Directions: *Read* "**Case Files: Dr. Coppolino's Deadly House Calls**" *(pages 27-28), then answer these questions:*

1. Where did the Drs. Carl and Carmela Coppolino live? Florida
2. Describe the manner in which William Farber was murdered (who/what/how):
   His wife Marjorie gave him an injection of "medication" from Dr. Coppolino, then Dr. Coppolino suffocated him with a pillow.
3. What was Dr. Coppolino's motive for murdering his wife?
   $65,000 in life insurance, most likely having an affair with wealthy socialite Mary Gibson. He wanted to live in high society.
4. What led to the Dr. Coppolino's acquittal in the New Jersey trial?
   The absence of toxicological findings to back up the story told by Marjorie Farber, a "scorned and embittered woman."
5. In the Florida trial, it was found that Dr. Coppolino used the chemical succinylcholine to kill his wife. This chemical is a *(stimulant, paralytic)* drug and was found in large doses in her *(brain, lungs, heart).*
6. Dr. Coppolino was convicted of *(manslaughter, first degree murder, second degree murder)* in the death of his wife.

Get started immediately, please!

1.4: The Role of the Forensic Scientist

SFS1. Students will recognize and classify various types of evidence in relation to the definition and scope of Forensic Science.

a. Compare and contrast the history of scientific forensic techniques used in collecting and submitting evidence for admissibility in court (e.g. Locard's Exchange Principle, Frye standard, Daubert ruling).

8/5/16

- a forensic scientist's time is split between the lab and the courtroom, where the ultimate significance of the evidence is determined
- after analyzing physical evidence, they must persuade a jury to accept the conclusions drawn from that analysis

Part I: Analyzing Physical Evidence/Scientific Method

- 3 major avenues available to police investigators for assistance in solving a crime: confessions by suspects, eyewitness accounts (victims or witnesses), and physical evidence from a crime scene
- only physical evidence is free of inherent error and bias
  - faulty memories and lapses in judgment lead to erroneous charges/convictions

