



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
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Cardiac Arrest! Using Forensics to Investigate Cardiovascular Anatomy and Function

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Forensic Science has become the darling of high schools, colleges, and graduate schools around the country in the last few years. A myriad of television shows have popularized forensic science, and it even has its own cable channel: Court TV. High school and middle school teachers can capitalize on this fascination by incorporating crime scenarios into their lessons in biology, chemistry, physics, environmental science, or just about any discipline to generate interest and relevancy. For those of us privileged to teach Forensic Science introductory courses in high school it is an opportunity to have students use scientific inquiry constantly in the classroom. Forensic science is the essential applied science. Students use the scientific method to gather data and use the data to support or refute a hypothesis of "what happened?"

This unit is written to incorporate the study of the anatomy and physiology of the cardiovascular system into a Forensic Science class. It is a very versatile unit that can be adapted to any high school biology, anatomy and physiology, forensic science, or health class and parts can be used in middle or elementary school to study the heart. It is multidisciplinary in that it makes use of reading, writing, scientific investigative, artistic, and presentation skills. It is inquiry-based in that the students must decide what kind of information they need and form their own questions to solve the mystery. The lessons are based on a scenario in which a body is found and an inexperienced coroner can only say that "cardiac arrest" has taken place. Students must determine the various mechanisms of cardiac arrest and try to determine a more specific cause of death and whether or not a crime has been committed. The highlight of the unit is the "Heart Game." Students actually "become" the parts of the heart and the circulating red blood cells and act out the path of circulation. The heart game can be played at any grade level by including or excluding anatomical parts and varying the complexity of the path of circulation.

The unit is written for a 12th grade Forensic Science class but can be modified for biology, anatomy and physiology or health or used for the study of the cardiovascular system in middle school. The "Heart Game" can be played by any grade level.

(Recommended for Biology, grades 6-8; Anatomy and Physiology, Forensic Science, Health, and Biology, grades 9-12.)

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