Crime Scene

Come in and get your notebooks out. We have notes today!
This information can help investigators:

- Reconstruct the sequence of events
- Give the *modus operandi* (the criminal’s method of operation, or MO)
- Find the motive of the crime

The goal of a crime scene investigation is to recognize, document, and collect evidence at the scene of a crime.
The 7 S’s of a Crime Scene Investigation

- Securing the Scene
- Separating the Witnesses
- Scanning the Scene
- Seeing the Scene (photography)
- Sketching the Scene
- Searching for Evidence
- Securing and Collecting Evidence
What happens during a Crime Scene Investigation

**SECURING THE SCENE**
- Get medical attention to those in need
- Make arrest
- Protect scene from unauthorized people
- Detain suspects and witnesses

**SEPARATING THE WITNESS**
- First responders separate the witnesses so they do not talk with each other
- Witnesses are interviewed. The goal is to determine what happened

**SCANNING THE SCENE**
- Find all possible evidence, but don’t collect it
- Identify points of entrance and exit
- Consider what may have happened
What happens during a Crime Scene Investigation

**SEEING THE SCENE**
- Important to take notes and photographs
- Consistency between the final report (notes), photos and sketch are very important
- A properly documented crime scene should allow others to take our finished product to use in either reconstructing the scene or the chain of events for a court room presentation

**SKETCHING THE SCENE**
- Present a clear “mind’s eye” picture of the crime scene
- Complement investigator’s notes and photos
- Show accurate location and relationships of the evidence items
- Refresh the memory of investigators
- Illustrate the testimony of witnesses
- Provide factual data for crime scene reconstructions
What happens during a Crime Scene Investigation

SEARCHING FOR EVIDENCE

• Most important phase of the investigation
• Methodically and thoroughly search every inch of the scene
• Search for anything that shouldn’t be there

SECURING AND COLLECTING EVIDENCE

• Investigator must put each item in a separate container and label it
• Fragile items first (fingerprints, blood stains)
• Evidence on large object—entire object collected
The 7 S’s of a Crime Scene Investigation
A Closer look....

• Securing the Scene
• Separating the Witnesses
• Scanning the Scene
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• Sketching the Scene
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• Securing and Collecting Evidence
Seeing the Scene

Seeing the Scene involves taking notes and pictures in as much detail as possible to understand the nature of the crime.

A few things to consider when “seeing” the scene:
- The notes and reports should be done in a chronological order and should include no opinions, no analysis, or no conclusions.
- Take photographs before anyone touches or alters the scene.
- Take multiple photographs of the evidence from at least two different orientations (angles).
- If using a digital camera, check the photographs for clarity and retake them when necessary.
- Place an identifying label and ruler next to key pieces of evidence.
The notebook should be a bound, composition-style book in which the pages cannot be easily removed.

Each page must be numbered, dated, written in pen, and witnessed by another person.

For the data section of the notebook, be sure to record:

- The identity of every sample that was tested
- The date and time of day the test was run
- Appropriate environmental conditions at the time the test was run
- Your observations about the samples

To make changes in the notebook, draw one line through the section you are changing, then mark the change with your initials, the date, and the time of the change.
The 7 S’s of a Crime Scene Investigation
A Closer look....

• Securing the Scene
• Separating the Witnesses
• Scanning the Scene
• Seeing the Scene (photography)
• **Sketching the Scene**
• Searching for Evidence
• Securing and Collecting Evidence
Sketching the Scene

A crime scene sketch shows the accurate location and relationships of the evidence items. A sketch can serve multiple purposes including: Complementing the investigators notes and photos, refreshing the memory of investigators, and helping understand the crime.

There are many different ways to sketch a crime scene.
Rules for sketches

• **Plan for what kind of sketch you need:** how many and what type of sketches will be needed to convey scene to attorneys, judges, and jury

• **First make a rough sketch of the overall layout:** graph paper is useful in making this sketch

• **Prepare a detailed sketch with accurate measurement.**

• **Prepare blowup sketches as necessary:** use these for critical areas such as bloodstain patterns, bullet trajectories and areas containing large numbers of evidence items

• **Show compass points on sketch:** north arrow
Rules for sketches (cont.)

