

# Welcome to Forensic Crime Science

Ms. Scribner

Eisenhower High School

Goddard #265



**Qualified Admission Course** – articulated agreement with WATC for college credit

Science credit for high school graduation

AND

Science credit to enter college



# Law, Public Safety & Security CTE

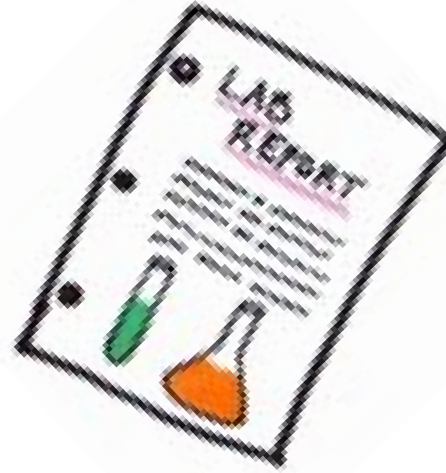
- **Application Class**—Forensic Science Comprehensive #44225 (1 credit)



# Science

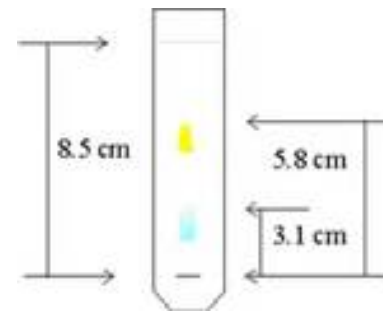
**Forensic science** is any scientific field that is applied to the field of law

- Scientific Method
- Application of scientific concepts
- Lab Reports
- Data Collection
- Analysis of Data
- Documentation
- Drawing Conclusions
- Formal letters communicating results



