A Correlation and Narrative Brief of

Anatomy, Physiology, and Disease
An Interactive Journey for Health Professionals
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To the

Tennessee Learning Expectations
for
Anatomy and Physiology
Overview
Makes difficult anatomy and physiology concepts easy to understand for today’s high school students.

Features and Benefits

- Incorporates a refreshing, student-friendly writing style with numerous real-world features to make learning fun, interesting, and relevant.
- Diseases, disorders, symptoms, and treatments are presented in the context of the body systems to give students a broader understanding of topics.
- Engaging applications to careers and the workplace reinforce science curriculum, stressing essential life skills such as nutrition, communication, and professionalism, to prepare students for today’s health care environment.
- Provides point-of-use definitions of medical terminology with pronunciation and word roots.
- Relates textbook concepts to actual medical cases.
- Includes a Student CD-ROM with engaging videos on employability skills and professional profiles.

Table of Contents

Chapter 1  Anatomy, Physiology, & Disease: Learning the Language
Chapter 2  The Human Body: Reading the Map
Chapter 3  The Cells: The Raw Materials and Building Blocks
Chapter 4  Tissues and Systems: The Inside Story
Chapter 5  Basic Diagnostic Tests: What Do The Tests Tell Us?
Chapter 6  The Skeletal System: The Framework
Chapter 7  The Muscular System: Movement for the Journey
Chapter 8  The Integumentary System: The Protective Covering
Chapter 9  The Nervous System: The Body’s Control Center
Chapter 10 The Endocrine System: The Body’s Other Control Center
Chapter 11 The Senses: The Sights and Sounds
Chapter 12 The Circulatory System: Transport and Supply
Chapter 13 The Respiratory System: It’s a Gas
Chapter 14 The Lymphatic and Immune Systems: Your Defense Systems
Chapter 15 The Gastrointestinal System: Fuel for the Trip
Chapter 16 The Urinary System: Filtration and Fluid Balance
Chapter 17 The Reproductive System: Replacement and Repair
Chapter 18 The Journey’s End: Now What?
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Tennessee Learning Expectations for Anatomy and Physiology

- Teacher’s Resource CD-ROM with PowerPoint® for visual presentations, an image library, and video clips.
- TestBank with TestGen provides hundreds of test questions in a variety of formats with automated grading software.
### Tennessee Learning Expectations for Anatomy and Physiology

| Standard 1.0 | The student will explore methods of scientific inquiry as they relate to the study of the anatomy and physiology of the human body. |

| Learning Expectations | The student will: |

| 1.1 Design and conduct scientific investigations to explore new medical or pharmacological techniques, examine previous results, test how well a theory predicts, and compare opposing theories. | **SE**: 91, 261, 435, 481, 563, 599, 641  
**TM**: 60, 138, 175, 201, 221, 278 |

| 1.2 Use appropriate tools and technology to produce accurate data. | **SE**: 91, 195, 227, 261, 321, 355, 481, 519, 563, 599, 641  
**TM**: 11-12, 21-22, 60, 79, 99, 118-119, 138, 175, 201, 221, 278 |

| 1.3 Communicate and defend scientific findings. | **SE**: 91, 195, 227, 261, 321, 355, 481, 519, 563, 599, 641  
**TM**: 11-12, 21-22, 60, 79, 99, 118-119, 138, 175, 201, 221, 278 |

| 1.4 Explore the history and impact of medical technology as it relates to the study of the structure and function of the human body. | **SE**: 48, 49, 150  
**TM**: 20, 21 |

| 1.5 Distinguish between human anatomy and physiology. | **SE**: 4, 5, 26  
**TM**: 2, 3, 10 |

| 1.6 Create a wellness plan related to prevention of chronic diseases and/or disorders | **SE**: 563, 641  
**TM**: 337, 395 |

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**SE** = Student Edition  
**TM** = Teacher’s Manual
### Tennessee Learning Expectations for Anatomy and Physiology

