



**Objective:** You will be able to list the 7 steps of crime science investigation

- o Do Now:
  - Read “Types of Evidence” on p. 23
  - Differentiate between direct and circumstantial evidence



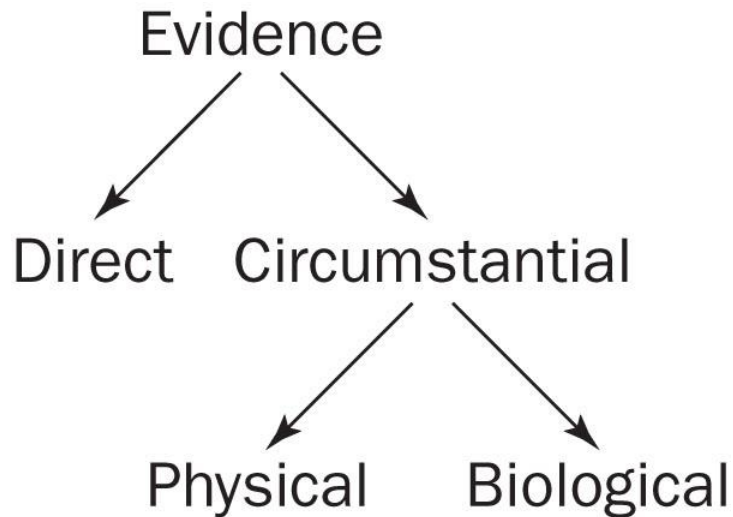
# Principle of Exchange

**Established by Dr. Edmond Locard,  
the principle states:**

- When a person comes in contact with an object or another person, a cross-transfer of physical material can occur
- Study of the material can determine the nature and duration of the transfer



# Types of Evidence

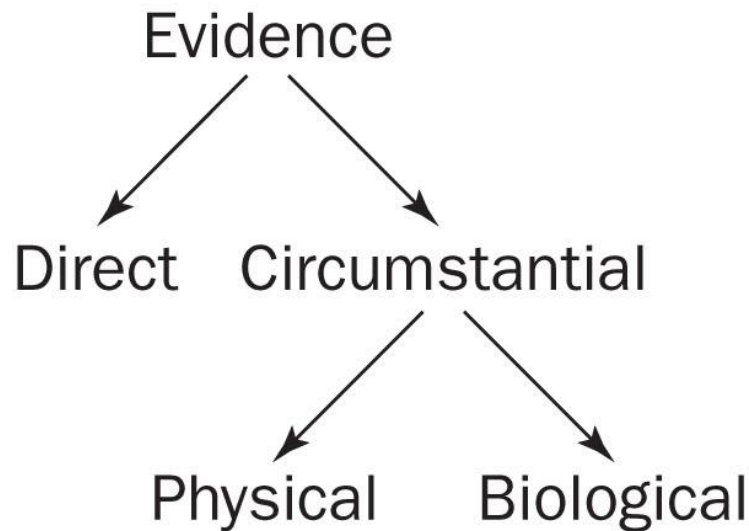


## **Direct evidence**

Testimony by a witness about what that witness saw, heard, or did



# Types of Evidence



## Circumstantial evidence

- also called **Indirect**
- *trace evidence*

## Physical evidence

- e.g., fingerprints

## Biological evidence

- e.g., blood or hairs



# Types of Evidence



Explain why this would be or would not be trace evidence

You arrive at a crime scene outside of a bar in downtown NYC. You happened to be nearby and are the first law enforcement agent to arrive.



**Officer  
Jack**



**You see a crowd around an unconscious man on the ground.  
There is blood on him and on the ground around him.**

What do you do?

How would you go about collecting evidence?



