

crime in the classroom



Crispin Andrews describes how a group of one-time cops and forensic science experts are helping to give students a real taste of science in action

'The students learn much more using proper equipment and from watching the experts do it'

WHEN HE was unravelling a dastardly felony, did Sherlock Holmes consider the facts from the comfort of his Baker Street lodgings? When a crime scene needed investigating, did Grissom and Sidle from CSI sit behind a desk, their heads stuck in the latest edition of *Master Detective*?

Good forensic detectives take action, but it's purposeful action, backed up by scientific knowledge and an appreciation of scientific process. So when it's time for Year 11 BTEC applied science students at Roundhay School to learn how to collect and store evidence, why not learn from people who have been there and done it? Rather than sitting and listening to another routine presentation – why not get up and collect the evidence yourself?

CRIME SCENE

It's Wednesday morning, and three former police officers have arrived at the Leeds secondary school. It's not a raid, but they are armed – with fingerprint kits, cameras and all manner of other forensic equipment. Oh, and a few blow-up dead bodies. Think Forensic has arrived. Based just outside Wakefield, Yorkshire, these former cops provide a whole range of forensic and investigatory workshops to support the curriculum from KS 1, through to GCSE, BTEC and 'A' level.

Today they're at Roundhay to give the students an insight into

the work of forensic detectives, and inspire them to carry out their own forensic detection.

"We're here to show children how to collect trace evidence from a crime scene," says Gary Atkinson, a former police officer from Leeds. "The students will learn how to take fingerprints, swabs and crime scene photographs. We also show them how to protect the crime scene from contamination and explain why forensic experts investigate a crime scene in a certain way."

By the time 30 or so students arrive, the school hall resembles a crime scene, or, to be more precise, a series of identical crime scenes. Four unfortunate victims are face-down on the floor, each in a pool of (mercifully fake) blood.

Beside each lies a miniature cricket bat covered in more fake blood, a wine bottle and glass. To the right is the remnant of a note. The wall to the victim's house is cunningly disguised as a row of assembly chairs. On it is a blood splatter, and at the back, near the doorway (an opening in another row of assembly chairs) a large footprint puts paid to initial suggestions that a member of the local under-eight cricket team might have committed the crime.

It's an age-old story from

domestic suburbia. Murderous impulses have once again been set off by that most dangerous of situations – the love triangle. Bob is married to Daphne, and seeing Sophie on the side. Sophie is now dead. Fibres from Bob's and Daphne's yacht club sweaters put them both at the scene, but both deny the murder.

"The students' job," says Sue Proctor, a former traffic cop, who set up Think Forensic five years ago, "is to collect the evidence and then work out

whodunit."

FIRST STEPS

Sherlock Holmes laid the ground rules for all fictional detectives. His science of deduction was based on careful and focused observation. But for real teams of detectives, there's an important stage between observation and deduction.

"You have to collect the evidence before you can use it," Gary Atkinson tells students. Today's police and forensic experts use advanced technology

The Think Forensic team pits ex-cops (and their evidence bags) against the student community





Students are given the chance to get to grips with fingerprint practice

to analyse evidence. To make ▶ the most of this technology, the evidence has to be collected and relocated to various laboratories. “It’s not like on CSI, with their Armani suits and fast cars,” Atkinson adds. “We have to spend hours in dirty, mucky places in the middle of the night.”

For the Roundhay students, the first 40 minutes are more ‘show and tell’ than ‘look and listen’. Gary and co explain how to photograph evidence from all corners of a room, fill in evidence forms, take swabs from cups, bottles and bloodstains. They also show the youngsters how to take their own fingerprints, and fingerprints from an object, using fingerprint powder and a brush.

“We tried fingerprinting in class but we only had Sellotape, carbon powder and a glass slide,” says science teacher, Kate Snow. “The students learn much more using proper equipment and from watching the experts.”

In the opening presentations, the three former police officers highlight the need for accurate evidence collection with stories from their time in the force.

“A few years back the Animal

Liberation Front was planting incendiary bombs around the country,” says Think Forensic’s Angie Elliot, a CID officer for 30 years. “Investigating in Sheffield we lifted over 29,000 clues. If a piece of evidence is not labelled bagged and stored properly, it would take forever to find it. We’d look pretty stupid in court if we couldn’t produce the right evidence to support our claims.”

The importance of keeping evidence safe for years at a time is highlighted by the example of the Yorkshire Shoe Rapist – so called because he stole shoes and jewellery from his victims. “A woman convicted of drink driving was a DNA match to the previously unknown suspect,” Elliot says, “and forensics told us that the rapist must be a male relative of this woman.”

When police raided the printing works where the woman’s brother was employed, they found more than 100 pairs of stiletto shoes hidden behind a trap door. The brother, a respected family man, was eventually jailed for life for admitting raping four women



Dusting for prints is a tricky business – and crucial in bringing a criminal to justice

and trying to rape two others, and his frightening shoe collection suggests many other victims never came forward. “Advances in technology can only help us with old cases if we store the evidence safely,” Angie explains.

Atkinson adds that a scenes-of-crime officer has to properly record, package and seal every bit of evidence, or the forensic service department won’t accept it. He tells the students that an investigator can unwittingly contaminate a crime scene by leaving dribble, footprints, hair follicles – exactly the same types of evidence that a perpetrator or an innocent bystander may leave.

“Police will only send one team into each crime scene to prevent cross-contamination,” Gary explains. “Even when we use tents to surround the scene and cordon off the road to prevent intruders, you still get some people wandering through on the way to the bus stop. Then you have to get their clothes, as evidence and take DNA samples from them, so you can distinguish between their traces and those already at the scene.”

