

GLENCOE CORRELATION
BIOLOGY: THE DYNAMICS OF LIFE
NEBRASKA

Science Standards Grades 9-12

| STANDARDS | PAGE REFERENCES |
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| 12.1 Unifying Concepts and Processes Unifying concepts and processes help students think about and integrate a range of basic ideas which builds an understanding of the natural world. | |
| 12.1.1 By the end of twelfth grade, students will develop an understanding of systems, order, and organization. | SE: 68-69, 210, 930-932 <i>Design Your Own BioLab</i> 58-59 <i>Problem-Solving Lab</i> 932 TWE: EN 933 |
| 12.1.2 By the end of twelfth grade, students will develop an understanding of evidence, models, and explanation. | SE: <i>Investigate BioLab</i> 104-105, 302-303, 354-355, 1016-1017 <i>Design Your Own BioLab</i> 834-835 TWE: UM 222, 285, 883 |
| 12.1.3 By the end of twelfth grade, students will develop an understanding of change, constancy, and measurement. | SE: <i>Internet BioLab</i> 24-25, 414-415, 626-627 <i>MiniLab</i> 112, 155, 476 <i>Problem-Solving Lab</i> 203, 903 TWE: IN 197 AL 819 |
| 12.1.4 By the end of twelfth grade, students will develop an understanding of form and function. | SE: <i>Investigate BioLab</i> 302-303 <i>MiniLab</i> 561, 608, 702, 764, 795, 827 TWE: CA 787 |
| 12.1.5 By the end of twelfth grade, students will develop an understanding of change over a period of time. | SE: 67-69, 375-379, 397-399, 1013-1015 <i>Design Your Own BioLab</i> 58-59 <i>Problem-Solving Lab</i> 68 <i>Investigate BioLab</i> 84-85 <i>MiniLab</i> 376, 754 TWE: CE 375 |
| 12.2 Science as Inquiry Science as inquiry requires students to combine processes and scientific knowledge with scientific reasoning and critical thinking to develop their understanding of science. | |
| 12.2.1 By the end of twelfth grade, students will develop the abilities needed to do scientific inquiry. | SE: <i>Design Your Own BioLab</i> 58-59, 164-165, 330-331, 522-523, 734-735, 910-911 <i>Internet BioLab</i> 238-239, 279-280 TWE: UA 11 AL 12-13 |
| 12.3 Physical Science Physical science focuses on the science facts, concepts, principles, theories, and models that are important for all students to know, understand, and use. | |
| 12.3.1 By the end of twelfth grade, students will develop an understanding of the structure of the atom. | SE: 142-144, 153 <i>Problem-Solving Lab</i> 145 <i>BioDigest</i> 244 TWE: IS 143 |

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| 12.3.2 By the end of twelfth grade, students will develop an understanding of the structure and properties of matter. | SE: 143, 145-147, 148-151, 157-163 <i>Physical Science Connection</i> 146 <i>BioDigest</i> 244-245 TWE: RE 143 PR 147 |
| 12.3.3 By the end of twelfth grade, students will develop an understanding of chemical reactions. | SE: 147-148, 162, 222-224, 225-228, 230, 231, 232, 234-235 <i>Inside Story</i> 162 <i>Design Your Own BioLab</i> 164-165 TWE: CE 147 PSC 148 |
| 12.3.4 By the end of twelfth grade, students will develop an understanding of motions and forces. | SE: <i>Physical Science Connection</i> 655, 727, 828 <i>Connection to Physics</i> 778 TWE: PSC 655, 828 |
| 12.3.5 By the end of twelfth grade, students will develop an understanding of the conservation of energy and increase in disorder. | SE: 154 <i>Physical Science Connection</i> 52, 185, 369, 841, 897 TWE: PSC 185 |
| 12.3.6 By the end of twelfth grade, students will develop an understanding of the interactions of energy and matter. | SE: 226 <i>Physical Science Connection</i> 119, 296, 904 <i>Connection to Chemistry</i> 240 TWE: QD 227 |
| 12.4 Life Science Life science focuses on the science facts, concepts, principles, theories, and models that are important for all students to know, understand, and use. | |
| 12.4.1 By the end of twelfth grade, students will develop an understanding of the cell. | SE: 172, 175-178, 180-185, 187, 206-210, 225-228, 230, 231-232, 234-237 <i>Investigate BioLab</i> 188-189, 238-239 <i>BioDigest</i> 246-247 |
| 12.4.2 By the end of twelfth grade, students will develop an understanding of the molecular basis of heredity. | SE: 269-270, 281-284, 288, 291-292, 296-299 <i>Problem-Solving Lab</i> 283, 291, 299 TWE: UM 289 EN 297 |
| 12.4.3 By the end of twelfth grade, students will develop an understanding of the theory of biological evolution. | SE: 393-403, 404-413, 450-453 <i>Problem-Solving Lab</i> 397, 447 <i>Internet BioLab</i> 414-415 <i>BioDigest</i> 468-469 TWE: PR 394 |
| 12.4.4 By the end of twelfth grade, students will develop an understanding of the interdependence of organisms. | SE: 44-45, 48-54, 56-57, 97-99 <i>Inside Story</i> 55 <i>Investigate BioLab</i> 58-59 TWE: UM 51 PR 55 IN 97, 98 |
| 12.4.5 By the end of twelfth grade, students will develop an understanding of matter, energy, and organization in living systems. | SE: 46-48, 52-54, 56-57, 75, 221, 225-228 <i>Problem-Solving Lab</i> 40 TWE: UST 80 IN 227 |

