



Program Transfer Goals

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Utilize, create, and analyze models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

PACING

First Nine Weeks		
Introduction to Anatomy 4.5 weeks	Integumentary System 2 weeks	Anatomical Terminology 1.5 weeks

Second Nine Weeks		
Skeletal System 2.5 weeks total	Muscular System 2.5 weeks	Nervous System 2 weeks

Third Nine Weeks			
Senses 1.5 weeks total	Endocrine System 2.5 weeks	Digestive System & Nutrition 3.5 weeks	Cardiovascular & Respiratory Systems 2.5 weeks

Fourth Nine Weeks			
Excretory System 1 week	Immune & Lymphatic Systems 2.5 weeks	Reproductive System 2.5 weeks	Cat Dissection 1 week

Assurances for a Guaranteed and Viable Curriculum

Adherence to this scope and sequence affords every member of the learning community clarity on the knowledge and skills on which each learner should demonstrate proficiency. In order to deliver a guaranteed and viable curriculum, our team commits to and ensures the following understandings:

Shared Accountability: Responding to the Needs of All Learners

- High levels of learning for all students.
- The district and course formative assessments aligned to the standards for this course support educators and learners in monitoring academic achievement and leveraging interventions.

Shared Understanding: Curriculum Design

- The district curriculum design weaves together the elements of content, skills and assessments in order to adhere to curriculum design at the macro and micro level, ensuring vertical alignment.
- The district curriculum incorporates standards, scope and sequence, enduring understandings, essential questions, performance assessments, and recommended resources.

Interdependence: Curriculum Units

Members of the learning community utilize the curriculum units, plan collaboratively, and reflect on results for continuous improvement.

The district curriculum units may be found: <http://tinyurl.com/Coppell-Curriculum>

UNIT 1: INTRODUCTION TO ANATOMY & PHYSIOLOGY

TIMELINE: 4.5 WEEKS - 1ST GRADING PERIOD

Unit Summary: Review concepts learned in previous life science courses such as lab safety, cells & tissues. Provide students with basic anatomical terminology that will help them understand concepts throughout the year. Includes fetal pig dissection.

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Students will know...

- Cells carry out all the chemical activities the body needs to survive
- Tissues provide a division of labor among body cells
- Organelle structures affect cell function
- Membrane structure allows for selective transport of materials into and out of the cell
- Cellular transports regulate homeostasis at the cellular level
- Mistakes in cell division can lead to diseases & disorders such as cancer
- Cells communicate with each others in 3 general categories; no distance, short distance, long distance

Students will be skilled at...

- Plan and implement a scientific inquiry to prove osmosis is a process that moves water from high concentration to low concentrations.
- Collecting data
- Communicating results from lab
- Interpreting diagrams
- Discussing their health with their healthcare providers.

UNIT 2: THE INTEGUMENTARY SYSTEM

TIMELINE: 2 WEEKS - 1ST GRADING PERIOD

Unit Summary: An overview of structure and function of the integumentary system. Students will learn how aging, diseases, disorders and trauma affect the integumentary system. Students will learn how the integumentary system works with other systems to maintain health.

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Students will know...

- The body is composed of 4 types of membranes
- The integumentary system aids the body in maintaining homeostasis
- Each layer of the skin has a specific function
- Environmental factors have a strong impact on the integumentary system
- Structure is related to function
- The sensory structures function together to help the body maintain homeostasis

Students will be skilled at...

- Collecting & interpreting data
- Communicating results from lab
- Interpreting diagrams
- Forming conclusions based on scientific evidence
- make choices in selecting everyday products using scientific research findings
- evaluate the impact of research on scientific thought, society, and the environment
- Discussing their health with their healthcare providers.

UNIT 3: ANATOMICAL TERMINOLOGY

TIMELINE: 1.5 WEEKS - 1ST GRADING PERIOD

Unit Summary: Students will acquire anatomical terminology vocabulary that will help learn all human body systems and help them communicate in anatomical language with their healthcare providers.