# What is a Crime Scene?

- All areas over which the victim, criminal and eyewitness move during the commission of a crime.
- Pathways to and from scene
- The physical location at which an offense was committed
- The area of the crime scene can be relatively small or very large

# The Seven S's of Crime Scene Investigation



1. **Secure** the scene
2. **Separate** the witnesses
3. **Scan** the scene
4. **Seeing** the scene
5. **Sketch** the scene
6. **Search** for evidence
7. **Secure** the collected evidence

# The Seven S's of Crime Scene Investigation



1. **Secure the scene**
  2. **Separate the witnesses**
- **First arriving officer**
    - Seek medical attention if necessary
    - Arrest suspect if possible
    - Secure and isolate crime scene

# The Seven S's of Crime Scene Investigation



## 3. Scan the scene

- a. Determine where photos should be taken
- b. Identify primary and secondary scenes
  - Primary is place of crime
  - Secondary is where suspect may live or body found

## 4. Seeing the scene - Photography

# Photography

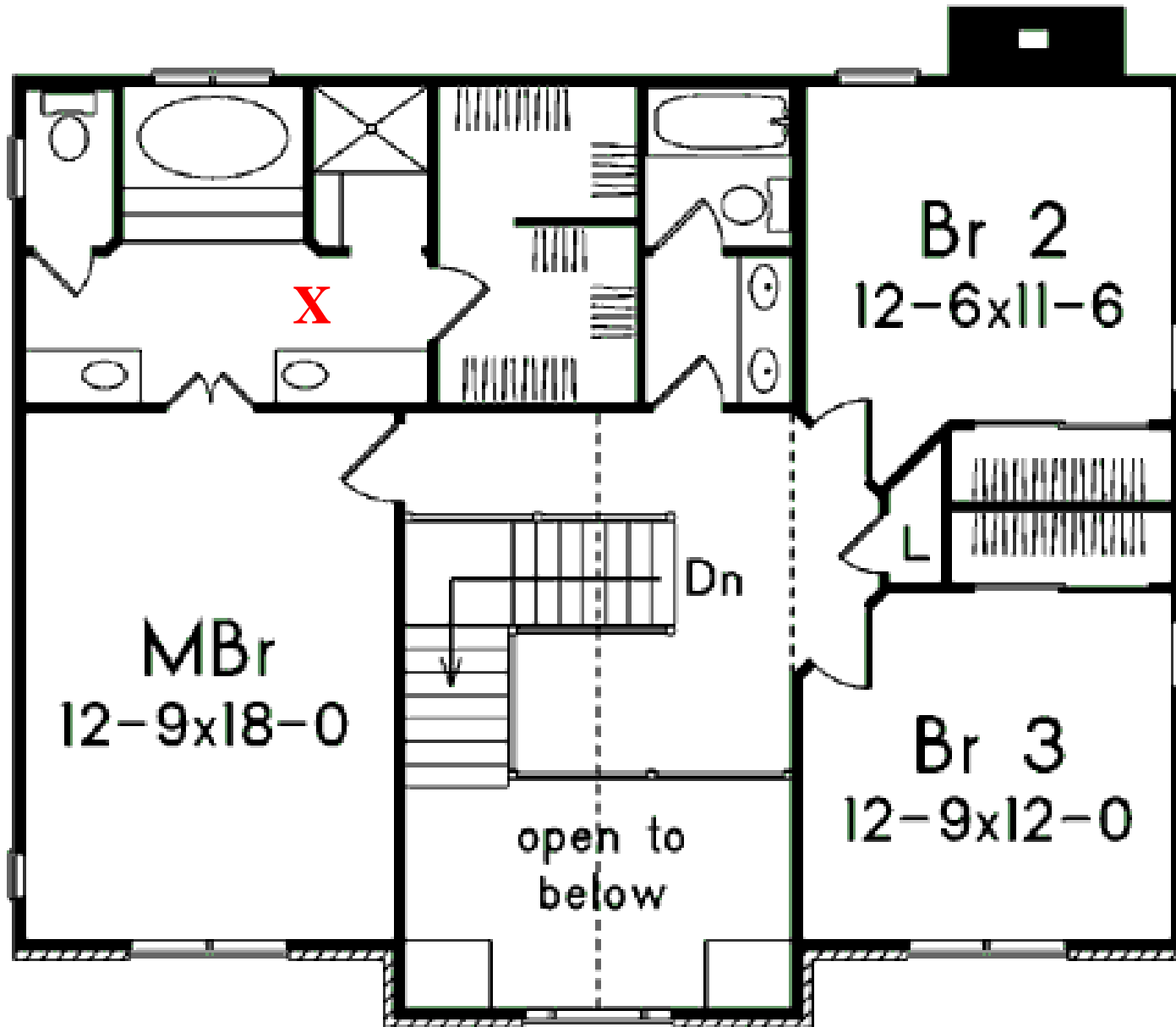
- Photograph evidence while it is unaltered
  - 📄 If objects moved then pictures may not be admitted as evidence
  - 📄 If moved must be noted in report
- Pictures of entire scene including points of exit and entry
- Surrounding areas where important events occurred before or after crime
- If indoors, all wall areas photographed and adjacent rooms

# Photography

- If body then photos of body position and location relative to entire scene
  - Close-ups to show injuries and weapons
  - Surface beneath body after it has been removed
- Each item at scene is photographed to show position relative to entire scene
  - Then close-ups to show details of itself
  - Include ruler or something to show size

# Second floor

X = Body found

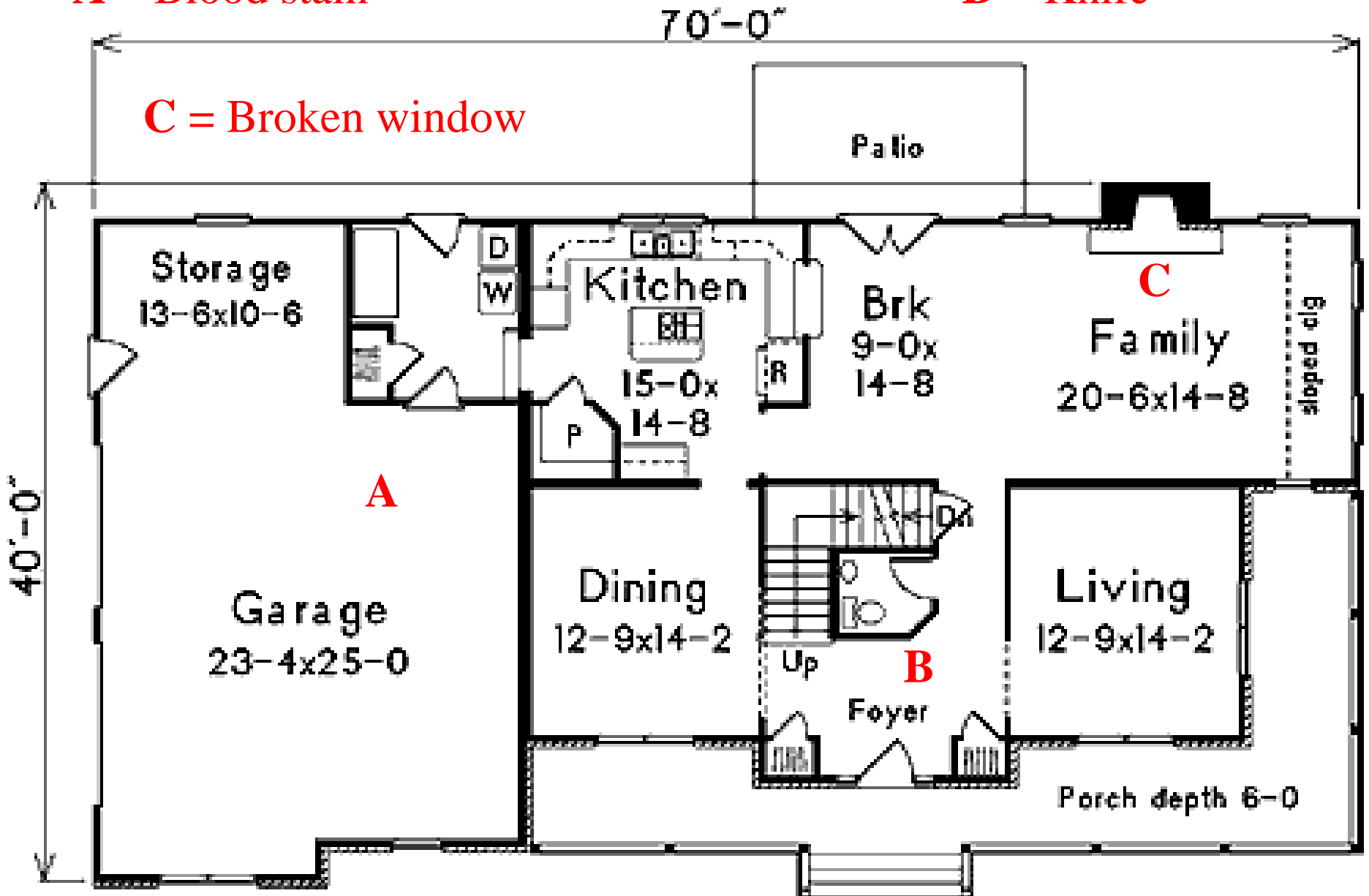


# First floor

**A** = Blood stain

**B** = Knife

**C** = Broken window





# The Seven S's of Crime Scene Investigation



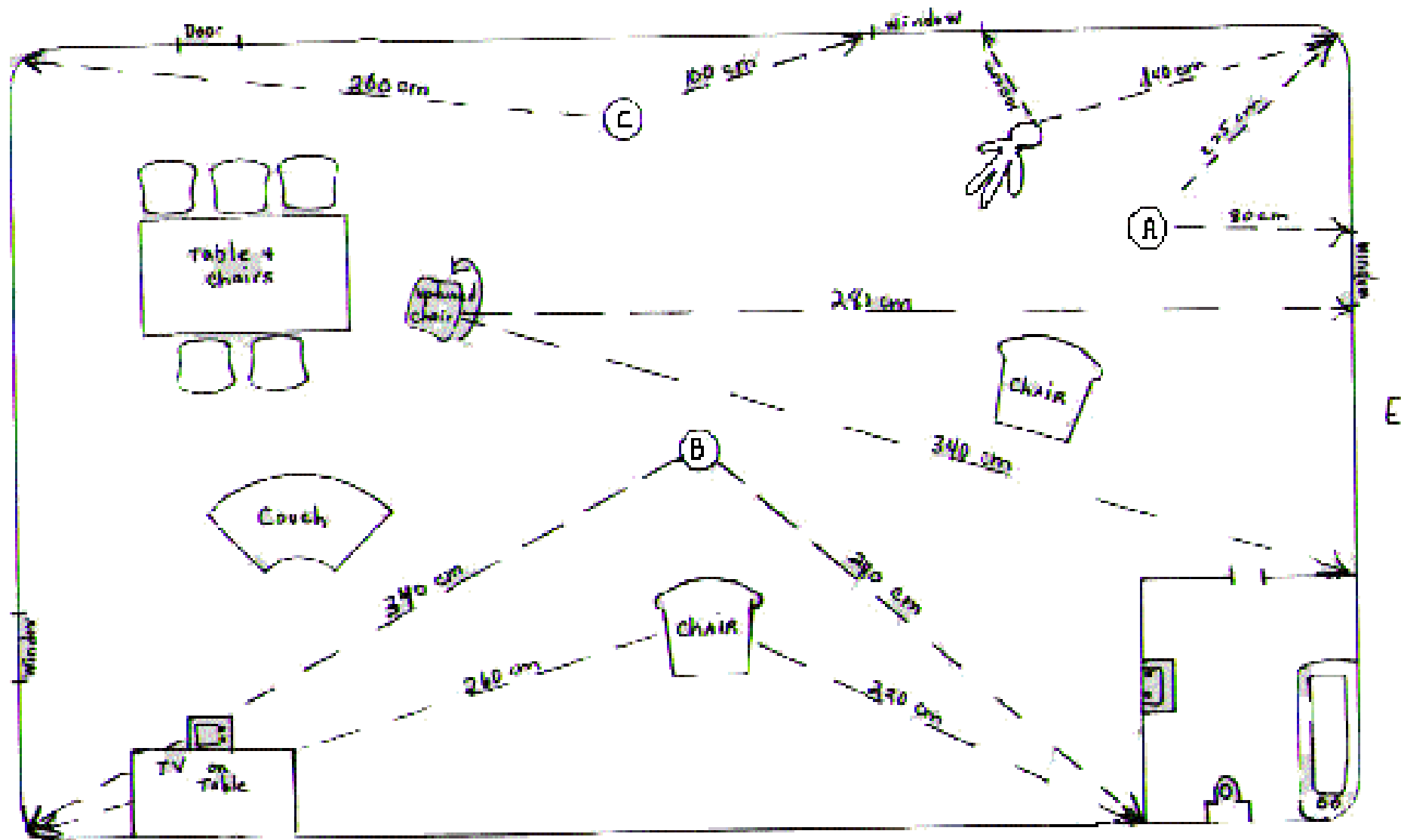
1. **Secure** the scene
2. **Separate** the witnesses
3. **Scan** the scene
4. **Seeing** the scene
5. **Sketch** the scene
6. **Search** for evidence
7. **Secure** the collected evidence

# The Seven S's of Crime Scene Investigation



## 5. Sketch the scene

- o Rough sketch shows dimensions of scene and location of all objects
  - o Create a legend
  - o Pertinent objects are located by two fixed points like walls
  - o Compass pointing north
- o Finished sketch is prepared with craftsman's tools



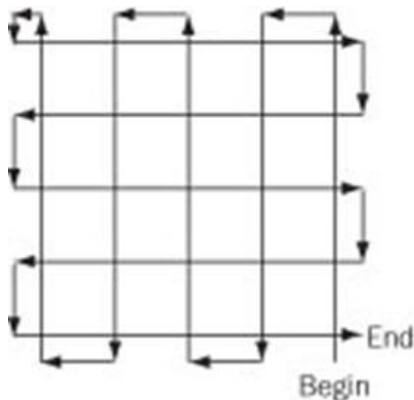
- (A) cigarette butt
- (B) Beer mug
- (C) knife
- (D) Female victim



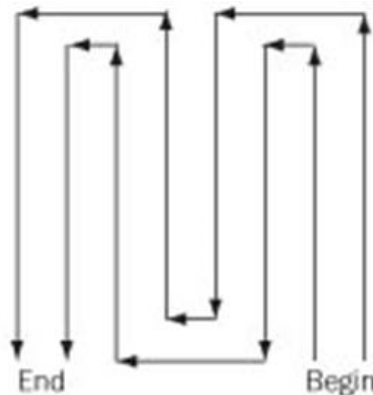
# The Seven S's of Crime Scene Investigation

## 6. Search for evidence

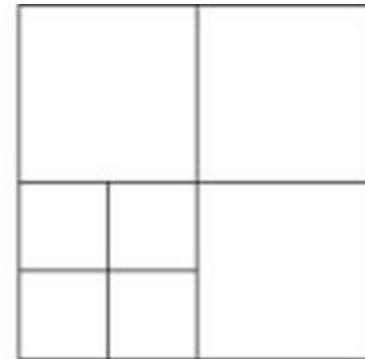
- Need to be done so that no accusations of a cover up arise or overlook of evidence
- Need one person in control to coordinate collection of evidence



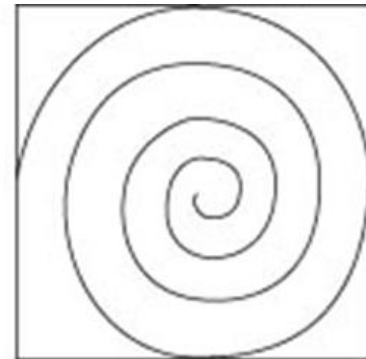
Grid



Linear



Quadrant or Zone



Spiral

# The Seven S's of Crime Scene Investigation



## 7. Secure the collected evidence

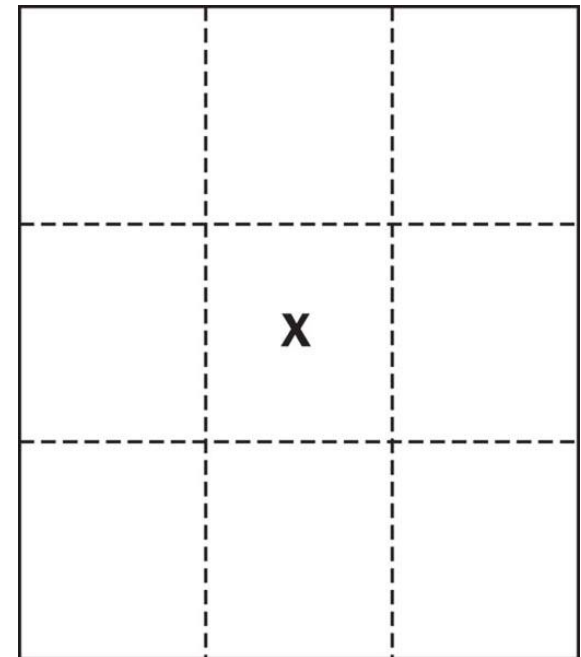
# Collecting and Packaging Evidence

- Purpose is to prevent any changes between time it was removed and time received at lab
- Nothing should be tampered with until it reaches lab
  - Ex. Not pulling hair off of clothes
- Pill bottles, envelopes are good for storing small objects
- Clothes must be air dried and stored individually in a paper bag
  - 📖 Stops mold and mildew from ruining evidence
- Marked with initials of collector, location of evidence and date of collection



# Packaging the evidence

1. Crease a clean paper and place evidence in the X position
2. Fold in the left and right sides, and then fold in the top and bottom
3. Put the bundle into a plastic or paper evidence bag affixing a seal over the opening
4. Write your name on the seal





# Evidence ID Forms

Evidence	
Case # _____	Inventory # _____
Item # _____	Item description _____
_____	_____
_____	_____
Date of recovery _____	Time of recovery _____
Location of recovery _____	
Recovered by _____	
Suspect _____	
Victim _____	
Type of offense _____	
Chain of custody	
Received from _____	By _____
Date _____	Time _____ AM or PM
Received from _____	By _____
Date _____	Time _____ AM or PM
Received from _____	By _____
Date _____	Time _____ AM or PM
Received from _____	By _____
Date _____	Time _____ AM or PM

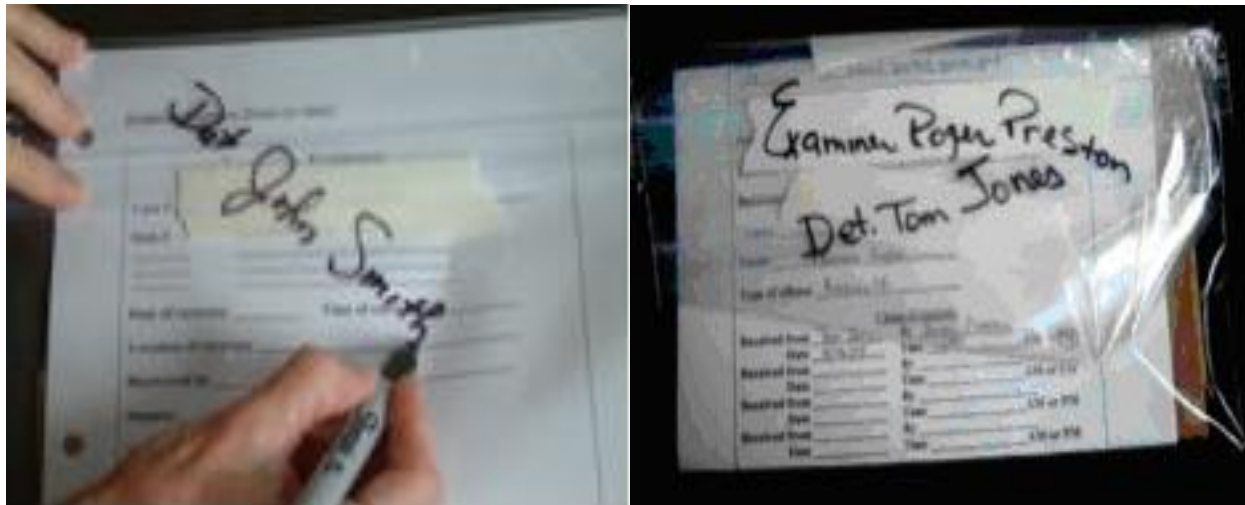
Evidence Inventory Label	
Case # _____	Inventory # _____
Item # _____	Item description _____
_____	_____
_____	_____
Date of recovery _____	Time of recovery _____
Location of recovery _____	
Recovered by _____	
Suspect _____	
Victim _____	
Type of offense _____	
Chain of custody	
Received from _____	By _____
Date _____	Time _____ AM or PM
Received from _____	By _____
Date _____	Time _____ AM or PM
Received from _____	By _____
Date _____	Time _____ AM or PM
Received from _____	By _____
Date _____	Time _____ AM or PM





# Chain of Custody

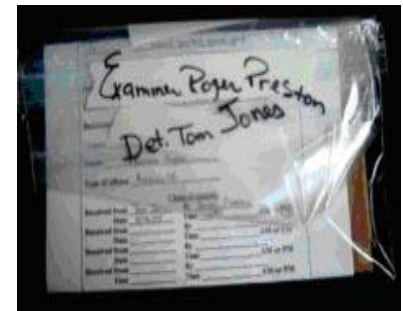
**Maintaining a chain of custody log is essential to present credible evidence in court**





# Chain of Custody (cont'd.)

1. Bag the evidence  
Add identification  
Seal it  
Sign it across the sealed edge
2. Sign over to a lab technician  
Open bag on non-sealed edge
3. Return items to the evidence bag  
Seal evidence bag in another bag  
Sign the evidence log





# New Detectives: OJ Simpson Case



# Crime Scene Reconstruction

Crime scene reconstruction involves:

- o Forming a hypothesis of the sequence of events
- o From before the crime was committed through its commission



# Staged Crime Scenes

When lab results don't match up with the testimony of witnesses

Common examples:

- Staging a fire—to cover bankruptcy
- Staging a suicide—to cover a murder
- Staging a burglary—to collect insurance money



# Staged Crime Scenes

Was the crime scene staged?  
Consider:

- Does the type of wound match the weapon?
- Could the wound be easily self-inflicted?
- What were the mood and actions of the victim before the event?
- What were the mood and actions of the suspect before the event?

# Group Roles



## 5 people per team

- o Lead Investigator
- o Note taker
- o Photographer
- o 1 or 2 Sketch artists

# Crime Scene Safety

- AIDS and hepatitis B from body fluids
- Officers with contact must have had a hepatitis vaccination



# Legality

- Can't search unless a probable cause
- Exceptions:
  - Emergency situation
  - Need to prevent immediate loss of evidence
  - If made with a lawful arrest
  - Consent of all parties

# Crime Scene Admissibility

## ➤ Michigan v. Clifford

Investigators searched an arson fire scene five hours after the fire was put out, **without** consent or warrant.

Incriminating evidence was recovered and used in the conviction.

The US Supreme Court reversed the decision citing the need for a warrant

# Crime Scene Admissibility

## ➤ Michigan v. Tyler –

Arson investigators conducted three separate searches of a fire scene. The first was one and one-half hours after the fire, but dense smoke caused the search to wait until four hours later (the second search).

The third search was weeks later.

Evidence from the first two searches was held admissible, but evidence from the third search was excluded.

# Crime Scene Admissibility

## Mincey v. Arizona –

Investigating the shooting death of an undercover police officer in the residence of the suspect.

- Search of scene and found evidence of other crimes.
- The police charged the suspect with those crimes as well and the court rejected it.
- The court recognized the need of the police to control the situation upon their arrival, and the need to establish a crime scene. **But as soon as there was no more danger of evidence loss, removal or destruction, there was ample time to obtain a search warrant,** particularly when evidence of other crimes was inadvertently discovered.

# Witnesses?

- One type of evidence that you may wish to collect is an eyewitness account
- How much weight would you give to an eyewitness statement?

Awareness test

# Jurors rely heavily on eyewitness identification

- Eyewitnesses are highly fallible
- Researchers examined 40 cases where DNA exonerated wrongfully convicted people.
  - In 90% of the cases, mistaken eyewitness identification played a major role.
- Another study looked at 500 wrongful convictions and concluded that mistaken eyewitness identification occurred in 60%.
- An experiment examined eyewitness identification accuracy
  - A person enters a convenience store and performs some “memorable action” to ensure drawing the clerk's attention. Later the clerk views a photospread and identifies the "customer."
  - The percentage of correct identification ranged from 34-48% and the percentage of false identification is 34-38%.

# accuracy?

- Asking leading questions
  - “Was the driver wearing a red shirt?”
  - This will more likely cause the observer to describe them with a red shirt
- Age; children and elderly are seen as not as credible because of unreliable memory
  - Study done using a video of a crime and young adults were most accurate (17-25)
- Simply how memory works

# Causes of memory unreliability

- Memory is “blurred”
- Memory fills in the gaps
- Memory systematically distorts perception
- Memory is personal
- Memory changes over time