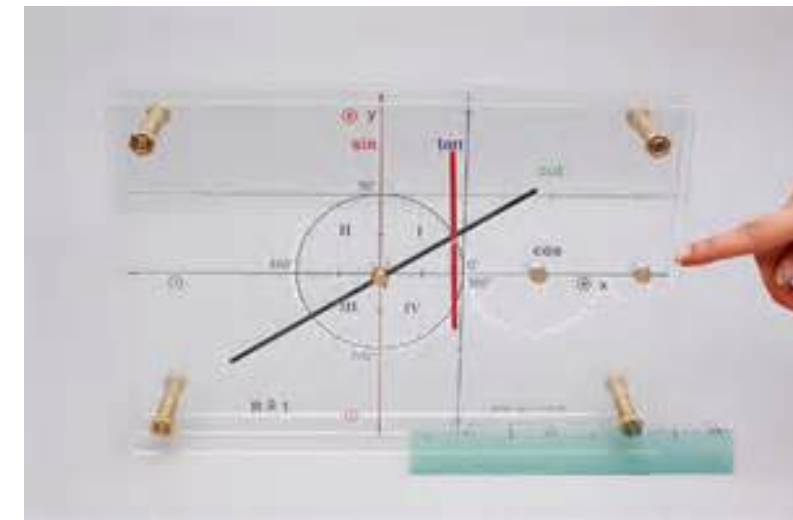
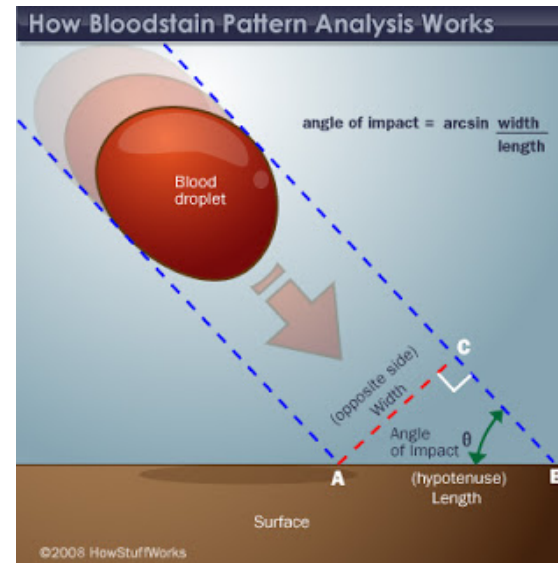
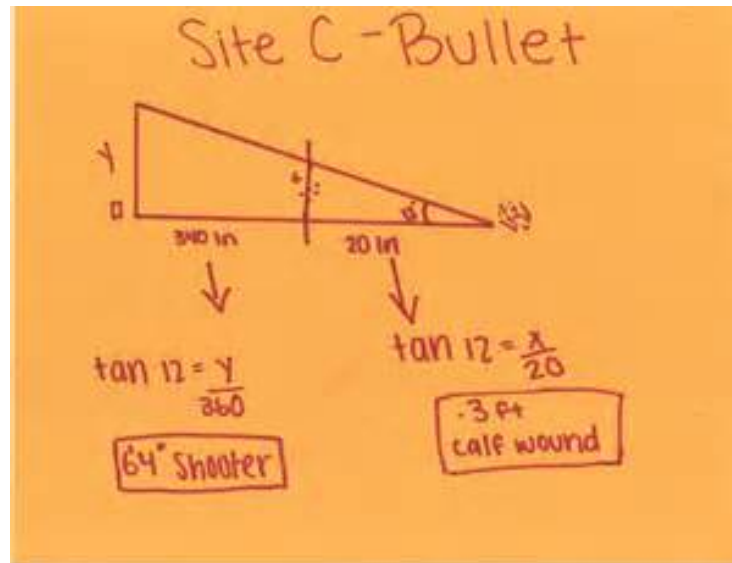
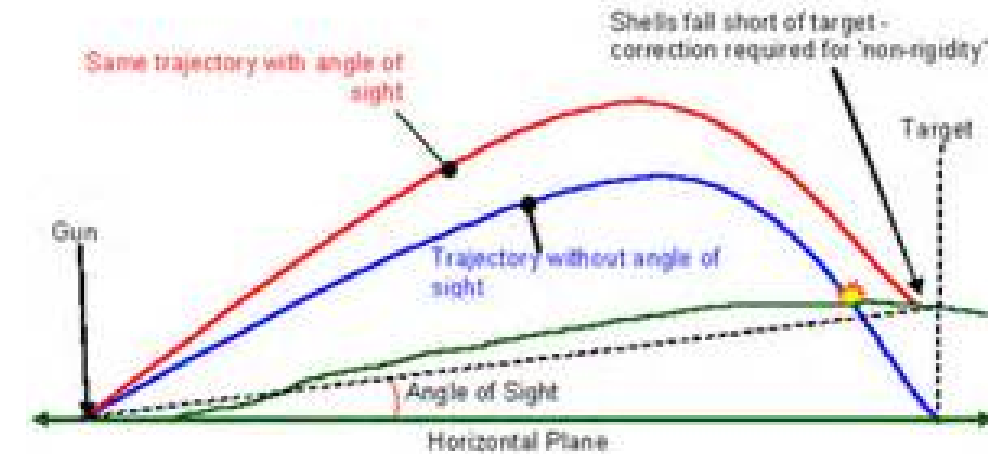
# Mathematics

- Geometry –position and space
- Trigonometry-angle
- Angle of Impact
- Time of Death
- Rf Value



$$R_f (\text{yellow}) = \frac{5.8 \text{ cm}}{8.5 \text{ cm}} = 0.72$$

$$R_f (\text{cyan}) = \frac{3.1 \text{ cm}}{8.5 \text{ cm}} = 0.36$$





# Common Core

- The Common Core asks students to read stories and literature, as well as more complex texts that provide facts and background knowledge in areas such as science and social studies.
- Students will be challenged and asked questions that push them to refer back to what they've read.
- This stresses critical-thinking, problem-solving, and analytical skills that are required for success in college, career, and life.



# College and Career Ready

- Students are “employees” of the ABC Forensic Science Company. They can “try on” the career of a lab technician, field investigator, or law enforcement that is responsible for gathering evidence.



# Engaging Students





# Competencies

## Introduction

- Discuss careers available in the field of forensic science and training required for each
- Distinguish individual evidence from class evidence and discuss its relevance in a court of law
- Justify use of observation skills and debate validity of eyewitness accounts of events
- Practice HazMat and Bloodborne Pathogen safety



