Special Bone Fractures Lesson

Really?
Agencies

Board Certifying Bodies

Books, Encyclopedias, & Treatises

Cases

College & University Courses

Commercial Applications of Science/Technology

Conference Proceedings & Abstracts

Continuing Education Courses

Dissertations

Law Reviews & Bar Journals

Legislation

Newspapers, Magazines, & Periodicals

Professional Associations & Societies

Radio/Television Shows

Scientific Journals

Scientific Working Groups

Technical Working Groups

Internet Articles

Web Sites

THE NATIONAL CLEARINGHOUSE FOR SCIENCE, TECHNOLOGY AND THE LAW

FORENSIC DATABASE

Better than a general search engine, the unique NCSTL database instantly pinpoints focused results about forensic science & criminal justice topics. Learn more about the database & about NCSTL.
Articles

6 Interview
By Mark Feil, Ed.D.
Joe Matvay was the real-life Gil Grissom for 35 years with the Las Vegas Metro Police Department. We talked with him about how different TV is from reality and what he thinks about teachers.

23 Virtually Arresting
By Jeanette Hencken
A really neat and free alternative crime scene your students can explore online. There’s even a worksheet to go with it.

24 A Cart Full of Evidence
By Chris Bily
This impression lab uses carts and their wheels to give your students an outstanding experience learning the differences between class and individual characteristics.

10 Behind the Scenes at CSI
By Amy Nemcik
You know what the facilities look like on the TV show. Now you can see for yourself what it looks like in real life.

37 Summer Time
By Ricky Pelazao
No, it’s not the most wonderful time of year yet, but we’ve got some ideas of how to be pleasantly productive.

22 Going to Work
By Stephen Patt
Did you ever notice the exterior of the CSI facility on the TV show is never seen? See if you can figure out what the real place looks like in Las Vegas.

44 Using Mistakes to Learn Forensics
By Sam Goodman
This exercise will change the way you and your students watch forensic TV.

48 Give Me a Break!
By Audri Kowalyk and Susanne Christensen
How a bone fractures can tell you a lot about what happened, something forensic anthropologists want to know. This lesson on skeletal trauma will help your students understand the process.

Features

2 Editorial
4 Mini-Mystery
5 Hot Web Sites
39 Photo Crime
58 Morgue Guy
58 What’s Going On?
59 Just For Fun
60 Stoopid Crooks
CSI, then and now

Believe it or not it’s been 15 years since CSI premiered on television. That means high school seniors do not remember a world without DNA profiles, high-tech crime scene analysis, or crooks who don’t get away with murder on TV because the science is that good. It also means there’s whole generation of viewers who have never heard of Roger Daltry who sings the series’s theme song, or the band he was in (The Who). There are readers of this magazine who don’t remember when Who was on first base. But I digress.

The effect of CSI on the criminal justice system cannot be overestimated. From the latest cutting-edge breakthroughs to the now commonplace, but miraculous—10-years ago, practices, crime scene analysis has reinvented how the world views evidence and the process of justice. The Innocence Project relies on forensic breakthroughs as do cold case investigators and forensic TV junkies. Juries are hungry for forensic details and so is the public. And who can blame them? Forensics is a field that requires knowledge of cool science, i.e. the stuff that matters, like why gun barrels have rifling, not boring stuff like how fungi and plants differ. People like solving puzzles, and forensics offers a gratifying link between possible and improbable. Some people go to school or gain experience for decades and become world-renown forensic experts. Yet, the average Joe can feel empowered and gratified when he watches TV and gets to the not-so-obvious answer before the end of the show. Hollywood knows this and the number of forensic-dependent shows has increased as people tune in.

I understand why all the loose ends are usually wrapped up in 44 minutes of a TV show, and I don’t yell at the screen anymore when DNA tests only take four minutes. The story is all that matters, and if forensics are glamorized for the sake of storytelling I can live with that if underneath it all people are becoming interested in science.

Especially if that includes our students.

Dr. Mark Feil

Volume 9, Number 25, Spring 2015
Congrats!

Forensic News (continued on p. 23)

Visit CSI: THE EXPERIENCE Web Adventures

HTTP://FORENSICS.RICE.EDU

What teachers are saying

• “I am delighted to have found your website. It brings all the content we teach together in such a real-life way. It’s fantastic! Thank you for an amazing resource!

• “I found this a fascinating site. I went through the first case because I am assigning it to my students as part of a CSI unit. I can’t wait to do the other two cases. Thank you for making science fun.”

This work was supported in part by a grant from the National Science Foundation to the Fort Worth Museum of Science and History.
STANWICK AND THE STOLEN BONDS

BOB HARDING LOOKED worried as he opened his front door late one Saturday afternoon and let in Stanwick and Baskerville police chief William Ryan. Stanwick had been chatting with Ryan when Harding’s call came in.

“Here in the basement,” said Harding as the three descended the wooden steps. Harding, a lean, tall man with salt-and-pepper hair and a thin beard, was a retired automotive engineer.

“I had $75,000 in bearer bonds in my safe yesterday, and now they’re gone. The thief replaced the padlock, too. I had to saw it off.”

Ryan peered closely at the small safe, now open, which rested on a steel shelf about six feet up and was bolted to the wall. It contained a passport and a clutter of papers. “You’re sure the bonds were here yesterday?”

“Positive,” Harding replied. “I’m thinking of taking a trip to France, and last night I checked my passport. The bonds were still here then. I’m a light sleeper and heard nothing during the nighttime, so I’m sure they were taken today.”

“You were away, then,” said Stanwick.

“Yes, at an estate auction in Littleton. I bought a letter signed by Charles Dawes, who was vice president under Coolidge. I got home about four-thirty and brought it down here for temporary safekeeping. When I couldn’t work the padlock combination, I discovered that the lock wasn’t mine, so I had to saw it. Only the bonds are missing.”

The three men returned upstairs to the kitchen. Ryan excused himself for a few minutes to check the doors and windows.

“No forcible entry,” he said when he returned. “Who has a key to this place?”

“Just me,” replied Harding, “but I keep a spare under a flagstone in back.”

“And who knew about the key and the bonds?”

“Only two friends of mine, Pat Greeley and Joe Fabiano, knew of both. One or the other usually waters my plant when I’m away. They also knew I would be away today. Our model car club met last Wednesday night, and I mentioned the auction.”

“I didn’t know you went to estate auctions, Bob,” Stanwick remarked with a smile.

“It’s a hobby, Tom. Usually I buy books, though, not documents.”

“Did Greeley or Fabiano know the combination to your safe’s padlock?” asked Ryan.

Harding shook his head. “Only I knew that. The thief must have sawn off the lock.”

Ryan scratched the stubble on his chino. “You need to talk to your friends.”

“Thought you would,” said Harding as the doorbell rang. “Right after I called you, I called them, told them of the theft, and asked them to come over. Sounds like one of them is here now.”

They both were. All five men were soon seated in Harding’s living room. Greeley, a real estate agent, was slightly taller than Harding and had thin, sandy hair, bright freckles, and aviator glasses. Fabiano, a small man with tufts of hair around his ears, peered defiantly at Ryan through thick glasses. Ryan politely asked each where he had been that day.

“I was in Royston all morning,” said Greeley. “At the Ganterbridge Mall, getting a jump on my Christmas shopping. After lunch I showed two houses. Got home just before your call, Bob.”

“I spent the morning doing chores,” said Fabiano. “Taking the trash to the dump, buying groceries. Then I took my wife out for a long lunch at that new Malaysian place in Tewksbury.”

“Do you have any idea who might have committed this theft?” asked Ryan.

Both men shook their heads. “Real shame about the bonds, Bob,” Fabiano added.

“Thank you both,” said Ryan as he stood up. “Be sure to let me know where you can be reached.”

Two days later, Stanwick dropped by Ryan’s office at headquarters. “Anything new on the Harding theft, Bill?”

“Well, we found footmarks between the woods and his house,” said Ryan, leaning back and lacing his fingers behind his head. “Probably the thief’s, but we couldn’t determine the size. The key was under the flagstone, but not in its usual position, according to Harding. No fingerprints. The thief probably wore gloves.”

“It’s a pretty sparsely furnished place for someone who goes to estate auctions,” remarked Stanwick. “Hardly anything in the basement but screens, shelves of model cars, and a furnace, and just books and big, clumsy furniture upstairs.”

“Bob scaled back a lot after his wife died,” said Ryan. “I verified that Greeley did conduct those house tours Saturday afternoon, and a supermarket clerk thinks he remembers seeing Fabiano in the store that morning. I haven’t traced the replacement padlock yet, and frankly don’t know why the thief bothered.”

“He probably hoped to delay the discovery of the theft.”

(Continued on next page)
Stanwick said. “He knew that Harding usually buys books at estate auctions, and could hardly have known that Harding had checked the safe just the night before. It was the thief’s bad luck that Harding was able to pinpoint the day of the theft.” Ryan nodded.

“Not bad investigating for a one-horse department, though,” continued Stanwick with a grin. “You’ll need to do some more before you can make an arrest, I think, but at least we know who the thief is.”

Whom does Stanwick suspect as the thief?

The answer is on page 31

Stan Smith was the author of three books of Stanwick mini-mysteries that have been published in nine languages and sold over 120,000 copies.

Do you have a topic you’d like us to cover?
What kind of articles do you want?
Email us, tell us about it!

admin@theforensicteacher.com

http://bsapp.com/forensics_illustrated/index.html
Dr. Brennen Sapp put his entire forensics curriculum on this site. It’s incredible. He has PowerPoints, worksheets, labs, tests, etc. Definitely a site to remember.

http://www.awifs.org/
The Association of Women in Forensic Science Networking, resources, inspiration? This site has it all.

http://forensicoutreach.com/category/csi-and-forensic-science/
In the end the site owners want to sell you a workshop, but it’s all the other stuff here that makes it a fun diversion.

http://postalmuseum.si.edu/inspectors/index.html
The physical exhibit is no longer at the Smithsonian, but you can lose yourself at this site as you learn about the various forensic hats postal inspectors wear to keep you safe.

http://www.nlm.nih.gov/visibleproofs/
Engaging little site that somehow will suck you in as you find yourself drawn to explore the tabs and links.

If you’ve ever been bothered by the sight of abused pets this article explains how vets are using forensics to help animals.

http://www.aplusphysics.com/educators/activities/forensics.html
This site features three real-world crimes that can be solved with high school physics as well as and an intriguing webquest. A neat real-world application of physics to forensics.
Chillin’ with the Real Deal
When CSI premiered on CBS on October 6, 2000 it was unlike anything America had ever seen before. Prime time television combined drama, glitz, suspense, cutting edge forensic science, and compelling characters to produce a show that was soon on everyone’s lips. The unexpected happened overnight and it hit like a thunderstorm.

Forensics became cool.

People who had been doing something previously thought to be too technical for the general public for decades were suddenly celebrities beyond the medico-legal field. Dr. Henry Lee, Dr. G., serial killers, and a gamut of forensic television series all became fixtures in the American mind. Other shows popped up like dandelions after a summer rain. Even juries became hungry for forensic details when they served, a phenomenon called the CSI Effect.

But before Gil Grissom there was Joe Matvay. Both were shift supervisors for the Las Vegas Metro Police Department Crime Lab. Both oversaw CSIs, cases, crime scenes, and evidence by the boatload. Neither was afraid to get their hands dirty, and they often did. The main difference between them, though, was that Gil was a character in one of the hottest groundbreaking dramas to hit television, and Joe was the guy doing Gil’s job in real-life. Both retired not too long ago, and we were fortunate enough to catch up with Joe on the phone at his house in Las Vegas.

Forensic Teacher: I was wondering; tell me a little bit about yourself and your job.

Joe Matvay: I recently retired from the Las Vegas Metropolitan Police Department after 35 years. I am still involved in forensics - that is by teaching and by consulting.

FT: I understand. Still, so you ran the entire Las Vegas Metropolitan Police Forensics Unit?

JM: Well, no, not the whole section. I was a CSA supervisor or crime scene analyst supervisor. We could also say a crime scene investigation supervisor. There were other supervisors, but I had a squad of CSIs that reported to me.

FT: That sounds like a lot of fun.

JM: It was, and it was very interesting, very intriguing, and very rewarding.

FT: You and your people worked the day shift?—Just 8-5 or 9-5?

JM: No, I pretty much worked all the shifts. Actually, when I retired, I was on graveyard, but for many years before that I was on swing shift.

FT: Wow. Now, if you are on graveyard, do you — are you on call if there is nothing pending or does the lab keep running 24/7?

