### Big Ideas/Key Concepts:

- Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century.
- Society benefits when engineers apply scientific discoveries to design materials and processes that develop into enabling technologies.

### Ongoing Expectations

*Note: Do not teach a separate unit at year’s beginning. Embed inquiry and tech/engineering throughout all 4 quarters within content where appropriate.*

### Honors Addendum

*Note for Teachers of Honors: Do not teach this Honors Addendum at the end of the quarter. Embed the Honors Addendum within the regular Scope & Sequence (see end of quarter).*

### Embedded Inquiry

**CLE 3251.Inq.1** Recognize that science is a progressive endeavor that reevaluates and extends what is already accepted.

**CLE 3251.Inq.2** Design and conduct scientific investigations to explore new phenomena verify previous results, test how well a theory predicts, and compare opposing theories.

**CLE 3251.Inq.3** Use appropriate tools and technology to collect precise and accurate data.

**CLE 3251.Inq.4** Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.

**CLE 3251.Inq.5** Compare experimental evidence and conclusions with those drawn by others about the same testable question.

**CLE 3251.Inq.6** Communicate and defend scientific findings.

### Embedded Technology & Engineering

**CLE 3251.T/E.1** Explore the impact of technology on social, political, and economic systems.
<table>
<thead>
<tr>
<th>CLE 3251.T/E.2</th>
<th>Differentiate among elements of the engineering design cycle: design constraints, model building, testing, evaluating, modifying, and retesting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLE 3251.T/E.3</td>
<td>Explain the relationship between the properties of a material and the use of the material in the application of a technology.</td>
</tr>
<tr>
<td>CLE 3251.T/E.4</td>
<td>Describe the dynamic interplay among science, technology, and engineering within living, earth-space, and physical systems.</td>
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</tbody>
</table>
### 2017.18 Human Anatomy, Quarter 1

#### Big Ideas/Key Concepts:
- Anatomy and physiology investigates the interdependence of structure and function to form a living, integrated whole.
- The integumentary, skeletal, and muscular systems work together to support, protect, and move body structures as well as maintain homeostasis.

<table>
<thead>
<tr>
<th>Standards</th>
<th>Student Friendly “I Can” Statements</th>
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<tr>
<td><strong>Nature of Science</strong></td>
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<td>CLE 3251.Inq.1 Recognize that science is a progressive endeavor that reevaluates and extends what is already accepted.</td>
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<td><strong>Anatomical Orientation</strong></td>
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</tr>
<tr>
<td>CLE 3251.1.1 Distinguish between anatomy and physiology.</td>
<td>I can investigate the organization of the human body in relation to its ability to accomplish life functions and construct an explanation for the relationship between anatomy and physiology.</td>
</tr>
<tr>
<td>CLE 3251.1.2 Investigate the interrelationship between the structures and functions of the body systems.</td>
<td>I can describe the levels of structural organization and observe patterns in cell and tissue types across organ systems.</td>
</tr>
<tr>
<td>CLE 3251.1.3 Investigate the body cavities, the subdivisions of each cavity, and the organs within each area.</td>
<td>I can differentiate the major organ systems of the body and describe their functional connectivity.</td>
</tr>
<tr>
<td>CLE 3251.1.4 Use correct anatomical terminology when discussing body structures, sections, and regions.</td>
<td>I can use a human model to differentiate the major body cavities and organs located within them.</td>
</tr>
<tr>
<td>CLE 3251.1.5 Describe the body mechanisms that maintain homeostasis.</td>
<td>I can describe the human model using proper anatomical and directional terminology for body regions, planes, and cavities.</td>
</tr>
<tr>
<td><strong>HAP.WCE.1:</strong> Explain negative feedback using specific examples from the human body.</td>
<td>I can explain homeostasis and describe how it is accomplished through feedback mechanisms that utilize receptors and effectors.</td>
</tr>
</tbody>
</table>
Integumentary System

CLE 3251.2.1 Identify structures of the integumentary system and show the relationship between the structures and their functions.

CLE 3251.2.2 Investigate physiological mechanisms that allow the integumentary system to function.

Skeletal System

CLE 3251.2.1 Identify structures of the skeletal system and show the relationship between the structures and their functions.

CLE 3251.2.2 Investigate physiological mechanisms that allow the skeletal system to function.

I can explain through modeling and writing, how the body regulates temperature, blood carbon dioxide levels, and blood glucose levels.

Integumentary System

I can describe the anatomical structures (epidermis, dermis, hypodermis, accessory organs, and glands) of the integumentary system and explain their role in the physiological processes of protection, temperature homeostasis, and sensation.

I can diagram a cross-sectional image of skin layers (stratum corneum, stratum lucidum, stratum granulosum, stratum spinosum, and stratum basale) identifying the microscopic components and describe the life cycle of cells that maintain these layers.

Skeletal System

I can identify major bones (including, but not limited to: clavicle, scapula, phalanges, metacarpals, carpals, sternum, femur, patella, fibula, tibia, radius, ulna, humerus, cervical vertebrae, metatarsals, tarsals, maxilla, mandible, ilium, calcaneus) within the axial and appendicular divisions describing their physiological roles in creating a body scaffold, internal organ protection, and anchor points for skeletal muscles participating in movement.

I can diagram bone structures (diaphysis, epiphysis, epiphyseal plate, periosteum, spongy bone, compact bone, articular cartilage, endosteum, red marrow, and yellow marrow), identifying regions that participate in hematopoiesis and storage of minerals and fat.

I can investigate, explain and communicate the physiological mechanisms of bone building and remodeling.

HAP.WCE.2 Communicate the physiological mechanisms involved in bone development, growth, and repair.

CLE 3251.T/E.1 Explore the impact of technology on social, political, and economic systems.

I can explore the impact of technology on social, political, and economic systems.
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**Honors Addendum**

*Note for Teachers of Honors:* Do not teach this Honors Addendum at the end of the quarter. Embed the Honors Addendum within the regular Scope & Sequence.

**Anatomical Orientation**

**CLE 3251.1.2** Investigate the interrelationship between the structures and functions of the body systems.

**CLE 3251.1.4** Use correct anatomical terminology when discussing body structures, sections, and regions.

**CLE 3251.1.5** Describe the body mechanisms that maintain homeostasis.

**Skeletal System**

**CLE 3251.2.1** Identify structures of the skeletal system and show the relationship between the structures and their functions.

---

**I can design and build, using the design cycle, an arm or leg prosthesis to increase and demonstrate depth of understanding of the skeletal system.**

**I can explain the relationship between the properties of a material and the use of the material in the application of a technology.**

**Anatomical Orientation**

I can research the structure and function of organ systems of the body.

I can evaluate the processes by which the body regulates temperature, blood carbon dioxide levels, and blood glucose levels.

I can compare and contrast the different types of bones.

I can design and build using the engineering design cycle, an arm or leg prosthesis to increase and demonstrate depth of understanding of the skeletal system.