

Science Standard	Correlation By Page Numbers Make all correlations using the teacher text. Identify only <i>significant</i> areas of correlation. Use each bullet of the standard in the context of the stem. Please consult the 2003 Science Curriculum Framework for further information about each standard.
BIO.1 The student will plan and conduct investigations in which	
a) observations of living organisms are recorded in the lab and in the field;	7, 28, 36, 89, 101, 109, 119, 123, 141, 355, 442, 445, 495, 534, 646, 659, 667, 686
b) hypotheses are formulated based on direct observations and information from the scientific literature;	17, 28, 194, 207, 224, 266, 290, 319, 442, 445, 495, 556, 659, 667, 686
c) variables are defined and investigations are designed to test hypotheses;	17, 28, 194, 207, 224, 266, 290, 319, 442, 445, 495, 556, 659, 667, 686
d) graphing and arithmetic calculations are used as tools in data analysis;	12, 28, 89, 101, 119, 187, 224, 319, 512, 531, 556, 558, 571, 634, 677
e) conclusions are formed based on recorded quantitative and qualitative data;	17, 28, 89, 101, 109, 119, 123, 207, 290, 319, 355, 442, 556, 659, 667, 686
f) sources of error inherent in experimental design are identified and discussed;	The opportunity to address this objective is available. See the following: 17, 207, 495
g) validity of data is determined;	17, 28, 194, 207, 224, 266, 290, 319, 442, 445, 495, 556, 659, 667, 686
h) chemicals and equipment are used in a safe manner;	17, 28, 89, 101, 109, 119, 123, 355, 373, 387, 415, 442, 497, 598, 667, 686

Science Textbook Correlation Matrices
Biology Standards of Learning
Publisher: Glencoe/McGraw-Hill

Text/Instructional Material Title: Glencoe Biology: An Everyday Experience ©2003

i) appropriate technology, including computers, graphing calculators, and probeware, is used for gathering and analyzing data and communicating results;	9, 36, 89, 101, 109, 119, 123, 141, 246, 253
j) research utilizes scientific literature;	17, 42, 152, 326, 668
k) differentiation is made between a scientific hypothesis and theory;	15, 16, 18, 20, 22, 23
l) alternative scientific explanations and models are recognized and analyzed; and	235, 298, 337, 467, 588, 618
m) a scientific viewpoint is constructed and defended (the nature of science).	21, 127, 175, 281, 389, 517, 569

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BIO.2 The student will demonstrate scientific reasoning and logic by	
a) evidence supporting the cell theory;	31, 44, 45
b) scientific explanations of the development of organisms through time (biological evolution);	617, 618, 619, 620, 621, 624, 625
c) evidence supporting the germ theory of infectious disease;	82, 90, 91
d) development of the structural model of DNA; and	586, 587, 588, 602, 603
e) the collaborative efforts of scientists, past and present.	61, 356, 413, 426, 465, 465, 587, 680

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BIO.3 The student will investigate and understand the chemical and biochemical principles essential for life. Key concepts include	
a) water chemistry and its impact on life processes;	30, 184, 185, 191, 212, 279, 403, 425, 449, 657, 663, 664, 665, 666, 676, 677, 680, 681, 682, 683, 684, 687, 688
b) the structure and function of macromolecules;	This objective falls outside the scope of Glencoe/McGraw-Hill Biology: An Everyday Experience.
c) the nature of enzymes; and	204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 216, 217, 218, 219
d) the capture, storage, transformation, and flow of energy through the processes of photosynthesis and respiration.	27, 28, 114, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 282, 283, 405, 406, 407, 408, 409, 414, 416, 417

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BIO.4 The student will investigate and understand relationships between cell structure and function. Key concepts include	
a) characteristics of prokaryotic and eukaryotic cells;	This objective falls outside the scope of Glencoe/McGraw-Hill Biology: An Everyday Experience.
b) exploring the diversity and variation of eukaryotes;	This objective falls outside the scope of Glencoe/McGraw-Hill Biology: An Everyday Experience.
c) similarities between the activities of a single cell and a whole organism; and	26, 27, 29, 32, 35, 38, 40, 41, 45
d) the cell membrane model (diffusion, osmosis, and active transport).	32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 44, 45