JM: In Las Vegas, and it does vary from agency to agency, we have about 50 crime scene investigators. We are a 24-hour a day, 7-day a week, 365-day a year outfit. There is obviously, crime going on at all hours. That is why we were always staffed. However, there were times when I was on-call - all of the supervisors there had to take turns being on-call.

FT: I see. Tell us a little bit about your background.

JM: I started 35 years ago and I have a bachelor of science degree in biology. Over the course of my career, I got certified in various forensic disciplines. I am certified at the highest level in the crime scene discipline from the International Association for Identification. I am also a certified latent print examiner, so I spent some of my career working as a fingerprint expert. I am also certified as a bloodstain pattern examiner.

FT: You were busy.

JM: Well, you have to be to keep pace with the progress. I love all the various forensic disciplines, so I studied hard to try and be top of my game in all of them.

FT: What were you hired as initially?
JM: Well, way, way back then, the position was called identification specialist, but the title changed over the years and the title is now called crime scene analyst.

FT: Ah, okay. So, now do crime scene analysts have to be good at everything or do you have print people or DNA people or trace people who are also analysts?

JM: The most important aspect of any forensic investigation is clearly, without a doubt, the crime scene investigation. It’s at the crime scene that the physical evidence exists. So, you really have to be knowledgeable about all of the forensic disciplines in order to be a good crime scene investigator. You need to be able to recognize and identify and gather and preserve and analyze the evidence from the crime scene in order to solve the case. Again, the crime scene investigation is paramount. You only have one chance to do the investigation properly. And if you miss one thing it’s probably gone forever.

FT: Oh yeah.

JM: Now, that’s no disrespect to the other forensic disciplines, which are more laboratory-based such as DNA. They need special labs for DNA and it is very, very important. I love DNA because it helps us solve crimes.

FT: Absolutely.

JM: But the key is the crime scene. Some of the other disciplines in forensics are DNA, latent prints, footwear and tire tracks, trace evidence, questioned document examination, etc. They are all important because they all do what we are trying to do, and that is to identify the perpetrator and link the perpetrator to the crime scene. And that is what we are basically trying to do with the crime scene investigation. I mean, there are a lot of different functions for crime scene investigations, but the main thing is to identify the bad guy and link the bad guy to the scene or the victim.

FT: How compartmentalized is the forensics investigation unit in Las Vegas? And by that I mean, is it the job of one person to oversee prints and firearms and DNA and trace and then put them all together and look at how they are going? Or does the guy in trace talk to the ballistics guy, talk to the DNA guy, then they go to supervisor and say this is what we think it is?

JM: Well, it kind of depends. Let me tell you a little bit about Las Vegas Metro Police. We have a total of about 5,000 employees, and we are the ninth largest police agency in the country. I have to say that I’m more than a little biased, but we’re pretty darn good at what we do.

FT: Yes.

JM: Depending on the type of case - let’s just say it is a homicide because that is usually the most serious crime we investigate at the police level. With any homicide investigation, this is how we did it in Las Vegas. There would be a group of homicide detectives and a supervisor from a particular squad that would respond. There would also be a group of crime scene investigators from a particular squad that would respond - so there would usually be at least two crime scene investigators and a supervisor.

FT: Right.

JM: We work hand in hand. We work in conjunction with each other because we are all trying to do the same thing and that is to solve the case.

FT: Good.

JM: So the crime scene investigators, their job is to investigate the scene. The homicide investigators, their job is to try and gather information from interviews and interrogations. What I would do is communicate whatever we found, and by we I’m talking about the crime scene investigators, whenever we found anything of significance, I would immediately report that to homicide so that they would have that information.

FT: Okay.

JM: If they found anything of significance from their interviews, they would report it to us, communication is critical, so that two-way communication really helped to solve our cases. When the scene was all done, the evidence would be analyzed in the forensic lab by the respective section that was applicable. We had a latent print section and we of course had a DNA section. We had a firearms and tool marks section, and trace evidence and toxicology and a controlled substance section.

FT: Okay.

JM: Forensic scientists would analyze the evidence and then it would be reported back so that we were all aware of what information was discerned. Does that make sense?

FT: Yes, it does. And I have couple of more questions about that specific topic. What about autopsies, was the pathology lab, the morgue, was it onsite?

JM: No. In Las Vegas, there is a separate entity and that is the Clark County Coroner and Medical Examiner’s Office. With respect to that particular entity, they have forensic pathologists who would perform the actual autopsy on the body of the decedent. There are assistants there that assist the forensic pathologist. During the autopsy procedure, there would also be a crime scene investigator there, and there would also be a homicide investigator. That’s how we work it in Las Vegas.
FT: Absolutely.

JM: Now, if samples were taken from the body, I am talking about blood, urine, vitreous fluid from the eye, maybe stomach contents, that was usually sent off to a separate lab. But any evidence from the body was our responsibility. So, let’s say the victim was shot. We would recover the clothes because the clothes are potential evidence.

FT: Right.

JM: Plus, you never know what may develop and need to be analyzed down the road. It may be that we wanted to determine the distance the perpetrator was to the victim when the gun was discharged. We do that by analyzing the clothes. If there was a bullet inside the cavity of the victim we would recover that as well, and that would go to our firearms section. It may be that there was a footwear impression on the victim’s clothes. We want all of the evidence we can get. Plus, we would also fingerprint the decedent for a couple of reasons. First it would be to identify the victim, a positive identification through fingerprints. We may need the victim’s prints for elimination purposes. By that I mean we could compare the prints from the crime scene, so that we know if we have the victim’s prints from the scene or we have suspect’s prints from the scene. We would also take photographs to document the location and extent of wounds, as well as to identify any evidence and things of that nature.

FT: Let me just ask a few more questions about the job itself. What does it say on the outside of the building? Does it say Forensics Lab, Division of Forensics, CSI, what does it say?

JM: Well, we’re a pretty big entity and we’re in a couple of different buildings. So, it depends on where you are. And also, we don’t really advertise so it doesn’t say much on the outside of the buildings.

FT: I see. That’s pretty smart.

JM: Once you get inside, it does say “CSI” in the building where I was. Forensics was in an adjacent, but separate building and it houses the forensic laboratory. Our photographic laboratory is in that building as well. And another thing I want to mention because it’s really important as well. We had a mobile crime scene investigation vehicle.

FT: Are all the buildings close?

JM: Yes. They’re adjacent to each other.

FT: I’ve been to Vegas a number of times and sometimes it gets really hot.

JM: It gets very hot and very cold in the desert.

FT: When you went to crime scenes did you have police badges and did you carry guns?

JM: In Las Vegas we do carry guns because it’s potentially very dangerous out there. And at times the CSA is at the scene by his or herself. Now, we investigate any felony so that includes burglaries, grand larcenies, robberies, sexual assaults, attempted murders, battery with a deadly weapon, kidnapping, and of course murder. With respect to some of the property crimes like burglary or grand larceny, often the CSIs are there by themselves, they are armed, and that’s for self protection. With respect to badges, and you’ve probably seen this on TV, everybody is issued a vest, and there is a badge on the vest. The vest is used for a couple different purposes. First is for identification. Secondly, to store items. There are a lot of pockets in which to keep things. In the pockets on my vest I kept rubber gloves, booties, a couple flashlights, a knife, some pens, antimicrobial wipes, my walkie-talkie, and so on. Depending on their preferences, people would put different things in their vests.

FT: What is the average crime scene processing time?

JM: Well, there really is no average because every scene is different. I mean I could say a rough approximation is an hour and half on a burglary, but it could be four or five hours - but that is rare. On a homicide it could be eight, twelve, sixteen, twenty hours. It just depends. There really is no average time at one scene, like I said they are all different and we want to make sure that all of the evidence is identified, documented, and collected before we secure from the scene.

FT: Now, at a big scene like a murder with tons of evidence, I imagine you have more than one person there?

JM: Yes. From criminalistics. At a murder scene we would generally have two crime scene investigators and a supervisor at the minimum. Depending on the situation I’ve had my whole squad out at a site, which is eight CSIs and myself, investigating a scene that was extensive, convoluted, and covered a wide geographic distance. So, it just depends.

FT: Great. I do have to ask because you said 35 years in the field and if I did the math right, the only show on TV really doing any sort of forensics around that time was Quincy. My point is that was when you first started in the police department doing forensics, what state was forensics in at that point? I mean we did not have DNA then, what did we have and how advanced was it? We had blood typing, did you have ballistic and trace?

JM: That’s a great question. I’m glad you asked. Forensics has always been extremely important, but a lot of people didn’t know about it back then. The ones that valued it were the prosecutors. The key with physical evidence is that it does not lie, it has a story to tell, and it’s up to the forensic scientist to interpret that story. So, forensics has always been

(Continued on page 16)
CSI has given people the impression the Las Vegas Metro Police Department Crime Lab is a glamorous, high tech forensic playground where cool lighting and shadowy glass unite with enough state-of-the-art equipment to make the FBI jealous. Right. The following photos reflect real life. If you want to work in the place on TV don’t major in science when you get to college. Major in acting.

The *entry* is our front/public entryway and has a display case of the items for sale that benefit aces and eights (a nonprofit to support crime scene analysts and homicide detectives) and the Injured Police Officers Fund (which does not include crime scene analysts, but we still fully support).

The *powder processing room* is the other half or the room that houses the chemical processing room. There are two hoods where powder processing occurs, a cabinet where a wide variety of fingerprint powders are stored, two work stations and areas for packaging evidence. This room is one of the main areas that evidence examination, processing, and packaging occurs.
The evidence cage is where evidence that has been documented, processed and packaged (all the work that the crime scene analyst is responsible for) is stored. The crime scene analyst writes on a log sheet the event #, package # and description of the contents. A supervisor unlocks the cage, ensures that the log is consistent with the packages being stored and the packages are placed in the cage. Members of the evidence vault come every business day and collect the packages and transport them to the evidence vault for long term storage. Additional cross checks are made by evidence vault personnel when the packages are collected.

The temporary storage room is where the evidence cage is located. There is a desk where the logs are kept that show chain of custody of both the evidence and latent print packets as well as completed crime scene reports that are ready to be reviewed by the supervisor. There are also multiple lockers in a variety of sizes that are used to secure evidence that is not ready to be packaged. Once a crime scene analyst returns to the lab, they may not have the time to complete all the documentation required on an item of evidence prior to working another crime scene or the end of their shift. The evidence is stored in the lockers (that only have one key, which is maintained in the sole care and custody of the crime scene analyst that collected the evidence from the scene) until the crime scene analyst has an opportunity to complete the documentation and package the evidence.
The packaging room contains 4 workstations and a variety of supplies to package and protect evidence that the crime scene analysts collect. This room is also used for report writing. This room is adjacent to the room that houses the evidence cage.

Supplies are stored throughout the building, however this area contains the majority of our storage. Each crime scene analyst also has a portion of a four-level shelf to store their camera equipment and field gear. This is also the room where vehicle keys are kept. At the beginning of the shift, a crime scene analyst will check out a vehicle and load it with their equipment.
The biohazard room contains multiple self-contained drying cabinets. Each cabinet has a fan/ventilation system and air filter to circulate air through the cabinet. These cabinets are used to dry items that may be soaked with either water, but more often are soaked in bodily fluids. Body fluids will grow mold and decompose over time, degrading any potential evidence. The best way to package and preserve items are in a dried state. We also use these cabinets if we have items of evidence that are covered in insects; mostly to contain the insects and keep them from taking over the office. There is a table and a variety of packaging material in the room as well, so that the hazardous materials are contained and to limit any cross contamination during examination, documentation or packaging. Pictured is a piece of blood-stained clothing.

The digital workstation room is located across the hall from the chemical/powder processing room and contains two digital camera workstations and a scanner workstation. These cameras are used to document ridge detail on items. The ridge detail could be impression, patent or latent detail developed in the chemical/powder processing room. The cameras can also be used to document small items of evidence or evidence visible only with an alternate light source.
The bullpen consists of 41 cubicles in three rows in the middle of the room. Each Crime Scene Analyst has their own cube (two cubes have two crime scene analysts). Around the perimeter of the cubes are the supervisor’s offices, the intelligence liaison office, the Training coordinator’s office and the director’s office. We have a front office area where our support staff works.

The chemical processing room and the powder processing room are technically the same room. The chemical processing happens on one side, and the powder processing happens on the other. The chemical side of the room consists of a fume hood and three superglue chambers, as well as work space, chemical storage, and a sink. The majority of the chemical processing conducted in this room is for the development or enhancement of latent print detail. We also store our blood enhancement chemicals in this area, and occasionally use them there; although most chemical enhancement is done either on scene or in the garage (if a vehicle is our scene).
The major crime scene truck is one of only two marked units that the crime scene investigations section uses. It is a repurposed fire department ambulance that contains a large quantity and variety of equipment and is only used on homicides and officer involved shootings.

