



MASSACHUSETTS
Science and Technology/Engineering Curriculum Framework
Life Science (Biology), Grades 6–8
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LEARNING STANDARD	PAGE REFERENCES
Classification of Organisms	
1. Classify organisms into the currently recognized kingdoms according to characteristics that they share. Be familiar with organisms from each kingdom.	SE: 23, 25-26, 361-362 <i>Launch Lab 5</i> <i>Lab 27</i> TWE: A 5, 27 IL 23
Structure and Function of Cells	
2. Recognize that all organisms are composed of cells, and that many organisms are single-celled (unicellular), e.g., bacteria, yeast. In these single-celled organisms, one cell must carry out all of the basic functions of life.	SE: 38-39, 45, 51, 96-97, 187, 215 TWE: FF 39 D 40 TPK 186
3. Compare and contrast plant and animal cells, including major organelles (cell membrane, cell wall, nucleus, cytoplasm, chloroplasts, mitochondria, vacuoles).	SE: 39, 41, 241 <i>Lab 46</i> TWE: VL 41 A 45, 46 Da 45
4. Recognize that within cells, many of the basic functions of organisms (e.g., extracting energy from food and getting rid of waste) are carried out. The way in which cells function is similar in all living organisms.	SE: 15, 42-43, 77-78, 188 TWE: TF 42
Systems in Living Things	
5. Describe the hierarchical organization of multicellular organisms from cells to tissues to organs to systems to organisms.	SE: 45, 114, 370-371, 400-401, 550-551 TWE: CA 18
6. Identify the general functions of the major systems of the human body (digestion, respiration, reproduction, circulation, excretion, protection from disease, and movement, control, and coordination) and describe ways that these systems interact with each other.	SE: 18, 484-487, 496-497, 525-529, 654-656 <i>Lab 583</i> <i>MiniLAB 541</i> TWE: A 582
Reproduction and Heredity	
7. Recognize that every organism requires a set of instructions that specifies its traits. These instructions are stored in the organism's chromosomes. Heredity is the passage of these instructions from one generation to another.	SE: 100, 112 TWE: TC 94, 124 UA 98 CC 105 Act 146

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8. Recognize that hereditary information is contained in genes located in the chromosomes of each cell. A human cell contains about 30,000 different genes on 23 different chromosomes.	SE: 112, 126, 128 TWE: TC 94, 124 QD 131 D 146
9. Compare sexual reproduction (offspring inherit half of their genes from each parent) with asexual reproduction (offspring is an identical copy of the parent's cell).	SE: 101-102, 104, 223 TWE: LD 100 D 275
Evolution and Biodiversity	
10. Give examples of ways in which genetic variation and environmental factors are causes of evolution and the diversity of organisms.	SE: 114-115, 158-159 <i>Lab</i> 133 TWE: D 106 SJ 114
11. Recognize that evidence drawn from geology, fossils, and comparative anatomy provide the basis of the theory of evolution.	SE: 163-169, 241, 397, 435 TWE: TF 164
12. Relate the extinction of species to a mismatch of adaptation and the environment.	SE: <i>Integrate Earth Science</i> 363 <i>Integrate History</i> 417 TWE: Act 166 TF 171 FF 173
Living Things and Their Environment	
13. Give examples of ways in which organisms interact and have different functions within an ecosystem that enable the ecosystem to survive.	SE: 685, 721 TWE: TF 685 A 687 Act 713
Energy and Living Things	
14. Explain the roles and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.	SE: 15, 696-700, 726-729 TWE: UA 698 DI 727 UA 728
15. Explain how dead plants and animals are broken down by other living organisms and how this process contributes to the system as a whole.	SE: 219, 229, 697, 725 TWE: CA 229
16. Recognize that producers (plants that contain chlorophyll) use the energy from sunlight to make sugars from carbon dioxide and water through a process called photosynthesis. This food can be used immediately, stored for later use, or used by other organisms.	SE: 15, 242, 302, 305-307, 726 TWE: TF 728
Changes in Ecosystems Over Time	
17. Identify ways in which ecosystems have changed throughout geologic time in response to physical conditions, interactions among organisms, and the actions of humans. Describe how changes may be catastrophes such as volcanic eruptions or ice storms.	SE: 740-743, 749, 754 <i>Integrate History</i> 417 TWE: IM 161, 746 DI 166

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18. Recognize that biological evolution accounts for the diversity of species developed through gradual processes over many generations.	SE: 159-161, 167, 172-173 TWE: TC 94 A 173

Codes Used for TWE Pages

A	Assessment
Act	Activity
AIL	Alternative Inquiry Lab
CA	Caption Answer
CB	Content Background
CC	Curriculum Connection
CD	Cultural Diversity
D	Discussion
Da	Daily Intervention
DI	Differentiated Instruction
FF	Fun Fact
IL	Inquiry Lab
IM	Identifying Misconceptions
LD	Lab Demonstration
MM	Make a Model
QD	Quick Demo
SJ	Science Journal
T	Troubleshooting
TC	Theme Connection
TF	Teacher FYI
TPK	Tying to Prior Knowledge
TQA	Text Question Answer
UA	Use an Analogy
USC	Use Science Words
VL	Visual Learning