

Introduction to Forensic Science

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Week 1: What Is Forensic Science?

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SAMPLE

Introduction to the Course

For as long as I can remember, I have been drawn toward science and how wonderfully put together the world around us is. As I grew older and grew closer to God, I was awed by the way science points back to our amazing Creator. Many people see science and Christianity as separate forces, but when we look close enough and allow ourselves to look for God in the science, we find Him there.

As a high school student who planned to go to college, I began to consider what field of study I was most drawn to. I was torn between archaeology and forensics. In the state I lived in at the time, the only archaeology program was several hours from my home and family. I made the decision to enter college as a forensic science and psychology double major.

Due to several factors, I never did get that double major. I went back to college after many years and earned my degree in education instead. A couple of years after getting my degree, I began putting that education to use. However, I didn't end up using that degree to teach in the public school system; instead, I homeschooled my children and tutored the children of friends of mine. Soon, our classes took form.

Forensic science was one of the first classes I was asked to offer as a homeschool class. I did some research and found a freely available online textbook and developed a course around it. It was somewhat difficult for me. Each year came with the disclosure that forensics is full of mature content and sometimes gruesome imagery. I focused on the science and tried to go around or overlook the mature content. I created my own labs and worksheets whenever possible and continued to teach the class, over and over.

The idea of developing a forensic science course that focuses on the science and comes from a Christian view never crossed my mind. It was several years after using SchoolhouseTeachers.com that the idea of a Christian-based forensics course was brought up. I volunteered to share what knowledge I had about the subject. After several discussions with several people, the idea for this course was born. We are focusing on the science used in the field of forensics, not the crimes and the criminals. We approach this topic as Christians, with Biblical values and ideals.

You will notice that this course is laid out in a very specific way. While the base of the course is the text, there are several other important aspects as well.



Every chapter of the text is followed by an OBSERVE activity. These are worksheets that help the student review the materials presented in the text. Answer keys are provided.



Several of the chapters also have INVESTIGATE activities. These activities require students to use outside resources, such as the internet or their local library, to dig deeper into a specific topic and present their findings. These activities should be graded based on the provided rubric.



Most of the chapters have ANALYZE activities that go with them. These are our labs. There is at least one lab for each of our fifteen types of evidence, although most lessons will have multiple labs. Students can print the lab sheets and follow along with the videos, or they can gather the required materials and perform the experiment on their own. The majority of our labs will be able to be completed using basic household items or materials easily accessible from your local store.



The final aspect of the course is the EVALUATE activities. These reviews, much like tests, come at the end of certain sections and serve to test the student's knowledge of what has been covered in the course so far. Answer keys are provided.

Week 1: What Is Forensic Science?

This chapter is an explanation of the field of forensic science and a breakdown of some of the many jobs within it.

The Bible's book of Mark tells us, "*For from within, out of the heart of men, proceed evil thoughts, adulteries, fornications, murders, thefts, covetousness, wickedness, deceit, lasciviousness, and evil eye, blasphemy, pride, foolishness: All these evil things come from within, and defile the man*" (Mark 7:21–23, KJV).

We know that those who surrender their hearts and lives to God are not the men that are referenced in this verse, but rather those who don't follow the Lord in their lives. It's no secret that there are people around us who do not have other people's best interests at heart. We hear daily in the news about bad things that happen. Maybe we have even been the unfortunate victim of one of these evil hearts.

When a crime occurs, there are many people who get involved in the process of solving a crime and seeking justice for those who have been affected. Forensic science is the field of science that helps to analyze the materials and people involved with the crime. The idea that science can connect the dots and help find answers has been around since the 1900s. At that time, a Frenchman named Edmond Locard argued that every contact or interaction between people or items would result in a transfer of materials. This became known as Locard's exchange principle and is one of the main principles of forensics.



Possible evidence

The job of forensics is to focus on the transfer of materials—evidence left behind at the scene of a crime—and figure out how to connect that evidence to the people involved. It is not the job of one person but rather a team effort serving many different roles. It starts with the first responders and the police, who report to the scene of a crime when it is reported. Crime scene investigators are specially trained to know how to document the scene and collect pieces of evidence that can be analyzed. Detectives investigate the scene and work with others to determine what happened. Often, forensic specialists are called upon to analyze evidence or interpret information. There are many areas that forensics can specialize in. Let's take a quick look at just a few.