The conference room is where our shift briefings are held at the beginning of every shift, where classes are held, and various meetings. We also have a reference library that is housed in the room.
critical, but people didn’t know about it back then. The only thing people really understood back then was fingerprints. We didn’t have DNA back then, but we had serology. This is basically blood typing.

FT: Right.

JM: And then we have A, B, AB, and O along with some extensions of that, which we used all the time. We could not be that specific with serology as we can today with DNA. With the advent of the CSI TV shows and Forensic Files and others like that, criminals are now tried on forensics. Most people now realize how significant and important this is for criminal prosecution.

FT: Sure.

JM: First of all, evidence has a certain value. Always has, always will. I like to say that I was CSI before CSI was cool. It wasn’t cool back then. Now, everybody seems to have an interest in CSI. We did have firearms back then, we did have trace evidence back then, we did have controlled substances back then, but of course the techniques have evolved over the years so we can discern a lot more information with the equipment we have today. With forensics there are two key things that we need to concentrate on, and that’s with any tests or any type of evidence. And those are sensitivity and specificity. We try to glean the most information we can from the physical evidence.

FT: Yes. I have a few more job questions for you. What are the majority of cases the police department deals with that the forensic lab guys are involved with? Are they murders, are they abuse, are they robberies? What’s the vast majority?

JM: What we did in the CSI section is we would investigate any felony. Under Nevada law, a felony is any crime punishable by one year or longer in the Nevada State Prison. So, the thing we go on the most is burglaries. It’s a property crime, but it is a very serious crime. If you’re the victim of a burglary you’re going to be traumatized, you’re going to be upset, and you want the police department to investigate.

FT: Yep.

JM: Obviously, it is not as serious a crime as a murder, but it is a felony. On rare occasions we would respond on gross misdemeanors.

FT: I have a question, you may not know the answer to this. If you do not know, that is fine. There is a TV show called The First 48, have you seen it?

JM: A couple of times.

FT: I have to ask—on the show 90-95% of the crimes are solved by just canvassing and interviewing witnesses and I read here in Delaware that up to 90% or higher of the cases are pled out. So that leaves obviously a small percentage of overall cases for the CSIs to work through, but it is still possible to be a relatively large number. What kind of backlog do you guys have at CSI?

JM: Well, for us in CSI, the backlog in Las Vegas is not that bad. Now in some of the other forensic disciplines, there is a little bit of a backlog. I’ve been retired about 10 months now, so the statistics could have changed a little bit, but it was about like this when I retired. We had about a six months backlog in DNA because we did not have enough DNA analysts. I mean we could always use more forensic scientists. It was about a three-month backlog in latent prints, and that is actually not that bad. I mean there are other agencies that have a year or more of backlog in the various forensic disciplines. So, we could always use more people, but funding is always an issue.

FT: Okay.

JM: So with respect to what you said, that many crimes are solved by canvassing, I don’t know if I agree with that. I would agree that there are some, and I can’t give an exact statistic. There are various ways to solve cases. One is if a suspect is caught during the commission of a crime. That is a good way to solve a case. It happens, but not all that often. Another way to solve the case is if there is a victim or a witness that can positively identify the perpetrator. Does it happen? Yes, it happens, but not all that often, and remember, people can change their appearance. So, when that case goes to court, they may look completely different. Another way we can solve the case is if somebody confesses. Does it happen? Yeah, it happens, but there are potential problems with that as well. Maybe they weren’t advised of their Miranda Rights. Or, they were and they said that they weren’t, so there are potential issues there too.

FT: Okay.

JM: Hold on one second. My wife just brought up a very good point. She’s been with me for 25 years, so she’s very knowledgeable about forensics herself. There are a lot of plea bargains and that’s mainly because there’s not enough judges, there’s not enough courtrooms, there’s not enough prosecutors to take every case to trial immediately. When people do plead it’s because the evidence is usually overwhelming.

FT: Aaaaah.

JM: And the reason why the evidence is overwhelming is because of physical evidence.

FT: That makes perfect sense. Now, I have to ask the inevitable question, the one you get all the time. Can you compare and contrast your group and the Las Vegas CSIs to the TV show?
JM: Okay, that’s a great question I have been asked a lot and here’s how I like to explain it. The great thing about the TV show is, and I alluded to this earlier, it highlights the importance of crime scene investigators and physical evidence. Prior to the CSI show there had been a lot of police shows on TV, but it was more run and gun and detectives doing their job, or patrol interacting with people. The CSI show was the first one to highlight the significance, the value, of crime scene investigation. So kudos to them for that. I think that’s tremendous. Now on the TV show you have CSIs that do everything, while in real life that’s not the case. No one person can do everything. And no one lab can do everything.

FT: Really.

JM: It’s just not physically possible. That’s why we have different sections within the lab, because one person just can’t do it all. The other thing is that on the TV show they concentrate the entire squad to the one case, but in real life that’s not the way it is. We have crime scene investigators that go from call to call to call. So in a typical night they may go from a burglary to a robbery to a sexual assault to a stabbing. You usually can’t devote all of your personal resources on one particular case. The other fallacy about the TV show is that they solve the case in 44 minutes because they have to complete the story.

FT: I love that.

JM: And in real life it may take years. Just to give you an example - shortly before I retired I solved one of my murders from 27 years earlier.

FT: Wow.

JM: And I did that with fingerprints.

FT: Wow.

JM: So, just to kind of recap, I love forensic shows because I love forensics. But in real life it’s not quite like it is on TV.

FT: How often do people ask you about the TV show and try to make comparison between you and Gil Grissom?

JM: Hundreds of times, hundreds of times.

FT: That leads me to my next question which is what do you think of the CSI effect?

JM: Let me go over what the CSI effect is in case you don’t fully understand it. Because of the proliferation of TV shows, because of books, because of magazine articles, everybody has been exposed to forensic science. They know it exists and they’ve come to expect it. And that is not a bad thing. However, what has happened with us is that we often have to go to court and give what we call “negative testimony”. By that I mean we have to explain to the jury that sometimes what you see on TV isn’t the way it is in real life. We have to explain why we did not get fingerprints from that gun, why there was not any DNA from that crime scene.

FT: Okay.

JM: I personally think that’s a good thing, though. Because I think we need to educate the jurors. It is good to let them know what was there, what was done, why it was done, and why things weren’t done - so they can get a full appreciation of the investigation. So, the CSI effect doesn’t hurt. We do have to give that negative testimony at times, but I think it gives the jury a fuller picture of the complete case.

FT: I never looked at it from that point of view. I am glad I asked about it.

JM: Me too.

FT: So, what was your—well, I was going to ask what was your toughest case but solving a murderer after 27 years sounds like it’s pretty well up there.

JM: That’s up there. Let me tell you about one of my favorite cases.

FT: Absolutely.

JM: I’ll tell you quickly about two. One of my favorite cases took seven years to solve, it was solved by fingerprints. What had happened is a husband and wife owned a fruit stand in Las Vegas. It was actually an enclosed business where it was called the Fruit and Nut Stand.

FT: Okay.

JM: The store was robbed, and the lady proprietor had been brutally murdered. She had been cut up terribly with a bread knife. Well, the first person you always want to talk to is the spouse. Turns out he had a great alibi, because he was in California getting a load of fruits and nuts. It was a legitimate robbery for sure. This poor lady had been mutilated, and brutally murdered, after which she was dragged to a back storeroom. I was there with two other crime scene investigators conducting the crime scene investigation. There was a lot of blood about the storeroom. On a cabinet on the wall in the back storeroom where the victim was, there was a bloody fingerprint. I removed the cabinets so I could document and preserve the bloody fingerprint. There were a lot of other things we did to complete the scene investigation. Upon returning to the lab, I wanted to compare her prints to know whether or not the bloody print was hers or the perpetrator’s. So, I did that and it was not hers. That made me feel great, because I knew I had the suspect’s print.

FT: Yeah.
Great.

FT: My wife Lisa wants to say something.

JM: guest speakers. People who have experience in the discipline seem to really spark and pique the interests of students. Wait. Is there any advice you have for today's high school forensic teachers besides enthusiasm?

FT: You said you had another case?

JM: Well, yes. This one is not a serious murder it was a burglary. It was a crime where a couple of kids had burglarized some homes. I went out to investigate and ended up recovering almost all of the stolen property. I made both the kids on fingerprints, I made one on footwear, and that’s when I met my wife who was living there - she was the victim. So I solved that case and won the heart of the damsel in distress.

FT: That must have felt really good.

JM: It felt wonderful.

FT: You said you had another case?

JM: Well, yes. This one is not a serious murder it was a burglary. It was a crime where a couple of kids had burglarized some homes. I went out to investigate and ended up recovering almost all of the stolen property. I made both the kids on fingerprints, I made one on footwear, and that’s when I met my wife who was living there - she was the victim. So I solved that case and won the heart of the damsel in distress.

FT: That is so cool, oh, man that’s nice. Let me shift gears. Is there any advice you have for today’s high school forensic teachers besides enthusiasm?

JM: Yes, there are a couple of things. Enthusiasm and bring in guest speakers. People who have experience in the discipline seem to really spark and pique the interests of students. Wait. My wife Lisa wants to say something.

FT: Great.
**FT:** Absolutely.

**Lisa:** That is what I can contribute. It is a hard job and I admire and I wish the best for anyone who is going into this profession because you will deal with the worst life has to offer every day. On a great day all you have are burglaries. But never lose perspective of the good that comes from your efforts and care.

**FT:** Thank you, Lisa You are the first person I’ve spoken with who has talked about the reality of the job. On TV, you are right, it sounds glitzy and glamorous and jazzy. Oh, let me take my high heeled shoes and low cut V neck and my bracelets and jewelry and I won’t be doing this murder more than 7-8 minutes and then I am going out clubbing. You are absolutely right about the heartbreak and the crime and the sacrifices and I am really grateful to you for bringing that up. Thank you.

**Lisa:** Joe and I often discussed his scenes and lamented the fact that there was nothing he could do to undo what crime occurred on our streets or in a victim’s life, but what he did do was his best job possible to ensure that justice had its chance to be played out.

**FT:** Absolutely.

**Lisa:** And one last thing: everybody loves firefighters and nobody loves a cop—until they need one. Then if the outcome is not perfect to every single individual someone will undoubtedly want to sue the police department and claim all kinds of insidious stuff against them. Sadly, I think most everyone believes that cops are always profiling people, and that they have each other’s backs when they do bad things, and that most all cops are just plain dirty and sleazy. These are not the cops we know, including our local cops as well as many cops from agencies worldwide. Are there bad cops? Obviously. There are bad apples in every walk of life and every profession. I myself have worked for some classic rear-ends in the private sector. There are approximately 2 million people in Las Vegas and we have a very large police department, which is most deservedly highly accredited and staffed with fine individuals just like you and me. They care deeply and perform exemplary work for our community and its people.

**JM:** Do you have any other questions for her?

**FT:** No, I don’t. I just want to reaffirm that CSI in real life does not include model-like clothes and everybody does not have a glass office with glass all around?

**JM:** No. You are absolutely correct.

**FT:** And you don’t have the state of the art equipment because you are not on unlimited budget, right?

**JM:** Well, we do have a lot of state of the art equipment but no one has all of that instrumentation. Well, I mean the FBI does, Scotland Yard does. But typically no one agency has everything.

**FT:** Okay. Now, also—this is the biggest thing that bugs me about the TV show and I just—you didn’t work in the dark. Please tell me you turned on the lights.

**JM:** Oh, yeah. We’ll turn on the lights, yes. And let me tell you a couple of things about that. Lighting is critical in everything in forensic science. When you think about it, what does light do? It enables us to see. And the first thing that we have to do in any investigation is see the whole picture, so lighting is critical. We do use flashlights. I always carried seven flashlights with me for different purposes. There may have been times when we went to a crime scene and it was dark and we might photograph the light fixtures to show the original condition that they were in, but then we would turn on the lights. The reason why they don’t do that on TV, I think, is for dramatic effect.