• **Make accurate measurements for all evidence items:** each item requires measurements to at least two fixed points; label evidence using numbers

• **Measure the dimensions and location of all furniture:** label furniture using letters

• **Measure the location of all windows and doors:** include the direction of door opening

• **Have 2 individuals verify all measurements**

• **Use equal accuracy for measurements for items on the same sketch:** if more accuracy is required, make a separate blowup sketch

• **Use fundamental methods for measurements:** use metal tapes and walker wheels; use feet and inches unless in a metric measurement country

  *Exception: when measuring bloodstains for bloodstain pattern reconstructions, use metric units*
When Sketching....

Avoid common errors:

- Make sure tape is straight and doesn’t sag
- Don’t read numbers upside down (6 for 9)
- Reading the wrong foot mark
- Confusing the zero point on the tape
Types of Rough Sketches
Types of Rough Sketches

General area sketch:

- Illustrates the general area in which the crime scene occurs
- Used for orientation of other sketches
- It does not have measurements
- Only approximates the relative size of various area
Types of Rough Sketches (cont.)

**Detailed sketch:**
- Contain measurements for all evidence item locations and other pertinent objects such as furniture
- Not drawn to scale but proportions should be similar
Blowup Sketch:
• Allow for higher accuracy of measurements for blood spatter, bullet trajectories or other pattern evidence
• Detailed sketches of small areas inside larger sketch
Types of Rough Sketches (cont.)

**Exploded View Sketch:**
- Shows the walls flat
- Used to illustrate interrelationship of blood spatters, bullet holes, and trajectories
Types of Rough Sketches (cont.)

**Elevation Sketch:**
- Used to show slopes present in the scene
- These are rough sketches to show the elevation perspective of a crime scene
Types of Finished Sketches
Types of Finished Sketches

Not to Scale:
• For report purposes only; not to be used in the courtroom
• Not to scale
• Label sketch “NOT TO SCALE”

Drawn To Scale:
• Scale: shows proportional size of objects in relation to each other; actual measurements can be determined by the given scale
• Drawn in pencil first
• Drawing pens are used to draw over pencil lines
• Include legend—explains what the symbols actually are on the drawing or map
• Include title—what is the drawing of and where
• Include compass directions—which way is north, so all directions can be determined
Types of Finished Sketches (cont.)

- **Computer Sketch:**
  - Often used in the court room by attorneys to explain information to the jury
Measuring
Measuring

Rectangular coordinates:
- Easiest to use indoors where there are 4 walls in a rectangular format
- Each item must have measurements to 2 walls that abut each other
- Can be used outdoors where there are fixed areas with rectangular formats
Measuring (cont.)

**Triangulation:**
- Used indoors and outdoors
- Advantage of this method is easy to make measurements
- Requires a minimum of 2 people
- Uses 2 fixed reference points
- Measurements are made from the first point to the item(s)
- Measurements are then made from the second point to the item(s)
- This creates a triangle
Secondary reference points:
- An extension of either the rectangular coordinates method or the triangulation method
- Area to be sketched is distant from the primary reference points
- Secondary points can be established by measurement from the primary reference points
Measuring (cont.)

**Transecting baseline:**
- Requires laying out a metal measuring tape in a line between two fixed points.
- Measurements to each item are made at $90^\circ$ to the measuring tape.
- The length along the baseline is also recorded, thus giving the required two measurements for each item.

![Diagram of transecting baseline with measurements](image-url)
Measuring (cont.)

- **Polar Coordinates:**
- Devised of a two-dimensional system where each point is determined by a distance and angle from a center point.
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A Closer look....

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Examples of trace evidence are:
- Pet hair on clothes
- Hair on a brush
- Fingerprints
- Soil
- Blood drops
- Used facial tissue
- Paint chips
- Broken glass
- Fibers
Physical vs. Biological Evidence

- **Physical Evidence**: fingerprints, footprints, shoeprints, tool marks, and tire impressions; reduces the number of suspects to a specific, smaller group of individuals

- **Biological Evidence**: body fluids, hair, plant parts, and natural fibers; makes the group of suspects very small, or reduce it to a likely individual
Searching for Evidence

• Most important phase of the investigation
• Methodically and thoroughly search every inch of the scene
• Search for anything that shouldn’t be there
Searching for Evidence (cont.)

Patterns for searching:
- **Grid**—works best for single investigators
- **Linear**—works best for multiple investigators
- **Quadrant or Zone**—works best for multiple investigators
- **Spiral**—works best for single investigators
Come in and get your notebooks.

