A Planned Course of Study for

Forensic Science

ASHS Course # 0492

Abington School District

Abington, Pennsylvania

September, 2016

FORENSIC SCIENCE PLANNED COURSE OF STUDY

I. Objectives

Students will demonstrate the appropriate level of proficiency in each of the following areas related to Forensic Science:

1. 3.1.12.A Apply concepts of systems, subsystems, feedback and control to solve complex technological problems.
2. 3.1.12.C Assess and apply patterns in science and technology.
3. 3.2.12.A Evaluate the nature of scientific and technological knowledge.
4. 3.2.12.B Evaluate experimental information for appropriateness and adherence to relevant science processes.
5. 3.2.12 C Apply the elements of scientific inquiry to solve multi-step problems.
6. 3.2.12 D Analyze and use the technological design process to solve problems.
7. 3.3.12 B Analyze the chemical and structural basis of living organisms.
8. 3.3.12 C Explain gene inheritance and expression at the molecular level.
9. 3.4.12.C Apply the principles of motion and force.
10. 3.7.12 A Apply advanced tools, materials and techniques to answer complex questions.
11. 3.7.12 B Evaluate appropriate instruments and apparatus to accurately measure materials and processes.

II. Major Concepts

Students will demonstrate the appropriate level of proficiency in each of the following areas (organized by standard):

1. 3.1.12.A Apply concepts of systems, subsystems, feedback and control to solve complex technological problems.

a.) Chapter 1 Observation Skills
b.) Chapter 2 Crime-Scene Investigation and Evidence Collection
c.) Chapter 3 The Study of Hair
d.) Chapter 4 A Study of Fibers and Textiles
e.) Chapter 6 Fingerprints
f.) Chapter 7 DNA Fingerprinting
g.) Chapter 8 Blood and Blood Spatter

2. 3.1.12.C Assess and apply patterns in science and technology.
    a.) Chapter 1 Observation Skills
    b.) Chapter 2 Crime-Scene Investigation and Evidence Collection
    c.) Chapter 3 The Study of Hair
    d.) Chapter 4 A Study of Fibers and Textiles
    e.) Chapter 6 Fingerprints
    f.) Chapter 7 DNA Fingerprinting
    g.) Chapter 8 Blood and Blood Spatter

3. 3.2.12.A Evaluate the nature of scientific and technological knowledge
    a.) Chapter 1 Observation Skills
    b.) Chapter 2 Crime-Scene Investigation and Evidence Collection
    c.) Chapter 7 DNA Fingerprinting

4. 3.2.12.B Evaluate experimental information for appropriateness and adherence to relevant science processes
    a.) Chapter 1 Observation Skills
    b.) Chapter 2 Crime-Scene Investigation and Evidence Collection
    c.) Chapter 3 The Study of Hair
    d.) Chapter 4 A Study of Fibers and Textiles

e.) Chapter 6 Fingerprints
f.) Chapter 7 DNA Fingerprinting
g.) Chapter 8 Blood and Blood Spatter

5. 3.2.12 C Apply the elements of scientific inquiry to solve multi-step problems.
    a.) Chapter 1 Observation Skills
    b.) Chapter 2 Crime-Scene Investigation and Evidence Collection
    c.) Chapter 3 The Study of Hair
    d.) Chapter 4 A Study of Fibers and Textiles
    e.) Chapter 6 Fingerprints
    f.) Chapter 7 DNA Fingerprinting
    g.) Chapter 8 Blood and Blood Spatter

6. 3.2.12 D Analyze and use the technological design process to solve problems
    a.) Chapter 1 Observation Skills
    b.) Chapter 2 Crime-Scene Investigation and Evidence Collection
    c.) Chapter 3 The Study of Hair
    d.) Chapter 4 A Study of Fibers and Textiles
    e.) Chapter 6 Fingerprints
    f.) Chapter 7 DNA Fingerprinting
    g.) Chapter 8 Blood and Blood Spatter

7. 3.3.12 B Analyze the chemical and structural basis of living organisms.
    a.) Chapter 3 The Study of Hair
    b.) Chapter 4 A Study of Fibers and Textiles
    c.) Chapter 6 Fingerprints
    d.) Chapter 7 DNA Fingerprinting

e.) Chapter 8 Blood and Blood Spatter

8. 3.3.12 C Explain gene inheritance and expression at the molecular level
    a.) Chapter 3 The Study of Hair
    b.) Chapter 6 Fingerprints
    c.) Chapter 7 DNA Fingerprinting
    d.) Chapter 8 Blood and Blood Spatter

9. 3.4.12.C Apply the principles of motion and force
    a.) Chapter 8 Blood and Blood Spatter

10. 3.7.12 A Apply advanced tools, materials and techniques to answer complex questions
    a.) Chapter 1 Observation Skills
    b.) Chapter 2 Crime-Scene Investigation and Evidence Collection
    c.) Chapter 4 A Study of Fibers and Textiles
    d.) Chapter 6 Fingerprints
    e.) Chapter 7 DNA Fingerprinting
    f.) Chapter 8 Blood and Blood Spatter

11. 3.7.12 B Evaluate appropriate instruments and apparatus to accurately measure materials and processes
    a.) Chapter 2 Crime-Scene Investigation and Evidence Collection
    b.) Chapter 4 A Study of Fibers and Textiles
    c.) Chapter 6 Fingerprints
    d.) Chapter 7 DNA Fingerprinting
    e.) Chapter 8 Blood and Blood Spatter

III. Instruction

FORENSIC SCIENCE PLANNED COURSE OF STUDY

A. Course Schedule

1. 5 days a week, for one semester, 48 minutes per period

B. Pacing

1. Marking Period 1
    a. Observation
    b. CSI / Evidence Collection
    c. Blood and Blood Spatter
2. Marking Period 2
    a. The Study of Hair
    b. Fingerprints
    c. DNA and DNA Fingerprinting

C. Methods

1. Note taking and lecture/discussion based on past crime scene investigations
2. Cooperative learning activities
3. Analysis of mock crime scenes
4. Inquiry based laboratory investigations
5. Formal lab report writing assignments
6. Student reading from the text
7. Supplementary materials will be used

D. Technology

1. Use of computers will be incorporated into the course
2. Web-based tools including extensive use of Google Classroom, Google Sheets, Google Docs.

E. Resources

1. Bertino, Anthony J. (2008). *Forensic Science: Fundamentals and Investigations*. South-Western Cengage Learning.

IV. Assessment

A. Procedures for Evaluation

1. Summative assessments
2. Formative assessments will be administered in a variety of formats
3. Accommodations aligned with those permitted for the PSSA/Keystone Exams and included in IEP's will be provided for Special Education students who are enrolled in this course.

B. Expected Levels of Achievement

Students are expected to achieve at least a minimum level of proficiency. Proficiency and related grades are defined as follows:

A……..90 – 100%
B……..80 - 89%
C……..70 - 79%
D……..60 - 69%