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VISIBLE  BODY®

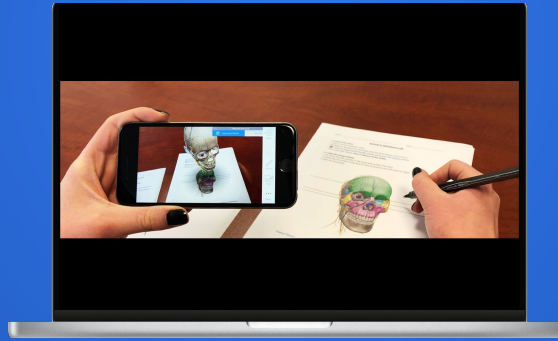
Curriculum Asset Guide

Spring 2024

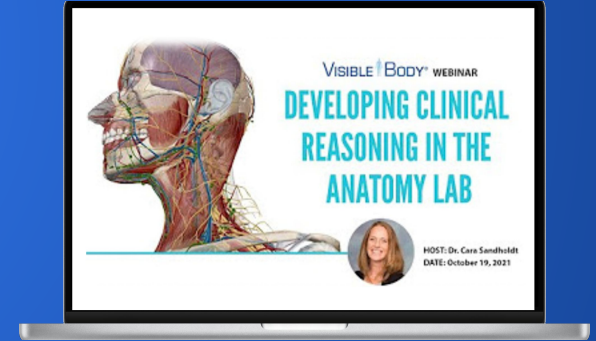


Interactive lessons and assessments
correlated to state standards

Courses and outlines correlated
to textbooks



Online and in-person, labs
and study tools



Lesson plans

Instructor community content



A message from our team...

Dear educators,

This guide provides an overview of the library of curriculum assets created over the years to support students and instructors using Visible Body.



The assets shared in this document were developed by our in-house team, as well as by our community of educators. This list is extensive and is always growing and evolving. If you do not see what you are looking for, reach out to your VB representative or email support@visiblebody.com.

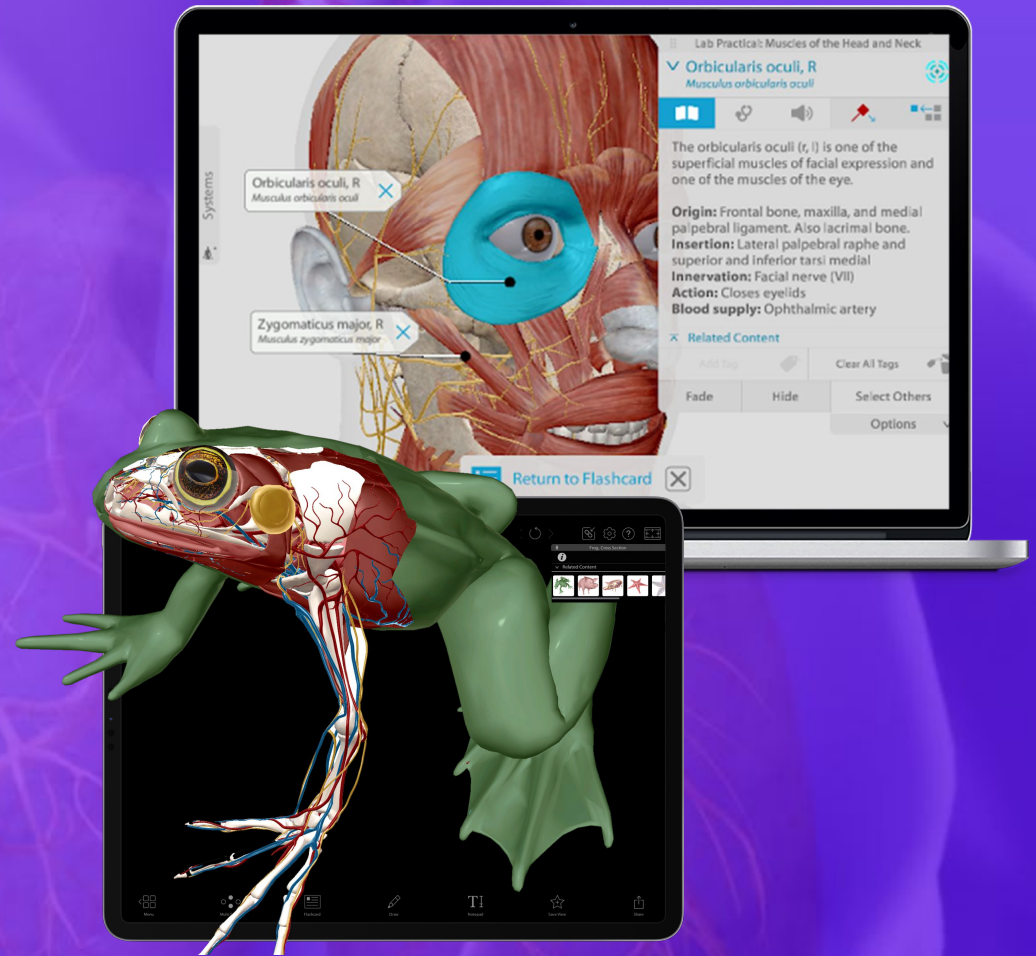


We look forward to working with you as you consider how our offerings meet your needs!

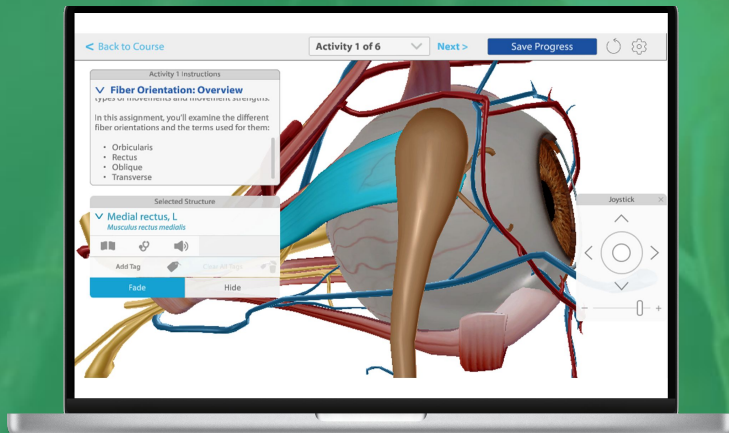
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Lessons with correlations and assessments



VISIBLE  BODY®

VB Immersive assignments

If you are looking for a student experience as straightforward as a textbook, but more visual and interactive, try our immersive assignments.

- Lessons are correlated to NGSS and a collection of state standards.
- Each lesson includes learning objectives for students to use as guidelines.
- Each lesson is formed by a series of activities and low stakes assessments that keep students aware of their progress.
- The time students spend on activities and their performance on assessments are tracked in the built-in gradebook.

Details:

- Languages available: English
- Access: Available on VB Courses page to instructors with a Courseware account.
- Development process: Each lesson is developed to be bite-sized, easily digestible, and to follow visual pedagogy. They are peer reviewed, proofread, correlated, and then released to instructors.