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| 12.4.6 By the end of twelfth grade, students will develop an understanding of the behavior of organisms. | SE: 859-873 <i>MiniLab</i> 860 <i>Problem-Solving Lab</i> 867, 872 <i>Investigate BioLab</i> 874-875 TWE: IN 861 AL 864-865 VL 865 |
| 12.5 Earth and Space Science Earth and space science focuses on the science facts, concepts, principles, theories, and models that are important for all students to know, understand, and use. | |
| 12.5.1 By the end of twelfth grade, students will develop an understanding of energy in the earth system. | SE: 46, 74-75, 144, 369, 372, 374-375, 378-379 <i>Investigate BioLab</i> 386-387 TWE: DI 75 CA 75, 374 |
| 12.5.2 By the end of twelfth grade, students will develop an understanding of geochemical cycles. | SE: 52-54, 56-57 <i>Inside Story</i> 55 TWE: QD 53 PR 55 |
| 12.5.3 By the end of twelfth grade, students will develop a scientific understanding of the origin of the earth system. | SE: 369-372, 374-379 <i>MiniLab</i> 371, 376 <i>Problem-Solving Lab</i> 372, 384 <i>Investigate BioLab</i> 386-387 TWE: CDIV 370 CA 374 |
| 12.5.4 By the end of twelfth grade, students will develop a scientific understanding of the origin of the universe. | TWE: TS 388 can lead into a teacher/class discussion on the origin of the universe. |
| 12.6 Science and Technology An understanding of science and technology establishes connections between the natural and designed world, linking science to technology. | |
| 12.6.1 By the end of twelfth grade, students will develop an understanding of technological design. | SE: <i>MiniLab</i> 425 <i>Design Your Own BioLab</i> 834-835 |
| 12.6.2 By the end of twelfth grade, students will develop an understanding about science and technology. | SE: 21-23, 345, 347-348 <i>BioTechnology</i> 304, 356, 688, 966 TWE: GF 304, 688, 966 |
| 12.7 Science in Personal and Social Perspectives A personal and social perspective of science helps a student understand and act on personal social issues. This perspective builds a foundation for future decision making. | |
| 12.7.1 By the end of twelfth grade, students will develop an understanding of personal and community health. | SE: 312-314, 323-324, 924-928, 956-963 <i>MiniLab</i> 927, 959, 1028 <i>Problem-Solving Lab</i> 928, 1027 TWE: BJ 925 PR 927 CA 961 |

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| 12.7.2 By the end of twelfth grade, students will develop an understanding of the effects of population change. | SE: 91-93, 95-99, 100-103 <i>Inside Story</i> 94 <i>Problem-Solving Lab</i> 101 <i>MiniLab</i> 102 <i>Biology and Society</i> 938 TWE: CA 101 UM 102 AS 103 |
| 12.7.3 By the end of twelfth grade, students will develop an understanding of natural resources. | SE: 114, 116-117 <i>Biology and Society</i> 60, 600 <i>Connection to Health</i> 572 TWE: EN 117 GF 600 |
| 12.7.4 By the end of twelfth grade, students will develop an understanding of environmental quality. | SE: 103, 118-120, 121-125 <i>Biology and Society</i> 60, 600, 854 <i>MiniLab</i> 122 <i>Problem-Solving Lab</i> 124 TWE: AL 118-119 EN 119 IS 124 |
| 12.7.5 By the end of twelfth grade, students will develop an understanding of natural and human-induced hazards. | SE: 494-495, 508-509, 513, 1023-1030 <i>Connection to Health</i> 216 TWE: EX 495 UM 1024 DI 1025 |
| 12.7.6 By the end of twelfth grade, students will develop an understanding of the role of science and technology in local, national, and global challenges. | SE: 21-23, 118-119, 121-125, 351-353 <i>Problem-Solving Lab</i> 353 <i>Biology and Society</i> 498, 854, 1044 TWE: AL 350-351 |
| 12.8 History and Nature of Science The history and nature of science illustrates different aspects of scientific inquiry, the human aspects of science, and the role that science has played in the development of various cultures. | |
| 12.8.1 By the end of twelfth grade, students will develop an understanding of science as a human endeavor. | SE: 3-5, 11-17, 18, 21 <i>Biology and Society</i> 388 TWE: BR 15 CDIV 20 |
| 12.8.2 By the end of twelfth grade, students will develop an understanding of the nature of scientific knowledge. | SE: 11-17, 19-21 <i>Design Your Own BioLab</i> 164-165, 496-497 <i>Focus On</i> 1060-1061 TWE: QD 15 CA 17 IN 1060 PR 1061 |
| 12.8.3 By the end of twelfth grade, students will develop an understanding of the history of science. | SE: 171-172, 281-283, 380-382, 384-385, 393-396, 1024-1025, 1039 TWE: VL 381 BJ 1039 |

Codes Used for TWE Pages

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| AL | Additional Lab |
| AS | Assessment |
| BJ | Biology Journal |
| BR | Brainstorming |
| CA | Challenge Activity |
| CDIV | Cultural Diversity |
| CE | Chalkboard Example |
| DI | Discussion |
| EN | Enrichment |
| EX | Extension |
| GF | Going Further |
| IN | Inquiry |
| IS | Inclusion Strategy |
| PR | Project |
| PSC | Physical Science Connection |
| QD | Quick Demo |
| RE | Reinforcement |
| TS | Teaching Strategies |
| UA | Using an Analogy |
| UM | Using Models |
| UST | Using Science Terms |
| VL | Visual Learning |