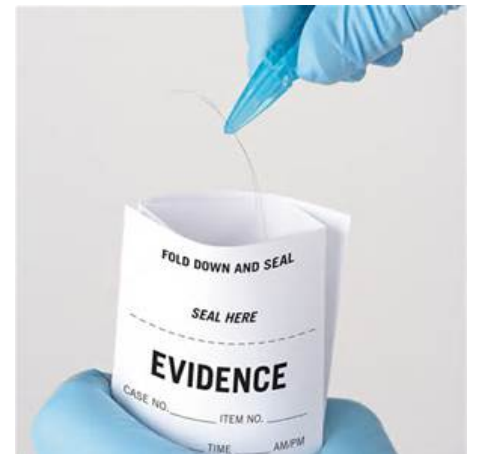


## **Crime Scene Investigation**

- Differentiate procedures for securing & documenting a crime scene
- Perform evidence collection and storage

## **Trace Evidence**

- Develop, analyze and classify fingerprints
- Identify & compare various types of shoe, tire, palm, lip, and bite prints
- Analyze, identify, and compare various hair samples
- Compare various types of fibers through physical and chemical analysis



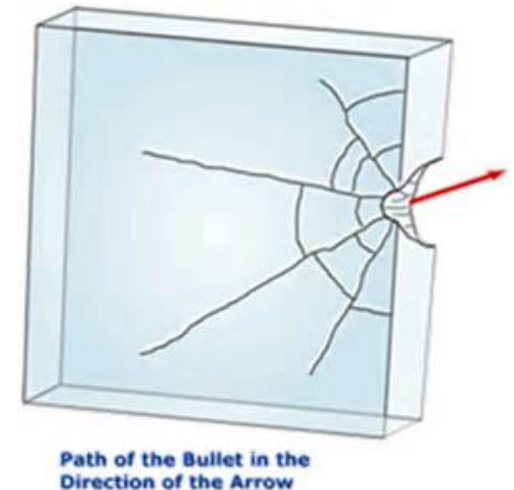
## Drugs & Toxicology

- Perform tests to identify various drugs and/or poisons
- Research and examine how various drugs &/or poisons affect and/or move through the human body



## Soil & Glass Analysis

- Deduce, compare & contrast characteristics of various types of sand and soil
- Use refractive index and density to determine differences in small particles of glass



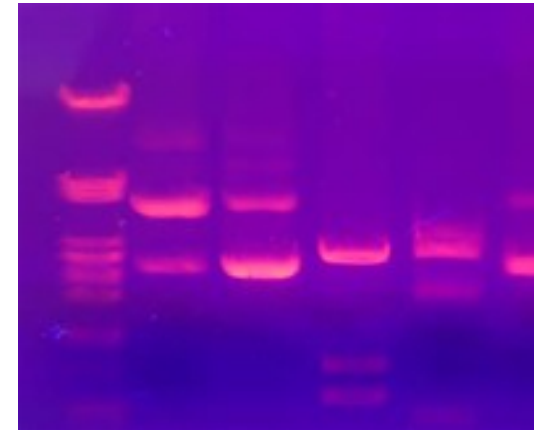
## Serology

- Distinguish between human and animal blood
- Accurately type blood
- Explore bloodstain patterns as a function of velocity, direction and height of fall



## DNA Analysis

- Describe crime scene evidence collection and processing to obtain DNA
- Isolate and extract DNA from cells
- Justify use of DNA to determine family connections
- Examine use of DNA in the legal process





## Forensic Entomology

- Outline the succession of various types of insects found on a body as it decomposes
- Deduce time of death using insect evidence



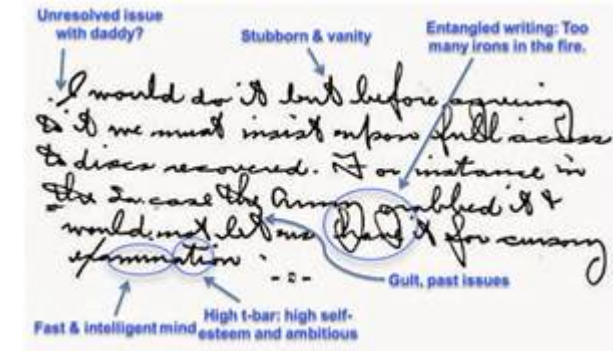
## Human Remains

- Use a human skeleton to determine gender, age range, height and race
- Predict time of death using rigor mortis, algor mortis, livor mortis, and stages of decomposition
- Distinguish between cause, manner, and mechanisms of death



## 10 Handwriting/Document Analysis

- Characterize facets of individual handwriting
- Distinguish between different handwriting styles
- Conduct an experiment using paper chromatography to determine the ink used
- Describe features of paper currency used to detect counterfeit bills