Anatomical Terminology

Learning Objectives

- Explain why anatomical terminology is used in anatomy and physiology
- Describe anatomical position
- Identify the four different types of planes
- Describe how each type of plane divides the body
- Describe the location of a structure using anatomical directions
- Describe the meanings of anatomical directional terms
- Describe the meanings of anatomical prefixes

Correlations:

- *FL CTE 01.03 Examine medical implications of body planes, directional terms, cavities, abdominal regions, and quadrants.*
- *FL CTE 02.01 Evaluate and apply anatomical terminology to describe location of parts or areas of the body and to describe the relation of one part to another.*
- *FL CTE 02.02 Interpret correct medical terminology including roots, prefixes and suffixes to indicate anatomical structures and function.*
- *FL CTE 02.03 Extend medical terminology to real-world applications.*

Activities and quizzes

- Introduction to Terminology
- Anatomical Position
- Quiz: Anatomical Terminology Introduction
- Planes and Positions: Overview
- Sagittal Planes
- Coronal Planes
- Transverse Planes
- Oblique Planes
- Quiz: Planes and Positions
- Anatomical Directions: Overview
- Anterior/Posterior
- Dorsal/Ventral
- Superior/Inferior
- Proximal/Distal
- Medial/Lateral
- Superficial/Deep
- Quiz: Anatomical Directions
- Anatomical Prefixes
- Quiz: Anatomical Prefixes

Excitable Tissues

Learning Objectives

- Describe what it means for tissues to become “excited”
- Identify the two types of excitable tissues involved in muscle contraction
- Identify different types of cells found in the nervous system
- Explain the role of each type of cell that makes up nervous tissue
- Describe the differences between the three types of muscle tissue
- Explain how a muscle’s structure relates to its function

Correlations:

- *FL CTE 03.3* Compare and contrast the four main types of tissue including the interrelationships of tissues.
- *FL CTE 06.6* Apply knowledge of cells and tissues in the muscular system.
- *FL CTE 07.5* Apply knowledge of cells and tissues in the nervous system.

Activities and quizzes

- Excitable Tissues: Introduction
- Quiz: Excitable Tissues
- Nervous Tissue Overview
- Neurons
- Neuroglia
- Quiz: Nervous Tissue
- Muscle Tissue Overview
- Skeletal Muscle Tissue
- Smooth Muscle Tissue
- Cardiac Muscle Tissue
- Quiz: Muscle Tissue

Cells: Plasma Membrane

Learning Objectives

- Describe the composition of the plasma membrane
- Explain how the structure of the plasma membrane impacts its function
- Explain how substances cross the plasma membrane of a cell
- Compare and contrast passive and active transport
- Describe the process of osmosis
- Predict the direction water will move into or out of a cell

Correlations:

- *FL CTE 03.01* Discuss and describe cell structure and function in healthy tissue.

Activities and quizzes

- Plasma Membrane Overview
- Hydrophilic Heads and Hydrophobic Tails
- Permeability of the Plasma Membrane
- Quiz: Structure of the Plasma Membrane
- Passive Transport
- Active Transport
- Quiz: Passive and Active Transport
- Osmosis Overview
- Hypotonic Solutions
- Hypertonic Solutions
- Isotonic Solutions
- Quiz: Osmosis

Bony Landmarks: Joint Surfaces and Bony Prominences

Learning Objectives

- Compare the different types of joint surfaces: heads, condyles, and facets
- Describe the kinds of movement each of these joint surfaces facilitates
- Identify each type of bony prominence: processes, spines, tubercles, tuberosities, crests, and epicondyles
- Describe the similarities and differences between these bony prominences

Correlations:

- *FL CTE 05.03* Identify and explain major bone markings and their implications.

Activities and quizzes

- Joint Surfaces: Overview
- Heads
- Condyles
- Facets
- Quiz: Joint Surfaces
- Prominences: Overview
- Processes
- Spines
- Tubercles
- Tuberosities
- Crests
- Epicondyles
- Quiz: Prominences

Bony Landmarks: Passageways, Indentations, and Edges

Learning Objectives

- Identify a canal, meatus, foramen, sinus, groove, and fissure
- Describe the similarities and differences between canals, meatuses, foramina, sinuses, grooves, and fissures
- Identify a fossa, notch, ramus, and margin
- Describe the similarities and differences between fossae, notches, rami, and margins

Correlations:

- *FL CTE 05.03* Identify and explain major bone markings and their implications.

Activities and quizzes

- Holes and Grooves: Overview
- Canals
- Meatuses
- Foramina
- Sinuses
- Grooves
- Fissures
- Quiz: Holes and Grooves
- Dents, Divots, and Edges: Overview
- Fossae
- Notches
- Rami
- Margins
- Quiz: Dents, Divots, and Edges

Cranial Nerves: Overview

Learning Objectives

- Identify each cranial nerve by its number and name
- Identify the sensory, motor, and mixed cranial nerves

Correlations:

- *FL CTE 07.01* Apply medical terminology as related to the nervous system.
- *FL CTE 07.02* Discuss and describe the structure and function of the nervous system across the lifespan.
- *FL CTE 07.05* Apply knowledge of cells and tissues in the nervous system.

Activities and quizzes

- Cranial Nerves Introduction
- Locating the Cranial Nerves
- Sensory Cranial Nerves
- Motor Cranial Nerves
- Mixed Cranial Nerves
- Quiz: Cranial Nerves Overview

Cranial Nerves: Sensory, Motor, and Mixed

Learning Objectives

- Identify each of the sensory cranial nerves
- Describe the functions of each sensory cranial nerve
- Identify each of the motor cranial nerves
- Describe the functions of each motor cranial nerve
- Identify each of the mixed cranial nerves
- Describe the functions of each mixed cranial nerve

Correlations:

- *FL CTE 07.01* Apply medical terminology as related to the nervous system.
- *FL CTE 07.02* Discuss and describe the structure and function of the nervous system across the lifespan.
- *FL CTE 07.05* Apply knowledge of cells and tissues in the nervous system.

Activities and quizzes

- Sensory Cranial Nerves: Overview
- CN I Olfactory Nerve
- CN II Optic Nerve
- CN VIII Vestibulocochlear Nerve
- Quiz: Sensory Cranial Nerves
- Motor Cranial Nerves: Overview
- CN III Oculomotor Nerve
- CN IV Trochlear Nerve
- CN VI Abducens Nerve
- CN XI Accessory Nerve
- CN XII Hypoglossal Nerve
- Quiz: Motor Cranial Nerves
- Mixed Cranial Nerves: Overview
- CN V Trigeminal Nerve
- CN VII Facial Nerve
- CN IX Glossopharyngeal Nerve
- CN X Vagus Nerve
- Quiz: Mixed Cranial Nerves

Endocrine Organs

Learning Objectives

- Identify the primary and secondary endocrine organs
- Compare primary and secondary endocrine organs
- Describe the functions of the primary and secondary endocrine organs

Correlations:

- *FL CTE 08.01* Apply medical terminology as related to the endocrine system.
- *FL CTE 08.02* Discuss and describe the structure and function of the endocrine system across the lifespan.
- *FL CTE 08.05* Evaluate the relationship between the endocrine system and homeostasis in health and disease.
- *FL CTE 08.06* Apply knowledge of cells and tissues in the endocrine system.

