

## Section 4: The Justice System

### Lesson Plan 2: Criminal Investigation and Forensics

#### SNAPSHOT

<b>Grade Level</b>	8-10
<b>Duration</b>	1-2 periods

#### Introduction

Evidence is an integral part of criminal court cases, and there are specific protocols that must be followed when evidence is collected and used in court. Cases such as the 2007 trial of Robert Pickton show us how complex this can be, particularly in cases involving forensic evidence.

Forensic science can be simply defined as the application of science to the law. In criminal cases forensic scientists are often involved in the search for and examination of physical traces which might be useful for establishing or excluding an association between someone suspected of committing a crime and the scene of the crime or victim. Some areas of forensics include: forensic biology, forensic pathology, forensic entomology, forensic chemistry/toxicology, forensic counterfeits and documents, and forensic firearms identification (ballistics). This lesson will teach students about the process of collecting and using evidence in court. It will also provide an in depth look into the different areas of forensic science.

#### Objectives

Upon completion of this lesson, students will:

- Learn why there are rules pertaining to the use of evidence in court
- Understand that police must take special measures when collecting evidence from a crime scene
- Learn about some cases where forensic evidence was key
- Know that in criminal cases, the rights of the accused as well as the victim are protected
- Become knowledgeable in different areas of forensic science

## Focus Questions

1. What kinds of evidence can be collected in a police investigation?
2. What rules must police follow when collecting evidence?
3. What are some examples of cases where forensic evidence played a vital role?
4. What are some of the different areas of forensics?

## Teaching Summary

### Topics 1 & 2: Use of Evidence in Court & Police Investigation

These topics are covered in Activity 1. Students will read *Handout 1: Evidence in Court* and *Handout 2: Regina vs. Feeney*. Afterwards, they will complete a role play exercise and answer three discussion questions.

### Topic 3: An In-Depth Look at Forensics

Activity 2 will give students more detail on the specific areas of forensics. Students will read *Handout 3: Forensic Science* and will work in groups to come up with questions for a Jeopardy game on the forensic areas.

## CONTENT

### Topic 1: The Use of Evidence in Court

#### Examining the Issues of Evidence

The trial of Robert Pickton, which began in January 2007, stems from the largest serial killer investigation in Canadian history and is “unprecedented in its magnitude”.

To make the case manageable and ensure justice gets delivered, the trial judge severed six of the 26 first degree murder counts on the basis that they are “materially different” and left the option for the Crown to pursue a trial on the remaining 20 counts at a later date. 3500 potential jurors were called for jury selection in December 2006 for the trial that is estimated to last about a year.

One can't help but wonder how one of the basic values of our justice system, as reflected in s. 11(d) of the *Canadian Charter of Rights and Freedoms*, that every citizen has a right “to be presumed innocent until proven guilty according to law in a fair and public hearing by an independent and impartial tribunal” will be honoured in these circumstances. How will the accused obtain an impartial jury that is free from prejudicial attitudes when the case has such high profile in the media?

The jury selection process aims at securing a jury that is impartial at the outset. To maintain the impartiality and fairness of the jurors throughout the trial, various mechanisms ensure that the jury has access only to the evidence that is properly admissible and will not be swayed by inadmissible considerations.

#### The Purpose of the Rules of Evidence

The types of evidence include oral evidence of witnesses, opinion evidence of experts, real evidence such as objects found at the crime scene, and demonstrative evidence (materials created for the purpose of the trial) such as crime scene photographs. All of these types of evidence are used to prove a case.

In a typical jury trial, when an item of evidence is put forward, the judge evaluates its admissibility by a process known as voir dire, which is a trial about admissibility of the particular item within the main trial about the guilt of the accused. The voir dire is open to the public, but the jury has to leave the courtroom. The counsel for the Crown and defence put forward arguments about why this evidence should or should not be put to the jury and the judge makes a ruling. Various rules of admissibility are contained in the common law and statutes (for example, the *Canada Evidence Act*), judicial discretion

and the *Charter*. For example, the evidence will be excluded if it is irrelevant, illegally obtained, involuntary, privileged, or unduly prejudicial to the accused.