<table>
<thead>
<tr>
<th>ANATOMY AND PHYSIOLOGY</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard 2.0</strong></td>
<td>The student will explore the chemical, microscopic, and organizational structures of the body and will relate explore their role in human anatomy and physiology.</td>
</tr>
<tr>
<td><strong>Learning Expectations</strong></td>
<td></td>
</tr>
<tr>
<td>The student will:</td>
<td></td>
</tr>
</tbody>
</table>
**TM:** 26-45, 48-61, 82-100, 102-120, 122-139, 142-177, 180-203, 206-222, 224-254, 256-280, 282-307, 310-339, 342-369, 372-396 |
| **2.2** Investigate human cytology structure and function including cellular respiration and metabolism | **SE:** 58, 59, 60, 61, 62, 63, 65, 66, 68, 69, 70, 71, 72, 73, 76, 77, 78, 80, 81, 82, 83, 84, 86-87, 88-91  
**TM:** 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44-46 |
| **2.3** Explore the structure and function of human tissues/histology | **SE:** 94, 95, 96, 97, 98, 99, 100, 103, 121, 122, 123  
**TM:** 48, 49, 50, 51, 58, 59, 60 |
| **2.4** Investigate the major body regions, directions, and cavities to include organs within each and apply the correct related terminology. | **SE:** 4, 5, 6, 7, 8, 9, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 52, 53, 54, 55  
**TM:** 2, 3, 16, 17, 18, 19, 20, 21, 22 |
| **2.5** Describe the body mechanisms that maintain homeostasis. | **SE:** 14-16, 328-329, 408  
**TM:** 6, 7, 181, 182, 198-199, 200 |

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</tr>
</thead>
</table>

### ANATOMY AND PHYSIOLOGY

#### Standard 3.0

The student will explore systems that relate to the support and movement of the human body.

#### Learning Expectations

The student will:

- **3.1** Explain the structure and functions of the integumentary system and its role in homeostasis of the human body
  - SE: 230, 233, 234, 248-249
  - TM: 122, 123, 131, 132

- **3.2** Identify the skeletal system (the bones and their parts) and relate the physiological mechanisms that assist the skeletal system in fulfilling its function.
  - TM: 82-85, 86-90, 96-100

- **3.3** Illustrate the various types of muscles, including major skeletal muscles of the body, and explain the physiology of muscle contraction.

- **3.4** Investigate and explain diseases and disorders common to integumentary system
  - SE: 251, 252, 253, 254, 255, 259, 260, 261
  - TM: 132, 133, 134, 135, 136

- **3.5** Investigate and explain diseases and disorders common to skeletal system
  - SE: 185, 186, 187, 188, 189, 191
  - TM: 91, 92, 93, 94, 95, 96, 99

- **3.6** Investigate and explain diseases and disorders common to muscular system.
  - SE: 207, 208, 216, 220, 221, 222, 223
  - TM: 109, 110, 111, 112, 116

### ANATOMY AND PHYSIOLOGY

#### Standard 4.0

The student will explore systems that relate to integration, sensation, and control of the human body.

#### Learning Expectations

The student will:

- **4.1** Investigate the anatomy and physiology of the central and peripheral nervous systems from the microscopic to systemic levels.
  - TM: 149, 150, 151, 152, 153, 154, 157, 158, 159, 160, 161, 162, 164, 165

- **4.2** Analyze the anatomy and physiology of the special senses and their role in sensory perception.

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<table>
<thead>
<tr>
<th>Expectation</th>
<th>Textbook References</th>
</tr>
</thead>
</table>
| **4.3 Investigate the anatomy and physiology of the endocrine organs and connect the relation of each structure to the hormonal regulation of homeostasis.** | SE: 324-327, 332-334, 341-342, 345-346, 348-350, 353-355  
**TM:** 180, 183, 184, 185, 186, 187, 188, 189, 192, 196, 199, 200, 201, 202, 451-452 |
**TM:** 147, 148, 149, 152, 154, 155, 156, 163, 166, 167, 168, 170, 171, 172, 173, 175176, 177, 209, 210, 213, 214, 216, 217, 218 |
| **4.5 Investigate and explain diseases and disorders common to the endocrine system.** | SE: 335, 336, 337, 339, 340, 342, 343, 344, 345, 346, 349, 355  
**TM:** 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 196, 197, 198, 199, 202 |

### ANATOMY AND PHYSIOLOGY

**Standard 5.0**
The student will investigate the structure and function of body systems that relate to transportation, respiration, and defense.