Activities and quizzes

- Endocrine Organs Introduction: Part 1
- Endocrine Organs Introduction: Part 2
- Quiz: Endocrine Organs Introduction
- Functions of the Primary Endocrine Organs
- Hypothalamus
- Pituitary Gland
- Pineal Gland
- Thyroid Gland
- Parathyroid Gland
- Adrenal Glands
- Quiz: Primary Endocrine Organs
- Functions of the Secondary Endocrine Organs
- Heart
- Thymus
- Pancreas
- Kidneys
- Male Gonads
- Female Gonads
- Quiz: Secondary Endocrine Organs

Vessels of the Thorax

Learning Objectives

- Identify the major arteries of the thorax
- Explain which structures and regions these arteries supply
- Identify the major veins of the thorax
- Describe the different ways blood can reach the azygos vein

Correlations:

- *FL CTE 09.01* Apply medical terminology as related to the cardiovascular system.
- *FL CTE 09.02* Discuss and describe the structure and function of the cardiovascular system across the lifespan.
- *FL CTE 09.03* Demonstrate knowledge of major blood vessels.

Activities and quizzes

- Arteries of the Thorax: Part 1
- Arteries of the Thorax: Part 2
- Quiz: Arteries of the Thorax
- The Azygos Vein
- Blood Flow into the Azygos Vein
- Quiz: The Azygos System

Vessels of the Head and Neck

Learning Objectives

- Identify the head and neck vessels nearest the heart
- Identify the vessels of the external head and neck
- Explain the pathway of blood through the head and neck vessels
- Identify the arteries that supply blood to the brain
- Describe the overall pathway of blood flow entering the brain
- Identify the venous structures that drain the brain
- Describe the pathway of blood flow exiting the brain

Correlations:

- *FL CTE 09.01* Apply medical terminology as related to the cardiovascular system.
- *FL CTE 09.02* Discuss and describe the structure and function of the cardiovascular system across the lifespan.
- *FL CTE 09.03* Demonstrate knowledge of major blood vessels.

Activities and quizzes

- Branches of the Aortic Arch
- Branches of the Superior Vena Cava
- Quiz: Branches of the Aortic Arch and Superior Vena Cava
- Arteries of the External Head and Neck: Part 1
- Arteries of the External Head and Neck: Part 2
- Veins of the External Head and Neck: Part 1
- Veins of the External Head and Neck: Part 2
- Quiz: External Circulation of the Head and Neck
- Blood Flow to the Brain: Overview
- Arteries at the Brainstem
- Circle of Willis: Part 1
- Circle of Willis: Part 2
- Quiz: Arteries that Supply the Brain
- Venous Sinuses: Part 1
- Venous Sinuses: Part 2
- Quiz: Veins that Drain the Brain

Respiratory Conduction: Upper Respiratory Tract

Learning Objectives

- Identify the structures of the upper respiratory tract
- Describe how the structures of the upper respiratory tract clean, warm, and moisten air
- Describe how the larynx is involved in phonation
- Explain how the larynx helps prevent food from entering the airway

Correlations:

- *FL CTE 11.01* Apply medical terminology as related to the respiratory system.
- *FL CTE 11.02* Discuss and describe the structure and function of the respiratory system across the lifespan.
- *FL CTE 11.03* Evaluate the interrelatedness of the cardiovascular and respiratory systems.
- *FL CTE 11.04* Apply knowledge of cells and tissues in the respiratory system.

Activities and quizzes

- Air Entering the Respiratory Tract
- Pathway of Air
- Quiz: Upper Respiratory Tract
- Larynx Overview
- Structure of the Larynx
- Swallowing
- Phonation
- Quiz: Larynx

Respiratory Conduction: Lower Respiratory Tract

Learning Objectives

- Identify the structures that conduct air into and out of the lungs
- Explain how debris is cleared from the respiratory tract
- Describe the relationship between air pressure and volume in the lungs
- Explain how air moves into and out of the lungs

Correlations:

- *FL CTE 11.01* Apply medical terminology as related to the respiratory system.
- *FL CTE 11.02* Discuss and describe the structure and function of the respiratory system across the lifespan.
- *FL CTE 11.03* Evaluate the interrelatedness of the cardiovascular and respiratory systems.
- *FL CTE 11.04* Apply knowledge of cells and tissues in the respiratory system.

Activities and quizzes

- Airways into the Lungs
- Trachea and Esophagus
- Protecting the Airways
- Quiz: Trachea and Bronchi
- Boyle's Law
- Expansion and Contraction of the Lungs
- Pleura
- Quiz: Moving Air in and out of the Lungs

Digestive: Small and Large Intestines

Learning Objectives

- Identify the different regions of the intestines
- Compare the functions of the small intestine and large intestine
- Explain how the structure of the small and large intestines relates to their functions
- Describe how the intestines are adapted for absorbing nutrients and water
- Describe the different types of cells within the intestines and their functions

Correlations:

- *FL CTE 12.01* Apply medical terminology as related to the digestive system.
- *FL CTE 12.02* Discuss and describe the structure and function of the digestive system across the lifespan.
- *FL CTE 12.03* Apply knowledge of cells and tissues in the digestive system.

Activities and quizzes

- Small Intestine
- Large Intestine
- Quiz: The Intestines and Their Regions
- Serosa and Muscularis
- Mucosa and Submucosa of the Small Intestine
- Mucosa of the Large Intestine
- Mesentery: Arteries
- Mesentery: Veins and Lymphatic Vessels
- Quiz: Structure of the Intestines
- Absorbing Nutrients
- Intestinal Cells
- Hormones Produced by Intestinal Cells
- Intestinal Lymphatic Structures
- Quiz: Absorption and Secretion in the Intestines

Urinary: Nephrons and Glomerular Filtration

Learning Objectives

- Describe the structure of the glomerulus
- Explain how the glomerulus helps filter blood
- Explain the role podocytes play in glomerular filtration
- Describe how the glomerular filtration rate can increase or decrease

Correlations:

- *FL CTE 13.01* Apply medical terminology as related to the urinary system.
- *FL CTE 13.02* Discuss and describe the structure and function of the urinary system across the lifespan.
- *FL CTE 13.03* Justify the interrelatedness of the urinary and cardiovascular system in promoting homeostasis.
- *FL CTE 13.04* Apply knowledge of cells and tissues in the urinary system.

Activities and quizzes

- Nephron Structure: Renal Corpuscle
- Glomerular Filtration
- The Glomerulus: Overview
- Structure of the Glomerular Capillaries
- Quiz: The Glomerulus
- Factors of Glomerular Filtration Rate
- Filtration Slits
- Fluid Pressure: Part 1
- Fluid Pressure: Part 2
- Quiz: Glomerular Filtration Rate

Urinary: Nephrons and Urine Production

Learning Objectives

- Explain how materials move through the renal tubule
- Explain how urine is produced
- Describe how salt concentration levels affect water movement in the nephron loop

Correlations:

- *FL CTE 13.01* Apply medical terminology as related to the urinary system.
- *FL CTE 13.02* Discuss and describe the structure and function of the urinary system across the lifespan.
- *FL CTE 13.03* Justify the interrelatedness of the urinary and cardiovascular system in promoting homeostasis.
- *FL CTE 13.04* Apply knowledge of cells and tissues in the urinary system.