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BIO.5 The student will investigate and understand life functions of archaeobacteria, monerans (eubacteria), protists, fungi, plants, and animals, including humans. Key concepts include	
a) how their structures and functions vary between and within the kingdoms;	60, 61, 62, 63, 64, 65, 79, 80, 81, 90, 91, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 114, 118, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 134
b) comparison of their metabolic activities;	60, 61, 62, 63, 64, 65, 79, 87, 88, 90, 91, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 114, 118, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 134
c) analyses of their responses to the environment;	80, 81, 85, 87, 107, 108, 126, 144, 152, 153, 164, 174, 176, 177
d) maintenance of homeostasis;	The opportunity to address this objective is available. See the following: 29
e) human health issues, human anatomy, body systems, and life functions; and	190, 191, 192, 196, 204, 205, 206, 216, 225, 226, 227, 228, 247, 248, 249, 250, 267, 267, 268, 269, 270, 286, 287, 288, 289
f) how viruses compare with organisms.	72–73

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BIO.6 The student will investigate and understand common mechanisms of inheritance and protein synthesis. Key concepts include	
a) cell growth and division;	463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 477, 480, 481, 504, 593, 594
b) gamete formation;	The opportunity to address this objective is available. See the following: 471, 472, 473, 474
c) cell specialization;	40
d) prediction of inheritance of traits based on the Mendelian laws of heredity;	558, 559, 560, 561, 562, 563
e) genetic variation (mutation, recombination, deletions, additions to DNA);	595, 596, 597, 598, 599, 600, 601, 602, 603, 606, 607, 608, 609, 610
f) the structure, function, and replication of nucleic acids (DNA and RNA);	586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 600, 601, 602, 603
g) events involved in the construction of proteins;	33, 34, 592, 593
h) use, limitations, and misuse of genetic information; and	569, 580, 581, 582, 583, 593, 599, 600, 601, 602, 603
i) exploration of the impact of DNA technologies.	569, 593, 601, 603

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BIO.7 The student will investigate and understand bases for modern classification systems. Key concepts include	
a) structural similarities in organisms;	56, 57, 58, 64, 65, 134, 135, 136, 154, 155, 619, 624
b) fossil record interpretation;	613, 617, 618, 619, 621, 622–623, 624, 625
c) comparison of developmental stages in different organisms;	524–525, 528–529, 532–533, 535–537, 538–539
d) examination of biochemical similarities and differences among organisms; and	58, 64, 65, 619, 624
e) systems of classification that are adaptable to new scientific discoveries.	59, 60, 61, 62

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BIO.8 The student will investigate and understand how populations change through time. Key concepts include	
a) evidence found in fossil records;	613, 617, 618, 619, 621, 622–623, 624, 625
b) how genetic variation, reproductive strategies, and environmental pressures impact the survival of populations;	606, 607, 608, 609, 610, 611, 612, 614, 615, 616, 621, 624, 625
c) how natural selection leads to adaptations;	606, 607, 608, 609, 610, 611, 612, 614, 616, 621, 624, 625
d) emergence of new species; and	610, 611, 612, 614, 616, 621, 624, 625
e) scientific explanations for biological evolution.	617, 618, 619, 620, 621, 624, 625

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BIO.9 The student will investigate and understand dynamic equilibria within populations, communities, and ecosystems. Key concepts include	
a) interactions within and among populations including carrying capacities, limiting factors, and growth curves;	636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 651
b) nutrient cycling with energy flow through ecosystems;	655, 656, 657, 658, 659, 670, 671
c) succession patterns in ecosystems;	660, 661, 662, 670, 671
d) the effects of natural events and human influences on ecosystems; and	674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 690, 691
e) analysis of the flora, fauna, and microorganisms of Virginia ecosystems including the Chesapeake Bay and its tributaries.	The opportunity to address this objective is available. See the following: 651, 653, 662, 666, 671, 682, 687