## 11. Ballistics & Tool Marks

- Distinguish between types of firearms and ammunition
- Use bullet trajectory to determine position of shooter
- Design and conduct scientific investigations to match tool marks in a criminal investigation
- Distinguish between impressions with microscopic examinations

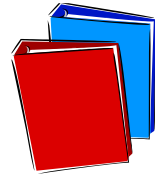


# Equipment Needed for Success:

Pen or Pencil  
(everyday)



3-Ring Binder (at  
least 1½ inches



1 Glue Stick  
Scissors



1 Roll of Clear Tape  
OR



1 Roll of  
Masking Tape



non-latex gloves



# DAILY ROUTINE



- Copy Daily assignment in notebook.
- JOB PREP----BELLWORK assignment. (3-5 min.)
- STAFF BRIEFING--- overview of day's lesson/work. (2-3 min.)
- TASK---Lesson/work, lecture notes, AV notes, lab, etc.(approx 45 min.)
- Clean up/storage. Review of assignments given. (5 min.)





# Hands-On application of scientific concepts



# Electrophoresis



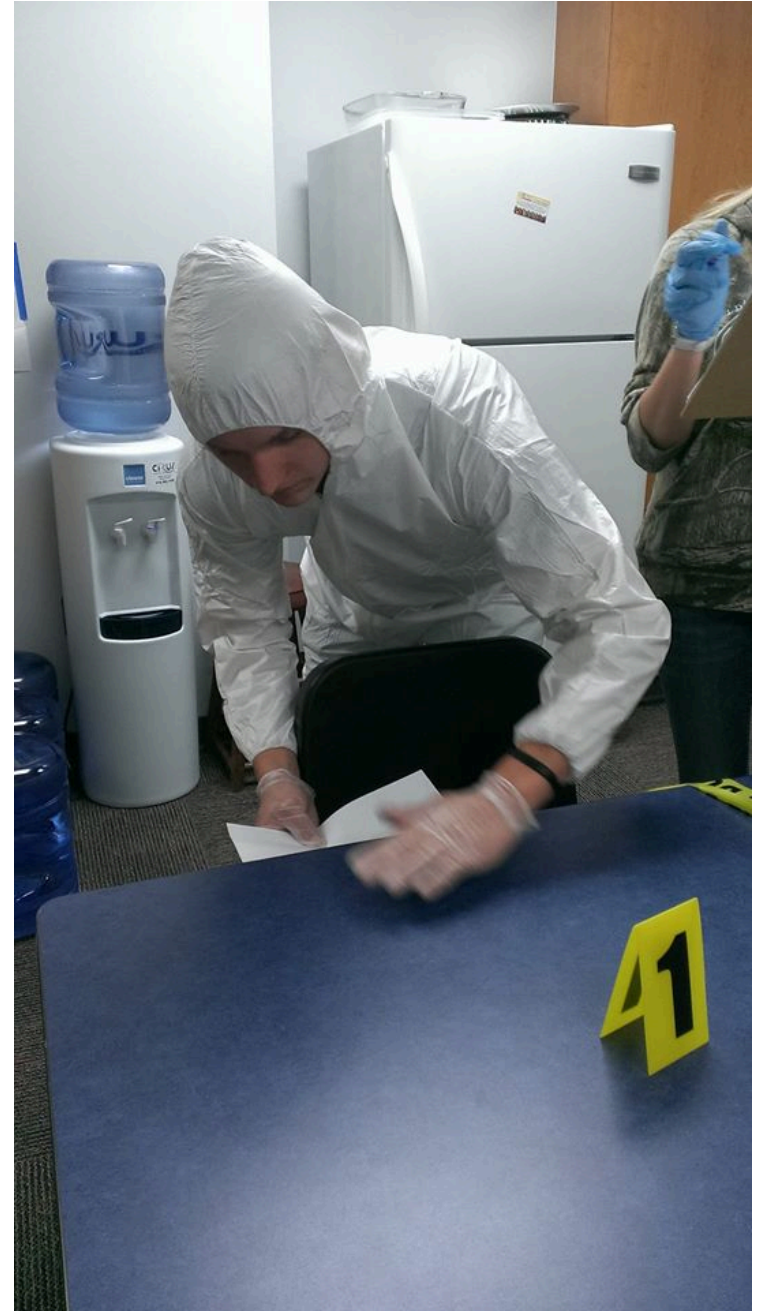
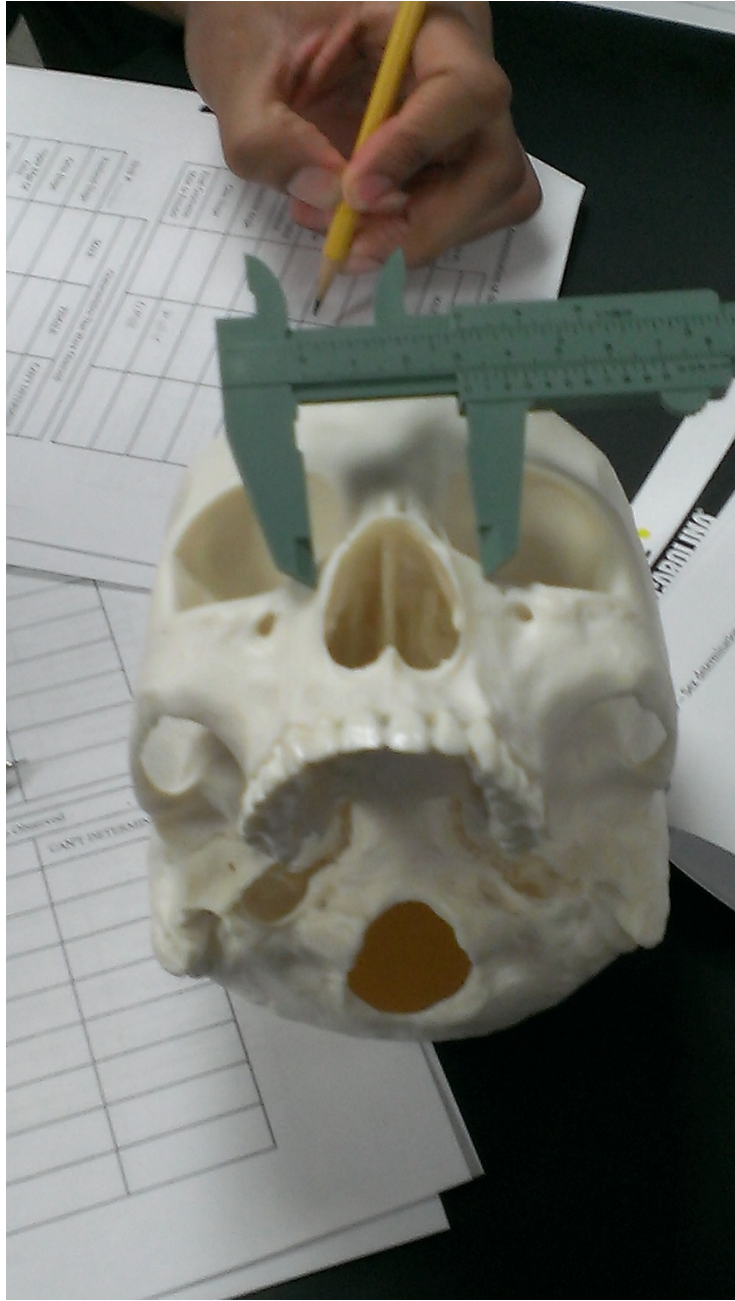