**FT:** Oh, yes. For one of the last labs of the year in my forensics class I set up a crime scene, actually four of them, in my classroom and I would keep the students in the hallway until I was ready. And I told them on this day, make sure you dress up really fancy like you’re going for a job interview. They would come in and I had the room all dark except for a blue light in one corner and a flashing red light in the other corner and I would get each pair of students a little flashlight like what they use on TV, and I would say here is your crime scene, how many pieces of evidence can you find? And there would be six pieces of evidence for each crime scene in each of the corners. I think the best they ever get was to find two of them and the point of the exercise was just to demonstrate that you really need to turn on the lights.

**JM:** That’s right, you do! Lighting is critical, I mean, for photo documentation you have to have light and if it’s too dark, you’re not going to see anything, you’re not going to capture any of the images. Plus, with fingerprints, and this is one of the things I teach- too much and too little light is not good for visualizing the evidence. I recently taught this at St. Joseph’s College in Indiana for the master’s program in Forensic Science for Dr. Neal Haskell.

**FT:** Yep.

**JM:** So, when searching for fingerprints you really want light that isn’t too dim or too powerful. Now there are times when we do want intense light to initially see the prints, but that’s all part of the learning curve. Lighting is crucial.

**FT:** Thank you for justifying my biggest pet peeve about TV. Let us talk about you for a second. What were you like as a kid, were you always curious, were you always into trouble, or what kind of kid where you?
JM: [Laughs] What kind of kid was I?

FT: Yes. A lot of people I interview are the same way as adults as they were as kids, and they are infinitely curious or enthusiastic or they just gotta take the next step and find out why or how or who?

JM: I know what you’re asking. I’m chuckling because I’ve never been asked that question before. I have been referred to as Curious George. I have always been a very curious, inquisitive individual. I was always also very studious. I was actually a good kid; I mean I did not get into trouble. I was very respectful with my parents and elders. I am a Catholic. When I was a kid, I went to church, I still go to church every Sunday as an adult.

FT: What were your favorite subjects in school, elementary and high school?

JM: Science. I have always been interested in science. I mean, I love pretty much everything about science. When I was in college I took courses that didn’t really apply to my major, but that I had an interest in. To give you an example, I took a lot of anthropology classes; didn’t really apply to my major, but I had an interest in it. I took accounting—didn’t apply to my major, but I had an interest in it. And I took some criminal justice classes. That is kind of what led me into my 35-year police department career. Do you want me to expound on that?

FT: Sure.

JM: Well, my degree was in biology, and I love chemistry, but as I said I took a lot of criminal justice classes just because I had an interest in the subject.

FT: Right.

JM: This is my story. After my third or fourth criminal justice class, the instructor came out to me one day and he said, “I’ve had you in a couple classes, and I know you’re not a criminal justice major. Can I ask why you are taking these classes?” I told him I had an interest in the subject. I told him that I was a science major. And he said he happened to know the director of the police crime lab. He asked if I would be interested in an internship at the crime lab for college credit.

FT: This is at UNLV, University of Nevada, Las Vegas?

JM: Yes. So I interned for a year in the police crime lab while I was in college.

FT: Wow.

JM: And so with some of the things I worked on in the criminalistics, or forensic lab, I did a pretty good job on it and I guess impressed some people. After I graduated college, I originally wanted to be a criminalist (forensic scientist). I was told there weren’t any openings and there wouldn’t have been for several years. And so the lieutenant who was in charge of CSI offered me a job; that’s how I started with the Las Vegas Metropolitan Police Department.

FT: Excellent. Now, going back to college and even high school, I ask because I asked all the people I interview for this magazine to think about a couple of teachers you had either in high school or college that really, really stood out in your mind, that you could not wait to get back to their class because it was so absorbing. I am sure you can easily recall these people. What did these teachers do that really lit a fire within you?

JM: In high school and in college the best teachers I had were the ones that were passionate about what they were teaching. I think that says it all. They loved what they did and that came across when they were teaching their students.

FT: Thank you so much for talking today. I had a great time.

JM: No problem. I appreciate being interviewed. Thanks for the opportunity.
Going to Work

If you’ve paid careful attention to CSI the television show you may have noticed the exterior of the building is never seen. Joe Matvay sent us a photo of the building where he and his team worked. Can you pick it out from those seen below? The answer is on page 36.

By Stephen Patt
Forensics in Schools

educational resources

Easy to download student activities on a user-friendly website...
...created for upper-middle school and high school students.

Topics include:
- Arson
- Ballistics
- Polygraph
- Blood Spatter
- Impaired Driving
- Police Canines
- Fingerprinting
- Trace Evidence
- Criminal Profiling
- Forensic Genetics
- Forensic Entomology
- Forensic Anthropology

Activities include:
- Short Readings
- Worksheets
- Labs
- Projects
- Case Studies

Over 100 student activities!

$1.29 to $1.99 each

www.forensicsinschools.com
780.458.1264

Written by a Science Teacher - edited by a Cop!
Go to the website, [www.centredessciencesdemontreal.com/static/autopsie/index.htm](http://www.centredessciencesdemontreal.com/static/autopsie/index.htm) and skip the introduction and choose English from the upper right side of the screen unless you and your students prefer French. Otherwise, enjoy the introduction. [www.centredessciencesdemontreal.com/static/autopsie/index.htm](http://www.centredessciencesdemontreal.com/static/autopsie/index.htm)

What to do

1. **Warning:** if multiple students are watching the introduction on multiple computers this is going to be noisy.
2. You can then read the introduction information about the case or click on “skip the introduction.” If you read the introduction, you will then need to click on “enter the crime scene.”
3. Next, click on “start the investigation.”
4. Using your cursor (mouse pointer), place the arrow on each number until the number changes into a hand. When the evidence shows up, click on it with the hand.
5. Move the cursor to the right until it is on the “collect the clue.” Write the name of the type of evidence (clue) in the table below in the column labeled “Clue.”
6. Click on “Collect the Clue.”
7. Click on each of the techniques. A box will open that has another box that lights up when the cursor is on it. Click on the box that opens (either “see more information about this technique” or “choose another technique”) and write notes from those boxes in the appropriate column below. If the box that opens says “choose another technique,” then write “doesn’t apply” in the column for that piece of evidence below.

<table>
<thead>
<tr>
<th>Clue</th>
<th>Notes from measuring &amp; diagramming</th>
<th>Notes from photographing</th>
<th>Notes from taking samples</th>
<th>Notes from polylight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When you have completed the above table for all five clues, turn this sheet in.
Several years ago I received several substantial donations of teaching materials from Bill Sherlock, who at the time was the training coordinator for the Illinois State Police Forensic Science at Chicago. As I sifted through the materials I came across several 11 x 17 inch sheets of paper with what appeared to be some sort of tracks on them along with a scale. Curious about what these tracks were, I contacted Bill. He explained that they were tire tracks from the wheels of lab carts. Furthermore, he explained that he used them with impression evidence examiner trainees as a universal way of teaching the comparison process. It was a simple but brilliant idea.

Last year I was tasked with teaching forensic science to middle school and high school students. One of the early challenges was figuring out a way to teach the concepts of class characteristics and individual characteristics to students with little to no experience comparing impression evidence. These can be abstract concepts especially for younger students. I recalled the lab cart wheel impression exercises that I received years earlier. I gave considerable thought about the best way to go about making them. The method that I decided on is detailed in the following article.

The exercises were successfully implemented with students over the past year. The sample that has been provided along with this article was used. On average, students completed this exercise in 20 minutes. Some students completed it more quickly while other students took a bit longer. This is normal and to be expected. There is always a small percentage of students that possess an innate ability to compare impression evidence.

Students enjoyed this exercise and appreciated having a hands-on activity versus being lectured to or reading about it in a book. While they didn’t immediately recognize the connection, it benefitted them when we got into specific impression evidence disciplines such as footwear impressions and fingerprints. This exercise is a valuable tool for developing something I like to call “examiner eyes.” This is a behavioral characteristic where a student’s eyes, when presented with a questioned to known comparison, begin moving back and forth looking for compliant characteristics.

Impression Evidence

The impression evidence disciplines are predicated on the theory that no two objects are alike. With respect to forensic science this theory is central to the examination and comparison of evidence such as fingerprints, firearms, tool marks, footwear impressions, etc.

A pattern evidence examination begins with an evaluation and comparison of class characteristics. Class characteristics are features of an object that allow it to be grouped with other objects with similar features. In commercially produced products, these features are typically determined prior to manufacture. An example of this would be the physical size, physical shape, and tread design of a shoe outsole. If class characteristics are found to be in agreement then the comparison moves to the next step. An evaluation and comparison of individual characteristics commences. Individual characteristics are randomly acquired characteristics that make an object unique and separate it from all other objects even those with similar class characteristics. Returning to the footwear example, individual characteristics would be features such as the nicks, cuts, gouges, tears and other random damage that occur from the interaction between the footwear outsole and the surfaces it comes into contact with.

Curriculum Inclusion

Teaching students the difference between class characteristics and individual characteristics can be a challenging task. This is especially true with students who have little to no background in forensic science. Having clear, unambiguous definitions with multiple high quality visual examples and hands-on activities that provide reinforcement can overcome these obstacles. These are very important concepts that should be addressed early on in the semester. These terms are pervasive throughout forensic science.
Wheels from Carts

Wheels from carts and forensic science initially seem like an unlikely union. However, upon closer inspection, the connection becomes clear. Tires from carts are manufactured items that have different class characteristics that are determined by the manufacturer prior to production. Once these tires are placed onto carts and used to transport materials back and forth, they are subjected to abrasive forces that result in the acquisition of individual characteristics. This is no different than the example of the shoe outsole used previously.

Lab Activity

An excellent introductory activity involves making known impressions and questioned impressions from the wheels of carts. These can be lab carts, library carts, shopping carts or any other type of cart that has relatively small wheels. This activity is inexpensive to prepare, the materials are common and readily available, and in addition to teaching the concepts of class characteristics and individual characteristics, it develops and fosters comparison skills.

Materials and Methods

- Multiple carts
- Vaseline
- 8 1/2” X 11” white paper
- Black Magnetic Fingerprint Powder
- Magnetic Fingerprint Powder Applicator
- Latex gloves
- 50 pound bag of sand
- Chalk
- Goo Gone
- Rubbing alcohol
- Towels

1. **Choosing the correct carts.** It is important to use carts that have wheels with a variety of class characteristics. It is equally as important to use carts that have differing amounts of wear and tear. Carts from local grocery stores, Home Depot, Lowes, and other stores make excellent candidates for this activity. If you choose to include carts from stores it is a good idea to contact the store manager prior to your arrival and inform him or her of your intentions. People will be surprisingly cooperative when you explain that you’re preparing a forensic science activity.

2. **Preparing the work space.** Regardless if this is done inside or outside, the surface should be hard, clean, smooth, and seamless. It should also be large enough to allow for nearly 2 full rotations of the wheels. Lay two pieces of 8 1/2” X 11” paper lengthwise on the floor; this will serve as the known impression. Directly forward of the two 8 1/2” X 11” pieces of paper place another piece of 8 1/2” X 11” paper and position it horizontally; this will serve as the questioned impression. A numerical/alphabetical designation should be given to each piece of paper so that they can be cataloged and so that the known and questioned can be associated at a later date if need be (Figure 1).

3. **Creating the impressions.** Turn the cart upside down with the wheels facing up. Utilizing a cloth and rubbing alcohol, clean the wheels of dirt and debris. Wearing a pair of latex gloves, place a small dollop of Vaseline into the palm of the hand and rub both hands together to evenly distribute the Vaseline across the surface of the gloves. Rub the gloved hand across the entire surface of the wheel (Figure 2). Flip the cart over and place the wheel directly in front of the paper. Position the sand directly over the wheel that has been coated with
Vaseline. Slowly push the cart across all three sheets of paper (Figure 3).

4. Process the sheets of paper with magnetic powder and put aside (Figure 4).

5. Cleaning the wheels. It is extremely important that the wheels be thoroughly cleaned after the impressions are made. Vaseline can create slick conditions which are hazardous. Goo Gone and a soft cloth will do an acceptable job of cleaning the wheels. Figure 5 shows everything you’ll need.

6. Scanning the impressions. The impressions should be placed on a flatbed scanner, scanned at a minimum of 800 dpi, and saved as a jpeg. It is also important that a scale be placed next to both the questioned and known impressions to insure that when they are printed they are 1:1. It’s advisable to create a folder for each cart and save the images in them. When printing these exercises it is advisable to print them all on the same printer as different printers tend to enlarge or shrink images in slightly different amounts. Also, keep the ruler with the folder of images in case it needs to be referred to at a later date.

Putting it All Together

With the labor intensive portion of this project out of the way, now the activities can be developed. This is best accomplished with Microsoft Publisher. Microsoft Publisher is part of the Microsoft Office suite.