After the voir dire is complete, the jury then returns to the courtroom and the main trial resumes. If the judge decided that the evidence is inadmissible, the jury would never hear about it. If it is admitted, it will be presented to the jury. The voir dire process will be repeated when a new item of evidence is proposed to be put forward.

Section 645 of the *Criminal Code* allows the judge to address the issues which require exclusion of the jury from the courtroom before a panel of jurors is called. This process was employed in the Pickton prosecution to reduce the length of trial. Since January 2006, the voir dire portion of the trial on the admissibility of evidence was in motion. As in any trial, members of the public are able to observe the voir dire proceeding. However, to avoid tainting the impartiality of potential jurors, a publication ban was put in place. The media was prohibited from publishing any evidence heard during the voir dire; the ban serves the same purpose as excluding the jury from the courtroom.

The procedure for establishing admissibility of evidence is lengthy, but it has to be precisely followed. If the jury is by mistake exposed to evidence that it should not consider, then this may undermine the whole trial. The mistake is costly in terms of the burden on the accused, the victim, the jurors and the entire justice system.

### **The Use of Evidence from a Crime Scene**

As it is impossible to address admissibility rules for all types of evidence, crime scene evidence will be discussed as an example. The evidence obtained from the site of the crimes played a central role in the Pickton trial. For instance, DNA evidence was being used to identify the human remains uncovered by forensic scientists and archaeology students at the Pickton farm as those of the missing women.

According to the Crown spokesman, the case “set standards as far as forensic investigation” is concerned. The crime scene analysis had to be painstaking and meticulous in order for it to withstand the challenges in court. The site had to be examined in detail. Items of evidence from the crime scene had to be photographed in context, then collected. In order to preserve the objects in the condition they were found and avoid contamination, they were packaged separately in transparent glass or plastic containers, labeled and sealed. The officers wore gloves and hair nets to avoid leaving DNA traces at the crime scene.

All of the accused's rights had to be honoured in the conduct of the search. A violation of rights under the *Charter* may have led to the exclusion of otherwise admissible evidence from the trial if admitting it would "bring the administration of justice into disrepute".

Unlike witnesses giving testimony who can speak for themselves, the objects have to be introduced. Somebody will explain what they are, validate them, and express an opinion of how genuine the object is, or relate them to the issues in the case. This process is called authentication.

The Crown has to show that the item offered to the jury in court is the same original item from the crime scene and has not been contaminated or tampered with, unless the defence admits continuity. The police officer who finds the object becomes a witness who testifies on how the object was discovered and collected. There must also be a documented continuous chain of possession of the physical evidence.

As far as the relevance of the object to the case, in some cases, the jury can rely on first-hand observation to reach its conclusions. In many other situations, the Crown will engage a properly qualified expert witness to establish the relevance. In this case, the evidence was transmitted to the expert with the details of how the evidence was collected. For example, biological specimens were analyzed by DNA experts. The experts testified in court about the significance of the specimens.

The crime scene must also be accurately photographed. Demonstrative evidence, such as photographs, casts and imprints from the crime scene, aid the jury in creating a picture of events and surroundings and complement the oral descriptions by witnesses. Although all of the formal rules of evidence may be satisfied, the trial judge may exercise his or her discretion to exclude graphic photographs (such as those of victims' remains), if s/he considers that their prejudicial effect to the accused is greater than their relevance to the trial.

In the Pickton trial the use of photographs took an even more prominent place than is typical. The prosecution and defence agreed to produce photographs of the physical evidence rather than producing the actual exhibits in court. The trial judge ordered that the Crown provide the defence with the date, time, object depicted and its photographer. The key for the Crown was to establish that the photographs were accurate representations of the objects depicted.

Adapted from a [Law Connection Article on Evidence and Forensics](#).

## Topic 2: Police Investigation

### Regina vs. Feeney – Calling Police Investigation into Question

#### **Actual Case History**

*First Trial - British Columbia Supreme Court (unreported, 1992)*

- Michael Feeney was convicted of second degree murder by a jury in 1992.
- At this trial, the Crown relied on the evidence that had been obtained by the police when they entered Michael's trailer and arrested him on June 8, 1991.