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- Utilize, create, and analyze models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

Students will know...

- Anatomical terminology is essential in medical records to make sure communication is consistent between physicians.

Students will be skilled at...

- Describing the human body using anatomical terms.
- Discussing their health with their healthcare providers.

UNIT 4: THE SKELETAL SYSTEM

TIMELINE: 2.5 WEEKS - 2ND GRADING PERIOD

Unit Summary: An overview of structure and function of the skeletal system. Students will learn how aging, diseases, disorders and trauma affect the skeletal system. Students will learn how the skeletal system works with other systems to maintain health.

Transfer Goal:

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Utilize, create, and analyze models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

Students will know...

- The skeletal system provides a variety of functions, such as protection/support, mineral storage, hematopoiesis, & attachment for muscles to aid in movement.
- Bone is living tissue that changes/ remodels overtime as a result of factors such as hormones, gravity, genetics, weight, gender, etc.
- The interaction of the muscular and skeletal system allows our body to move.

Students will be skilled at...

- Collecting & interpreting data
- Communicating results from lab
- Interpreting diagrams
- Forming conclusions based on scientific evidence

- make choices in selecting everyday products using scientific research findings
- evaluate the impact of research on scientific thought, society, and the environment
- Discussing their health with their healthcare providers.
- Splinting broken limbs

UNIT 5: THE MUSCULAR SYSTEM

TIMELINE: 2.5 WEEKS - 2ND GRADING PERIOD

Unit Summary: An overview of structure and function of the muscular system. Students will learn how aging, diseases, disorders and trauma affect the muscular system. Students will learn how the muscular system works with other systems to maintain health.

Transfer Goal:

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Utilize, create, and analyze models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

Students will know...

- The interaction of the muscular system and skeletal system allows our body to move. Coordination of this movement is regulated by voluntary & involuntary messages from the nervous system.
- Muscle contraction is dependent on a variety of nutrients/elements that we get from our diet. Poor diets can result in immature undeveloped muscles and or conditions such as cramps.
- There are 3 varieties of muscles with distinct functions relating to movement of our skeleton, heart and fluids/food.

Students will be skilled at...

- Collecting & interpreting data
- Communicating results from lab
- Interpreting diagrams
- Forming conclusions based on scientific evidence
- Make choices in selecting everyday products using scientific research findings
- Evaluate the impact of research on scientific thought, society, and the environment
- Discussing their health with their healthcare providers.

UNIT 6: THE NERVOUS SYSTEM

TIMELINE: 2 WEEKS - 2ND GRADING PERIOD

Unit Summary: An overview of structure and function of the nervous system. Students will learn how aging, diseases, disorders and trauma affect the nervous system. Students will learn how the nervous system works with other systems to maintain health.

Transfer Goal:

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Utilize, create, and analyze models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

Students will know...

- The structure of a neuron affects its function

- The structure of the brain affects its functioning ability.
- Brain trauma relates to the area affected.
- The environment potentially can cause harm to brain development.

Students will be skilled at...

- Collecting & interpreting data
- Communicating results from lab
- Interpreting diagrams
- Forming conclusions based on scientific evidence
- Make choices in selecting everyday products using scientific research findings
- Evaluate the impact of research on scientific thought, society, and the environment
- Discussing their health with their healthcare providers.
- Make healthier choices involving sleep and use of electronic devices
- Testing reflexes & interpreting results
- Analyzing how drugs & brain injuries affect the CNS
- Analyzing how damage to the CNS effects the rest of the body.

UNIT 7: SENSES

TIMELINE: 1.5 WEEKS - 3RD GRADING PERIOD

Unit Summary: An overview of structure and function of the sense organs. Students will learn how aging, diseases, disorders and trauma affect the sense organs. Students will learn how the sense organs works with other systems to maintain health.

