

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

Course/Subject: HAP  
Topic: Basic Plan

Days: 9  
Grade Level: 11, 12

**Key Learning**

Basic life functions and levels of organization are essential to the structure and function of the 11 main body systems.



**Unit Essential Question**

What are the basic functions of life and the basic levels of organization that relate the basic structures and functions of the 11 human systems.

<b>Concept</b> Basic characteristics of living things	<b>Concept</b> Levels of organization of the human body	<b>Concept</b> Human body systems
<b>Standards:</b>	<b>Standards:</b>	<b>Standards:</b>
↓	↓	↓
<b>Lesson Essential Question</b> What are the basic characteristics of life?	<b>Lesson Essential Question</b> How is the human body compartmentalized?	<b>Lesson Essential Question</b> Why is the organization of the human body essential to the function of the 11 body systems?
↓	↓	↓
<b>Vocabulary</b> Life functions, Digestion, Respiration, Excretion, Circulation, Nervous, Endocrine	<b>Vocabulary</b> Chemical, Cellular, Tissues	<b>Vocabulary</b> Skeletal, Muscular, Cardiovascular, Lymphatic, Urinary, Integumentary, Reproductive

<b>Concept</b>	<b>Concept</b>	<b>Concept</b>
<b>Standards:</b>	<b>Standards:</b>	<b>Standards:</b>
↓	↓	↓
<b>Lesson Essential Question</b>	<b>Lesson Essential Question</b>	<b>Lesson Essential Question</b>

HAP 1

1/20/14

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

↓	↓	↓
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>

**Additional Information/Resources:**

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

Course/Subject: HAP  
Topic: Biochemistry

Days: 12  
Grade Level: 11, 12

**Key Learning**

Basic atomic structure relates to chemical reactions, the properties of water and organic compounds.

**Unit Essential Question**

How do the Chemical properties of compounds determine how compounds catalyze and decompose?

<b>Concept</b> Basic atomic structure and reactions.	<b>Concept</b> The properties of water.	<b>Concept</b> Major classes of organic compounds.
<b>Standards:</b>	<b>Standards:</b>	<b>Standards:</b>
↓	↓	↓
<b>Lesson Essential Question</b> How does the basic atomic structure relate to chemical reactions?	<b>Lesson Essential Question</b> What are the six major properties of water and how do these properties relate to water function?	<b>Lesson Essential Question</b> What are the four major organic compounds and why are they important to life?
↓	↓	↓
<b>Vocabulary</b> Proton, neutron, electron, valance, Synthesis, decomposition, single displacement, double displacement, dehydration synthesis	<b>Vocabulary</b> Specific heat, solubility, heat of vaporization	<b>Vocabulary</b> Proteins, carbohydrates, monosaccharides, disaccharides, polysaccharides, lipids, nucleic acids, fatty acids, glycerol

<b>Concept</b>	<b>Concept</b>	<b>Concept</b>
<b>Standards:</b>	<b>Standards:</b>	<b>Standards:</b>
↓	↓	↓

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

<u>Lesson Essential Question</u>	<u>Lesson Essential Question</u>	<u>Lesson Essential Question</u>
↓	↓	↓
<u>Vocabulary</u>	<u>Vocabulary</u>	<u>Vocabulary</u>

Additional Information/Resources:

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

Course/Subject: HAP  
Topic: Bones

Days: 25  
Grade Level: 11,12

**Key Learning**

Bones provide structure, mineral storage, blood production, and areas for the attachment of muscles in the human body.



**Unit Essential Question**

How and why are bones necessary and essential to the human body?

<b>Concept</b> General bone structure, growth, and development	<b>Concept</b> Bone remodeling, healing, and aging	<b>Concept</b> Bones of the axial skeleton
<b>Standards:</b>	<b>Standards:</b>	<b>Standards:</b>
↓	↓	↓
<b>Lesson Essential Question</b> What is the general structure of a bone? How do bones grow? What is the process of bone development?	<b>Lesson Essential Question</b> How and why do bones remodel? How do bones heal? What conditions/diseases are associated with aging and bones?	<b>Lesson Essential Question</b> What are the bones of the skull? What are the bones of the vertebral column? What are the bones of the thorax?
↓	↓	↓
<b>Vocabulary</b> Epiphysis, diaphysis, articular cartilage, cancellous bone, compact bone, medullary canal, Osteons, osteoblasts, osteoclasts	<b>Vocabulary</b> External callus, internal callus, Osteopenia, arthritis, osteoporosis	<b>Vocabulary</b> Sphenoid, ethmoid, frontal, temporal, occipital, orbit, nasal, styloid process, mastoid process, stella turicia, nasal conchae Atlas, axis, articular process, transverse process, dens, bifed spine true, false, floating ribs, sternum, hyoid process

