete dominance, multiple alleles, and sex-linked traits).
22 - Multiple Choice	NCES.Bio.3.2.2	Predict offspring ratios based on a variety of inheritance patterns (including dominance, co-dominance, incomplete dominance, multiple alleles, and sex-linked traits).

<b>23 - Multiple Choice NCES.Bio.3.2.2</b>	Predict offspring ratios based on a variety of inheritance patterns (including dominance, co-dominance, incomplete dominance, multiple alleles, and sex-linked traits).
<b>24 - Multiple Choice NCES.Bio.3.4.1</b>	Explain how fossil, biochemical, and anatomical evidence support the theory of evolution.
<b>25 - Multiple Choice NCES.Bio.3.4.2</b>	Explain how natural selection influences the changes in species over time.
<b>26 - Multiple Choice NCES.Bio.3.4.1</b>	Explain how fossil, biochemical, and anatomical evidence support the theory of evolution.
<b>27 - Multiple Choice NCES.Bio.3.2.2</b>	Predict offspring ratios based on a variety of inheritance patterns (including dominance, co-dominance, incomplete dominance, multiple alleles, and sex-linked traits).
<b>28 - Multiple Choice NCES.Bio.3.1.2</b>	Explain how DNA and RNA code for proteins and determine traits.
<b>29 - Multiple Choice NCES.Bio.3.4.3</b>	Explain how various disease agents (bacteria, viruses, chemicals) can influence natural selection.
<b>30 - Multiple Choice NCES.Bio.3.4.3</b>	Explain how various disease agents (bacteria, viruses, chemicals) can influence natural selection.
<b>31 - Multiple Choice NCES.Bio.3.5.1</b>	Explain the historical development and changing nature of classification systems.
<b>32 - Multiple Choice NCES.Bio.2.1.2</b>	Analyze the survival and reproductive success of organisms in terms of behavioral, structural, and reproductive adaptations.
<b>33 - Multiple Choice NCES.Bio.2.1.2</b>	Analyze the survival and reproductive success of organisms in terms of behavioral, structural, and reproductive adaptations.
<b>34 - Multiple Choice NCES.Bio.1.1.2</b>	Compare prokaryotic and eukaryotic cells in terms of their general structures (plasma membrane and genetic material) and degree of complexity.
<b>35 - Multiple Choice NCES.Bio.3.5.2</b>	Analyze the classification of organisms according to their evolutionary relationships (including dichotomous keys and phylogenetic trees).
<b>36 - Multiple Choice NCES.Bio.2.1.2</b>	Analyze the survival and reproductive success of organisms in terms of behavioral, structural, and reproductive adaptations.
<b>37 - Multiple Choice NCES.Bio.2.1.2</b>	Analyze the survival and reproductive success of organisms in terms of behavioral, structural, and reproductive adaptations.
<b>38 - Multiple Choice NCES.Bio.3.2.3</b>	Explain how the environment can influence the expression of genetic traits.
<b>39 - Multiple Choice NCES.Bio.2.1.2</b>	Analyze the survival and reproductive success of organisms in terms of behavioral, structural, and reproductive adaptations.
<b>40 - Multiple Choice NCES.Bio.2.1.2</b>	Analyze the survival and reproductive success of organisms in terms of behavioral, structural, and reproductive adaptations.
<b>41 - Multiple Choice NCES.Bio.2.1.2</b>	Analyze the survival and reproductive success of organisms in terms of behavioral, structural, and reproductive adaptations.
<b>42 - Multiple Choice NCES.Bio.2.1.3</b>	Explain various ways organisms interact with each other (including predation, competition, parasitism, mutualism) and with their environments resulting in stability within ecosystems.
<b>43 - Multiple Choice NCES.Bio.2.1.3</b>	Explain various ways organisms interact with each other (including predation, competition, parasitism, mutualism) and with their environments resulting in stability within ecosystems.
<b>44 - Multiple Choice NCES.Bio.2.1.1</b>	Analyze the flow of energy and cycling of matter (water, carbon, nitrogen and oxygen) through ecosystems relating the significance of each to maintaining the health and sustainability of an ecosystem.
<b>45 - Multiple Choice NCES.Bio.2.1.3</b>	Explain various ways organisms interact with each other (including predation, competition, parasitism, mutualism) and with their environments resulting in stability within ecosystems.
<b>46 - Multiple Choice NCES.Bio.2.2.2</b>	Explain how the use, protection and conservation of natural resources by humans impact the environment from one generation to the next.
<b>47 - Multiple Choice NCES.Bio.2.2.1</b>	Infer how human activities (including population growth, pollution, global

warming, burning of fossil fuels, habitat destruction and introduction of nonnative species) may impact the environment.

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- 48 - Multiple Choice NCES.Bio.2.1.4** Explain why ecosystems can be relatively stable over hundreds or thousands of years, even though populations may fluctuate (emphasizing availability of food, availability of shelter, number of predators and disease).
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- 49 - Multiple Choice NCES.Bio.2.1.4** Explain why ecosystems can be relatively stable over hundreds or thousands of years, even though populations may fluctuate (emphasizing availability of food, availability of shelter, number of predators and disease).
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- 50 - Multiple Choice NCES.Bio.2.1.3** Explain various ways organisms interact with each other (including predation, competition, parasitism, mutualism) and with their environments resulting in stability within ecosystems.
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