Activities and quizzes

- Flow of Fluid
- Renal Tubule: Reabsorption and Secretion
- Proximal and Distal Convoluted Tubules
- Nephron Loop
- Nephron Loop: Descending Limb
- Nephron Loop: Ascending Limb
- Final Absorption and Secretion
- Quiz: Absorption

Male Reproductive System

Learning Objectives

- Identify the male external and internal reproductive structures
- Describe how male reproductive structures are involved in sperm creation, activation, transport, and support
- Identify the structures sperm travels through before exiting the body
- Explain how sperm is created from male reproductive stem cells
- Identify where immature and mature sperm cells are created and stored

Correlations:

- *FL CTE 14.01* Apply medical terminology as related to the each of the male and female reproductive systems.
- *FL CTE 14.02* Discuss and describe the structure and function of both reproductive systems across the lifespan.
- *FL CTE 14.03* Apply knowledge of cells and tissues of both reproductive systems.

Activities and quizzes

- Male External Reproductive Anatomy
- Fascia
- Structures Underneath the Fascia
- Quiz: Male Reproductive Anatomy
- Sperm Creation, Maturation, and Storage
- Internal Pathway of Sperm
- Seminal Fluids
- Quiz: Pathway of Sperm
- Creation of Sperm
- Sperm Cell Creation via Meiosis
- Quiz: Creation of Sperm

Female Reproductive System

Learning Objectives

- Identify the female reproductive structures
- Explain the functions of the female reproductive structures
- Describe each type of oocyte that develops from ovarian stem cells
- Explain the process of oogenesis

Correlations:

- *FL CTE 14.01* Apply medical terminology as related to the each of the male and female reproductive systems.
- *FL CTE 14.02* Discuss and describe the structure and function of both reproductive systems across the lifespan.
- *FL CTE 14.03* Apply knowledge of cells and tissues of both reproductive systems.

Activities and quizzes

- Female External Reproductive Anatomy: Overview
- External Reproductive Structures: Part 1
- External Reproductive Structures: Part 2
- Quiz: Female External Reproductive Anatomy
- The Ovaries and Uterine Tubes
- The Uterus
- The Vagina and Cervix
- Quiz: Female Internal Reproductive Anatomy
- Primary Oocytes
- Secondary Oocytes
- Meiosis in Oocytes
- Quiz: Oogenesis

Muscle Naming: Introduction

Learning Objectives

- Apply some basic rules for naming muscles
- Explain how a muscle's name can give insight about its attachments, shape, location, action, and other characteristics

Correlations:

- *FL CTE 06.01* Apply medical terminology as related to the muscular system.
- *FL CTE 06.02* Discuss and describe the structure and function of the muscular system across the lifespan.
- *FL CTE 06.06* Apply knowledge of cells and tissues in the muscular system.

Activities and quizzes

- Muscle Naming Schemes: Overview
- Origin and Insertion
- Number of Heads
- Shape
- Muscle Action
- Location
- Relative Descriptors
- Fiber Orientation
- Quiz: Muscle Naming Introduction

Muscle Naming: Origin, Insertion, and Number of Heads

Learning Objectives

- Explain how a muscle's name can give insight about its attachments
- Describe how origins and insertions impact movement, speed, and strength

Correlations:

- *FL CTE 06.01* Apply medical terminology as related to the muscular system.
- *FL CTE 06.02* Discuss and describe the structure and function of the muscular system across the lifespan.
- *FL CTE 06.06* Apply knowledge of cells and tissues in the muscular system.

Activities and quizzes

- Origin and Insertion
- Attachments and Movement
- Number of Heads
- Quiz: Origins, Insertions, and Number of Heads

Muscle Naming: Fiber Orientation

Learning Objectives

- Explain how a muscle's name can give insight about its fiber orientation
- Describe how fiber orientation relates to muscle movement

Correlations:

- *FL CTE 06.01* Apply medical terminology as related to the muscular system.
- *FL CTE 06.02* Discuss and describe the structure and function of the muscular system across the lifespan.
- *FL CTE 06.06* Apply knowledge of cells and tissues in the muscular system.

Activities and quizzes

- Fiber Orientation: Overview
- Orbicularis
- Rectus
- Oblique
- Transverse
- Quiz: Fiber Orientation

Muscle Naming: Shape and Movement

Learning Objectives

- Explain how a muscle's name can give insight about its shape and action
- Explain complex muscle movements, based on the muscle's anatomy

Correlations:

- *FL CTE 06.01* Apply medical terminology as related to the muscular system.
- *FL CTE 06.02* Discuss and describe the structure and function of the muscular system across the lifespan.
- *FL CTE 06.06* Apply knowledge of cells and tissues in the muscular system.

Activities and quizzes

- Shape and Movement: Overview
- Trapezius
- Deltoid
- Rhomboideus
- Serratus
- Quiz: Shape and Movement

Muscle Naming: Location

Learning Objectives

- Explain how a muscle's name can give insight about its location

Correlations:

- *FL CTE 06.01* Apply medical terminology as related to the muscular system.
- *FL CTE 06.02* Discuss and describe the structure and function of the muscular system across the lifespan.

Activities and quizzes

- Location: Overview
- Head and Neck Regions
- Thoracic and Abdominal Regions
- Arm Muscles
- Leg Muscles and Pelvic Region
- Quiz: Location

Muscle Naming: Relative Descriptors

Learning Objectives

- Explain how a muscle's name can give insight about its relative characteristics

Correlations:

- *FL CTE 06.01* Apply medical terminology as related to the muscular system.
- *FL CTE 06.02* Discuss and describe the structure and function of the muscular system across the lifespan.
- *FL CTE 06.06* Apply knowledge of cells and tissues in the muscular system.

Activities and quizzes

- Relative Descriptors: Overview
- Relative Size
- Relative Length
- Relative Location: Part 1
- Relative Location: Part 2
- Quiz: Relative Descriptors

Layers of Skin

Learning Objectives

- Identify the layers of the skin
- Describe the structure and function of each skin layer
- Explain how the skin protects the body's tissues and organs

Correlations:

- *FL CTE 04.01* Apply medical terminology as related to the integumentary system.
- *FL CTE 04.02* Discuss and describe the structure and function of the integumentary system across the lifespan.
- *FL CTE 04.03* Demonstrate knowledge of cells and tissues in the integumentary system.

Activities and quizzes

- Layers of the Skin: Overview
- Epidermis: Part 1
- Epidermis: Part 2
- Dermis: Overview
- Dermis: Papillary Layer
- Dermis: Reticular Layer
- Hypodermis
- Quiz: Layers of the Skin

Skin Cells, Pigmentation, and Touch Receptors

Learning Objectives

- Identify the different types of skin cells
- Describe the functions of the different types of skin cells
- Explain the difference between melanocytes and melanin
- Describe the factors that influence skin pigmentation
- Identify the different types of skin receptors
- Explain the function of dermatomes

Correlations:

- *FL CTE 04.01* Apply medical terminology as related to the integumentary system.
- *FL CTE 04.02* Discuss and describe the structure and function of the integumentary system across the lifespan.
- *FL CTE 04.03* Demonstrate knowledge of cells and tissues in the integumentary system.