**Learning Expectations**

The student will:

<table>
<thead>
<tr>
<th>Expectation</th>
<th>Textbook References</th>
</tr>
</thead>
</table>
| **5.1 Describe the molecular and cellular components of the blood and their role in the maintenance of the normal homeostasis of the human body.** | SE: 407, 408-412, 432, 433-435, 386, 388, 389, 394, 431, 433, 434, 435  
**TM:** 233, 234, 235, 236, 252, 253, 458-459, 224, 225, 250, 251, 252, 253, 254, 458, 459 |
| **5.2 Demonstrate an understanding of the anatomy and physiology of the heart and the flow of blood through the heart.** | SE: 390, 391, 392, 393, 394, 395, 396, 402, 403, 404, 405, 434, 435  
**TM:** 224, 225, 226, 227, 250, 251, 252, 253, 458-459 |
| **5.3 Describe the structure of blood vessels and label the major arteries and veins.** | SE: 390, 391, 392, 393, 394, 395, 399, 400, 401, 416, 417, 419, 420, 433, 434, 435, 436  
**TM:** 239, 240, 250, 251, 252, 253, 254, 458, 459 |
| **5.4 Describe the physiological basis of circulation and blood pressure.** | SE: 416, 417, 418, 419, 420, 433, 434, 435  
**TM:** 239, 240, 421, 250, 251, 252, 253, 458, 459 |

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</tr>
</thead>
</table>
| **5.5** Describe the structure and function of the respiratory system and demonstrate the role of the respiratory and cardiovascular systems in maintaining homeostasis. | **SE:** 438, 439, 440, 441, 442, 443, 444, 445, 447, 448, 449, 450, 453, 454, 455, 456, 457, 458, 459, 460, 469, 470, 471, 472, 473  
**TM:** 256, 257, 258, 259, 260, 261, 262, 263, 264, 270, 271, 272, 273 |
| **5.6** Describe the major organs of the lymphatic system and explain how they relate to the immune response. | **SE:** 488, 492, 493, 495, 496, 497, 498, 499, 505, 506, 507, 508, 509, 515-516  
**TM:** 282, 284, 285, 286, 287, 288, 290, 291, 292, 293, 294, 295, 296, 303, 304, 305, 464, 465, 466 |
| **5.7** Investigate and explain diseases and disorders common to cardiac system | **SE:** 396-398, 399-402, 404, 405-406, 414-415, 421, 423, 424, 426, 427, 428, 429, 430, 434, 435  
**TM:** 227, 228, 229, 230, 231, 233, 237, 238, 240, 242, 243, 244, 245, 246, 247, 248, 249, 252, 253 |
| **5.8** Investigate and explain diseases and disorders common to respiratory system | **SE:** 445, 450, 451, 452, 458, 460, 461, 462, 463, 464, 465, 468, 469, 475, 476, 480, 481  
**TM:** 259, 261, 265, 266, 267, 268, 269, 271, 274, 275, 276, 278 |
| **5.9** Investigate and explain diseases and disorders common to circulatory and lymphatic system | **SE:** 487, 488, 489, 490, 494, 495, 496, 499, 500, 501, 502, 504, 505, 511, 514, 515, 516, 518, 519  
**TM:** 284, 285, 289, 290, 291, 292, 296, 297, 298, 299, 300, 301, 301, 302, 304, 305 |