*British Columbia Court of Appeal ((1995), 54 B.C.A.C. 228)*

- After he was convicted, Michael Feeney appealed his case to the Court of Appeal for BC, arguing that this evidence had been obtained illegally by the police and therefore the Crown should not be able to use it against him in court.
- The Court of Appeal denied the appeal, and upheld Feeney's conviction.

*Supreme Court of Canada ([1997] 2 S.C.R. 13)*

- Michael Feeney again appealed, now to the Supreme Court of Canada. The Court agreed with the defence and overturned the rulings of the lower courts, holding that the evidence found when the police entered the trailer couldn't be used against Michael Feeney at trial.
- The reason for the court's decision is that police are not allowed to enter someone's home to arrest them unless they first have reasonable and probable grounds to believe that the person has committed an offence. The officer who entered the trailer testified at trial that he suspected Michael was involved, but that he did not believe he had reasonable and probable grounds to arrest him before entering the trailer. The Crown argued that, in spite of the officer's personal opinion, police actually did have sufficient information to arrest Mr. Feeney before they entered his trailer. The Supreme Court disagreed.
- Nor are police allowed to walk into someone's home for the purposes of searching it if they do not have a search warrant. There are narrow exceptions to that rule which allow police to storm in if they have good reason to believe that evidence is about to be destroyed or someone is about to be hurt, but the Supreme Court of Canada held that neither of these conditions existed at the time the police entered Michael's home.
- The Supreme Court held that because the police broke the law in very serious ways, none of the evidence they found in Michael's trailer that day could be used against him in court. Because he had been convicted on the basis of this evidence, the Supreme Court of Canada ordered a new trial.

*Second Trial – B.C.S.C. ([1999] B.C.J. No. 688, aff'd 2001 BCCA 113)*

- When the new trial was ordered, the police went back to work in an attempt to gather more evidence. Using new DNA technology, the police matched the saliva on the Sportsman cigarette butt found on Frank's property to Michael Feeney. They also relied on the fingerprints found in Frank Boyle's home and on the beer can in the Datsun that were matched to Michael Feeney, as well as the blood type test matching the bloody crowbar found by the Datsun to Frank Boyle.
- All of the evidence from the trailer that was used in Michael Feeney's first trial, which the Supreme Court held was collected illegally, was excluded.
- On the basis of the new forensic evidence, and especially the DNA match on the cigarette butt, Michael Feeney was again convicted of second degree murder by a jury in 1999. His appeal to the Court of Appeal (2001 BCCA 113) was dismissed.
- Interesting fact – the trial judge was Mr. Justice Wally Oppal and the Crown counsel, for both of Mr. Feeney's trials, was Kathy Murphy. Ms. Murphy was also Crown counsel for the high-profile trial of the five men accused of kidnapping Vancouver student Graham McMynn.

***Facts of the Case***

Michael Feeney was charged with the second degree murder of Frank Boyle. The following is the evidence in the case against Mr. Feeney.

*The Evidence*

Frank Boyle was an 85 year-old widower who was well-known in his community, the small northern town of Likely, B.C. Frank was last seen alive on the evening of June 7, 1991.

*The Crime Scene*

- At about 8:20 a.m. on June 8, 1991, Frank's neighbour noticed that Frank's garage door was open. This being out of the ordinary, the neighbour took a peek into Frank's house. He found Frank lying on his back in the living room.
- Frank had sustained five severe blows to the head, apparently from a crowbar. Any one of the blows was sufficient to kill him. Blood was spattered on the walls. The house was ransacked and his money, Sportsman cigarettes and beer were missing.
- Frank's red Datsun truck was gone too, but it was found a few hours later, abandoned at an S curve in the road ½ km away. A bloody crowbar was found near the truck.

