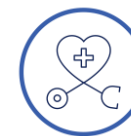


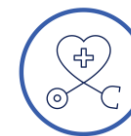
STEMploration Health Sciences Virtual Lessons

Unit Overview

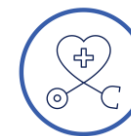
Lesson	Overview	Student Learning Outcomes	Time
STEMploration Health Sciences Virtual Lessons Lesson 1: Introduction	Have you ever thought about what a career in health sciences might be like? This lesson is an introduction to the Allied Health Sciences. In this lesson you will review different possibilities and careers in the health sciences and take a first-person role as a first responder. You will also begin to follow the case of a young skateboarder from accident to recovery.	<ul style="list-style-type: none">Describe some of the careers in the Allied Health Sciences.Explain why it is important to make informed career choices.Use subjective and objective information to make sense of an emergency situation.	45-50 minutes
STEMploration Health Sciences Virtual Lessons Lesson 2: Respiration	In this lesson, the skateboard accident patient is transported to the ER. The ambulance arrived with an EMT and a supervising paramedic. You, taking on the role of a young, allied health professional, will complete a lab on respiratory distress that connects body systems and illustrates how labored breathing can impact heart rate. You will also consider whether you might be interested in becoming an EMT.	<ul style="list-style-type: none">Explain the body as a system of interacting subsystems.Understand how respiratory distress affects heart rate.Analyze data to summarize results and report conclusions.	45-50 minutes
STEMploration Health Sciences Virtual Lessons	When dealing with broken bones, the first responder needs to be able to do a quick assessment of the break and then stabilize the injury for transport to the emergency room. Being able to create a standardized, safe, and effective splint is essential for this work in	<ul style="list-style-type: none">Explain the role of bones in the functioning of the human body.	45-50 minutes



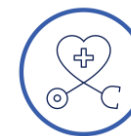
Lesson 3: The Skeletal System	<p>caring for patients. In this lesson, you will learn a standardized splinting technique, review the different types of broken bones, and learn about x-rays. This lesson also introduces the careers of x-ray technician and radiologist.</p>	<ul style="list-style-type: none"> • Summarize the stages of how bones heal. • Review the different types of bone fractures. 	
STEMploration Health Sciences Virtual Lessons Lesson 4: Exploring the Emergency Room	<p>Emergency rooms are busy places where many different health science professionals work together to help patients. In this lesson you will review different types of careers and events that take place in the emergency room and get a good look at the brain and its functions. You will also continue to follow the medical journey of the skateboarder and his experience with getting a CT scan.</p>	<ul style="list-style-type: none"> • Describe the role of a Radiology Technician. • Use subjective and objective information to make sense of an emergency situation. • Make inferences when reading CT scan. 	45-50 minutes
STEMploration Health Sciences Virtual Lessons Lesson 5: Blood and the Human Body	<p>A phlebotomist's role in the health professions is to draw and test blood from patients. In this lesson you will learn some basics about blood and explore the career of a phlebotomist and its role in the day-to-day operations of a doctor's office or medical lab. You will also be visiting with our skateboarder patient and seeing his experience getting blood drawn.</p>	<ul style="list-style-type: none"> • Explain the role of a phlebotomist. • Explain blood typing and its importance. • Define the different human blood types. 	45-50 minutes
STEMploration Health Sciences Virtual Lessons Lesson 6: Skin our Body's Largest Organ	<p>In this lesson, you will take on the role of physician assistant specializing in surgery to take care of our skateboard patient. You will also learn how the skin heals, and more deeply about the physician assistant career.</p>	<ul style="list-style-type: none"> • Explain how skin heals. • Use new knowledge about how wounds heal to reflect on common first aid practices. • Explain the role of a physician assistant. 	45-50 minutes