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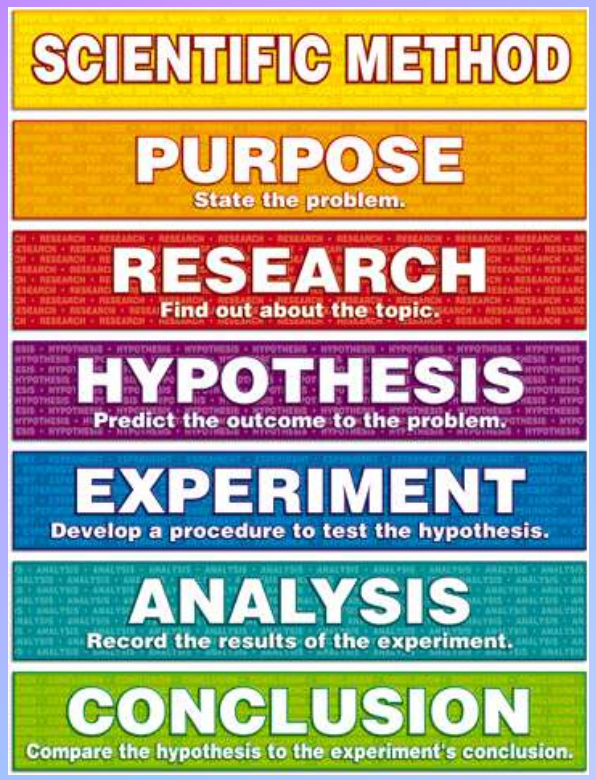
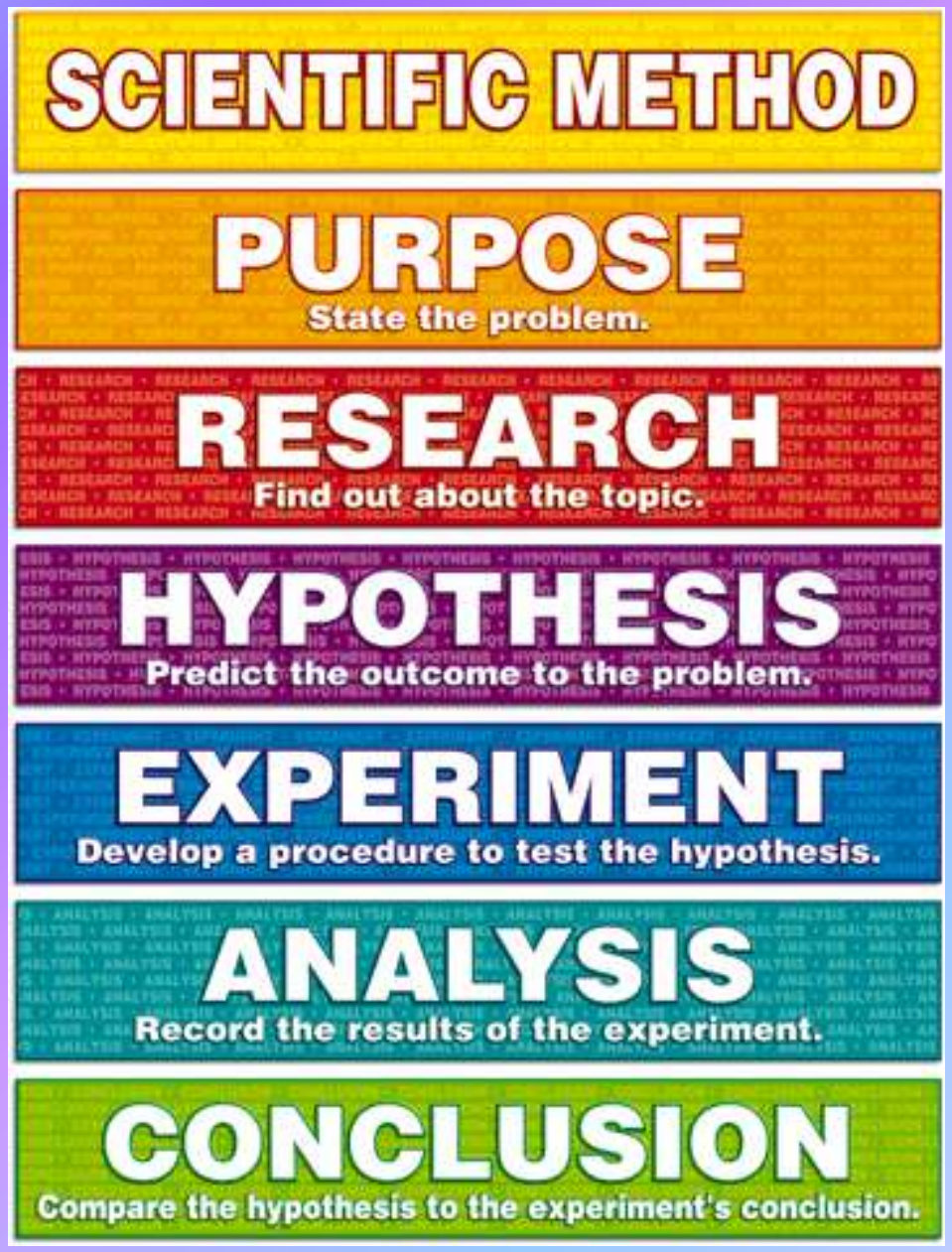
- preliminary evaluations of events/circumstances surrounding crimes are often compounded by misleading eyewitness statements and inappropriate confessions

- physical evidence is free of bias because it must undergo scientific inquiry before being presented to a jury
- **scientific method** = process suing strict guidelines to ensure careful and systematic collections, organization, and analysis of information
  1. state the problem
  2. gather information



- **scientific method** =
  suing strict guidelines
  careful and
  collections,
  analysis of
    1. state the problem
    2. gather information
    3. form a hypothesis
    4. test the hypothesis
    5. record and analyze data
    6. state the conclusion



- the principles of the scientific method provide a safety net to ensure the outcome of an investigation is not tainted by human emotion or compromised by belittling, distorting, or ignoring contrary evidence
- only when hypotheses are validated by experimentation are they deemed suitable as scientific evidence (meaning appropriate for use in a criminal investigation and eligible for admission into a court of law)

SELF-CHECK QUESTION!