### *Witnesses*

- On the same day, June 8, the police talked to Cindy Potter, who lived near where the Datsun truck was found. She said she saw someone she knew only as Michael walking on the road at about 6:45 a.m. that day, heading away from the Datsun. He had something in his hand – possibly a beer, possibly a stick.
- The police next spoke with Kelly Spurn. Kelly owned a property that he rented to Angela Feeney Russell and her partner Dale Russell. Angela's brother, Michael, arrived in town not long ago and had been staying in a small trailer at the back of the property. Kelly told the police that the night before, Michael had stolen his blue flatbed truck and ditched it in exactly the same spot where the Datsun was found.
- The police next visited the property rented by Dale Russell. Dale told the police that Michael took a joyride in Dale's blue flatbed truck the day before and ditched it up the road. He told police that Michael came home around 7 a.m. that morning after a night of drinking.
- The police later interviewed Angela Feeney Russell. She told them that her brother Michael had no blood on him when he arrived home that morning.
- However, when it came to the second trial, Angela testified that she might have seen a few blood spots on his shirt, but that she might have just dreamed that.
- Several people who were partying with Michael the night before (June 7) testified that he had been bumming beer and cigarettes from them because, he said, he had no money.

### ***Arrest of Michael Feeney***

- After interviewing Dale Russell on June 8, the police proceeded to the trailer at the back of the property where Michael Feeney was said to be staying. The police did not have a search warrant. The police knocked on the trailer door, and when there was no answer, they walked in. They found Michael sleeping and arrested him for the murder of Frank Boyle.
- The police obtained a warrant under section 487.05 of the Criminal Code to take a blood sample from Michael.

### ***Forensic Evidence***

#### ***Michael Feeney's Trailer***

- Upon entering Michael Feeney's trailer, the police found a pair of Michael's shoes with blood on them. It was later determined that the blood matched Frank's blood type. The soles of the shoes matched shoe prints found at the scene of the crime.
- They also found a package of Sportsman cigarettes.

- The police also seized the blood-spattered T-shirt Michael was wearing at the time, later determined to match Frank's blood. When the police asked Michael why there was blood on his shirt, Michael responded, "I got hit in the face with a baseball". However, he had no facial injuries when he was arrested.

#### *Frank Boyle's Property*

- In the cabin on Frank's property, the police found Frank's empty wallet and a Sportsman cigarette butt.
- The police also found a fingerprint on the door of the refrigerator in Frank's home. When they plugged this fingerprint into the B.C. Automated Fingerprint Identification System, they matched those of Michael Feeney.

#### *Off-site*

- Police also determined that the blood on the crowbar found beside the Datsun was of the same blood type as Frank Boyle's.
- The police found another fingerprint on a beer can in the cab of the Datsun. When they plugged this fingerprint into the B.C. Automated Fingerprint Identification System, they matched those of Michael Feeney.

### **Topic 3: An in Depth Look at Forensic Science**

Forensic science can be simply defined as the application of science to the law. In criminal cases forensic scientists are often involved in the search for and examination of physical traces which might be useful for establishing or excluding an association between someone suspected of committing a crime and the scene of the crime or victim. Such traces commonly include blood and other body fluids, hairs, textile fibers from clothing, materials used in buildings such as paint and glass, footwear, tool and tire marks, flammable substances used to start fires and so on. Sometimes the scientist will visit the scene itself to advise about the likely sequence of events, identify any indicators as to who the perpetrator might be, and join in the initial search for evidence.



Other forensic scientists analyze suspected drugs of abuse including specimens from people who have taken drugs or who have been drinking and driving, or who may have

been poisoned. Yet others specialize in firearms, explosives, or documents whose authenticity is questioned.

### Forensics in Court

Forensic scientists can appear for either side — prosecution or defence in criminal matters, and plaintiff or defendant in civil ones. They tend to present their findings and opinions in written form either as formal statements of evidence or reports. Sometimes they are required to attend court to give their evidence in person.



As an integral part of the RCMP National Police Services, the Forensic Laboratory Services (FLS) is responsible for conducting analyses and examinations of physical evidence and in reporting results and conclusions in connection with police investigations anywhere in Canada. Its services are primarily available to police agencies, courts and government agencies in most provinces (Ontario and Quebec have their own provincial forensic laboratories).

Based on the results of their work, members of the Forensic Laboratory Services issue case reports and provide expert forensic testimony to the courts. In certain cases, the laboratory staff can — on request — provide advice and opinion to interpret evidence in situations where a hypothetical scenario may have been established, but where laboratory examinations have not been requested.

