

Unit 5: Toxicology/Drugs

Content Area: **Science**
Course(s):
Time Period: **Generic Time Period**
Length: **3 weeks**
Status: **Published**

Unit Introduction

This topic will cover the techniques that forensic toxicologists use to isolate and identify drugs and poisons.

Standards

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| SCI.9-12.HS-ESS3-6.4.1 | When investigating or describing a system, the boundaries and initial conditions of the system need to be defined and their inputs and outputs analyzed and described using models. |
| SCI.9-12.HS-ETS1-4.4.1 | Models (e.g., physical, mathematical, computer models) can be used to simulate systems and interactions— including energy, matter, and information flows— within and between systems at different scales. |
| SCI.9-12.HS-LS1-1.6.1 | students investigate systems by examining the properties of different materials, the structures of different components, and their interconnections to reveal the system's function and/or solve a problem. They infer the functions and properties of natural and designed objects and systems from their overall structure, the way their components are shaped and used, and the molecular substructures of their various materials. |
| SCI.9-12.HS-LS1-3.7.1 | Feedback (negative or positive) can stabilize or destabilize a system. |
| SCI.9-12.HS-PS1-1.1.1 | students observe patterns in systems at different scales and cite patterns as empirical evidence for causality in supporting their explanations of phenomena. They recognize classifications or explanations used at one scale may not be useful or need revision using a different scale; thus requiring improved investigations and experiments. They use mathematical representations to identify certain patterns and analyze patterns of performance in order to reengineer and improve a designed system. |
| SCI.9-12.HS-PS1-4.5.1 | Changes of energy and matter in a system can be described in terms of energy and matter flows into, out of, and within that system. |
| SCI.9-12.HS-PS1-6.7.1 | students understand much of science deals with constructing explanations of how things change and how they remain stable. They quantify and model changes in systems over very short or very long periods of time. They see some changes are irreversible, and negative feedback can stabilize a system, while positive feedback can destabilize it. They recognize systems can be designed for greater or lesser stability. |

Essential Questions

What techniques do forensic toxicologists utilize to isolate and identify drugs and poisons?

What is the importance of discovering drugs in human tissues and organs?

Content / Skills

Content:

- The role of forensic toxicology
- The analysis of blood for alcohol
- The role of the toxicologist
- Techniques used in toxicology

Skills:

- Explain how alcohol is absorbed into the bloodstream and transported throughout the body
- Identify and contrast laboratory procedures for measuring the concentration of alcohol in the blood
- Analyze the techniques utilized by forensic toxicologists
- Define the role of the forensic toxicologist and examine how their role relates to the outcome of a case