What part of the scientific method predicts an outcome to the problem?

the hypothesis

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Determining Admissibility of Evidence:

- 1923, DC circuit court: ***Frye v. United States*** = in order for evidence to be admitted at trial, the questioned procedure/ technique/principles must be "generally accepted" by a meaningful segment of the relevant scientific community

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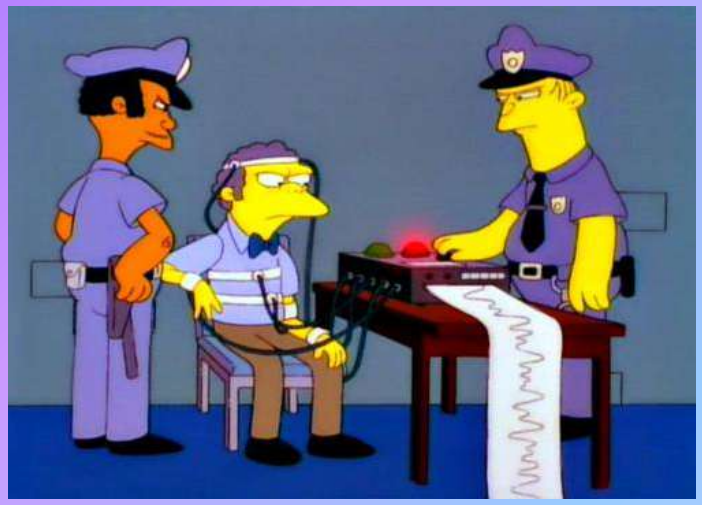
  - this standard can be met by presenting books/papers or prior judicial decisions
  - *Frye v. US* responsible for admission of polygraph tests
  - might not be flexible enough to allow for scientific issues that have not yet garnered widespread support in the scientific community



- **Federal Rules of Evidence** = alternative to Frye standard

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  - Rule 702: a witness "qualified as an expert by knowledge, skill, expertise, training, or education" may offer expert testimony if:
    - "the testimony is based on sufficient facts or data,
    - the testimony is the product of reliable principles and methods, and
    - the witness has applied the principles/methods reliably to the facts of the case."

Judging Scientific Evidence

- 1993, US Supreme Court: ***Daubert v. Merrill Dow Pharmaceuticals*** = asserted that "general acceptance," or the Frye standard, is not an absolute prerequisite to the admissibility of scientific evidence under the Federal Rules of Evidence

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  - makes the trial judge the "**gatekeeper**" in judging the admissibility and reliability of scientific evidence presented in their courts—they do this by inquiring:
    1. whether the theory or technique is falsifiable, refutable, and/or testable
    2. whether it has been subjected to peer review and publication
    3. the known or potential error rate

3. the known or potential error rate
4. the existence of standards and controls concerning its operation
5. the degree to which the theory/technique is accepted by the scientific community

- concerns have been expressed that the abandonment of the Frye general acceptance test will result in pseudoscientific claims in the courtroom:

> "In this regard the respondent seems to us to be overly pessimistic about the capabilities of the jury and of the adversary system generally. Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence."

- 1999, US Supreme Court: ***Kumho Tire Co., Ltd. v. Carmichael*** = the Court unanimously ruled that the "gatekeeping" role of the trial judge applied not only to scientific testimony, but to **all** expert testimony:

> "We conclude that Daubert's general holding—setting forth the trial judge's general "gatekeeping" obligation—applies not only to testimony based on "scientific" knowledge, but also to testimony based on "technical" and "other specialized" knowledge.... We also conclude that a trial court may consider one or more of the more specific factors that Daubert mentioned when doing so will help determine that testimony's reliability. But, as the Court stated in Daubert, the test of reliability is "flexible," and Daubert's list of specific factors neither necessarily nor exclusively applies to all experts in every case."

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  - US Supreme Court rejects the argument, recognizing the necessity for devising new scientific tests—although these tests may be new and unique, they are admissible only if they are based on scientifically valid principles and techniques:

> "Society need not tolerate homicide until there develops a body of medical literature about some particular lethal agent."

SELF-CHECK QUESTIONS!

In the "*Daubert*" court ruling, who was made the "gatekeeper" in judging the admissibility and reliability of scientific evidence presented in court?

the trial judge

Which court ruling states that this role applied not only to scientific testimony, but to all expert testimony?

Kumho Tire Co., Ltd. v. Carmichael

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Part II: Providing Expert Testimony

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- trial courts have broad discretion in accepting an individual as an expert witness on any particular subject

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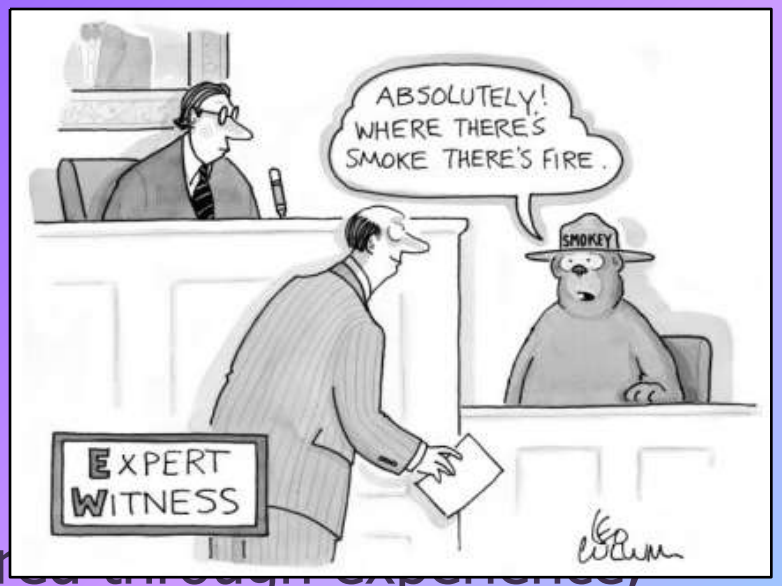
- trial courts have broad discretion in accepting an individual as an expert witness on any particular subject
- **expert witness** = individual whom the court determines to possess knowledge relevant to the trial that is not expected of the average
  - courts consider knowledge acquired through experience, training, or education
  - competency is established by citing educational degrees, professional articles/books published, and years of occupational experience



  - competency is established by citing educational degrees, professional articles/books published, and years of occupational experience
  - cannot render any view with absolute certainty, they can only offer an opinion based on a reasonable scientific certainty and derived from training and experience
- a forensic scientist is neither an advocate for the prosecution nor the defense, but only an advocate of truth—deciding guilt or innocence is for the judge and jury

Part III: Training Others on Proper Evid. Collection Tech.

- the competence of a laboratory staff and the sophistication of its analytical equipment have little or no value if relevant evidence cannot be properly recognized, collected, and preserved at the site of a crime

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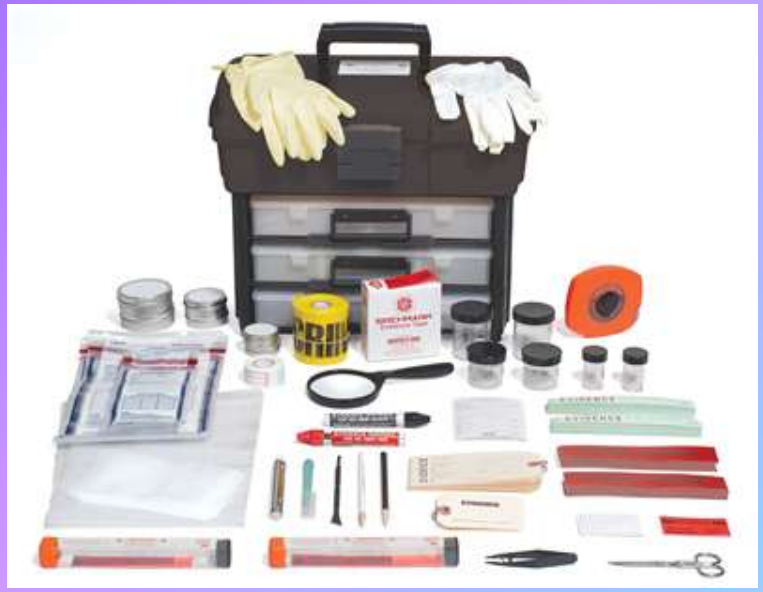
- the competence of a laboratory staff and the sophistication of its analytical equipment have little or no value if relevant evidence cannot be properly recognized, collected, and preserved at the site of a crime
- most direct and effective response to this problem has been to dispatch specially trained evidence-collection technicians to the crime scene.
- these evidence-collection technicians are:
  - trained by the laboratory staff to recognize and gather pertinent physical evidence at the crime scene,



- these evidence-collection technicians are:
  - trained by the laboratory staff to recognize and gather pertinent physical evidence at the crime scene,
  - administratively assigned to the laboratory to facilitate their continued exposure to forensic techniques and procedures, and
  - equipped with the proper tools and supplies for proper collection and packaging of evidence for future scientific examination
- training of police officers in evidence collection is important since nearly every fieldwork officer (traffic, patrol, investigation, or juvenile control officers) collects evidence for later examination at some point in their careers

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  - periodic lectures, laboratory tours, and dissemination of manuals prepared by the laboratory staff that outline proper methods for collecting and submitting physical evidence help establish a working relationship with the laboratory

SELF-CHECK QUESTIONS!

True or False: An expert witness offers absolute certainty in their testimony.

False

Why do police officers need to be trained on proper evidence collection techniques?

nearly every officer will collect evidence for later examination