New and advanced forensic methods are developed through research. Working as a team, Forensic Laboratory Services aims to provide state-of-the-art service and forensic science capabilities in a diverse range of scientific disciplines. Laboratory sites are located in Vancouver, Edmonton, Regina, Winnipeg, Ottawa, and Halifax. The National DNA Data Bank is located in Ottawa.

Some areas of forensics include:

- Forensic biology
- Forensic pathology
- Forensic entomology
- Forensic chemistry/toxicology
- Forensic counterfeits and documents
- Forensic firearms identification (ballistics)

## **Forensic Biology**

### ***What does a Forensic Biologist do?***

A forensic biologist is a person with a biology degree who works in a lab and processes specimens that are brought to him or her by the police. It is the biologist who performs serological and DNA analyses of physiological fluids for the purpose of identification and individualization. The type of material typically examined includes, but is not limited to, blood and semen, collected at crime scenes and from articles of physical evidence. These types of physiological fluids are frequently generated during the commission of violent crimes such as homicides, rapes, assaults, and hit and run fatalities. In some cases, the biologist may have to testify in court as an expert witness.

### ***DNA Evidence***

A new form of identification relies on DNA, which carries the genetic information of each person. Everyone's DNA is different (except for identical twins). DNA profiling or typing is sometimes called DNA fingerprinting because it allows police to identify an individual in the same way as fingerprints do. DNA can be extracted from any body fluid (blood, saliva, sweat, or nasal mucus) or from fragments of a body (hair roots, torn skin or flesh).

Forensic scientists do not look at the whole of a person's DNA sequence, but rather a sub-set of a DNA profile. DNA profiles are a very powerful means of determining whether two or more samples may or may not have come from the same person. If DNA profiles do not match, they came from different people. However, if they do match, there is still a very slight chance that they may have come from different people.

DNA is the same in every cell of the body, and stays the same throughout life. As such, DNA profiles taken at different times and places can be compared in order to determine whether or not they come from the same person.

DNA analysis does not enable scientists to build up a picture of a person from their DNA. The only characteristic that the DNA tells us is the sex of the person. DNA profiling is only used to compare different DNA samples, and to determine whether or not they could be from the same person. Biological trace evidence is processed using DNA analysis techniques to generate DNA typing profiles. RCMP services include:

- Comparing DNA profiles to determine if there are any forensically significant associations
- Submitting selected DNA typing profiles for entry into the Crime Scene Index of the National DNA Data Bank of Canada

### ***Fingerprinting***

Analysis of fingerprints is probably the most well known use of forensic science. Each fingertip has a pattern of fine skin ridges that are slightly different for every person - even identical twins.



A fingerprint is composed of grease and dried sweat left behind by the tips of the fingers. The palms of the hand also leave identifiable prints, as do the soles of the feet. Often the forensic biologist would examine this evidence.

Fingerprints can be detected on a vast range of different surfaces using a variety of techniques. The police keep a huge national database of prints taken from charged criminals. New prints are taken by a laser-scanning procedure, where the hand is placed on a flat glass plate, and its print is stored and compared to other prints electronically

### **Forensic Pathology**

Forensic Pathology is the legal branch of pathology concerned with:

- Determining cause of death (including murder, accident or unexpected death)
- Examination of some wounds and injuries due to crime or negligence
- Examination of tissue specimens that may be relevant to rape, or other crimes

The examination of dead bodies (autopsy) is closely related to anatomical pathology. A forensic pathologist is a medical doctor who has specialized in the field of Pathology with several years of advanced training. In Canada, Forensic Pathology is not a separate specialty from Pathology. Therefore, doctors specialize in Pathology and often go to the United States for experience in Forensic pathology. In the U.S., a separate specialty in forensic pathology exists. The forensic pathologist autopsies bodies and determines the cause of death and all other factors that relate to the body directly. They may attend crime scenes and frequently testify in court.