Additional Criteria	Evidence Please provide information that will assist the reviewers in identifying support for the following criterion indicators.
1. Safe use of materials and equipment is encouraged.	Safety is emphasized throughout the text in each Lab, ex. page 101 and in Appendix D Safety in the Laboratory, pages 702-703.
<p>2. Materials emphasize the use of effective instructional practices and learning theories.</p> <ul style="list-style-type: none"> • Students are guided through different approaches such as the learning cycle. • Students are provided the opportunity to conduct scientific inquiry appropriate for their age, grade, and maturity. • Concepts are introduced through concrete experiences. • • Students are required to use manipulative materials during investigations and activities. • Multiple opportunities are provided for students to apply concepts. • Learning activities offer opportunities for students to revise their prior knowledge and create new knowledge. • Students are encouraged to pose questions and to identify problems, as well as propose multiple solutions and design and conduct tests of inference. • Students collect and interpret data through a variety of technologies and draw conclusions based on that data. 	<ul style="list-style-type: none"> • Both Chapter 1, pages 2-23 and The Skills Handbook, pages 704-719 provide information on the Scientific Method, organizing information inferring skills and formulating models • The text is correlated with the National Science Content Standards, TWE page 5T, to assure the scientific inquiry included is appropriate for age, grade, and maturity. • This is covered throughout the text. Specific examples are in the Labs, ex. page 101, Applying Technology, page 152, Science and Society, page 281 and the MiniLabs, ex. page 189. • Students are required to use manipulative materials in the MiniLabs, ex. page 423 and the Labs, ex. page 495. • This is emphasized throughout the text. Specific examples include Labs, ex. page 76, Applying Technology, ex. pages 152-153, and the Chapter Reviews, ex. page 111. • This is included in the Text Labs, ex. page 371 and in the TWE Misconceptions, ex. page 5. • These are included in the Labs, Applying Technology, Science and Society, Technology and MiniLabs. For information see TWE pages xxi to xxiv. Also see the Skills Handbook, pages 704-719. • Using the Skills Handbook, pages 704-719 and the Labs, Applying Technology and The MiniLabs, students have ample practice at this.

Science Textbook Adoption Additional Criteria

Biology Standards of Learning

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Text/Instructional Material Title: Glencoe Biology: An Everyday Experience ©2003

Additional Criteria	Evidence Please provide information that will assist the reviewers in identifying support for the following criterion indicators.
<p>3. Materials present content in an accurate, unbiased manner, and are based on sound science.</p> <ul style="list-style-type: none">• Materials do not contain content errors (omissions of current content, out-of-date content, overgeneralizations, etc.).• Materials do not contain production errors (misspelled words, word omissions, incorrect answers).• Diverse groups (racial, ethnic, cultural, linguistic), males and females, people with disabilities, and people of all ages are represented appropriately.• The materials are free of non-scientific explanation.	<ul style="list-style-type: none">• The material was reviewed by consultants, teachers and editors and found to be free of content errors.• Page proofs were thoroughly checked by the editors to correct production errors.• As a matter of policy, all photos were checked to assure that diverse groups, males and females, people with disabilities, and people of all ages were represented appropriately.• The material was checked by consultants, teachers and editors to assure that non-scientific explanation was not included.

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<p>4. Materials promote student assessment as an integral part of the instructional process.</p> <ul style="list-style-type: none">• Assessment suggestions and scoring criteria for student performances on work such as lab practicals or tasks, concept maps, research projects, observation checklists, etc., are provided.• Assessment items include multiple-choice, short answer, essay and open-ended questions with charts, graphs, and diagrams imbedded within the items.• Options include techniques for assessing students' prior knowledge.• Assessment items reflect the rigor and the intent of the standards. For example, they require students to use higher order thinking skills to apply, analyze, synthesize, evaluate, and make judgments or recommendations.	<ul style="list-style-type: none">• Assessment suggestions are included in the TWE on pages 18T and 19T.• These can be found in each chapter's Check Your Understanding, ex. page 78 and Review, ex. pages 90-91.• This is included throughout the text. The Labs, ex. page 17 and The Skills Handbook, pages 704-719 are examples.• These are covered throughout-including the end-of chapter Reviews, ex. page 45, the Check Your Understanding, ex. page 55 and The Labs, ex. page 76.

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Additional Criteria	Evidence Please provide information that will assist the reviewers in identifying support for the following criterion indicators.
<p>5. Materials are presented in an organized, logical manner and are appropriate for the age, grade, and maturity of the students.</p> <ul style="list-style-type: none">• Materials are organized appropriately within and among units of study.• Format design includes titles, subheadings, and appropriate cross-referencing for ease of use.• Writing style, length of sentences, and vocabulary are appropriate. • Graphics and illustrations are appropriate. • Level of abstraction is appropriate, and real life examples, including careers are provided • Sufficient applications are provided to promote depth of understanding.	<ul style="list-style-type: none">• Materials were reviewed by consultants, teachers and editors and found to be organized appropriately.• the design includes titles, subheadings and cross references, ex. page 94.• The writing style, length of sentences and vocabulary were reviewed by consultants, teachers and editors and found to be appropriate.• The graphics and illustrations were reviewed by consultants, teachers and editors and found to be appropriate.• The Labs, Applying Technology, Science and Society, Technology and MiniLabs provide examples. Career Close-Up provides career material. Information on these are on TWE pages xxi to xxiv.• Applications are provided in the Labs, ex. page 224, The MiniLabs, ex. page 269, and the end-of-chapter Review, ex. page 155.