- **Crime scene investigators** are specially trained how to document a crime scene and collect evidence in the proper manner. They are often the first step in analyzing a crime scene.
- **Arson investigators** are called upon when there is a fire. They have studied how fire behaves and work to analyze the scene, evidence, and witness testimony to determine how a fire started or what happened as it burned.
- **Computer forensics examiners** are investigators who are very important. They study digital evidence, ranging from videos to photos to computers, in order to help solve a crime.
- **Forensics nurse examiners** are nurses specially trained to collect evidence from the victims of crimes where people have been injured.
- **Medical examiners** (also known as **MEs**) examine the bodies of those who have died in an unknown or unnatural way. They collect evidence during their postmortem exams and often help determine the cause of death.
- **Forensic psychologists** specialize in studying the behaviors of criminals. They often look at the mental and emotional aspects of both criminals and victims.
- **Forensic accountants** specialize in studying financial documents and finding evidence of criminal activity, such as embezzlement or fraud.
- **Forensic anthropologists** are scientists who use evidence, such as bones or preserved tissues, to help figure out what happened to people who have been dead a very long time.

There are so many more roles that a forensic scientist can specialize in, but these are some of the most commonly recognized.



Lab equipment

Most forensic scientists begin their education with a college degree in a field of science particular to their interest, such as biology, chemistry, or psychology. Many also have degrees in forensic science. Forensic scientists quite often work in laboratories, but they can work in many ways. Forensic scientists have worked to help solve ancient crimes, and we have seen that in the form of skeletons and artifacts found by archaeologists. They have helped to identify human remains. They help identify animal species involved in accidents or crimes. They testify in court in regard to their discoveries in the lab.

Many labs are run by government agencies, such as the Federal Bureau of Investigation (FBI) or the Internal Revenue Service (IRS). State agencies also typically have labs, such as my home state's Georgia Bureau of Investigation. There are also private labs that employ forensic scientists. Some of these labs are generalized, but some labs specialize in specific fields of

forensics. The focus of the IRS, for example, is on examining documents. There are definitely many, many ways that an education in forensic science can be used.

This course is going to take a closer look at various facets of forensic science. We will start with collecting evidence at the crime scene. Then we will look at fifteen specific types of evidence analysis. Finally, we will talk about what happens to evidence once it has been collected, tested, and applied to the case.



OBSERVE Activity 1: Complete the Observe Activity 1 page, which reviews our course introduction and Week 1.




INVESTIGATE Activity 1: Complete the Investigate Activity 1, which will encourage you to take a closer look at one or more of the careers involved in forensic science.

OBSERVE Activity 1

Review our course introduction and Week 1.

1. There are four icons seen in this text to let you know about certain activities. What is the name of each activity and what does it mean?

a)  Name _____

What kind of activity can be found by this icon?

b)  Name _____

What kind of activity can be found by this icon?

c)  Name _____

What kind of activity can be found by this icon?

d)  Name _____

What kind of activity can be found by this icon?

2. Forensic science is the field of science that _____
_____.

3. What is the idea that every interaction we have leaves behind a transfer of evidence?

4. For each of the following, explain what this role in forensics might perform.

a) Crime scene investigator:

b) Arson investigator:

c) Computer forensics examiner:

d) Forensics nurse examiner:

e) Medical examiner:

f) Forensic psychologist:

g) Forensic accountant:

h) Forensic anthropologist:

5. What sort of college degree does someone interested in forensic science usually get?

6. Where can someone work with forensics?

INVESTIGATE Activity 1

Complete Investigate Activity 1, which will encourage you to take a closer look at one or more of the careers involved in forensic science.

In Week 1, we briefly looked at 8 careers associated with forensic science: crime scene investigator, arson investigator, computer forensics examiner, forensic nurse examiner, medical examiner, forensic psychologist, forensic accountant, and forensic anthropologist. There are a multitude of other professions involved in forensic science as well, but we only mentioned these few.

For your investigation activity, research to learn more about one of these careers. You can use the internet, making sure that you use reliable and trustworthy sources, or visit your local library to find books on the topic. You will then write several paragraphs on what you learned.

First, select which career you would like to focus on then find your resources. While you read, take notes to help you write your paragraphs. Below is a list of possible information to include. Some of this information will be readily found, while some of it may be more difficult to find, depending on which career you have chosen.

What to include in your writing:

- What career are you focusing on?
- Does it get referred to by any other names?
- What are the requirements for getting a job in this field?
- What school subjects might someone in this field have to study?
- Are there specific schools you need to attend for this career?
- What sort of tasks does this job do at work?
- Outside of forensics, can you have a job in this field?
- What sort of income does this job have?
- What are the hazards of working in this field?
- How long does someone typically work in this field? Retirement?
- Is there anything particularly interesting that you learned about this job?

Make sure your research is presented in complete sentences. Present your information in an organized manner. Proofread your work for spelling mistakes or grammatical errors.