Forensic pathologists work closely with the Coroner (British tradition) or Medical Examiner (American tradition). In some Provinces, there is a Medical Examiner system and in other provinces there is a Coroner's system. Medical Examiners must be medical doctors, but not necessarily forensic pathologists. Only the Chief and Deputy Medical Examiner are usually Forensic Pathologists. In Ontario, Coroners are also doctors, but

in the rest of Canada, coroners are lay coroners and come from many backgrounds. In most cases, the position is part-time, fee-for-service.

Not all bodies that end up on an autopsy table are necessarily of forensic interest. It is the job of the forensic pathologist to determine the cause and manner of death. If the manner of death is 'accidental' then the case is not a forensic case.

### **Forensic Entomology**

Forensic Entomology is the use of the insects, and their arthropod relatives that inhabit decomposing remains to aid legal investigations. The broad field of forensic entomology is commonly broken down into three general areas: medico legal, urban, and stored product pests.

- The medico legal section focuses on the criminal component of the legal system and deals with the necrophagous (or carrion) feeding insects that typically infest human remains.
- The urban aspect deals with the insects that affect man and his immediate environment. This area has both criminal and civil components as urban pests may feed on both the living and the dead. The damage caused by their mandibles (or mouthparts) as they feed can produce markings and wounds on the skin that may be misinterpreted as prior abuse. Urban pests are of great economic importance and the forensic entomologist may become involved in civil proceedings over monetary damages.
- Lastly, stored product insects are commonly found in foodstuffs and the forensic entomologist may serve as an expert witness during both criminal and civil proceedings involving food contamination.

### **Forensic Chemistry/Toxicology**

Forensic chemists deal with non-biological substances, such as paint, potential fire accelerants, glass, fibers and textiles, plastics, building products, safe insulation and commercial products. A forensic chemist frequently conducts physical matching of seized materials and makes use of resources such as “The Paint Data Query” (PDQ) database, a searchable database of chemical and colour information of original automotive paints.



Forensic toxicologists deal mainly with body fluids to determine, for example, the level of alcohol or drugs a person has consumed and how these toxins would affect the person.

A wide array of laboratory techniques and instrumentation is used in forensic chemistry and toxicology studies. This includes ultraviolet, infrared, and visible spectrophotometry; neutron activation analysis; gas chromatography and mass spectrophotometry; high pressure liquid chromatography; and atomic absorption spectrophotometry. The techniques and instrumentation chosen depend on the type of sample or substance to be examined.

The fact that most samples examined are not pure substances, but are often mixed with dirt or debris, presents a major challenge to the forensic chemist. This may also be an advantage, as every substance collected at a crime scene is a unique mixture of chemical compounds that can ultimately be identified. Arsonists, for example, often use accelerants such as gasoline or kerosene to speed combustion and spread flames in the interior of a building. A forensic chemist may collect samples of burned and unburned materials, extract the volatile hydrocarbons, and separate the components for analysis by gas chromatography.

### **Forensic Counterfeits and Documents**

Counterfeiting is a crime as old as currency itself. Just about any document can be counterfeited. Aside from currency, this can include forged credit cards, debit cards, passports, birth certificates, social insurance number cards, traveller's cheques, marriage and driver's licences, bus and airline tickets, and money orders. Historically, counterfeiting of currency has not been a major problem for law enforcement in Canada. However, developments in the field of graphic arts attracted the attention of the criminal element in the early 1960s.

As a result, counterfeit currency rates increased substantially in 1962 and this trend has continued ever since. Although statistics for the last two years show that counterfeiting rates are dropping, easier access to affordable, improved personal computer and image reproduction technology has dramatically changed the nature of counterfeiting. It is an international problem.

### ***RCMP Procedures***

#### ***Counterfeits***

The counterfeits component examines suspect travel documents including passports and visas, as well as currency and credit cards, to determine if they are genuine. It also:

- Conducts forensic examinations of Canadian and foreign banknotes and coins
- Classifies and records information pertaining to banknotes and counterfeit travel documents and disseminates this information to Canadian law enforcement and to foreign partner agencies on a bilateral basis

### *Documents*

The documents section examines questioned documents to identify author, method of production, and if they have been altered. It also:

- Conducts handwriting and hand printing comparisons
- Establishes the means, media and materials used to produce documents (e.g. typewriters, computer printers, photocopiers, facsimiles, cheque writers, rubber stamps, and other graphic art media)
- Determines alterations, additions or deletions of documents
- Restores documents damaged by fire, water or other substances
- Detects and deciphers latent or partially hidden indentations

### **Forensic Firearms Identification (Ballistics)**

Sometimes incorrectly referred to as ballistics, firearms identification can be defined as: the identification of fired bullets, cartridge cases or other ammunition components as having been fired from a specific firearm.