Transfer Goal:

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Utilize, create, and analyze models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

Students will know...

- The brain interprets information from your sense organs so their sense of things can be different from other people who experience the same thing.

Students will be skilled at...

- Collecting & interpreting data
- Communicating results from lab
- Interpreting diagrams
- Forming conclusions based on scientific evidence
- Make choices in selecting everyday products using scientific research findings
- Evaluate the impact of research on scientific thought, society, and the environment
- Discussing their health with their healthcare providers.

UNIT 8: THE ENDOCRINE SYSTEM

TIMELINE: 2.5 WEEKS - 3RD GRADING PERIOD

Unit Summary: An overview of structure and function of the endocrine system. Students will learn how aging, diseases, disorders and trauma affect the endocrine system. Students will learn how the endocrine system works with other systems to maintain health.

Transfer Goal:

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Utilize, create, and analyze models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

Students will know...

- The endocrine system, along with the nervous system, is important in overall body homeostasis.
- Hypo or hypersecretion of hormones can lead to a variety of diseases/disorders.
- Sleep is important in your overall health.

Students will be skilled at...

- Collecting & interpreting data
- Communicating results from lab
- Interpreting diagrams
- Forming conclusions based on scientific evidence
- Make choices in selecting everyday products using scientific research findings
- Evaluate the impact of research on scientific thought, society, and the environment
- Discussing their health with their healthcare providers.
- Make healthier choices involving sleep and use of electronic devices

UNIT 9: THE DIGESTIVE SYSTEM AND NUTRITION

TIMELINE: 3.5 WEEKS - 3RD GRADING PERIOD

Unit Summary: An overview of structure and function of the digestive system. Students will learn how aging, diseases, disorders and trauma affect the digestive system system. Students will learn how the digestive system works with other systems to maintain health. Students will learn how their nutrition affects all body systems.

Transfer Goal:

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Utilize, create, and analyze models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

Students will know...

- Proper nutrition comes from a variety of food sources
- Specialized diets are needed if the body does not produce the correct hormones or enzymes for digestion of food
- Food is fuel for the body - good nutrition is needed for the body to function properly

Students will be skilled at...

- Collecting & interpreting data
- Communicating results from lab
- Interpreting diagrams
- Forming conclusions based on scientific evidence
- Make choices in selecting everyday products using scientific research findings
- Evaluate the impact of research on scientific thought, society, and the environment
- Reading food labels and making smart nutritional decisions
- Making informed decisions on nutrition - not believing in the latest fads or commercials - for themselves and their family in the future
- Discussing their health with their healthcare providers.

UNIT 10: THE CARDIOVASCULAR & RESPIRATORY SYSTEMS

TIMELINE: 2.5 WEEKS - 3RD GRADING PERIOD

Unit Summary: An overview of structure and function of the cardiovascular and respiratory systems. Students will learn how aging, diseases, disorders and trauma affect the cardiovascular and respiratory systems. Students will learn how the cardiovascular & respiratory systems works with other systems to maintain health.

Transfer Goal:

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Utilize, create, and analyze models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

Students will know...

- There are two types of circulation – systemic and pulmonary.
- Operational heart valves are essential to proper heart functioning.
- Many factors affect and determine blood pressure and pulse rate.
- Regular exercise and diets low in fat and cholesterol help maintain heart health.
- Gas exchange occurs over capillary walls.
- The respiratory passage runs from the nasal cavity to the alveoli.
- There are several protective mechanisms for the respiratory system.
- Respiratory muscles cause volume change that lead to airflow.
- Oxygen and carbon dioxide modify the rate and depth of breathing.
- Many physical factors alter the rate of respiration.

Students will be skilled at...