One suggested way to assemble this activity is to create 1-2 pages of known impressions and 2-3 pages of questioned impressions. 10 questioned impressions is an easy number to work with and advantageous in terms of scoring. Series of these exercises can be made in this fashion. The number of exercises can be determined by each individual instructor.

When the questioned impressions are copied and pasted into a document they should be given a letter and number designation i.e. Q-1, Q-2, Q-3 etc. They should also be separated by dotted lines so that students can cut them out and conduct their comparisons. Pattern evidence comparisons are normally conducted with the known impression and the questioned impression side-by-side. In the case of these exercises, the questioned impression can also be placed above or below the known impression.

As the number of exercises increases so should their complexity. There are a number of ways to accomplish this. One way is to change the orientation of the questioned impressions. Another way is to open the questioned impressions in Photoshop and make adjustments by changing the brightness and contrast. Yet another option within Photoshop is the filters feature. The questioned impressions can be put through various filters in order to make them more challenging and visually appealing. Deciding which of these tools to use and when to use them is a matter of personal preference.

A sample exercise has been included with this article that can be used as a reference. If there are questions about how to complete any of the tasks associated with this project or further guidance is required, the author can be contacted via e-mail.

Conclusion

To quote my mentor “You can learn how something is done or you can learn how to do something.” The latter of the two is preferred by the overwhelming majority of students. Lecturing students about class characteristics versus individual characteristics is of limited utility. Providing students with hands-on exercises that introduce and reinforce these concepts will stimulate their minds, impart a fundamental forensic science skill, and lay the foundation for learning other forensic science disciplines.

About the Author

Chris Bily is a forensic science instructor and curriculum developer at West Virginia University in Morgantown, West Virginia. He can be reached at Chris.Bily@mail.wvu.edu.
A Cart Full of Evidence
An Impression Evidence Comparison Primer

Questioned Impression

Known Impression

Written by: Christopher Bily
Introduction

“One of the most common forms of evidence investigators may detect and collect at a crime scene is impression evidence.”*

“Impression evidence is created when two objects come into contact with enough force to cause an impression. “*

“Pattern evidence may be additional identifiable information found within an impression. “*

Common Forms of Impression Evidence

- Fingerprints
- Footwear Impressions
- Tire Tracks
- Firearms
- Toolmarks

*National Institute of Justice

Fundamental Concepts

Class characteristics are the properties of evidence that can only be associated with a group and never a single source.*

Individual characteristics are properties of evidence that can be attributed to a single source with a high degree of certainty.*

The class characteristics of the shopping carts in the above image would be construction features such as overall design, material composition, material color, wheel type, wheel width, and wheel tread pattern.

The individual characteristics would be the randomly acquired characteristics (i.e. nicks, cuts, scratches, etc.) that the tires possess through day to day use.

To reinforce the concepts class characteristics and individual characteristics, exercises utilizing impressions from the wheels of a variety of carts have been developed. While the likelihood of shopping cart wheels being evidence at a crime scene is extremely remote, the underlying concept is universally applicable to all impression evidence disciplines.

*Adapted from Criminalistics: An Introduction to Forensic Science
**Class characteristics** are the properties of evidence that can only be associated with a group and never a single source.*

The class characteristics of the shopping carts in the above image would be construction features such as overall design, material composition, material color, wheel type, wheel width, and wheel tread pattern.

**Individual characteristics** are properties of evidence that can be attributed to a single source with a high degree of certainty.*

The individual characteristics would be the randomly acquired characteristics (i.e. nicks, cuts, scratches, etc.) that the tires possess through day to day use.

To reinforce the concepts class characteristics and individual characteristics, exercises utilizing impressions from the wheels of a variety of carts have been developed. While the likelihood of shopping cart wheels being evidence at a crime scene is extremely remote, the underlying concept is universally applicable to all impression evidence disciplines.

*Adapted from *Criminalistics: An Introduction to Forensic Science*
Comparison Nomenclature

**Identification**—The questioned impression and the known impression originated from the same source. The **class characteristics** (wheel width and tread design) and the **individual characteristics** (nicks, cuts, gouges, etc.) are in agreement.

**Exclusion**—The questioned impression and the known impression did not originate from the same source. **Class characteristics** are not in agreement. Exclusions can also take place when class characteristics agree but there is disagreement of individual characteristics.

**Inconclusive**—The questioned impression and the known impression have **class characteristics** that are in agreement, but one or both impression lack **individual characteristics** in sufficient quantity and/or quality to determine an identification.

---

**Directions**

1. Place a scale next to the scale in all of the known impressions and the questioned impressions to insure that they have all been printed 1:1.

2. Cut all ten questioned impressions out along the dotted lines.

3. Fold both sides of the questioned impression to reduce white space.

4. Compare each questioned impression to the sets of known impressions and determine identification, exclusion, or inconclusive. The comparisons can be performed vertically or horizontally.

5. Record the correct determination in the appropriate space on the answer sheet.
Directions

1. Place a scale next to the scale in all of the known impressions and questioned impressions to insure that they have all been printed 1:1.

2. Cut all ten questioned impressions out along the dotted lines.

3. Fold both sides of the questioned impression to reduce white space.

4. Compare each questioned impression to the sets of known impressions and determine identification, exclusion, or inconclusive. The comparisons can be performed vertically or horizontally.

5. Record the correct determination in the appropriate space on the answer sheet.
Exercise 100: Questioned Impressions

Exercise 100: Q1

Exercise 100: Q2

Exercise 100: Q3

Exercise 100: Q4

Exercise 100: Q5

Exercise 100: Q6

Exercise 100: Q7

Exercise 100: Q8

Exercise 100: Q9

Exercise 100: Q10
Exercise 100: Known Impressions

K1

K2
Exercise 100: Known Impressions

K3

K4
Answer Sheet

Directions: Compare each questioned impression to the sets of known impressions. Determine identification, exclusion, or inconclusive. If an identification determination is made, record the number of the Known Impression (K1, K2, etc.) as well.

Exercise 100

Q1. _________________________
Q2. _________________________
Q3. _________________________
Q4. _________________________
Q5. _________________________
Q6. _________________________
Q7. _________________________
Q8. _________________________
Q9. _________________________
Q10. _________________________

Range of Conclusions

Identification—The questioned impression and the known impression originated from the same source.

Exclusion—The questioned impression and the known impression did not originate from the same source.

Inconclusive—The questioned impression and the known impression have class characteristics that are in agreement, but one or both impression lack randomly acquired characteristics in sufficient quantity and/or quality to determine an identification.
FEATURES

- Courses: 3 2-day workshops, 1 credit each, applicable to Forensic Science master’s program.
- Take Forensic Entomology, Forensic Anthropology, Bloodspatter Analysis, Fingerprinting, or DNA Evidence courses as a complete course or individual workshops, for credit, or just to attend.

BENEFITS

- Internationally acclaimed experts in law enforcement and forensics
- Network with peers and professionals in the field as you learn by doing!
- Proximity to major metro areas
- Affordable—and housing offered at reduced rates

REGISTER NOW

http://zinc.saintjoe.edu/academics/forensic/prof_development.html
http://www.saintjoe.edu/forensic-science-professional-development-series

Contact Joel Haskell: jhaskell@saintjoe.edu
Saint Joseph’s College  •  US Hwy. 231  •  Rensselaer, Indiana 47978
www.saintjoe.edu  •  219-866-6000

Mini-Mystery Answer
(from p. 4)

Stanwick and the Stolen Bonds (from page 4)

The thief had to know about the bonds and the hidden key, which restricts the suspect list to Greeley and Fabiano. Fabiano, a small man, could not have reached the six-foot shelf easily enough to saw off the padlock and reach inside. Nor was there any furniture in the basement, or small, moveable furniture upstairs, that he could have used to stand on. The thief was therefore Greeley. He had stolen the bonds before going to the mall that day.

Going to Work
(from p.21)

The Las Vegas Metropolitan Police Department Crime Lab is situated in building D. The outside is unmarked, their space requirements aren’t multi-story huge, and there’s ample parking.

CELESTRON®

MICRO FI
Wi-Fi Handheld Microscope

Start a wireless revolution in your classroom or lab with Micro Fi, Celestron’s cutting-edge digital microscope with integrated WiFi!

- Completely wireless and battery powered
- Free mobile app provides live streaming feed of up to 30 feet
- Simultaneously stream to up to three devices
- Two-element IR-cut lens for correct color and high resolution
- Built-in digital camera captures still images and video
- Adjustable LED illuminator
- Durable, ergonomically designed housing

celestron.com
Summer is a great time to recharge your emotional and intellectual batteries after a long school year. We have the opportunity to spend time away from home, with friends, and to rediscover those hobbies that have been on hold since last summer. Recently The Forensic Teacher Magazine asked some forensic science teachers what they did with their summers. Some stocked up on supplies, others on knowledge, and still others on what Stephen Covey calls “sharpening the saw.”

“I meet with the local technical college’s Director of Police Academy and we discuss new techniques. He has introduced me to members of the state crime lab (who are willing to discuss topics with me) and he allows me to audit the evidence technician course to improve my skills and learn new techniques (he also allows me to borrow equipment during the school year because he knows I have been trained on it).” —Mr. D. Mader

“I don’t know if this qualifies, but a student gave me two frozen deer fetuses which I have put out in our ‘Anthropology Research Facility’ (the old dirt-floored batting cage at our school, which is totally fenced, covered with screen above, overgrown with brush and has a locked gate). We are in sunny and HOT Florida so I hope that a summer’s worth of decomp will give us something to investigate come fall. We will do entomology studies and excavate whatever we can. I did not bury them, but now I wish I had with one of them, just for comparison.” —Diana Latta

“I would try and take pictures of the deer every day since it will probably be gone in a couple of weeks and try to timelapse them together in iMovie. In the past when I use chicken breasts, the maggots have cleaned the flesh pretty quickly. [Ed. note: this submission was a follow-up to the previous one; he saw Diana’s]

I actually go for walks around town or nearby college campuses and keep my eyes open for debris. The last time I did this I found a torn charred dollar bill, some faux jewelry and a metal container all within a few feet. Yep I’m working up a scene in my head.

I also go to my local fly shop and get cheap pieces of fur so I have a good sampling of authentic animals, silver fox, red fox, moose, beaver, rabbit, antelope, deer, peacock feathers, muskrat and whatever else I can find. I use them in a poaching scenario and an illegal import of Tibetan antelope (that one’s real).

“I am an avid photographer along with a member of a very busy ambulance team. I use the summer time to take pics of some crime scenes (I usually don’t have the time during the school year), accidents, etc for me to use in class in various topics.” —Philip M. Orlando

“Although I am fairly new to teaching Forensics, I have found hitting tag sales and flea markets a great way to pick up some “odds and ends” as well as to find toy trucks, cars, dolls, Lego people etc. to use for lab bench crime scenes.” —Anonymous

“To have sand/soil samples for my students to analyze, I have asked everyone I know to please bring me materials from their travels. I now have black sand from Hawaii, powdery soft sand from Mexico, sand from beaches in Chicago, sand from Dingle, Ireland, as well as many other places.” —Anne G. Monks

“I record and watch forensic TV shows like “Forensic Files”, “Dr. G. Medical Examiner”, “FBI Files”, and others so I can supplement a unit we’re doing with video on the same topic. The History Channel is good too!” —Robin Corts

“Summer is a great time to go through the attic or the basement or the shed. Not only can I always find things to use in my classroom, but I can also get rid of a lot of junk while doing it.” —Steve Russell
Bloomin’ Easy!

One of the best things about teaching forensics is watching your students mature intellectually. Benjamin Bloom first published his taxonomy of thinking skills in 1956. As teachers we have an obligation to help students learn to use their minds in more powerful ways. The chart below lists suggestions for you to push your students mentally to higher places. Give them a try; often the difference between an easy forensic assignment and a challenging one is what you ask of your students.