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

<b>Concept</b> Bones of the appendicular skeleton	<b>Concept</b> Joint classification, location and use	<b>Concept</b> Comparison of axial and appendicular skeleton
<b>Standards:</b>	<b>Standards:</b>	<b>Standards:</b>
↓	↓	↓
<b>Lesson Essential Question</b> What are the bones of the arms? What are the bones of the legs?	<b>Lesson Essential Question</b> What are the various types of joints in the body? Where are the various types of joints located? How are the types of joints related to function?	<b>Lesson Essential Question</b> How are the axial and appendicular skeletons similar and different in structure and function?
↓	↓	↓
<b>Vocabulary</b> Humerous, scapula, coracoid process, acromian process, glenoid fossa, glenoid cavity, trochlea, radius, ulna, coranoid process, olecranon, capitulum, epicondyle, deltoid tuberosity	<b>Vocabulary</b> Ball and socket, gliding, saddle, hinge, synarthrosis, diarthrosis, amphiarthrosis	<b>Vocabulary</b> Shoulder girdle, pelvic girdle

**Additional Information/Resources:**

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

Course/Subject: HAP  
Topic: Cells

Days: 9  
Grade Level: 11, 12

**Key Learning**

Structure and function of cells, multicellularity, and membrane transport are important to life.






**Unit Essential Question**

How is cellular structure and function related to life functions?

<b>Concept</b> Basic cellular structure	<b>Concept</b> Basic cellular function	<b>Concept</b> Membrane transport
<b>Standards:</b>	<b>Standards:</b>	<b>Standards:</b>
↓	↓	↓
<b>Lesson Essential Question</b> How is the basic cellular structure related to life functions?	<b>Lesson Essential Question</b> How is basic cellular function related to membrane functions And transport?	<b>Lesson Essential Question</b> Why is membrane transport necessary for life?
↓	↓	↓
<b>Vocabulary</b> Cytology, Semi permeable, Phospholipids, Extracellular	<b>Vocabulary</b> Integral, Peripheral, Cytosol, Diffusion, Osmosis, Active transport	<b>Vocabulary</b> Genetic code, DNA Gene activation, Transcription, Translation, Negative feedback, Positive feedback, Cell lifecycle

<b>Concept</b>	<b>Concept</b>	<b>Concept</b>
<b>Standards:</b>	<b>Standards:</b>	<b>Standards:</b>
↓	↓	↓
<b>Lesson Essential Question</b>	<b>Lesson Essential Question</b>	<b>Lesson Essential Question</b>

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

		
<u>Vocabulary</u>	<u>Vocabulary</u>	<u>Vocabulary</u>

**Additional Information/Resources:**



EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

Course/Subject: HAP  
Topic: Muscles

Days: 11  
Grade Level: 11,12

**Key Learning**

Describe the types of muscles. Explain how muscles are necessary to human form and function.



**Unit Essential Question**

Why are muscles necessary for human form and function?

<p><b>Concept</b> The parts of a skeletal muscle and the major types of muscles</p>	<p><b>Concept</b> How do muscles gain energy and contract</p>	<p><b>Concept</b> Common muscular disorders</p>
<p><b>Standards:</b></p>	<p><b>Standards:</b></p>	<p><b>Standards:</b></p>
<p><b>Lesson Essential Question</b> What are the main parts of a skeletal muscle? What are the major types of muscles based on fibers alignment?</p>	<p><b>Lesson Essential Question</b> How does a muscle gain energy for contraction? What are the major steps of muscle contraction?</p>	<p><b>Lesson Essential Question</b> What are the common muscular disorders?</p>
<p><b>Vocabulary</b> Origin, insertion, sphincter, convergent, parallel</p>	<p><b>Vocabulary</b> ATP, CP, t-tubules, cross bridge, actin, myosin, troponin, tropomyosin, z lines, m lines, h bands, I bands, polarization, power stroke, Ach</p>	<p><b>Vocabulary</b> Muscular dystrophy, multiple sclerosis, tic, tourettes,</p>