- Collecting & interpreting data
- Communicating results from lab
- Interpreting diagrams
- Forming conclusions based on scientific evidence
- Make choices in selecting everyday products using scientific research findings
- Evaluate the impact of research on scientific thought, society, and the environment
- All students will be certified in CPR/First Aid through AHA (if possible)
- Monitoring their own heart rate &/or blood pressure and that of others

- Making informed decisions for healthy cardiovascular & respiratory system (no smoking, exercise, diet, etc.)
- Discussing their health with their healthcare providers.

UNIT 11: THE EXCRETORY SYSTEM

TIMELINE: 1 WEEK - 4TH GRADING PERIOD

Unit Summary: An overview of structure and function of the excretory system. Students will learn how aging, diseases, disorders and trauma affect the excretory system. Students will learn how the excretory system works with other systems to maintain health.

Transfer Goal:

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Utilize, create, and analyze models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

Students will know...

- The nephron is the functional unit of the kidney.
- The kidney has several anatomical regions.
- The nephron is responsible for urine formation.
- Urine formation is regulated by hormonal

Students will be skilled at...

- Collecting & interpreting data
- Communicating results from lab
- Interpreting diagrams
- Forming conclusions based on scientific evidence
- Make choices in selecting everyday products using scientific research findings
- Evaluate the impact of research on scientific thought, society, and the environment

UNIT 12: THE IMMUNE & LYMPHATIC SYSTEMS

TIMELINE: 2.5 WEEKS - 4TH GRADING PERIOD

Unit Summary: An overview of structure and function of the immune & lymphatic systems. Students will learn how aging, diseases, disorders and trauma affect the immune & lymphatic systems. Students will learn how the immune and lymphatic systems works with other systems to maintain health.

Transfer Goal:

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Utilize, create, and analyze models to understand the world.
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Students will know...

- The lymphatic system returns plasma to the blood stream after cleaning it.

- There are specific and nonspecific methods the body uses to protect itself.
- The skin and mucous membranes have a protective function
- There are five classes of antibodies.

Students will be skilled at...

- Collecting & interpreting data
- Communicating results from lab
- Interpreting diagrams
- Forming conclusions based on scientific evidence
- Make choices in selecting everyday products using scientific research findings
- Evaluate the impact of research on scientific thought, society, and the environment
- Making healthier choices that will help prevent them from getting sick

UNIT 13: THE REPRODUCTIVE SYSTEM

TIMELINE: 2.5 WEEKS - 4TH GRADING PERIOD

Unit Summary: An overview of structure and function of the reproductive system. Students will learn how aging, diseases, disorders and trauma affect the reproductive system. Students will learn how the reproductive system works with other systems to maintain health.

Transfer Goal:

- Ask questions, recognize and define problems, and propose solutions.
- Safely and ethically collect, analyze, and evaluate appropriate data.
- Utilize, create, and analyze models to understand the world.
- Make valid claims and informed decisions based on scientific evidence.
- Effectively communicate scientific reasoning to a target audience.

Students will know...

- The structures of the reproductive system are especially adapted for their functions.
- The reproductive system ensures continuity of the species by producing offspring.
- The process of implantation is very specific.
- Pregnancy alters the functioning of the mother's body.
- Many agents can interfere with fetal development.
- Several diseases can be passed through sexual intercourse

Students will be skilled at...

- Collecting & interpreting data
- Communicating results from lab
- Interpreting diagrams
- Forming conclusions based on scientific evidence
- Make choices in selecting everyday products using scientific research findings
- Evaluate the impact of research on scientific thought, society, and the environment
- Making healthier choices that will help prevent them from getting sick

UNIT 14: CAT DISSECTION

TIMELINE: 1 WEEK - 4TH GRADING PERIOD

Unit Summary: The students will use the cat dissection to review all body systems studied throughout the year, identify how structure relates to function and how the systems work together to maintain health.

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Students will know...

- All body systems are interdependent on each other to remain healthy

Students will be skilled at...

- Identifying major organs of all body systems
- Evaluating how structure relates to function in the human body
- Identifying any possible anatomical abnormalities that the specimen may have had
- Communicating results from the dissection