Activities and quizzes

- Skin Cells: Overview
- Melanocytes
- Keratinocytes
- Langerhans Cells
- Tactile (Merkel) Cells
- Fibroblasts
- Quiz: Skin Cells
- Skin Pigmentation: Part 1
- Skin Pigmentation: Part 2
- Quiz: Skin Pigmentation
- Touch Receptors: Overview
- Touch Receptors: Tactile (Merkel) Epithelial Cells
- Touch Receptors: Tactile (Meissner's) Corpuscles
- Touch Receptors: Free Nerve Endings
- Touch Receptors: Lamellar (Pacinian) Corpuscles
- Dermatomes
- Quiz: Touch Receptors

Hair and Skin Glands

Learning Objectives

- Identify the structures of hair
- Describe the function of each hair structure
- Explain the factors that influence hair shape and color
- Identify the different glands found in the integumentary system
- Compare the functions of the glands found in the integumentary system

Correlations:

- *FL CTE 04.01* Apply medical terminology as related to the integumentary system.
- *FL CTE 04.02* Discuss and describe the structure and function of the integumentary system across the lifespan.
- *FL CTE 04.03* Demonstrate knowledge of cells and tissues in the integumentary system.

Activities and quizzes

- Hair: Overview
- Hair Anatomy: Matrix
- Hair Anatomy: Cortex and Medulla
- Hair Anatomy: Internal and External Root Sheaths
- Hair Shape
- Hair Color
- Quiz: Hair
- Skin Glands: Overview
- Sebaceous (Oil) Glands
- Apocrine Sweat Glands
- Eccrine Sweat Glands
- Quiz: Skin Glands

Immune Cells: Monocytes

Learning Objectives

- Explain the role of monocytes in the immune response
- Describe the process of phagocytosis

Correlations:

- *FL CTE 10.01* Apply medical terminology as related to the lymphatic and immune systems.
- *FL CTE 10.02* Discuss and describe the structure and function of the lymphatic and immune systems across the lifespan.
- *FL CTE 10.06* Evaluate and discuss the body's defense mechanisms in relation to common communicable diseases.
- *FL CTE 10.07* Apply knowledge of cells and tissues in the lymphatic and immune systems.

Activities and quizzes

- Monocytes
- Monocytes and Phagocytosis
- Macrophages
- Dendritic Cells
- Quiz: Monocytes

Immune Cells: Granulocytes

Learning Objectives

- Identify the different types of granulocytes
- Describe the role of different granulocytes in immunity

Correlations:

- *FL CTE 10.01* Apply medical terminology as related to the lymphatic and immune systems.
- *FL CTE 10.02* Discuss and describe the structure and function of the lymphatic and immune systems across the lifespan.
- *FL CTE 10.06* Evaluate and discuss the body's defense mechanisms in relation to common communicable diseases.
- *FL CTE 10.07* Apply knowledge of cells and tissues in the lymphatic and immune systems.

Activities and quizzes

- Granulocytes: Overview
- Neutrophils
- Basophils
- Eosinophils
- Quiz: Granulocytes

Immune Cells: Lymphocytes

Learning Objectives

- Define adaptive immunity
- Compare the function of different lymphocytes during adaptive immune responses

Correlations:

- *FL CTE 10.01* Apply medical terminology as related to the lymphatic and immune systems.
- *FL CTE 10.02* Discuss and describe the structure and function of the lymphatic and immune systems across the lifespan.
- *FL CTE 10.05* Discuss the impact of B cells and T cells on diseases of the immune system.
- *FL CTE 10.06* Evaluate and discuss the body's defense mechanisms in relation to common communicable diseases.
- *FL CTE 10.07* Apply knowledge of cells and tissues in the lymphatic and immune systems.

Activities and quizzes

- Lymphocytes: Overview
- Adaptive Immunity: Part 1
- Adaptive Immunity: Part 2
- B Cells
- T Cells
- Natural Killer Cells
- Quiz: Lymphocytes

The Energy Cycle

Learning Objectives

- Identify the phases of cellular respiration
- Identify the reactants and products of cellular respiration
- Identify the reactions of photosynthesis
- Identify the reactants and products of photosynthesis
- Compare the processes of cellular respiration and photosynthesis

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Cellular Respiration: Overview
- Cellular Respiration Equation
- Quiz: Cellular Respiration: Introduction
- Photosynthesis: Overview
- Photosynthesis Reactions
- Photosynthesis Equation
- Quiz: Photosynthesis: Introduction
- Cellular Respiration vs. Photosynthesis: Reactants and Products
- Specialized Organelles: Mitochondria
- Specialized Organelles: Chloroplasts
- Electron Transport Chain
- Quiz: Comparing Cellular Respiration and Photosynthesis

Cellular Respiration

Learning Objectives

- Identify the phases of cellular respiration
- Identify the reactants and products of cellular respiration
- Identify the structures that make up a mitochondrion
- Explain the function of each mitochondria structure
- Describe how glucose and oxygen are needed to initiate phases of cellular respiration
- Describe how carbon dioxide, water, and ATP are produced by cellular respiration
- Describe what happens during glycolysis, pyruvate oxidation, the citric acid cycle, and oxidative phosphorylation

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Cellular Respiration: Overview
- Cellular Respiration Equation
- Quiz: Cellular Respiration: Introduction
- Mitochondria Structures
- Functions of Mitochondria Structures
- Where Cellular Respiration Occurs
- Quiz: Mitochondria Structures and Their Functions
- Reactants and Products: Overview
- Cellular Respiration Reactants: Glucose
- Cellular Respiration Reactants: Oxygen
- Cellular Respiration Products: Carbon Dioxide
- Cellular Respiration Products: Water
- Cellular Respiration Products: ATP
- Quiz: Cellular Respiration Reactants and Products
 - Phase 1: Glycolysis
 - Phase 2: Pyruvate Oxidation
 - Phase 3: Citric Acid Cycle
 - Phase 4: Oxidative Phosphorylation
- Quiz: Cellular Respiration Phases

Chromosomes and DNA Structure

Learning Objectives

- Identify the key structures of eukaryotic chromosomes
- Explore the functions of eukaryotic chromosome structures
- Identify the key structures of prokaryotic chromosomes
- Explore the functions of prokaryotic chromosome structures
- Compare the structure of eukaryotic and prokaryotic chromosomes
- Identify the components that make up DNA
- Explore the components of DNA and how they're bound together to form the double helix

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Chromosomes and DNA: Overview
- Eukaryotic Chromosome Structure
- Quiz: Eukaryotic Chromosomes
- Eukaryotic Chromosomes: Nucleosomes
- Eukaryotic Chromosomes: Chromatin
- Eukaryotic Chromosomes and Gene Expression
- Quiz: Eukaryotic DNA Coiling and Supercoiling
- Prokaryotic Chromosome Structure
- Nucleoid-Associated Proteins
- Plasmids
- Quiz: Prokaryotic Chromosomes
- Comparing Eukaryotic and Prokaryotic Chromosomes: Part 1
- Comparing Eukaryotic and Prokaryotic Chromosomes: Part 2
- Quiz: Comparing Eukaryotic and Prokaryotic Chromosomes
- DNA Structure: Overview
- DNA Structure: Sugar-Phosphate Backbone
- DNA Structure: Base Pairs
- Molecular Structure of DNA
- Quiz: DNA Structure

Prokaryotic and Eukaryotic Cells

Learning Objectives

- Identify the key structures of bacterial (prokaryotic) cells.
- Explain the functions of bacterial cell structures.
- Identify the key structures of animal and plant (eukaryotic) cells.
- Compare the structure and functions of animal and plant cells.
- Compare the structure and functions of prokaryotic and eukaryotic cells.