**SE = Student Edition**  
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<table>
<thead>
<tr>
<th>Tennessee Learning Expectations for Anatomy and Physiology</th>
<th>Anatomy, Physiology, and Disease: An Interactive Journey for Health Professionals, ©2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANATOMY AND PHYSIOLOGY</strong></td>
<td></td>
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<tr>
<td><strong>Standard 6.0</strong></td>
<td>The student will investigate the human organ systems that relate to nutrition, digestion, and excretion.</td>
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<td><strong>Learning Expectations</strong></td>
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<tr>
<td>The student will:</td>
<td></td>
</tr>
</tbody>
</table>
| **6.1** Analyze the structure and function of major organs of the digestive system. | **SE:** 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 536, 538, 539, 540, 541, 542, 543, 544, 546, 547, 548, 549, 559, 561, 562, 563  
  **TM:** 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 335, 336, 337 |
| **6.2** Analyze the structure and function of major organs of the excretory system. | **SE:** 138, 542, 543, 544, 566, 567, 568, 569, 570, 571, 572, 595, 597, 598, 599  
  **TM:** 322, 323, 336, 337, 342, 343, 344, 345, 359, 364, 365, 366, 367 |
| **6.3** Describe mechanisms of digestion and absorption within the body. | **SE:** 522, 523, 524, 525, 526, 527, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 561, 562, 563, 564  
  **TM:** 316, 317, 318, 319, 320, 321, 322, 323, 324, 335, 336, 337, 338, 339 |
| **6.4** Relate how nutrition, metabolism, and body temperature are interrelated. | **SE:** 220, 374-375, 585, 701, 708-711, 717  
  **TM:** 416 |
| **6.5** Examine the homeostatic mechanisms involved in the maintenance of normal fluid/electrolyte and acid/base balance. | **SE:** 136-137, 404-405, 408, 576  
  **TM:** 68, 69, 70, 71, 355, 416 |
| **6.6** Investigate and explain diseases and disorders common to digestive system. | **SE:** 138, 542, 543, 544, 566, 567, 568, 569, 570, 571, 572, 595, 597, 598, 599  
  **TM:** 318, 319, 322, 323, 324, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337 |
| **6.7** Investigate and explain diseases and disorders common to excretory system. | **SE:** 138, 545, 548, 550, 551, 552, 553, 554, 555, 556, 557, 558, 572, 573, 574, 575, 580, 581, 584, 585, 586, 587, 588, 590, 591, 592, 593, 594, 595, 597, 598, 599  
  **TM:** 334, 335, 336, 337, 344, 345, 359, 364, 365, 366, 367 |

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<table>
<thead>
<tr>
<th>Tennessee Learning Expectations for Anatomy and Physiology</th>
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</tr>
</thead>
</table>

**ANATOMY AND PHYSIOLOGY**

**Standard 7.0**
The student will investigate human body systems as they relate to reproduction, growth, and development.

**Learning Expectations**
The student will:

<table>
<thead>
<tr>
<th>7.1 Identify the structures and related functions of the male reproductive system.</th>
<th>SE: 622, 623, 624, 625, 626, 627, 628, 629, 637, 638, 639, 641</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TM: 384, 385, 386, 387, 388, 389</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7.2 Identify the structures and related functions of the female reproductive system.</th>
<th>SE: 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TM: 374, 375, 376, 377, 378, 379, 394, 395</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7.3 Indicate the duration and relate the major events at each stage of gestation.</th>
<th>SE: 602, 603, 604, 605, 606, 630, 637, 640</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TM: 372, 373, 374, 389, 394, 395, 396, 475, 476</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7.4 Investigate and explain diseases and disorders common to female reproductive system and/or pregnancy.</th>
<th>SE: 620, 621, 631, 633, 635, 636, 640, 641</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TM: 382, 383, 384, 391, 392, 394, 395</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7.5 Investigate and explain diseases and disorders common to male reproductive system.</th>
<th>SE: 624, 625, 628, 629, 636</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TM: 388, 389, 393</td>
</tr>
</tbody>
</table>

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