Firearms identification is actually a form of Toolmark Identification where the firearm, because it is made of a material harder than the ammunition components, acts as a tool to leave impressed or striated marks on the various ammunition components that come into contact with the firearm.

Firearms evidence submitted to a lab's firearms section will typically include:

- A firearm
- Fired bullets
- Spent cartridge cases
- Spent shot shells
- Shot
- Shot shell wadding
- Live ammunition
- Clothing
- Other related item

In addition to comparing ammunition components to firearms, firearm examiners conduct other examinations that usually include the following:

- Testing firearms to determine if they function properly
- Examining clothing and other items for gunshot residues and/or shot patterns in an attempt to determine a muzzle-to-garment distance
- Determining caliber and manufacturer of ammunition components. Including the examination of various shot shell components
- Determining the manufacturer or manufacturers of firearms that may have fired a particular bullet or cartridge case

Firearm examiners will perform specific scientific examinations upon the evidence submitted. Once the examinations are completed reports detailing their findings are forwarded to the investigating officer and eventually to all parties involved in any subsequent criminal proceedings.

Firearm examiners finish their involvement in a case by presenting their findings in court. Analysis and Indicators Studies have shown that no two firearms, even those of the same make and model, will produce the same unique marks on fired bullets and cartridge cases. Manufacturing processes, use, and abuse leave surface characteristics within the firearm that cannot be exactly reproduced in other firearms.

Firearms do not normally change much over time. This allows for firearms recovered months or even years after a shooting to be identified as having fired a specific bullet or cartridge case. Tests have been conducted that found that even after firing several hundred rounds through a firearm the last bullet fired could still be identified to the first. It should be noted that not all firearms leave consistent reproducible marks. But approximately eighty percent of the firearms that are examined produce what is sometimes called a "mechanical fingerprint" on the bullets and cartridge cases that pass through them.

Bullets collected for comparison to a specific firearm are examined first to see if they are of a caliber that could have been fired from the submitted firearm. They are then examined to determine if the pattern of rifling impressions found on the bullet match the pattern of rifling contained in the barrel of the questioned firearm. If these class characteristics agree the next step is to try to make a positive match between the individual characteristics that may have transferred to the bullet from the barrel.

## ACTIVITIES

### Pre-Activity

Assign the reading of *Handout 1: Evidence in Court* for homework.

### Activity 1: The Collection of Evidence for Regina vs. Feeney – Role Play

Discuss and highlight important parts of *Handout 1: Evidence in Court* before doing Part A and B below.

#### Part A

Have your students read the *Handout 2: Regina vs. Feeney*. Divide your class into three groups; one group will play the role of crown counsel, one group will play the role of defence counsel and one group will act as the judge sitting on the voir dire with respect to the evidence presented.

#### **Crown Counsel**

What forensic evidence would you present to the judge via voir dire in Michael Feeney's murder trial in 1992 and why? Which pieces do you think might not go to the jury?

#### **Defence Counsel**

What would you argue in Michael Feeney's defence? Which forensic evidence would you object to and why?

#### **Judge**

Look at the list of evidence carefully so you will be prepared to make an appropriate decision in this voir dire as to which pieces will go before the jury.

Ask a representative from both the crown counsel and the defence counsel to give submissions to the judge on each piece of evidence. Ask the judge to make a decision as to its admissibility at the trial. Lead a class discussion on the judge's decisions. Compare what happens to what happened in the actual case.

#### Part B

Assume that Michael Feeney was convicted of second-degree murder by a jury at his trial in 1992. He appeals this conviction to the British Columbia Court of Appeal, and finally, the Supreme Court of Canada. In 1997, the Supreme Court of Canada orders a

new trial, deciding that all of the evidence found by the police in Michael's trailer was obtained illegally and must be excluded.