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Cells: Overview
- Prokaryotic Cells: Overview
- Prokaryotic Organelles: Fimbriae and Pili
- Prokaryotic Organelles: Flagella
- Prokaryotic Cell Structures: DNA
- Quiz: Prokaryotic Cells
- Eukaryotic Cells: Overview
- Eukaryotic Cytoskeleton
- Eukaryotic Organelles: Endoplasmic Reticulum
- Eukaryotic Organelles: Golgi Complex
- Eukaryotic Organelles: Mitochondria
- Eukaryotic Organelles: Peroxisomes and Lysosomes
- Eukaryotic Organelles: Nucleus
- Unique Plant Structures
- Quiz: Eukaryotic Cells
- Prokaryotic Cells vs. Eukaryotic Cells: External Structures
- Prokaryotic Cells vs. Eukaryotic Cells: DNA
- Prokaryotic Cells vs. Eukaryotic Cells: Shared Structures
- Quiz: Comparing Prokaryotic and Eukaryotic Cells

Photosynthesis

Learning Objectives

- Identify the reactions of photosynthesis
- Identify the reactants and products of photosynthesis
- Identify the leaf structures that are involved in photosynthesis
- Explain the role each leaf structure plays in photosynthesis
- Identify the chloroplasts in a plant cell
- Identify the structures that make up a chloroplast
- Explain the function of each chloroplast structure
- Describe how carbon dioxide and water are needed to initiate photosynthesis
- Describe how oxygen and glucose are produced by photosynthesis
- Describe what happens during the light-dependent and light-independent reactions of photosynthesis

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Photosynthesis: Overview
- Photosynthesis Equation
- Quiz: Photosynthesis Introduction
- Leaf Structures and Their Roles in Photosynthesis: Part 1 and 2
- Chloroplast Overview
- Quiz: Leaf Structures and Their Roles in Photosynthesis
- Chloroplast Structures and Their Roles in Photosynthesis: Part 1 & 2
- Quiz: Chloroplast Structures and Their Roles in Photosynthesis
- Reactants and Products: Overview
- Photosynthesis Reactants: Carbon Dioxide
- Photosynthesis Reactants: Water
- Photosynthesis Reactants: Photons
- Photosynthesis Products: Glucose
- Photosynthesis Products: Oxygen
- Quiz: Reactants and Products of Photosynthesis
- Light-Dependent Reactions: Part 1 & 2
- Light-Independent Reactions: Part 1 & 2
- Quiz: Photosynthesis Reactions

Earthworm Dissection

Learning Objectives

- Identify the external and internal structures of the earthworm
- Describe how the earthworm moves, distributes oxygen through its body, digests food and expels waste, and reproduces
- Explain how the earthworm adapted to survive in its environment
- Observe the earthworm's body systems via dissection

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Earthworm: Overview
- External Features of the Earthworm
- Earthworm: Integumentary System
- Earthworm: Muscular System
- Quiz: Earthworm Integumentary and Muscular Systems
- Earthworm: Nervous System
- Earthworm: Circulatory System
- Earthworm: Respiratory System
- Quiz: Earthworm Nervous, Circulatory, and Respiratory Systems
- Earthworm: Digestive System (Part 1 & 2)
- Earthworm: Excretory System
- Earthworm: Reproductive System Overview
- Earthworm: Male Reproductive Structures
- Earthworm: Female Reproductive Structures
- Quiz: Earthworm Digestive, Excretory, and Reproductive Systems

Sea Star Dissection

Learning Objectives

- Identify the external and internal structures of the sea star
- Describe how the sea star moves, distributes oxygen through its body, digests food and expels waste, and reproduces
- Explain how the sea star adapted to survive in its environment
- Observe the sea star's body systems via dissection

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Sea Star: Overview
- External Features of the Sea Star
- Sea Star: Integumentary System
- Sea Star: Support System
- Quiz: Sea Star Integumentary and Support Systems
- Sea Star: Nervous System
- Sea Star: Circulatory System (Canals)
- Sea Star: Circulatory System (Tube Feet)
- Sea Star: Respiratory System
- Quiz: Sea Star Nervous, Circulatory, and Respiratory Systems
- Sea Star: Digestive System (Part 1 & 2)
- Sea Star: Reproductive System
- Quiz: Sea Star Digestive and Reproductive Systems

Frog Dissection

Learning Objectives

- Identify the external and internal structures of the frog
- Describe how the frog moves, distributes oxygen through its body, digests food and expels waste, and reproduces
- Explain how the frog adapted to survive in its environment
- Observe the frog's body systems via dissection

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Frog: Overview
- External Features of the Frog
- Frog: Integumentary System
- Frog: Muscular System
- Frog: Skeletal System (Axial Skeleton)
- Frog: Skeletal System (Appendicular Skeleton Part 1 & 2)
- Quiz: Frog Integumentary, Muscular, and Skeletal Systems
- Frog: Nervous System Overview
- Frog: Central Nervous System (CNS)
- Frog: Peripheral Nervous System (PNS)
- Frog: Circulatory System (Heart)
- Frog: Great Vessels (Part 1 & 2)
- Frog: Pulmonary Respiration
- Frog: Cutaneous Respiration
- Quiz: Frog Nervous, Circulatory, and Respiratory Systems
- Frog: Digestive System (Part 1 & 2)
- Frog: Reproductive System
- Frog: Excretory System
- Quiz: Frog Digestive, Reproductive, and Excretory Systems

Pig Dissection

Learning Objectives

- Identify the external and internal structures of the pig
- Describe how the pig moves, distributes oxygen through its body, digests food and expels waste, and reproduces
- Explain how the pig adapted to survive in its environment
- Observe the pig's body systems via dissection