<table>
<thead>
<tr>
<th>Level</th>
<th>Type of Activity or Question</th>
<th>Verbs Used for Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest level</td>
<td>Knowledge</td>
<td>define, memorize, repeat, record, list, recall, name, relate, collect, label, specify,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cite, enumerate, tell, recount</td>
</tr>
<tr>
<td></td>
<td>Comprehension</td>
<td>restate, summarize, discuss, describe, recognize, explain, express, identify, locate,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>report, recall, review, translate</td>
</tr>
<tr>
<td></td>
<td>Application</td>
<td>exhibit, solve, interview, simulate, apply, employ, use, demonstrate, dramatize,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>practice, illustrate, operate, calculate, show, experiment</td>
</tr>
<tr>
<td>Higher levels</td>
<td>Analysis</td>
<td>interpret, classify, analyze, arrange, differentiate, group, compare, organize,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>contrast, examine, scrutinize, survey, categorize, dissect, probe, inventory,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>investigate, question, discover, text, inquire, distinguish, detect, diagram, inspect</td>
</tr>
<tr>
<td></td>
<td>Synthesis</td>
<td>compose, setup, plan, prepare, propose, imagine, produce, hypothesize, invent,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>incorporate, develop, generalize, design, originate, formulate, predict, arrange,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>contrive, assemble, concoct, construct, systematize, create</td>
</tr>
<tr>
<td></td>
<td>Evaluation</td>
<td>judge, assess, decide, measure, appraise, estimate, evaluate, infer, rate, deduce,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>compare, score, value, predict, revise, choose, conclude, recommend, select, determine,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>criticize</td>
</tr>
</tbody>
</table>

Chart courtesy of Dr. Alicia T. Wyatt, McMurry University, Abilene, TX

By the Numbers:

1026 Pages
295 Articles
104 Labs/Activities
21 Back Issues
3 clicks to order
1 CD
$0 shipping fee
$29.95 (That’s it!)
The images on the next two pages, comprise a crime. The idea is to present them to your students and challenge them to solve the crime by looking at the photographs and reading the descriptions.

A more difficult challenge is presented on the two pages following the first mystery. In this issue there are two mysteries.

If you want to make a class set of the two pages and have your students work on them in pairs, you’re going to need a printer (and then a copier) capable of printing in color or gray scale. A printer or copier that only turns out black and white products just isn’t going to work. Gray scale is sufficient.

OR, you could transfer the images to a projector that allows every student to see them all at once.

Regarding the note at the bottom right of the second page: there are no clues in this version, and the answers are on page 46.

These pages are from Scotland Yard Photo Crimes, used with permission of Dorling Kindersley Publishers.

Please let us know what you think of this new feature at admin@theforensicteacher.com. We want to know if you can’t read the text or if the photos are jaggy so we can improve. Should we make this a regular feature?
THEFT at a SEANCE

Not all crimes are premeditated. This one was a spur-of-the-moment decision and hastily improvised. Therefore, the thief left a vital clue.

1. This was what Mr. and Mrs. Montague and their three guests were thinking one evening at the Montague's pleasant suburban home. Being under suspicion is not pleasant when you are innocent, and even less so when you are guilty, so that all but one felt relieved when Inspector Black's card appeared.

2. The card was soon followed by the Inspector himself who listened with sympathy while Mrs. Montague told him about the theft of her pearls.

3. "The pearls were an anniversary gift from my husband. He's a senior partner in a big City firm, you know. I was wearing the pearls for the first time this evening." Mrs. Montague explained.

4. The dinner guests were Mr. Montague's three business associates — two of his partners, Victor Crabtree and Jules Worthorne — and a member of a Spanish banking house, Señor Carlos Rodriguez. After dinner Mr. Worthorne, who was interested in psychic matters had suggested holding a séance. "We all thought it a bit of a lark," said Mrs. Montague, "so we agreed to it. He had told us where to sit round the table."

5. "Mr. Worthorne was on my left, Sr. Rodriguez sat next to him, my husband was on my right, and between Sr. Rodriguez and my husband was Mr. Crabtree. We were told to keep our hands on the table but apart."
Choose your suspect; John Hodgson, Robin Steinmetz, or Tim Waverly. Answer on page 41.

Think you know what happened? Who did Inspector Black suspect? The solution is on page 46.
ROBBERY on the PADDINGTON EXPRESS

The detective’s chief proof against law-breakers is the knowledge that fingerprints are unique. Occasionally, even a professional criminal will relax his guard and leave his gloves off and his prints behind.

1 Mr. Elliot Poswaite, of Poswaite and Higginbottom, the prestigious diamond firm, was taking some rare diamonds home for safe-keeping.

4 In the extreme rear compartment was a Mr. Michael Dalston, the younger member of Dalston and Son (Tailors) Ltd. He'd had a trying day, which ended in an argument with Dalston Sr.

2, 3 It was Friday night, and, as usual, Poswaite dined in town and caught the 10.15 train to his country home. Poswaite was in the third compartment from the rear of the last coach, which was followed by the guard's van. He sat in the near-side corner, facing the engine. Then he crossed the compartment to open the window, and returned to his seat, settling down for the journey. He soon nodded off.

5 In between Dalston's and Mr. Poswaite's compartments was one occupied by a certain Mr. Ronald Scofield, who was hoping to get some work done during the long ride home. Commuting to London and back every day was wearisome, but he had no other choice — his family had to eat, didn’t they?

6 In the compartment just in front of Poswaite's was Geoffrey Rouse. Rouse was an assistant in a big firm of jewellers which often had business dealings with Poswaite’s firm. He was thinking about a big transaction he was about to make. "If this works out," he thought, "my troubles will be over, and I will be in clover."

7 As the train was leaving, Dick Purcell ran down the platform into the front compartment of the last coach.
Think you know what happened? Who did Inspector Black suspect? The solution is on page 46.
Mistakes are part of the learning process. In fact, mistakes are valuable if one learns from them and they’re not too serious. And they rarely are in an educational setting if the teacher recognizes learning is going on.

The field of forensics has benefited from being on television more than just about any other subject except pro sports and cooking. Unfortunately, unlike those other subjects, much of what is portrayed on TV about forensic is false.

The basic concepts are correct. Fingerprints can be matched back to an individual, bullets are uniquely scarred by their passage down a gun barrel, and nearly everyone has their own set of DNA. However, much of what viewers see on television has been glamorized to the point of being inaccurate. Many viewers believe DNA typing takes the span of a commercial break. They don’t question the gym-toned, attractively dressed crime scene technicians who can process all the evidence at a scene in less than five minutes. Forensic students seem genuinely surprised to find out dead bodies stink and crime labs don’t look like they do on TV. These are all mistakes students can use to learn about how the real forensic world functions.

The rest of this article is a list of fallacies one will see on any of the glamor-forensic dramas. Photocopy the worksheet on the next page for your class and ask your students to check off what they observe. Such an exercise has the benefit of inspiring students to watch an episode more closely, and of making them conscious of how TV distorts the real world of forensics. Granted, a TV drama would be boring if the actors kept to a realistic schedule, but asking your students to find mistakes is a challenge, one they will enjoy.

Alternatively, your students can choose 24 mistakes from the list and write them on a 5 x 5 bingo card (center spot is free). This introduces a random element into the viewing process, and adds a touch of competition.

Readers will find other TV mistakes and should add them to their list and send us an email so we can update ours.

Happy hunting!
## Forensic TV Mistakes

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Show</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The CSI is the first responder</td>
<td>45</td>
</tr>
<tr>
<td>2.</td>
<td>The CSI enters a scene without foot coverings</td>
<td>46</td>
</tr>
<tr>
<td>3.</td>
<td>The CSI enters a scene without taking pictures</td>
<td>47</td>
</tr>
<tr>
<td>4.</td>
<td>The crime scene is dark, but no one turns on the lights</td>
<td>48</td>
</tr>
<tr>
<td>5.</td>
<td>Tiny flashlights are used to scan a dark room</td>
<td>49</td>
</tr>
<tr>
<td>6.</td>
<td>Evidence is moved before being documented</td>
<td>50</td>
</tr>
<tr>
<td>7.</td>
<td>Evidence is collected before being documented</td>
<td>51</td>
</tr>
<tr>
<td>8.</td>
<td>CSIs move the corpse</td>
<td>52</td>
</tr>
<tr>
<td>9.</td>
<td>All crimes are murders</td>
<td>53</td>
</tr>
<tr>
<td>10.</td>
<td>CSIs go through the pockets of the deceased</td>
<td>54</td>
</tr>
<tr>
<td>11.</td>
<td>No detectives are at the crime scene</td>
<td>55</td>
</tr>
<tr>
<td>12.</td>
<td>CSIs order the cops around</td>
<td>56</td>
</tr>
<tr>
<td>13.</td>
<td>The crime scene is process in less than 10 minutes</td>
<td>57</td>
</tr>
<tr>
<td>14.</td>
<td>All fingerprints at the crime scene are legible</td>
<td>58</td>
</tr>
<tr>
<td>15.</td>
<td>No fingerprint powder remains when techs leave</td>
<td>59</td>
</tr>
<tr>
<td>16.</td>
<td>Crime scene released, then revisited later</td>
<td>60</td>
</tr>
<tr>
<td>17.</td>
<td>Arson scenes are all safe to enter</td>
<td>61</td>
</tr>
<tr>
<td>18.</td>
<td>Decomposing bodies don't stink</td>
<td>62</td>
</tr>
<tr>
<td>19.</td>
<td>No one gags, regardless of the smell or sight</td>
<td>63</td>
</tr>
<tr>
<td>20.</td>
<td>DNA processing only takes five minutes</td>
<td>64</td>
</tr>
<tr>
<td>21.</td>
<td>Only one case for the entire forensic facility at a time</td>
<td>65</td>
</tr>
<tr>
<td>22.</td>
<td>All important bullets are found</td>
<td>66</td>
</tr>
<tr>
<td>23.</td>
<td>Tox report shows all drugs, regardless of decom</td>
<td>67</td>
</tr>
<tr>
<td>24.</td>
<td>Labs are kept dark with minimal lighting</td>
<td>68</td>
</tr>
<tr>
<td>25.</td>
<td>All evidence tables are lit from beneath</td>
<td>69</td>
</tr>
<tr>
<td>26.</td>
<td>Autopsy victims are tastefully clothed</td>
<td>70</td>
</tr>
<tr>
<td>27.</td>
<td>During an autopsy the brain isn't removed</td>
<td>71</td>
</tr>
<tr>
<td>28.</td>
<td>Autopsies only take five minutes</td>
<td>72</td>
</tr>
<tr>
<td>29.</td>
<td>AFIS fingerprint searches only takes one minute</td>
<td>73</td>
</tr>
<tr>
<td>30.</td>
<td>AFIS fingerprint searches flash by on computer screen</td>
<td>74</td>
</tr>
<tr>
<td>31.</td>
<td>AFIS fingerprint searches only find one positive</td>
<td>75</td>
</tr>
<tr>
<td>32.</td>
<td>Facial ID possibilities all flash on the computer screen</td>
<td>76</td>
</tr>
<tr>
<td>33.</td>
<td>No warrants needed for database searches of suspects</td>
<td>77</td>
</tr>
<tr>
<td>34.</td>
<td>All databases are accessible to investigators</td>
<td>78</td>
</tr>
<tr>
<td>35.</td>
<td>DNA is found on every surface examined</td>
<td>79</td>
</tr>
<tr>
<td>36.</td>
<td>Blood is found on every surface examined for it</td>
<td>80</td>
</tr>
<tr>
<td>37.</td>
<td>All blood found is human blood</td>
<td>81</td>
</tr>
<tr>
<td>38.</td>
<td>All trace evidence is identified in five minutes</td>
<td>82</td>
</tr>
<tr>
<td>39.</td>
<td>CSIs conduct interviews of suspects</td>
<td>83</td>
</tr>
<tr>
<td>40.</td>
<td>CSIs inform suspects of their rights</td>
<td>84</td>
</tr>
<tr>
<td>41.</td>
<td>CSIs make arrests</td>
<td>85</td>
</tr>
<tr>
<td>42.</td>
<td>CSIs look like models</td>
<td>86</td>
</tr>
<tr>
<td>43.</td>
<td>No one ever has a bad day</td>
<td></td>
</tr>
<tr>
<td>44.</td>
<td>No one has conflicts with another team member</td>
<td></td>
</tr>
</tbody>
</table>
Theft at a Seance
Photo Mystery Answer

Mrs. Montague had powdered her back and shoulders before going down to dinner (note her powder puff, pic. 3) and the thief, in grabbing the pearls, brushed her shoulder with his sleeve. A good detective would have seen the powder mark on Crabtree’s sleeve (pic. 1). Disposing of the pearls was another matter. When I arrived, he had to conceal the pearls and trust to luck to getting them back later. The wine decanter on the table seemed the quickest possible solution. While I was examining the table, Crabtree must have slipped the pearls into the decanter under pretence of helping himself to a cigar. (Did you notice the altered levels of the decanter and the fact that the cigar box had moved?) Only one man was smoking a cigar, so I had no hesitation in arresting Crabtree.

Robbery on the Paddington Express
Photo Mystery Answer

This thief obviously had so much on his mind, he forgot to wear his gloves. His fingerprints gave him away. I found the telling prints on the off-side door of Mr. Poswaite’s compartment. Poswaite, however, was not sitting on that side, but on the near side. The door handle that Poswaite turned to board the train was on the right-hand side of the door, away from the engine. Therefore, the door on the off-side must have had its handle facing towards the engine. If someone had inched along the footboard toward Poswaite’s compartment from the front of the train, he might have grabbed hold of the window with his left hand, but to do so with his right hand as well would mean moving past the door and opening it backward onto himself. This is a highly unlikely occurrence. However, if the thief came from the rear of the coach, he would necessarily pass the door to reach the handle, probably holding onto the window frame as he did so. There were two men in compartments behind Poswaite’s, and one, Scofield, was wearing a fingerstall. Dalston, then, was my man.
Free Issue
Free Subscription
Just sign up. Period.

Do your students kick butt?
Are they independent thinkers?
Ask them to write about it.
We’ll showcase their talent and even pay them.

admin@theforensicteacher.com

Do you have a lab your students love?
Want to get paid for sharing it?
Email us, tell us about it!
admin@theforensicteacher.com
Give Me A Break!

By Audri Kowalyk and Susanne Christensen

How a bone fractures can be a big clue to what happened.

Teaching Tips: Bone Fractures/Trauma:

I explored types of bone fractures/bone trauma with my students in my ‘Forensic Anthropology’ unit (Adv Forensics 35: Gr.11-12). This topic often leads into a lengthy discussion of the various types of fractures some of my students had in the past. To enhance this topic, the father of one of my student’s was a doctor and generously donated a stack of old X-rays to our class. I simply slapped these on an overhead projector for all students to see – truly cool!

When discussing this topic with Mark Feil (Editor of Forensic Teacher Magazine) – he asked if I had brought in real bone for demonstration/experimentation of bone fractures/trauma. Sadly, I have never tried this – but think I will. Going to a local butcher to ask to purchase (or for donation) pig and/or cow bones seems like a relatively easy thing to do.

This lesson is reprinted with permission from Advanced Forensic Science Educational Activities By Audri Kowalyk and Susanne Christensen. Copyright 2003. Available at www.forensicsinschools.com.
Reading: FORCE & Types of BONE FRACTURES

Introduction
In forensic science there are five main causes of death: accidental, homicide, natural, suicide and unknown. Bones usually exhibit clues concerning violent deaths such as homicide, suicide or accident - these manners of death most likely will cause skeletal trauma and as a result can be interpreted by a forensic anthropologist.

Directions of Force
The type of break in the bone depends on the direction from which the force was applied to the bone. Thus, there have been observed by forensic anthropologists, 5 directions of force that cause bone fractures: compression, shearing, bending, torsion, and tension.

1. **COMPRESSION** = A force that pushes down on bone. Fracture lines will often be numerous, wide-reaching and tend to radiate from the point of impact. This type of force most often occurs upon the skull and the shape of the displaced bone will likely match the instrument used to create the wound.

2. **SHEARING** = Force similar to bending by the immobilization of one bone segment occurs. When the force is applied a linear shearing type of fracture in the bone occurs and it is usually caused by a person attempting to stop themselves from falling - thus, these usually occur in accidents rather than homicides or suicides. However, there is one type of forensic case where shearing forces can occur and this is when a victim is dismembered using a sharp instrument (ie. saw).
3. **BENDING** = most common force; a force that impacts the bone at a right angle causing a triangular break usually through its cross section. Causes fracture lines at the point of impact or on the side opposite from the break. Usually causes complete breaks or fractures in adults, while in children infractions or 'green-stick' fractures occur. The most common fracture caused by a bending force is called a parry fracture of the ulnar bone in the arm and is caused when a person holds up their arms in self defense; this causes inward displacement of the bone. Parry fractures are often seen in deaths where there was a violent struggle.

4. **TORSION** = twisting forces that occur most often in accidents. One end of the bone is held stationary while the other end of the bone is twisted in some way. The fracture is caused by this spiral down the long axis of the bone. These types of forces most often occur in accidents (skiing, biking) and in forensic cases such as child abuse.

5. **TENSION** = a force that pulls on the long axis of the bone causing it to break. Tension forces most often causes dislocations of bone, but if the force is strong enough a portion of bone can break away from their main portion. This type of bone injury displays few fracture lines and occur most often occur in accidents rather than violent deaths.
Worksheet: FORCE & Types of BONE FRACTURES

Name: ___________________________ Date: ___________________________

Complete the following TRUE-FALSE questions after reading ‘FORCE & Types of BONE FRACTURES’. If the statement is FALSE - then place the correct statement in the line below.

1. In Forensic Science there are four main causes of death: accident, homicide, natural, suicide.    TRUE  FALSE

2. Bones usually exhibit clues concerning violent deaths such as homicide, suicide or accident. TRUE  FALSE

3. When a compression force is applied to bone the fracture lines will often be numerous, wide-reaching and radiate from the point of impact. TRUE  FALSE

4. In a compression fracture the shape of the displaced bone will not match the instrument used to create the wound. TRUE  FALSE

5. Compression fractures are usually found upon the bones in the rib cage. TRUE  FALSE

6. A ‘bending’ bone fracture is usually caused by a person attempting to stop themselves from falling. TRUE  FALSE
7. Shearing bone fractures will likely be evident if a victim is dismembered by a saw.  

8. A bending fracture is caused by a force that impacts the bone at a right angle causing a triangular break usually through its cross section.  

9. A parry fracture is caused when a person kicks their legs in self defense.  

10. Parry fractures are often seen in deaths where there was a violent struggle.  

11. A torsion fracture is caused by this spiral down the long axis of the bone and most often occur in accidents and in cases of child abuse.  

12. A tension fracture is caused by a force that pushes on the long axis of the bone causing it to break.
Reading: Determining TYPES of Trauma from Skeletal Remains

When skeletal remains are found, the actual cause of death can only be inferred by forensic anthropologists after the examination of the bones. This is because there are so many unknowns about this type of trauma. What forensic anthropologists will do after examination of bones is state that the trauma is “consistent” with a certain cause of death. For example, if a stab wound to the torso was thought to be the cause of death - existence of this type of wound does not prove that it was the cause so a forensic anthropologist will list the cause of death as “a death that is consistent with death by stabbing”. This is because the person could possibly have died from other causes before he/she was stabbed.

In forensic science there are five main causes of death: accident, homicide, natural, suicide and unknown. Bones usually exhibit clues concerning violent deaths such as homicide, suicide or accident - these manners of death most likely will cause in skeletal trauma and as a result can be interpreted by a forensic anthropologist.

Blunt Force Trauma

An injury caused by a blow from a wide instrument with a flat or round surface - thus this injures a wide surface area of the bone. The injury usually involves bone compression, bending and shearing forces over a wide area. The fracture wounds tend to be fairly simple unless excessive force is applied - then comminuted fractures (which contains many bone fragments) occurs. Any weapons used as clubs can cause blunt force trauma - however falling or being pushed onto on a hard surface can cause it as well. This type of trauma can occur during car, train or plane accidents as well.

Projectile Trauma

An injury caused by projectile trauma have such distinctive characteristics. These types of wounds exhibit complete displacement of bone with radiating fracture lines from the point of impact. The type of force caused by this type of trauma is usually a compression force, but some weapons can cause a bending force to occur. The focus of the force and the resulting bone injury caused by projectile trauma will start out small, but usually becomes wider as the projectile passes through the bone. Types of projectile that cause projectile trauma include bullets, arrows or spears.

Sharp Force Trauma

An injury caused by either a compression or shearing force that is applied towards a narrow focus. When the force is perpendicular - puncture wounds in the bone will appear. If the force is applied at an angle usually grazing cut marks are evident on the bone. Complete fractures of bone can occur when the weapon used is a ‘chopping’ type of instrument (ie. ax). Incomplete bone fractures will occur when the weapon used is a ‘cutting’ type of instrument (ie. knife).

At birth, there are over 270 bones in an infant human's body, but many of these fuse together as the child grows. A total of 206 separate bones exist in a typical adult, not counting numerous small sesamoid bones (bones found on joints ) and ossicles (small bones found in inner ear). wikipedia.org/wiki/Bone
Death by Strangulation

The hyoid bone is a free-floating c-shaped structure made up of three bones that covers the voice box (larynx) in the neck. In 8% of the deaths caused by suicidal hangings the adult hyoid bone will appear fractured. While in 34% of strangulation deaths fractured hyoids have been observed. Thus, if a Forensic Anthropologist observes a fractured hyoid bone the conclusion drawn is that there is a “strong indication” that strangulation occurred.

Unfortunately, it is difficult for forensic anthropologist to conclude that a strangulation has occurred in a young child because in only 7.1% of humans under the age of 20 - the 3 bones of the hyoid have fused together. Fusion of the hyoid bones in humans is usually not complete until adulthood.

Worksheet: Determining Types of Trauma from Skeletal Remains

Name:_________________________________________ Date:_____________________________________

Complete the reading ‘Determining TYPES of TRAUMA from SKELETAL REMAINS’ to answer the following questions.

1. Why can only the cause of death be “inferred” by Forensic Anthropologists rather than confirmed after they have studied the skeletal remains involved?

2. List the 5 main causes of death in Forensic Science & then circle the types of death that will likely cause skeletal trauma.

3. Fill in this chart - by stating the type of weapon used to cause this trauma, the type(s) of force found applied by this type of trauma and type(s) of bone injuries caused by this type of trauma...

<table>
<thead>
<tr>
<th>Type of Trauma:</th>
<th>Type of Weapon(s):</th>
<th>Type of Force(s):</th>
<th>Type(s) of Bone Injury present:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blunt Force:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Projectile:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharp Force:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strangulation:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Beside each of the following injuries - state the **type of trauma** that likely caused it...

a) A fractured hyoid bone is found in the skeleton of adult male: ______________________________________

b) Linear grazing marks are found Upon the ribs of unknown skeleton: ____________________________

c) A small round hole with radiating fractures is found in the breast bone of a skeleton: _________________

d) A fractured hyoid is found in the skeleton of a young child: ________________________________

e) Simple fracture wounds and bone fragments over a large surface area of a skull are observed: _________________________

f) Small puncture wounds appear on the pelvic girdle of a cadaver: ____________________________

When subjected to fire, the human body initially takes on the pugilistic posture (also called the boxer’s pose) where the fingers, wrists, elbows, and knees flex. This posture occurs because heat from the fire makes the muscles shrink, which causes the joints to flex. The pugilistic posture can only be examined on bodies that possess burned soft tissue. If the soft tissue is fully consumed by fire, only skeletal fragments remain and forensic anthropologists will be called upon to look for evidence of trauma on the bone.

KEY - True & False Worksheet: FORCE & Types of BONE FRACTURES

1. FALSE - There 5 mains causes of death = accident, homicide, natural, suicide & unknown.
2. TRUE
3. TRUE
4. FALSE - In a compression fracture the shape of the displaced bone will match the instrument used to create the wound.
5. FALSE - Compression fractures are usually found upon the skull.
6. FALSE - Shearing bone fracture is usually caused by a person attempting to stop from falling.
7. TRUE
8. TRUE
9. FALSE - A parry fracture is caused when a person holds up their arms in self defence.
10. TRUE
11. TRUE
12. FALSE - A tension fracture caused by a force that pulls on long axis of the bone, causing it to break.

KEY - Worksheet: Determining Types of Trauma from Skeletal Remains

1. There are so many unknown factors about the type of trauma that could have caused the death. ie. If a stab wound to the torso was thought to be the cause of death, existence of this type of wound does not actually prove that it was the true cause of death. Hypothetically, the person could possibly have died from other causes before he/she was stabbed.

2. 5 main causes of death = Accident, homicide, natural, suicide and unknown.

3. a) Blunt force: club, hammer; compression, bending and shearing forces; Injury = wide surface area  b) Projectile: bullets, arrows or spears; compression or bending; displacement of bone with radiating fracture lines from impact point.  c) Sharp force: axe, knife; compression/shearing forces; puncture wounds & grazing cut marks.  d) Strangulation: hands, rope; compression; fractured hyoid.

4. a) strangulation  b) sharp force trauma  c) projectile trauma  d) Inconclusive  e) blunt force trauma  f) sharp force trauma
What's Going On?