1. Discuss why you think the Supreme Court of Canada decided that the evidence found in Michael Feeney's trailer was obtained illegally and must be excluded.
2. Assume that you are Crown counsel. Now that all of the evidence found by the police in Michael Feeney's trailer must be excluded, what remaining pieces of forensic evidence would you present to the jury at Michael Feeney's second trial in 1999, and why? Note that modern DNA testing is widely available in Canada since the mid-1990s.
3. Now assume that you are a member of the defence team. What would you argue in Michael Feeney's defence?

## Activity 2: Forensics Jeopardy

Provide students with *Handout 3: Forensic Science*. After they have finished reading it, divide your class into six groups. Assign each group one of the following topics:

- Forensic biology
- Forensic pathology
- Forensic entomology
- Forensic chemistry/toxicology
- Forensic counterfeits and documents
- Forensic firearms identification (ballistics)

Ask the students to study their section and create at least 10 questions with answers related to their topic for the Jeopardy game. Each question should be assigned a value of \$200.00, \$400.00, \$600.00, \$800.00, or \$1,000.00. Students should word the questions and answers in Jeopardy game format. For example:

Q: This person works in a lab and processes specimens that are brought to him/her by the police. (\$200.00)

A: Who is the Forensic Biologist?

They can use the Internet to gather more information if they wish. Ask them to ensure the material is Canadian. Bonus marks can be given to any student who records the Jeopardy music to play in class or hums it before answering a question.

## RESOURCES

### **Activity 1: The Collection of Evidence for Regina vs. Feeney – Role Play**

*Handout 1: Evidence in Court*

*Handout 2: Regina vs. Feeney*

### **Activity 2: Forensics Jeopardy**

*Handout 3: Forensic Science*

## ASSESSMENT

### **Activity 1: The Collection of Evidence for Regina vs. Feeney – Role Play**

The role play exercise does not have to be graded. You may choose, however, to give participation marks for each student's contribution. The discussion questions may be handed in as a group and graded.

### **Activity 2: Forensics Jeopardy**

This activity does not require grading but participation marks may be granted for this as well.

## ENRICHMENT

### 1. What Happened in the Robert Pickton Case?

Refer back to *Handout 1: Evidence in the Courts*. Ask students how can we analyze the case on the basis of the evidence presented in court and recounted in the media?

Only those in the courtroom will be able to determine whether the evidence is valid, whether it has been



properly gathered, identified, analyzed and preserved. Most of us will have to depend on the judge and jurors to make that assessment. We will have to rely on media reports and eventually court reports. Until then we need to listen to broadcast and read newspaper reports in order to process as much of the detail as possible to come to our own decisions in the case. In an editorial passage found on the Sun's website on the case at [www.canada.com/vancouversun/features/pickton/index.html](http://www.canada.com/vancouversun/features/pickton/index.html), Patricia Graham, the Sun's Editor-In Chief, wrote a letter describing the strategy that the newspaper used when reporting on this case. Have students read it and decide whether they think the newspaper delivered on its commitment. Then have students research the verdict in this case and answer the following discussion questions:

- The Sun has featured many stories of the victims in this case – did that kind of reporting prejudice the case against the accused?
  - Find out how the jury members were selected and suggest how they might have remained neutral in the face of such widespread coverage of the crimes, victims and the trial.
  - Do you think that the accused's Charter rights were violated in this case? Check out Sections 7-15 of the Charter (fundamental legal rights) and recall the interview process that took place shortly after his arrest, the tapes of which were played in court.
  - The forensic evidence against the accused piled up during the case. What did the judge have to do to ensure that the trial remained a fair and impartial hearing of the case? Why should the public reserve judgment until the end of the trial?
  - How do you think the defence counsel served the interests of the accused?
  - Do you think it was appropriate to spend enormous amounts of money to protect the rights of the accused in this case? Discuss the implications of the phrase, "Everyone has the right to a fair trial."
2. Do some research on DNA evidence in the field of forensics and write a short speech to present to the class on your findings. You could call the Vancouver Police Museum or visit it to obtain more information on this topic.