We have pre-lab notes

YOU NEED SHIRTS BY TOMORROW!
Securing and Collecting Evidence

- Investigator must put each item in a separate container and label it
- Fragile items first (fingerprints, blood stains)
- Evidence on large object—entire object collected
What’s a bindle?

0 After evidence is allowed to air dry, it is packaged in a paper bindle.
0 The bindle then in placed inside a plastic or paper container.
0 The outer container is sealed and a chain of custody document and an evidence label are attached.
0 The size of the bindle depends on the size of the evidence.
0 Wrapping:
   0 Choose appropriate size paper
   0 Crease paper as shown below
   0 Place evidence in X position
   0 Fold left and right sides in
   0 Fold in top and bottom
   0 Insert top flap into bottom flap, then tape closed
Evidence Bindle

Case #
Date
Time
Name of who found it
Where (Side/Quadrant)

Description of object:
What is it.
Collecting Evidence

**Blood stains:**

- **Fresh blood:** blood in liquid pools should be picked up on a gauze pad or other clean sterile cotton cloth and allowed to dry thoroughly, at room temperature; refrigerate as soon as possible

- **Dried blood:** if possible deliver the entire item; if impractical to deliver the item, scrape the blood onto a clean piece of paper which can be folded and placed into an envelope; scrape blood using a freshly washed and dried knife; wash and dry the tool before each stain is scraped
Collecting Evidence (cont.)

- **Saliva:** collect on a sterile pad or swabs, allow to air dry and package in paper; do not use plastic containers

- **Semen:** allow stains to air dry; wrap clothing in paper, package evidence in paper bags; do not use plastic bags; for sex offense cases, the victim should always be examined by a physician and a sexual assault evidence collection kit should be used to collect evidence from the victim
• **Hair:** recover all hair present; use tweezers to pick up hair; place in paper bindles or coin envelopes which should then be folded and sealed in larger envelopes; if hair is attached to an object, do not attempt to remove; collect the entire object or wrap the area containing the hair in paper to prevent loss of hairs during shipment.
Collecting Evidence (cont.)

- **Fibers and Threads**: pick these up and place in a paper bindle, then in a coin envelope; do not use a mailing envelope as fibers can be lost; pick up fibers on tape only if the laboratory in your jurisdiction allows it and gives you its requirements; send all clothing of persons from which the fibers might have originated to the lab for comparison purposes.
Evidence Log

Should contain the following:

- Case number
- Item inventory number
- Description of the evidence
- Name of suspect
- Name of victim
- Date and time of recovery
- Signature of person recovering the evidence
- Signature of any witnesses present during collection
Chain of Custody

- **Maintaining the chain of custody is essential**
- The person who finds the evidence marks it for identification and bags the evidence
- The final container for the evidence is labeled
- The person who takes the evidence to the lab, signs it over to the technician
- The technician opens the package for examination at a location other than the sealed edge
- After examination of the evidence, the technician reseals the evidence in new packaging and signs the chain of custody log attached to the packaging
Locard’s Principle

States that when a person comes into contact with an object or another person, a cross-transfer of physical evidence can occur.

The material transferred is referred to as **trace evidence**.

"Wherever he steps, whatever he touches, whatever he leaves, even unconsciously, will serve as a silent witness against him".

--Edmond Locard
Locard Exchange Lab

During the lab you will:

• CLEAN LAB TABLE

• Draw a diagram of the t-shirt designating quadrants (front/back)

• Inspect your t-shirt and extract evidence (use tweezers – no hands)

• Construct and place evidence in a bindle – labeled Correctly! (you need to collect about 20 pieces of evidence in bindles)

• Review all evidence under the microscope. Create a table (each person – available on weebly).
T shirt Diagram (1 per group)

FRONT

FLs  F1  F2  F3  FRs
  F4  F5  F6
  F7  F8  F9

BACK

BLs  B1  B2  B3  BRs
  B4  B5  B6
  B7  B8  B9
How to Use a Microscope

1st. Clean the slide with slide paper – a few swipes
2nd. Center your evidence and place slide cover on top. CAREFULLY
3rd. Place in Microscope
4th. Start with RED lens with Platform all the way up. Adjust to find your sample. Use knob to focus your sample by the Arrow
5th. Then switch to YELLOW.. Re-adjust focus/platform
6th. Blue can be used – but, do not adjust platform, just focus

When showing someone, do NOT move the microscope.