Ask the Morgue Guy

Q. The majority of the school year is behind us and I have more than half my curriculum to go. Somehow we've spent more time on the units we've done than we did last year. Now I see there's no way we're going to be able to get through all the subjects on the syllabus. I'm waiting for an assistant principal to come to my room and tell me parents have complained because I'm taking too long to get through the material or I'm not giving my students what I promised. I feel really bad about this because now I have to rush and gloss over the units remaining to get through them all before finals. Suggestions? Can I dig myself out of this mess?

— Erin Glossner, Canton, CA

A. OK. First things first. Take a deep breath. Everything is going to be OK. Think about your year so far. Are you behind in your lessons because you've been lazy and have shown episodes from the entire second, third, and fourth seasons of CSI or The First 48 three times a week? If that's the case, then yes, you deserve to be yelled at and you should think hard about teaching this subject next year.

Or, have you and your students been having so much fun delving deep into each unit that you've lost track of time, and this is why you're behind?

If this is the case, relax and don't be so hard on yourself. Talk to your department head or principal about offering Forensics II next year. Yes, you're not going to hit everything on the syllabus this year, but I'll bet your students have had a ball doing what you've done. Next year trim down your syllabus—you can always add more units, or keep a closer eye on the calendar.

Below are only some of the great training offered by the American Academy of Forensic Science's website (www.aafs.org) and other places on the web. Please note: all email and website links are active.

May

19-21
Aquatic Death and http://forensicscienceeducation.org/aquatic-death-and-homicidal-drowning-investigation/

June

29-July 2
Bertino Forensic Science 4-Day Summer Institute Scotia-Glenville High School, Scotia, NY 12302 (near Schenectady, NY). Hands-on workshop for teachers focusing on several forensic disciplines as well as lessons, labs, curriculums, and saving money. Contact Patti Nolan Bertino at nolanp@nycap.rr.com or www.bertinoforensics.com or call 518-384-1718.

July

6-9
Bertino Forensic Science 4-Day Summer Institute Scotia-Glenville High School, Scotia, NY 12302 (near Schenectady, NY). Hands-on workshop for teachers focusing on several forensic disciplines as well as lessons, labs, curriculums, and saving money. Contact Patti Nolan Bertino at nolanp@nycap.rr.com or www.bertinoforensics.com or call 518-384-1718.

6-10
Forensic Science Workshop at Lawrence Tech in Southfield, MI. Topics will include Accident reconstruction, Blood spatter analysis, Glass analysis, Ballistics, Fingerprints and impressions, DNA fingerprinting, Forensic entomology, Crime scene processing, and Legal issues. Find out more at www.ltu.edu/arts_sciences/master_science_ed/forensic.asp

13-16
Forensic Science Workshop for Teachers in Foster City, CA. Topics will include DNA analysis using PCR, Blood splatter analysis, Fingerprinting, Population statistics in forensics, Ballistics/ firearms analysis, Mock trials, and more. More info at www.babec.org/node/56

13-16
Forensic Science and Law Summer Workshop at Duquesne University near Pittsburgh, PA. Topics will include Evidence Collection (lecture), Fingerprints (lab), Arson Investigation (lecture), Thin Layer Chromatography (TLC)(lab), Toxicology (lecture), Hair & Fiber Analysis (lab), Famous Cases (lecture), Body Decomposition (lecture), Firearms and Toolmarks (lab), Eyewitness Identification (lecture), DNA Fingerprinting (lecture), Mock Crime Scene, Handwriting Analysis (lecture), and Blood Spatter (lab). www.dug.edu/academics/schools/natural-and-environmental-sciences/academic-programs/forensic-science-and-law/summer-workshop.
What's Going On?

Make them.
That's right. Later in the year split your students into groups of two or three and challenge them to create a game based on their favorite unit. For this exercise have them design and create a board game. You'll go to the dollar store and buy poster board and supply the kids with markers (if you don't have a kind and generous art teacher in your school). They should design the game and write out the rules which you have to approve before they start work on the game board. Encourage originality. Turns can be taken via spinner, dice rolls, cards played, or anything else they can imagine. The goal of the game is to reinforce the forensics unit the designers liked the best. It should serve as both a review and to present new information to players not very familiar with the topic.

After one day of design and two more of hands-on construction ask the students to stand before the class and explain their product: how the game is played, scoring, and strategy.

Hint: at this time of year your athletic director will have a pile of poster-sized calendars for each sport at the school, most of which are now outdated. Good news: they're made of heavier stock paper and blank on the back. Use them!

Just for Fun

Don’t play games

Make them.
That's right. Later in the year split your students into groups of two or three and challenge them to create a game based on their favorite unit.

For this exercise have them design and create a board game. You'll go to the dollar store and buy poster board and supply the kids with markers (if you don't have a kind and generous art teacher in your school). They should design the game and write out the rules which you have to approve before they start work on the game board. Encourage originality. Turns can be taken via spinner, dice rolls, cards played, or anything else they can imagine. The goal of the game is to reinforce the forensics unit the designers liked the best. It should serve as both a review and to present new information to players not very familiar with the topic.

After one day of design and two more of hands-on construction ask the students to stand before the class and explain their product: how the game is played, scoring, and strategy.

Hint: at this time of year your athletic director will have a pile of poster-sized calendars for each sport at the school, most of which are now outdated. Good news: they're made of heavier stock paper and blank on the back. Use them!

Ongoing throughout the year:

The Forensic Science Education Conference for Middle- and High School Teachers.
A full schedule of exciting hands-on learning will be provided at the July 20-24, 2015, FSEC to be held at the University of Mississippi campus in Oxford, MS. An array of forensic investigative science topics will be presented. Included will be an overview of basic crime scene procedures, laboratory exercises and instruction on fingerprint recovery, blood spatter analysis, and body fluid analysis. Attendees will take with them a wealth of information and hands-on training experience for use in their own classrooms and laboratories. CONTACT: Nancy J. Jackson njackson@aafs.org or 719-636-1100.

13-16 Bertino Forensic Science 4-Day Summer Institute Scotia-Glenville High School, Scotia, NY 12302 (near Schenectady, NY). Hands-on workshop for teachers focusing on several forensic disciplines as well as lessons, labs, curriculums, and saving money. Contact Patti Nolan Bertino at nolanp@nycap.rr.com or www.bertinoforensics.com or call 518-384-1718.

20-24 Forensic Science Education Conference for Middle- and High School Teachers.
A full schedule of exciting hands-on learning will be provided at the July 20-24, 2015, FSEC to be held at the University of Mississippi campus in Oxford, MS. An array of forensic investigative science topics will be presented. Included will be an overview of basic crime scene procedures, laboratory exercises and instruction on fingerprint recovery, blood spatter analysis, and body fluid analysis. Attendees will take with them a wealth of information and hands-on training experience for use in their own classrooms and laboratories. CONTACT: Nancy J. Jackson njackson@aafs.org or 719-636-1100.

20-24 Forensic Science Education Conference for Middle- and High School Teachers.
A full schedule of exciting hands-on learning will be provided at the July 20-24, 2015, FSEC to be held at the University of Mississippi campus in Oxford, MS. An array of forensic investigative science topics will be presented. Included will be an overview of basic crime scene procedures, laboratory exercises and instruction on fingerprint recovery, blood spatter analysis, and body fluid analysis. Attendees will take with them a wealth of information and hands-on training experience for use in their own classrooms and laboratories. CONTACT: Nancy J. Jackson njackson@aafs.org or 719-636-1100.

28-30 Forensic Science Education Conference for Middle- and High School Teachers.
A full schedule of exciting hands-on learning will be provided at the July 28-30, 2015, FSEC to be held at Albany State University campus in Albany, GA. An array of forensic investigative science topics will be presented. Included will be an overview of basic crime scene procedures, laboratory exercises and instruction on fingerprint recovery, blood spatter analysis, and body fluid analysis. Attendees will take with them a wealth of information and hands-on training experience for use in their own classrooms and laboratories. CONTACT: Nancy J. Jackson njackson@aafs.org or 719-636-1100.

28-30 Forensic Science Education Conference for Middle- and High School Teachers.
A full schedule of exciting hands-on learning will be provided at the July 28-30, 2015, FSEC to be held at Albany State University campus in Albany, GA. An array of forensic investigative science topics will be presented. Included will be an overview of basic crime scene procedures, laboratory exercises and instruction on fingerprint recovery, blood spatter analysis, and body fluid analysis. Attendees will take with them a wealth of information and hands-on training experience for use in their own classrooms and laboratories. CONTACT: Nancy J. Jackson njackson@aafs.org or 719-636-1100.

Ongoing throughout the year:

The Forensic Anthropology Center in Texas offers several workshops during the summer. Topic include skeletal death investigators, outdoor human remains recovery, human osteology, and many more. www.txstate.edu/anthropology/facts/workshops.html

The Crime Museum has a number of workshops during the year in Washington, D.C. taught by forensic experts. All ages are welcome. www.crimemuseum.org/forensic-workshops

Do you or your organization have a workshop, seminar, conference, training opportunity, or announcement you’d like to share and have included free? Please email us at admin@theforensicteacher.com and tell us about it!
Lisa Miller, 48, of Chesapeake, MD, was recently arrested and charged with possession of cocaine and drug paraphernalia. She was taken to the local police station, booked, and offered the opportunity to make bail. Ms. Miller called a local bondsman and began saying she’d just returned from Liberia in West Africa and wasn’t feeling too well. In fact, she claimed to have a fever and felt very, very sick. The deputies at the station looked at her in a new light as she wondered aloud if she had Ebola. Everyone else in the station quickly either grabbed for surgical masks, safety goggles, and latex gloves, or freaked out and left the premises. After health care workers at the town hospital verified she was not sick, nor had she been out of the country, Ms. Miller was allowed to post bail after being charged with the original drug-related offenses and a new charge of obstruction of justice.

The North Idaho Violent Crime Task Force was staking out the house of fugitive Jacob Moore and weren’t being too subtle about it. They had a warrant for his arrest and he knew they were waiting to serve it to him. Suddenly, a flash of inspiration came to Jacob and he knew how to distract the men outside. He called in a bomb threat to Atlas Elementary School nearby, and waited for the cops to leave. Unfortunately for Mr. Moore, other cops went to the school. One of them happened to notice the caller ID on the phone of the bomb threat caller, which turned out to be Mr. Moore’s rotary house phone. At about the same time, the warrant was served and Moore was also charged with making a false report of a bomb at a school, obstructing an officer, and possession of drug paraphernalia.

In the last issue of this magazine we mentioned Michael Smith of Norridgewock, ME who has a tattoo of a handgun on his stomach, which caused a neighbor’s landscapers to call 911 because they thought it was real. Two months after that event Mr. Smith had an emotional fight with his girlfriend, drank way too much, and called police, eager to confess he stole prescription narcotics from his ex. The cop who drove to Smith’s house noticed Smith sported the tattoo of a gun in his waistband that caused so much trouble before. Unfortunately, Smith also had a real .40-caliber Glock on top of the tattooed one. Because of Maine’s open-carry gun law he wasn’t charged for the weapon the cop took from him, but since he had the stolen drugs, he was charged with their possession.

Walter Morrison, 20, of Phoenix, AZ, stole a freight package from a UPS plane to get ahead in life. The box contained a diamond worth $160,000, but Morrison didn’t bother to glance at the label declaring the worth of the package. He traded it for two joints, which had a street value of $20. Fortunately for the diamond’s owner, the package was recovered and Morrison arrested.

Nahshon X. Shelton went into the Madison Grocery and Beauty Store in Chicago to buy a two liter bottle of Pepsi. After the cashier explained the amount due was greater than the price on the shelf because of tax, Nahshon became very upset. He stormed out, furious he was required to pay 22 cents over the posted price, and returned a few minute later with a loaded semi-automatic pistol. Waving it around, he informed the cashier that since he lived locally he was “tax-exempt.” Police set him straight on how Illinois sales tax worked when they arrested him a few minutes later.

Oklahoma State Police pulled Lori Beth White Potarf over because of a broken tail light, and when they asked for identification she said she “was Wiccan.” Since she was acting a bit strange they asked to search her car. Ms. Potarf had nothing to hide and gave permission. The trouble was they found drug paraphernalia and meth residue. She explained it to the cops by saying, “Having meth isn’t against the law because of my religion.”
You could win this microscope.

Seriously.

Through a special partnership between Celestron and The Forensic Teacher Magazine, anyone who submits a forensic lesson plan, lab, or activity before June 1, 2015 will be entered in the drawing.

What are we looking for? Click here for guidelines.

Give us something you wrote, something that really works in your classroom, and you could win. It doesn’t matter if we’ve already covered it. Send it to admin@theforensicteacher.com with “Contest” in the subject line.