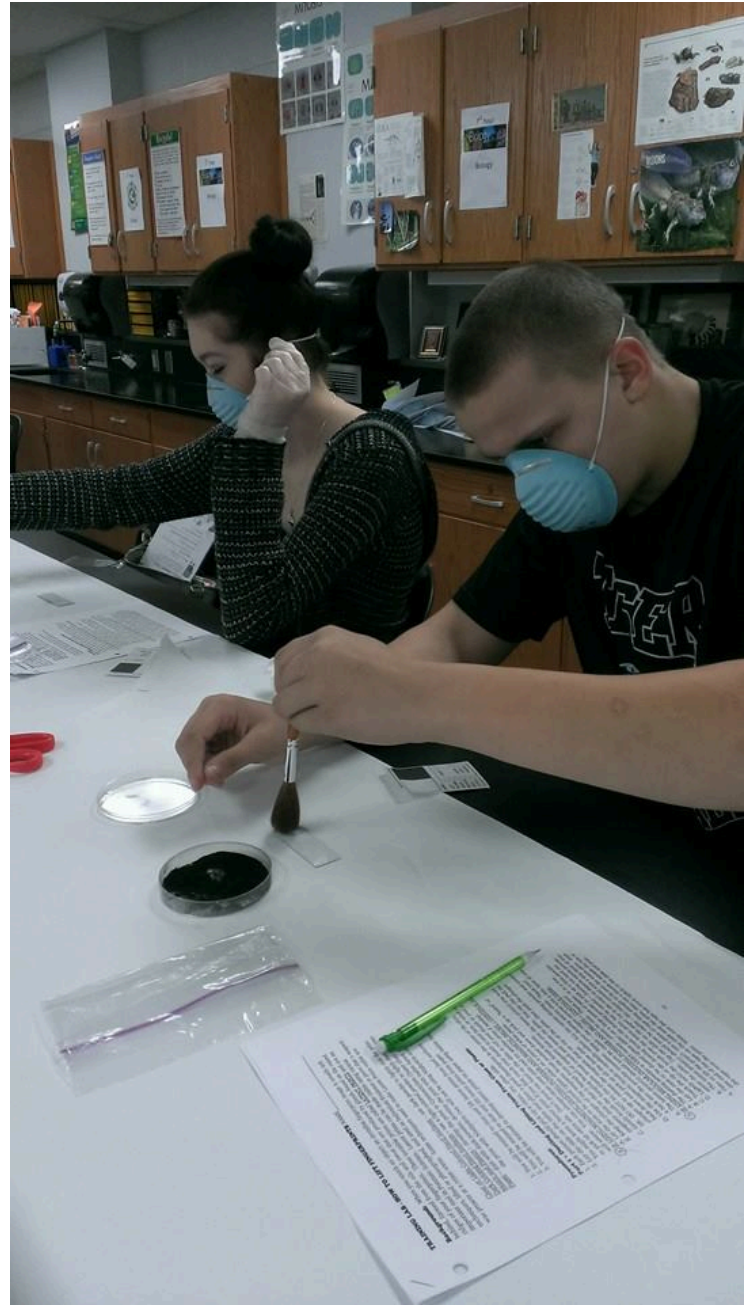
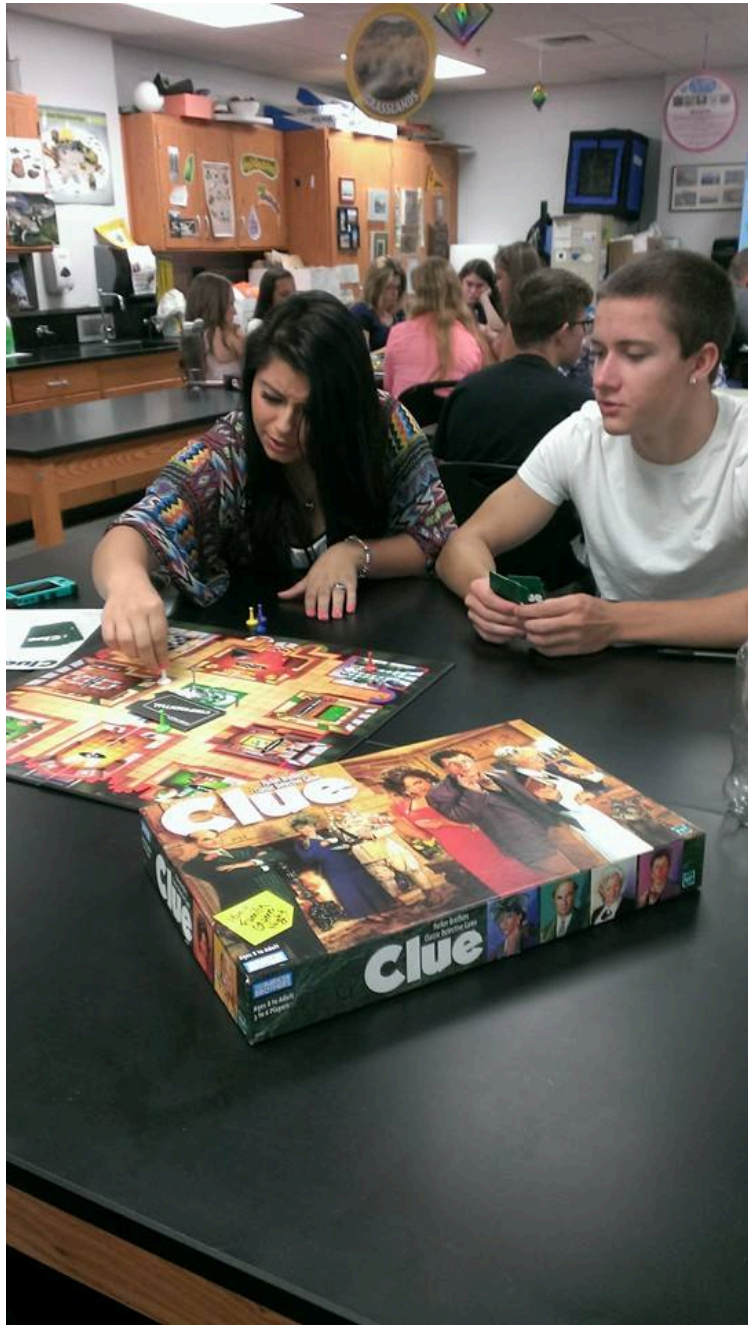
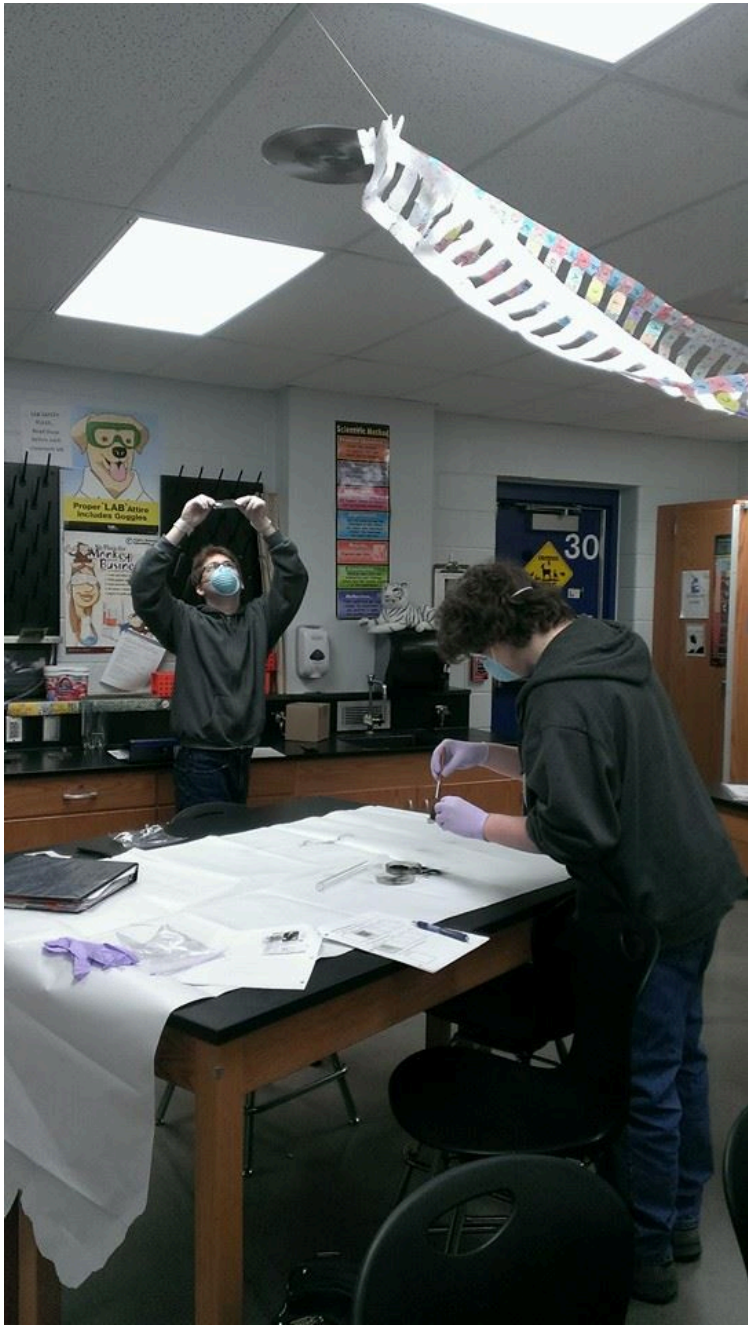














# Questions?

- Email: [dscribner@goddardusd.com](mailto:dscribner@goddardusd.com)
- Class website can be found at:  
<http://ehs.goddardusd.com/scribner>

Facebook page: search

Eisenhower High School Forensic  
Science Class—LIKE and FOLLOW