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Pig: Overview
- External Features of the Pig
- Pig: Integumentary System
- Pig: Muscular System
- Pig: Skeletal System (Axial Skeleton)
- Pig: Skeletal System (Appendicular Skeleton)
- Quiz: Pig Integumentary, Muscular, and Skeletal Systems
- Pig: Nervous System Overview
- Pig: Central Nervous System (CNS)
- Pig: Peripheral Nervous System (PNS)
- Pig: Circulatory System (Heart)
- Pig: Great Vessels (Part 1 & 2)
- Pig: Respiratory System
- Pig: Lungs
- Quiz: Pig Nervous, Circulatory, and Respiratory Systems
- Pig: Digestive System Overview
- Pig: Intestines
- Pig: Reproductive System (Part 1 & 2)
- Pig: Excretory System
- Quiz: Pig Digestive, Reproductive, and Excretory Systems

Animal Diversity: Comparing Digestive Systems

Learning Objectives

- Identify the digestive structures of the sea star, earthworm, frog, and pig
- Describe how the sea star, earthworm, frog, and pig digest food and expel waste
- Compare the digestive structures and functions of the sea star, earthworm, frog, and pig
- Describe key digestive adaptations that help the sea star, earthworm, frog, and pig get the nutrients they need to survive in their environments
- Identify which of these animals has the simplest and most complex digestive system

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Comparing Digestive Systems: Overview (Part 1 & 2)
- Quiz: Introduction to Animal Digestive Systems
- Digestive System: Sea Star (Part 1 & 2)
- Quiz: Digestive System: Sea Star
- Digestive System: Earthworm (Part 1 & 2)
- Quiz: Digestive System: Earthworm
- Digestive System: Frog (Part 1, 2, & 3)
- Quiz: Digestive System: Frog
- Digestive System: Pig (Part 1, 2, & 3)
- Quiz: Digestive System: Pig
- Unique Digestive Structures (Part 1, 2, & 3)
- Comparing Absorptive Structures (Part 1 & 2)
- Quiz: Comparing Animal Digestive Systems

Animal Diversity: Comparing Circulatory Systems

Learning Objectives

- Identify the circulatory structures of the sea star, earthworm, frog, and pig
- Describe how the earthworm, frog, and pig circulate blood throughout their bodies and how the sea star circulates water throughout its body
- Compare the circulatory structures and functions of the sea star, earthworm, frog, and pig
- Describe key circulatory adaptations that help the sea star, earthworm, frog, and pig survive in their environments
- Identify which of these animals has the simplest and most complex circulatory system

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Comparing Circulatory Systems: Overview (Part 1 & 2)
- Quiz: Introduction to Animal Circulatory Systems
- Circulatory System: Sea Star (Part 1 & 2)
- Quiz: Sea Star Circulatory System
- Circulatory System: Earthworm
- Quiz: Earthworm Circulatory System
- Circulatory System: Frog (Part 1 & 2)
- Quiz: Frog Circulatory System
- Circulatory System: Pig (Part 1 & 2)
- Quiz: Pig Circulatory System
- Unique Circulatory Structures (Part 1 & 2)
- Comparing Circulatory Structures
- Quiz: Comparing Animal Circulatory Systems

Animal Diversity: Comparing Respiratory Systems

Learning Objectives

- Identify the respiratory structures of the sea star, earthworm, frog, and pig
- Describe how the sea star, earthworm, frog, and pig exchange gases with their environments
- Compare the respiratory structures and functions of the sea star, earthworm, frog, and pig
- Describe key respiratory adaptations that help the sea star, earthworm, frog, and pig get the oxygen they need to survive in their environments
- Identify which of these animals has the simplest and most complex digestive system

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Comparing Respiratory Systems: Overview (Part 1)
- Comparing Respiratory Systems: Overview (Part 2)
- Quiz: Introduction to Animal Respiratory Systems
- Respiratory System: Sea Star
- Quiz: Sea Star Respiratory System
- Respiratory System: Earthworm
- Quiz: Earthworm Respiratory System
- Respiratory System: Frog (Part 1 & 2)
- Quiz: Frog Respiratory System
- Respiratory System: Pig (Part 1 & 2)
- Quiz: Pig Respiratory System
- Unique Respiratory Structures (Parts 1–4)
- Comparing Respiratory Structures
- Quiz: Comparing Animal Respiratory System

Animal Diversity: Comparing Nervous Systems

Learning Objectives

- Identify the nervous structures of the sea star, earthworm, frog, and pig
- Describe how the sea star, earthworm, frog, and pig receive sensory information from their environments and how the nervous system contributes to body movements
- Compare the nervous structures and functions of the sea star, earthworm, frog, and pig
- Describe key nervous system adaptations that help the sea star, earthworm, frog, and pig survive in their environments
- Identify which of these animals has the simplest and most complex nervous system

Correlations:

- Correlations for NGSS, Florida, NC, Texas, NY, PA, IL and CA available in intro bio lesson plans through the instructor resources link in Courseware

Activities and quizzes

- Comparing Nervous Systems: Overview (Part 1 & 2)
- Quiz: Introduction to Animal Nervous Systems
- Nervous System: Sea Star
- Quiz: Sea Star Nervous System
- Nervous System: Earthworm (Part 1 & 2)
- Quiz: Earthworm Nervous System
- Nervous System: Frog (Part 1, 2, & 3)
- Quiz: Frog Nervous System
- Nervous System: Pig (Part 1 & 2)
- Quiz: Pig Nervous System
- Unique Nervous Structures (Part 1, 2, & 3)
- Comparing Nervous Structures (Part 1, 2, & 3)
- Quiz: Comparing Animal Nervous Systems

Courses and outlines correlated to textbooks



VISIBLE  BODY®

Course Outlines and Textbook Correlations

Our database includes tens of thousands of visual assets and educational content. If you are an instructor or course developer looking to easily map our assets to your course, try a course outline or textbook-correlated course!

- Each course contains a series of folders with topics aligned to either a standard course or a popular textbook.
- In each folder are visual assets and quizzes for that topic. These include 3D models, animations, assessments, flashcard decks, lab activities, etc.
- The assets are organized into assignments and the instructions for assignments can be edited to fit course objectives and goals.

Details:

- Languages available: English
- Access: Available on VB Courses page to instructors with a Courseware account.
- Development process: Each correlation is developed by a VB Education Team member and reviewed for quality assurance.

[Get anatomy labs correlations](#)

- 7 anatomy lab correlations
- Correlated to popular lab manuals and to the VB lab activities
- Autograding available

A&P Textbook Correlations [A&P](#) | [Physiology](#)

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 - Includes most popular A&P textbooks and textbooks for Kinesiology, physical therapy, and health sciences

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 - Includes short and extended A&P courses
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[Biology Course Correlations](#)

- Includes biology correlations and labs
- Textbook correlations for Openstax, Campbell, and Miller

Online, in-person, and AR labs

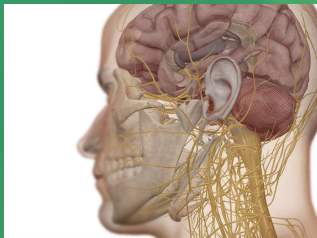
Lab manuals and lab activities

VB curricula includes extended labs and activities that can be completed in one session

- Use the 3D content in VB Suite with the extended lab manuals to enhance a wet lab or complete a fully virtual lab.
- Get students out of their seats with our augmented reality labs. These shorter series of activities have students use iPads, iPhones, or Android devices as a tool to see and interact with 3D models in students' own environment.