For the students, it’s a lesson in real-life science. “We don’t expect them to become expert forensic investigators, overnight,” says Kate Snow.

“We’re just looking to see if they can apply the knowledge they take in and demonstrate skills necessary to collect evidence from a crime scene.”

MOTIVATION

Somewhat reluctantly the students climb into white paper replicas of forensic suits. Suitably attired and embarrassed, they get to work. Together the Think Forensic team does what every teacher wants: gives students the tools and the motivation to learn.

Groups of six take a camera, some swabs, a fingerprint kit and, of course, a dead Sophie. For the next 20 minutes the students apply what they’ve learnt. They work together, dividing up jobs so that everyone contributes to the group’s outcome and gets a chance to show off their evidence collecting skills.

With a few reminders from Think Forensics’ police officers about not fingerprinting until last so they don’t cover the whole scene in a cloud of dust, the groups devise a strategy to collect the necessary data and keep the crime scene safe.

This type of learning can be applied anywhere. The students make decisions, remember and follow a procedure, combine



Students are shown how to photographing the evidence from all angles

'This type of learning can be applied anywhere. The students make decisions, remember and follow a procedure, combine thinking and doing while making judgements based on recalled information'

thinking and doing while making judgements based on recalled information.

Photography comes first. The students will need to remember that investigating officers may need to see the original crime scene again, at a later date, after the evidence has been collected and taken away. Next comes the footprint; crucially the students are equipped with the knowledge that every trainer print, provided it is not brand new, will have a distinctive pattern, depending on levels of wear.

Then it's on to swabs, from both the glass and bottle. Inevitably, one lad takes a mock swig, and regrets it immediately when he is reminded that in a crime scene a bottle could contain poison, or even urine, and, at the very least, will have the last drinker's spit fermenting at the bottom of the dregs.

WHODUNIT?

The students are informed that, back in suburbia, officers have arrested both Bob and Daphne. The students remember being told earlier that everyone arrested on suspicion of an offence has a DNA sample taken – forcibly, if necessary. Both Bob and Daphne deny killing Sophie. DNA from the glass, the bottle and the cricket bat, could be crucial.

Lastly, the groups collect fingerprints. They dust the murder weapon, the bottle, the glass and the note – "Happy birthday dear Sophie" – from Bob, and roll the ink over any prints that come up. All the clues, they meticulously log and store in evidence bags.

"If we had a whole day we'd go through the analysis stage, putting together the information the students found and getting them to make deductions," Sue Procter says.

Instead, over the next couple of weeks, Kate Snow teaches follow-up lessons on fingerprint analysis, fibre microscopy, and blood spatter analysis and footprinting techniques. "It has been brilliant to have a 'real' crime scene to refer back to," she says.

Kidnap room at Think Forensic's HQ



But, who, exactly, is the killer? And more importantly, from the evidence collected, can the students prove it?

Alongside the dead woman's body are some white specks – replica plastic maggots. In the course of his presentation, Andy Emery told a story about coming into a house several days after a sudden death, and finding the house covered with flies. Apparently flies can sniff out a dead body from 10 miles, descending on it within minutes to lay their eggs.

Forensic science is so advanced these days that scientists can determine when the first egg was laid from the lifecycle stage of the oldest maggot at the crime scene – giving a pretty accurate indicator of the time of death. The evidence from the Roundhay maggots indicate that Sophie has been dead for two days. So, Bob, who was away on business at the time, is in the clear.

Faced with this new evidence, Daphne admits to the killing, but

claims self-defence. There are no witnesses, so has the killer checkmated the student forensic teams? She might have but for one more crucial piece of evidence – the blood splatter at the crime scene.

"We can learn a lot from blood splatters," Angie Elliot explains. "By studying the shape of the blood marks we can deduce the direction of travel, which means we can pin point the positions of the attacker and victim at the scene." Too bad for Daphne, the pattern of Sophie's blood splatters clearly indicate a deliberate and systematic attack. Daphne is charged with murder.

So another case is solved. But it didn't take Holmesian feats of deduction, nor CSI-level insights to solve the crime. All it took was a careful, thorough collection of evidence, and backed by today's forensic

Think Forensic:
www.thinkforensic.co.uk

fact box

A RACE AGAINST TIME (AND CRIME)

For a touch of added realism, schools can visit Think Forensic's dedicated crime scene centre – located at the Think Forensic headquarters, just outside Wakefield. The centre hosts five separate crime scenes, with all the scenes related to the same story of kidnap and murder. Teams of students are assigned to individual scenes, appointing their own crime scene manager, crime scene photographer and communications officer.

Responding to mock calls from members of the public – at first, seemingly unrelated – they communicate by radio and trace clues from the kidnapper's home, his work; the victim's house and the place where the victim is being held.

Finally, but only if they're too slow, they uncover the murder scene.

fact box

THE THINK FORENSIC TEAM

Gary Atkinson: Police officer in South Yorkshire Police for 30 years, with 20 years as a Crime Scene Investigator. Specialised in fire investigation. Also lectures in forensics at Sheffield University

Andy Emer: Crime Scene Investigator with South Yorkshire police for thirty years. Had an additional supervisory role as head of department and Crime Scene Manager at serious crimes/major incidents

Angela Elliott: 30 years' service as a police officer in South Yorkshire Police, Drug Squad, CID and Major Crime Investigation

Sue Procter: 30 years as police officer in South Yorkshire police