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

<b>Concept</b> Major muscles of the upper torso	<b>Concept</b> Muscles of the lower torso	<b>Concept</b> Muscle performance
<b>Standards:</b>	<b>Standards:</b>	<b>Standards:</b>
↓	↓	↓
<b>Lesson Essential Question</b> What are the major muscles of the upper torso?	<b>Lesson Essential Question</b> What are the major muscles of the lower torso?	<b>Lesson Essential Question</b> What factors affect muscle performance? How do white and red muscle performance compare?
↓	↓	↓
<b>Vocabulary</b> Frontalis, nasalis, occipitalis, Temporalis, zygomaticus, rotator cuff, erector spinae, rectus abdominus, latissimus, transverse abdominus, deltoid, brachialis, brachioradialis, biceps, triceps, flexors, extensors, carpi	<b>Vocabulary</b> Quadriceps, biceps femoris, hamstring, gluteus, tensor fascia latte, peroneus, gastrocnemius, tibialis, gracilis, adductors	<b>Vocabulary</b> Red muscle, white muscle, integration

**Additional Information/Resources:**

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

Course/Subject: HAP  
Topic: Pig Dissection

Days: 9  
Grade Level: 11,12

**Key Learning**

Pig body structure and function is similar to humans in many areas.



**Unit Essential Question**

How does the bodily structure and function of the pig relate to humans?

<b><u>Concept</u></b> Introduction and external features of the pig	<b><u>Concept</u></b> General internal pig features.	<b><u>Concept</u></b> Pig digestive system
<b><u>Standards:</u></b>	<b><u>Standards:</u></b>	<b><u>Standards:</u></b>
↓	↓	↓
<b><u>Lesson Essential Question</u></b> What are the external features of a pig?	<b><u>Lesson Essential Question</u></b> What are the major internal features of a pig?	<b><u>Lesson Essential Question</u></b> What are the major digestive organs of a pig?
↓	↓	↓
<b><u>Vocabulary</u></b> No new vocabulary	<b><u>Vocabulary</u></b> Pericardium, omentum	<b><u>Vocabulary</u></b> Caecum

<b><u>Concept</u></b> Pig urinary and reproductive system	<b><u>Concept</u></b> Pig Respiratory and heart, internal and external organs	<b><u>Concept</u></b> Pig brain
<b><u>Standards:</u></b>	<b><u>Standards:</u></b>	<b><u>Standards:</u></b>
↓		↓

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

↓		
<p><b><u>Lesson Essential Question</u></b> What are the major features of the pig urinary and reproductive systems?</p>	<p><b><u>Lesson Essential Question</u></b> What are the major features of the pig respiratory system and heart?</p>	<p><b><u>Lesson Essential Question</u></b> What are the major features of a pig brain?</p>
↓	↓	↓
<p><b><u>Vocabulary</u></b> No new vocab</p>	<p><b><u>Vocabulary</u></b> Cardiac lobe, diaphragmatic lobe</p>	<p><b><u>Vocabulary</u></b> Sulcus, gyrus, cerebellum, cerebrum, medulla oblongata</p>

**Additional Information/Resources:**

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

Course/Subject: HAP  
Topic: Tissues

Days: 15  
Grade Level: 11,12

**Key Learning**

The human body has various types of tissues that work together to help the body function properly.






**Unit Essential Question**

How do human tissues function?

<b>Concept</b> Characteristics of four basic tissues	<b>Concept</b> Basic tissue form related to function.	<b>Concept</b> Identification of basic body tissue.
<b>Standards:</b>	<b>Standards:</b>	<b>Standards:</b>
↓	↓	↓
<b>Lesson Essential Question</b> What are the characteristics of the four basic body tissues?	<b>Lesson Essential Question</b> How are the forms of the basic body tissues related to their function?	<b>Lesson Essential Question</b> How do you visually identify basic body tissues?
↓	↓	↓
<b>Vocabulary</b> Glandular, avascular, basement membrane, squamous, cuboidal, columnar, adipocytes	<b>Vocabulary</b> GAP junction, tight junction, desmosomes, merocrine, apocrine, holocrine, fibroblasts, macrophages, microphages, cartilage, bone, membranes	<b>Vocabulary</b> Elastic cartilage, fibrocartilage, Osteons, stratified

<b>Concept</b>	<b>Concept</b>	<b>Concept</b>
<b>Standards:</b>	<b>Standards:</b>	<b>Standards:</b>
↓	↓	↓
<b>Lesson Essential</b>	<b>Lesson Essential</b>	<b>Lesson Essential</b>

EASTERN LEBANON COUNTY SCHOOL DISTRICT  
STUDENT LEARNING MAP

<u>Question</u>	<u>Question</u>	<u>Question</u>
		
<u>Vocabulary</u>	<u>Vocabulary</u>	<u>Vocabulary</u>

Additional Information/Resources: