



Q&A

CRIME SCENE INVESTIGATION



Q1: What does a crime scene investigator do?

A: A crime-scene investigator (or CSI) has a tough yet very important job: they work for the police to collect evidence wherever a law has been broken and the culprit needs to be found. They have to work quickly - sometimes 'forensic' evidence (evidence linked to a crime) can disappear, or be removed - either by accident or on purpose - so CSIs use a whole range of tools and techniques to collect the data they need.

When gathering evidence, CSIs use their eyes, cameras, video recorders, tape measures and scanners to find and record things like fingerprints, hairs, fibres, blood, footprints, debris, and even weapons. They control the

crime scene very carefully so that no-one disturbs the evidence. They take lots of measurements, photographs and videos to create a detailed record of everything at the scene - all of which is sent to a lab for analysis, and passed on to the police.

Although they can't arrest anyone, CSIs play an important part in serving justice by finding the physical proof that links criminals with the crime they have committed - or evidence that shows that wrongly accused people are innocent!

Q2: What surveying techniques are used in crime scene investigation?

A: Surveyors that work in crime-scene investigation use a whole range of survey techniques to help them map and catalogue a crime scene. Some of their methods are hugely high-tech, others are old fashioned - tried and tested - but put them all together and you have a way to catch even the cleverest crook!

On the high-tech end, surveyors use laser scanners that generate a 3D image of the crime scene. These models can then be shown in court, so that everyone can understand what the scene was like just after the crime happened, even if the evidence has now disappeared. Surveyors can also use aerial

and ground photography and video, capturing images of the scene from lots of different perspectives - including mega-close-up shots of small, delicate pieces of evidence. They can even use radar mapping to search for hidden evidence underground!

On the low-tech side, surveyors can use tape measures and rules. These may seem simple, but they provide an accurate means of measuring the relationships between objects at the scene. For example: how far was the Christmas cracker from the yeti's hand?



Q3: How many pieces of surveying equipment can you spot?

(Hint: They can be found on top of tripods, carried in a backpack, or attached to a vehicle, drone or helicopter)

In the sky:

- A Riegl laser scanner under the helicopter (Grid 6D)
- A Riegl laser scanner on the LiDAR USA drone (Grid 6F)
- A Mosen Engineering drone (Grid 6E)

On tripods:

- A Riegl laser scanner next to the dead yeti. (Grid 2C)
- A Trimble SX10 laser scanning Total Station next to the crash scene (Grid 4F)

Carried as a backpack:

- A Leica Pegasus laser scanning system (Grid 2E)

On the ground:

- A FINDAR ground-penetrating radar system (Grid 1E) which can function as an underground detective, discovering all kinds of things - from pipes, to gold, and even dead bodies!
- An SLR camera - this isn't strictly a survey tool, but it comes in handy when documenting a crime scene! (Grid 3D)



Q4: Why do you think you need to measure and take photos of a crime scene?



A: One really important problem when solving crimes is the unreliable nature of human memories! It might be years between a crime being committed and the case going to court, and by that time, witnesses and victims could well have forgotten key details. However, with CSIs and surveyors working hard to record exactly what was at the crime scene (before anyone can remove anything, or the wind or rain wash it away), the courts won't have to rely on hazy memories - they'll have all the evidence exactly as it was at the time the crime was committed. This is especially useful for people who never get to visit the crime scene themselves, such as police officers, lawyers, the jury and judges.

Not only can the CSIs and surveyors hard work be beneficial in a court, their data is so precise and detailed that sometimes they are able to recreate a real-life crime scene, perhaps in a warehouse or the police car park!

This can help people like police officers and the jury to understand what really happened, and work out who did what, with what, when, where, and maybe even why! Ultimately, the data that the surveyor collects can be used as evidence in a court of law, and can help the court make the right decision about whether a person is guilty or not.

Q5: Find Piggie Wiggle the TopoDOT® dog. What has she found? Could it be a piece of evidence?

A: Take a look at grid 3G - Piggie Wiggle and the police sniffer dog have both come across the same, sweetsmellingsnack: a mince pie! However, that's not the only tasty treat in the scene... something tells me that

the poor yeti might have perished for his pies! Can you play crime-scene investigator and find any other evidence that might back up this theory?



Q6: Who killed the yeti? Can you guess?

(Hint: Look for some forensic evidence - bloody footprints, a mince pie trail or even some toilet roll!)

A: Did you follow the telling trail of footprints? They led from the yeti's body, all the way up and along the bridge, yet they stopped at the tree! Curious! What about the toilet roll? Some of it is wrapped around the yeti, but did you spot some more, suspiciously snagged around the rear tire of the LSF Land Rover? Is that what caused the crash? And what about the mince pies? The yeti is surrounded by them - did his assailant do him in just to get at his delicious desserts? Well, if you've looked very carefully at the whole scene, you might just have spotted a very suspect sneaky squirrel in grid 4!! The mince-pie stealing toilet roll assassin has been caught red-handed - literally!!

Q7: What are the yellow numbered markers next to the yeti?

A: These markers are placed by the crime-scene investigators to show exactly where each piece of evidence was found. They could mark anything from a footprint to a spilt coffee cup or a murder weapon. They help to ensure that no one forgets

to record a piece of evidence, and they also help to stop people walking all over the evidence, or throwing away something that might be important by mistake.



Q8: Why are the crime scene investigators putting tape around the crime scene?

A: CSIs use tape to create a protective perimeter around a crime scene, which lets people know where they are and aren't allowed to be. Only official CSIs are allowed inside the taped-off

area - this stops anyone else from messing up the evidence. Once they've finished, they will 'release' the crime scene to the police, who can then start their own investigations.



Q9: Why are the crime scene investigators wearing masks?

A: CSIs wear face masks to protect both themselves, and the evidence. Crime scenes can contain poisons, radioactive materials, and other things that could be harmful to breathe in. There can also be unpleasant smells, and the masks help to filter these out, making working conditions more comfortable for the investigators. The masks are also useful for protecting evidence because

CSIs work with teeny, tiny things like fibres from carpets or clothes, or dust or hairs. One cough, one sneeze, even one breath too hard could blow away a delicate piece of evidence. That's why they wear gloves and shoe-covers, too - so they don't risk corrupting the evidence by adding their own fingerprints, shoe-prints or hair.



Q10: Why do you think the green LSF Land Rover crashed?

A: At first glance, it looks like Simon the Alien's spaceship crashed into it, but there might be more to it. There's the toilet roll round the tire - the calling card of the sinister squirrel! It also seems like there's a big pothole in the road, and the Land Rover's wheel fell into it. Did you know that surveyors check the roads for potholes and other types of damage? Either a surveyor wasn't doing their job here, or something else caused this damage!