STEMploration Health Sciences Virtual Lessons	<p>What exactly are germs and how do healthcare professionals in hospitals protect themselves and their patients from infection? In this lesson you will consider the role of the sterilization technician, the behind-the-scenes person in the operation room who works to keep the equipment sterile. You will also explore healthcare-associated infections and explore the differences between viruses and bacteria.</p>	<ul style="list-style-type: none"> • Explain the role of a surgical technician. and a sterilization technician. • Compare and contrast viruses and bacteria. • List the different types of PPE and when they should be used. • Describe how contamination occurs. 	45-50 minutes
STEMploration Health Sciences Virtual Lessons	<p>Biomechanics is the application of the principles of mechanics (physics) to the living body. The body's skeletomuscular system is comprised of levers that give it mechanical advantage when working with the force of gravity to produce movement. Physical therapists understand these principles and use them to rehabilitate injuries so that people can experience a normal range of motion in their joints and movement that is not compromised. In this lesson, you will explore the action of levers and how the body is made up of many levers.</p>	<ul style="list-style-type: none"> • Explain the role of a physical therapist. • Explain muscles and bones of the human body function together as levers. • Justify categorization of lever types. 	45-50 minutes
STEMploration Health Sciences Virtual Lessons	<p>Do Humans Have a Sixth Sense? In this lesson, you will meet up with our skateboarder and explore our sixth sense of proprioception. You will also dive into the occupational therapist career and learn the difference between occupational therapy and physical therapy.</p>	<ul style="list-style-type: none"> • Explain the difference between physical therapy and Occupational Therapy. • Describe the visual sense, the somatosensory sense, the kinesthetic sense, and the vestibular sense. 	45-50 minutes



STEMploration Health Sciences Virtual Lessons Lesson 10: Mental Health and Healing	<p>The patient, family, and community members are often experiencing very extreme, negative emotions in a hospital setting. In this lesson you will practice active listening and communication skills to de-escalate situations when they become heightened to the point of verging on violence.</p>	<ul style="list-style-type: none"> • Explain the social worker career. • Describe de-escalation techniques & active listening techniques. • Understand the importance of good communication skills. 	45-50 minutes
STEMploration Health Sciences Virtual Lessons Lesson 11: Safety and Epidemiology	<p>In this lesson you will explore the field of epidemiology, from the perspective of a health data analyst at the Centers for Disease Control. Many adults and children, like our skateboarder, are resistant to using helmets when engaging in sports activities that have a risk of violent impact to the head—skating, skiing, and cycling, to name a few. They often think that a head injury or death due to a head injury would not happen to them. In this lesson you will learn the importance of wearing a helmet and explore data on death and injury due to lack of helmet use.</p>	<ul style="list-style-type: none"> • Explain the role of a data analyst. • Explain how statistics and patterns can help us make informed decisions as a community • Understand what statistics are and how they are used in the Allied Health field. 	45-50 minutes
STEMploration Health Sciences Virtual Lessons Lesson 12: Closure	<p>This lesson begins with some questions designed to help you recall the work you've done and what you've learned throughout this Allied Health Sciences unit. You will engage in a reflective portfolio assignment and share your final thoughts with your classmates in Flipgrid.</p>	<ul style="list-style-type: none"> • Reflect on your learning and growth over time • Communicate your learning and growth over time 	45-50 minutes



Implementation Best Practice

Best Practice	Mini Unit	Introduction to Health Sciences	
All 12 lessons in order	Lessons 1 through 5	Lessons 1 through 3 only	Lesson1: Introduction
			Lesson 2: Respiration
			Lesson 3: Exploring the Emergency Room
			Lesson 4: The Skeletal System
			Lesson 5: Blood and the Human Body
			Lesson 6: Skin our Body's Largest Organ
			Lesson 7: The Operating Room & Disease Risk
			Lesson 8: Biomechanics
			Lesson 9: Occupational Therapy
			Lesson 10: Mental Health and Healing
			Lesson 11: Safety and Epidemiology
			Lesson 12: Closure