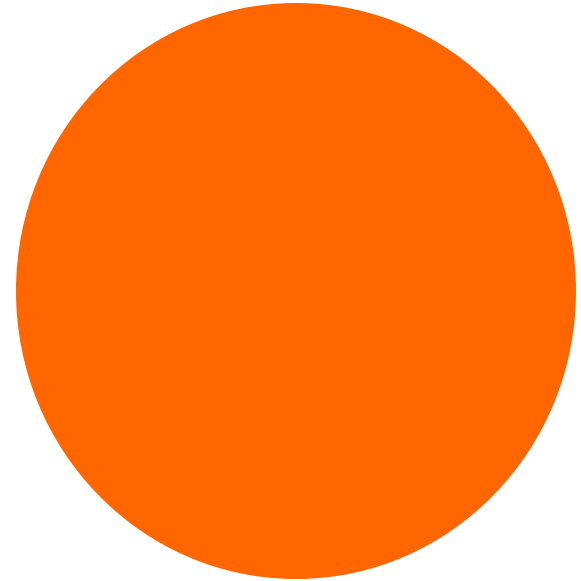
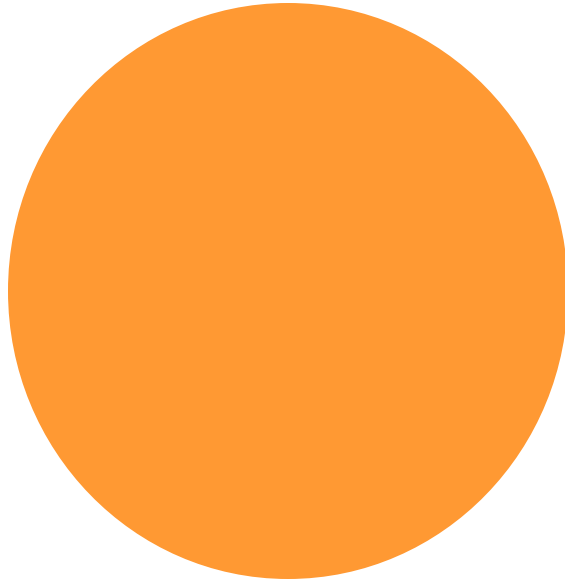
# Memory is “blurred”

- Images in our mind’s eye are never as clear as an actual perception

## Try to recall your bedroom

- People can discriminate between two objects if they are near each other

**What color do you see? Be specific**



**How about now?**

# Memory is “blurred” cont...

- Memory stores perceptual information in verbal form
  - A person may see a blue car and store it in his/her memory as the word “blue”
  - Later on , the person can only recall it as blue and not what shade of blue
  - Or worse yet, they could have stored it as “dark”
- Summary: Our memory is blurred because it encodes the “gist” of a scene.
  - Ex. A person is tall, short, young, old, fat, thin, white, black, rugged, etc...

# Memory fills in the gaps

- The eyewitness will often have insufficient information in the memory itself so they fill in the gaps through:
  - Pre-existing stereotypes
  - Other memories

i cdnuolt blveiee taht I cluod aulacly uesdnatnrd waht I was rdanieg. The phaonmneal pweor of the hmuan mnid, aoccdrnig to a rscheearch at Cmabrigde Uinervtisy, it dseno't mtaetr in waht oerdr the ltteres in a wrod are, the olny iproamtnt tihng is taht the frsit and lsat ltteer be in the rghit pclae. The rset can be a taotl mses and you can sitll raed it whotuit a pboerlm. Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe. Azanmig huh? yaeh and I awlyas tghuhot spleling was ipmorantt!

# Memory fills in the gaps

- The eyewitness will often have insufficient information in the memory itself so they fill in the gaps through:
  - Pre-existing stereotypes
  - Other memories
- People may inadvertently combine memory of two different events or confuse mental images with real events.

# Memory systematically distorts perception

- Examples:
  - People tend to remember colors as being brighter than they were (cars)
  - People asked to recall vehicle speed tend to overestimate slow speeds and to underestimate fast ones
- Memory biases toward expected events

# Memory is Personal

- Each witness extracts an interpretation that is meaningful in terms of his own experiences and world view.
  - Once the interpretation occurs, the events themselves become relatively unimportant.
- Causes different eyewitnesses observing the same event to have different interpretations and different memories.

# **Test Your Brain**



# Memory changes over time and with retelling

- Eyewitnesses incorporate information learned after the event into memory.
  - Ex; they may talk to another witness and use information from the conversation to fill in their reconstruction of the events.
  - Done by combining two memories into one or by using bias or expectations of what probably was seen.
- As people recall an event over and over, they drop details from earlier versions and add new ones.
  - The more times an eyewitness is questioned, all things being equal, the less accurate the last version will be.