

# Unit 2: Forensic Toxicology & Drug Identification

Content Area: **Science**  
Course(s): **Forensics**  
Time Period: **2nd Marking Period**  
Length: **5 Weeks**  
Status: **Published**

## Unit Overview

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Introduction to the name and classification of commonly abused drugs. Define and describe the goals and practices of forensic toxicology.

## Transfer

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Students will be able to independently use their learning to...

What kinds of long term, independent accomplishments are desired?

Identify the different types of abused drugs according to their classification.

Compare and contrast psychological and physical dependence of drugs.

Describe the different field and laboratory tests used to identify drugs.

Understand the proper collection and preservation of drug evidence.

Identify the different types of controlled substances.

Describe the goals and practices of forensic toxicology.

## Meaning

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## Understandings

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Students will understand that...

What specifically do you want students to understand?

What inferences should they make/grasp/realize?

The different types of controlled substances.

The psychological and physical dependence of drugs.

Drug control laws and the controlled substance act.

The different field and laboratory tests used to identify drugs.

The policies and procedures used in the collection and preservation of drug evidence.

The role that toxins play in causing death.

The goals and practices of toxicology.

## **Essential Questions**

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Students will keep considering...

What thought provoking questions will foster inquiry, meaning making and transfer?

What are the psychological and physical effects of drugs?

What are the different types of controlled substances?

What are the signs and symptoms of a drug overdose?

What type of toxins can cause death?

What are some of the different agents that can be used in bioterrorism?

## **Application of Knowledge and Skill**

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### **Students will know...**

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Students will know...

What facts and basic concepts should students know and be able to recall?

The different types of controlled substances.

The psychological and physical dependences of drugs.

The field and laboratory tests used in drug identification analysis.

The proper collection and preservation of drug evidence.

The techniques used to isolate and identify drugs and poisons.

The signs and symptoms of overdose with specific class of drugs and toxins.

Describe agents that may be used in bioterrorism.

### **Students will be skilled at...**

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Students will be skilled at...

What discrete skills and processes should students be able to use?

Identifying and classifying the different types of commonly abused drugs.

Describing the field and laboratory tests used to identify drugs.

Understanding the proper collection and preservation of drug evidence.

Describing the techniques used by forensic scientists to isolate and identify drugs and poisons.

Relating the signs and symptoms of an overdose with a specific class of drugs or toxins.

Defining the goals and practices of toxicology.

## **Academic Vocabulary**

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absorption, anabolic steroids, analgesic, chromatography, confirmation, controlled substance, depressant, drug, hallucinogen, infrared, ion, microcrystalline test, monochromator, narcotic, physical dependence, poison, psychological dependence, screening test, spectrophotometry, stimulant, toxin, toxicologist, ultraviolet.

## **Learning Goal 1**

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Students will be able to identify the different types of drugs.

## **NGSS Science and Engineering Practices Standards**

- 1: Asking questions and defining problems.
- 2: Developing and using models.
- 3: Planning and carrying out investigations.
- 4: Analyzing and interpreting data.
- 5: Using mathematics and computational thinking.
- 6: Constructing explanations and designing solutions.
- 7: Engaging in argument from evidence.
- 8: Obtaining, evaluating, and communicating information.

HPE.2.3.12

All students will acquire knowledge about alcohol, tobacco, other drugs, and medicines and apply these concepts to support a healthy, active lifestyle.

SCI.HS-LS1-3

Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

## **Target 1**

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SWBAT name and classify the commonly abused drugs.

## **Target 2**

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SWBAT compare and contrast psychological and physical dependence.

## **Target 3**

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SWBAT describe the field and laboratory tests used to perform drug identification analysis.

## **Target 4**

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SWBAT understand the proper collection and preservation of drug evidence.

## **Learning Goal 2**

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Students will be able to define and describe the goals and practices of forensic toxicology.

### **NGSS Science and Engineering Practices Standards**

- 1: Asking questions and defining problems.
- 2: Developing and using models.
- 3: Planning and carrying out investigations.

- 4: Analyzing and interpreting data.
- 5: Using mathematics and computational thinking.
- 6: Constructing explanations and designing solutions.
- 7: Engaging in argument from evidence.
- 8: Obtaining, evaluating, and communicating information.

HPE.2.3.12	All students will acquire knowledge about alcohol, tobacco, other drugs, and medicines and apply these concepts to support a healthy, active lifestyle.
SCI.HS-LS1-3	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

### **Target 1**

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SWBAT describe the techniques used to isolate and identify drugs and poisons.

### **Target 2**

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SWBAT describe the role of various types of drugs and toxins in causing death.

### **Target 3**

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SWBAT understand the basic concepts of toxicology and alcohol consumption.

### **Target 4**

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SWBAT discuss agents that may be used in bioterrorism.

## **Formative Assessment and Performance Opportunities**

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Oral question & answer discussion, in-class observation, written exercises, classwork & homework assignments, power point w/ notes, lab reports, projects, portfolios, quizzes and tests.

## **Summative Assessment**

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Unit assessment, project based assessments, lab reports, tests and quizzes.

## **Accommodations/Modifications**

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Specific to this unit, students will be grouped heterogeneously to provide support. Additional materials, will be available as needed.

Ex.

[Principles of Forensics Drug Chemistry](#)

[How Forensics Lab Techniques Work](#)

All instruction, labs, activities, and assessments will be modified and enhanced to adhere to individual student's IEPs and 504s. Differentiated classroom management strategies will be utilized as to adhere to these students individual plans.

## **Unit Resources**

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- Textbook- Forensic Science: An Introduction – 2nd Edition
- supplemental textbook materials
- Internet resources
- teacher generated power points & notes and lab materials.

## **21st Century Life and Careers**

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CAEP.9.2.12.C.1	Review career goals and determine steps necessary for attainment.
CAEP.9.2.12.C.2	Modify Personalized Student Learning Plans to support declared career goals.
CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.

## **Interdisciplinary Connections**

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LA.RST.11-12.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
LA.RST.11-12.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.
LA.WHST.11-12.9	Draw evidence from informational texts to support analysis, reflection, and research.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.