

Bonnie Nieves

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School District: Millbury Public Schools

Superintendent: Mr. Gregory Meyers

School: Millbury Memorial Junior/Senior High School

Principal: Mrs. Tara Bennett

Subject area: Biology

Grade Level: 9-12

Target Audience: High school students with an interest in Forensics, Crime Scene Investigation, Law Enforcement

Number of Days of Activity: 3

Project Title: CSI: Millbury

Project/Unit/Program - Focus/Goal: Engage all students in authentic learning experiences.

Students who would ordinarily be disinterested in conventional Biology lessons are exposed to diverse learning activities that emulate popular culture while incorporating higher-order thinking skills.

Standard Strands Being Assessed:

3.1 Describe the basic structure (double helix, sugar/phosphate backbone, linked by complementary nucleotide pairs) of DNA, and describe its function in genetic inheritance.

3.5 Describe how Mendel's laws of segregation and independent assortment can be observed through patterns of inheritance (e.g., dihybrid crosses).

4.6 Recognize that the sexual reproductive system allows organisms to produce offspring that receive half of their genetic information from their mother and half from their father, and that sexually produced offspring resemble, but are not identical to, either of their parents.

SIS1. Make observations, raise questions, and formulate hypotheses.

SIS4. Communicate and apply the results of scientific investigations.

CCSS ELA Literacy WHST 11-12 1

CCSS ELA Literacy WHST 11-12 2

Materials/External Links:

Crime scene backdrops (foam core board and 1x4's)

Evidence left at the scenes: lamp, shoes, fingerprints, hair samples (human and animal), fiber samples, microscope for analysis, blood type chart, theatrical blood

Activities are based on student interest but may include:

For analysis: microscopes, fingerprint dusting kit, blood typing kit, DNA gels, dental impressions, entomology investigation, glass fragmentation investigation

Miscellaneous: gloves, tweezers, evidence bags (zip-lock), evidence markers, crime scene tape, folders for case files, envelopes for clues, theatrical blood

Description:

Students travel between crime scene stations. Each of these has a different scenario and focuses on different aspects of forensic investigation. There are multiple opportunities for modifications at each station: clues provided in a sealed envelope, limit possible suspects, planted evidence.

Assessment Design:

Students keep a case file and notebook. Students are informally assessed on their ability to use deductive reasoning, logic, physics, genetics, anatomy, heredity to solve cases.