Details:

- Languages available: Multiple languages
- Access: Available on the VB website. No account needed. Use with VB Suite or Courseware.
- Development process: Each lab is developed to follow our visual and interactive pedagogy, is peer reviewed, proofread, correlated, and then released.



VISIBLE BODY

The Brain

A nervous system lab activity using Visible Body Suite

Blythe Nilson, Associate Professor of Biology,
University of British Columbia Okanagan



VISIBLE BODY

The Respiratory System

A respiratory system lab activity using Visible Body Suite

Andrew Criss, Doctoral Lecturer at York College

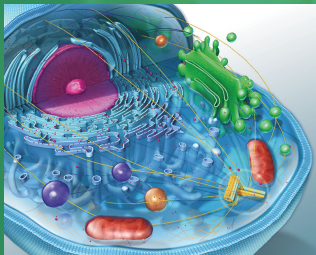


VISIBLE BODY

The Human Heart

A circulatory system lab activity using Visible Body Suite

Melli Crenshaw, Instructor of Biology, TCU



Biology Lab Activities:

Prokaryotic and Eukaryotic Cells

Adrienne Devlin, Executive Editor at Visible Body

VISIBLE BODY®

Labs with lesson plans and correlations

Extended anatomy labs

- Dozens of extended labs with varying levels of difficulty
- Lesson plans
- Objectives that correlate to HAPS, NGSS, and state standards

Biology labs

- More than a dozen labs
- Includes comparison of vertebrates and invertebrates
- Lesson plans with NGSS and state standard correlations

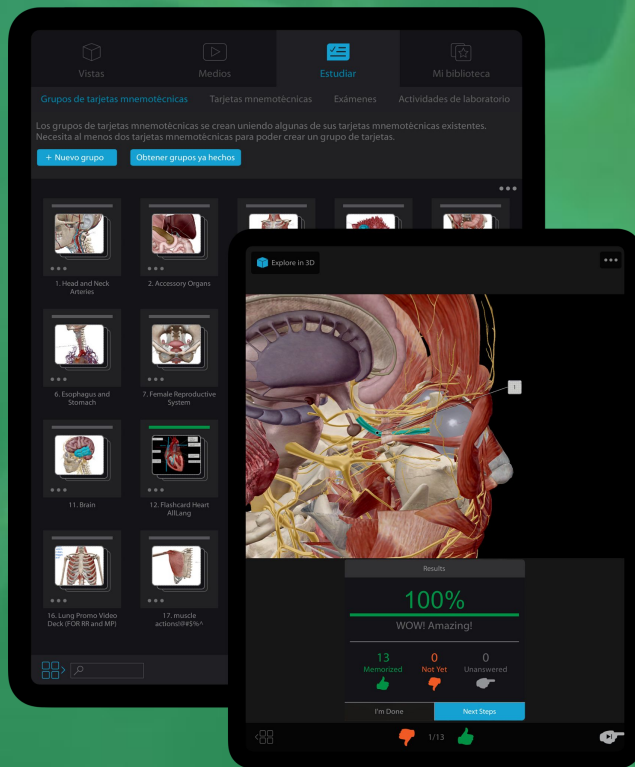
Augmented reality labs

- Augmented Reality labs for key organs
- Lesson plans with objectives
- Translations: French, German, Chinese, Japanese, Italian, Spanish

Lesson plan blog posts

- Ideas for interactive activities using the features of VB Suite and VB Courseware
- Step-by-step details
- Links to VB resources

Study tools and lesson plans



VISIBLE  BODY®

Flashcards, Tours, Videos, Lesson and Lecture Ideas

The VB Education Team uses our visual and interactive product to produce content that keeps students engaged in the learning process. Content includes:

- Flashcard decks students can use to study
- 3D Tours with which instructors can lecture or make assignments
- A Youtube channel with lessons on key concepts covered in life sciences courses
- The VB Learn Site, with its brief and visual presentations instructors can assign to students
- A blog with lesson ideas, lesson plans, and instructor interviews

Details:

- Languages available: English, plus multiple languages for the Learn Site
- Access: Available via our website. No account needed. Exceptions: Flashcards and 3D Tours. These require a VB Suite or Courseware account.
- Development process: Content is developed to follow our visual and interactive pedagogy, is peer reviewed, proofread, correlated, and then released.

Flashcard decks

- Dozens of Flashcard decks for anatomy & biology key concepts
- Available in multiple languages
- Easy to download and use, or modify as needed

Youtube lessons in biology and human body topics

- 15-minute lessons on key biology topics
- 2-5 minute visual mini-lessons on the human body

Presentation Tours

- Interactive presentations on key concepts
- Available in multiple languages
- Easy to download and use, or modify as needed

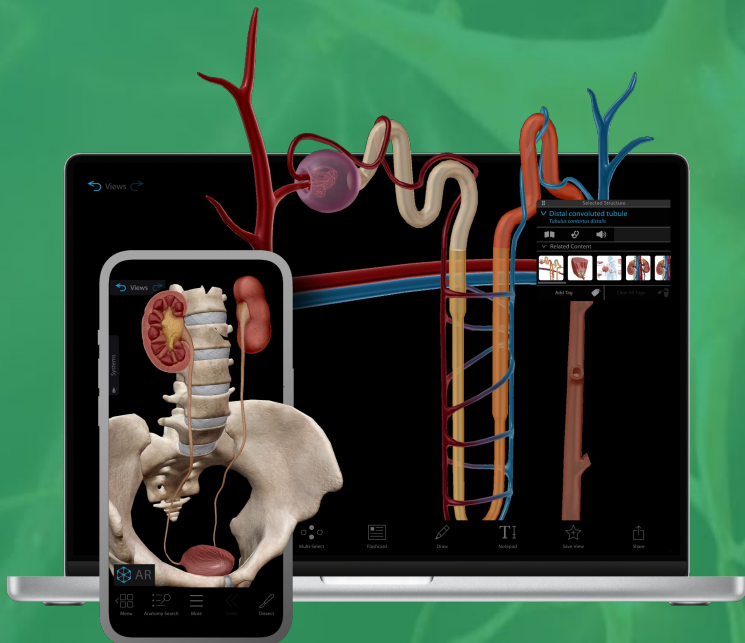
Lesson plan blog posts

- Ideas for interactive activities using the features of VB Suite and VB Courseware
- Step-by-step details
- Links to VB resources

Visual reviews of key biology and human body course topics

- Ideal for quick review or intro presentations
- Available in multiple languages

Community content



VISIBLE  BODY®

Content posted by the Education Team and instructors from our education community

The VB Education Community is a place where curriculum designers, instructors, and our customer engagement team post content they created that VB users can readily use!

The site includes

- Complete course outlines
- Lessons and assessments
- Presentations
- Flashcards
- Handouts
- Tutorials on key VB software features

[Browse the VB Education Community](#)

Training & Support

Need more assistance?

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Education Team!

The Education Team is
staffed with technology
experts and educators

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Contact the VB Education Team!

- LMS integration set up
- Student and educator training
- Syllabus integration 1:1 with faculty for their courses

[See example training](#)

