

Sizing Up Self-Contained Set of Instructional Materials in Forensic 2

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ABSTRACT

The present study is developmental research sought to develop and produce Self-instructional Modules in FORENSIC 2 Personal Identification. The designed modules covered 13 chapters namely: The Origin of Fingerprints, Fingerprint and Friction Skin, Fingerprint Patterns, Ridge Characteristics, Core and Deltas, Ridge Counting and Ridge Tracing, Techniques in Taking Fingerprint, Classification of Fingerprints, Fingerprint Classification Formulas, and Classifying Amputated Fingers. The development of the instructional modules was done during the First Semester of the Academic Year 2024-2025. This research adopted the Input-Process-Output-Outcome (IPPO) Model of Brown (1996) to demonstrate the design-develop-evaluate phases of module-making. The SIMs were designed to be used by the first-year students in the Bachelor of Science in Criminology Major in General Curriculum. In designing the modules, CHED Memorandum No. 24, Series of 2017 and Outcome Based-Syllabus in Forensic 2 served as the basis for the content and competencies included. The modules were evaluated by the experts composed of a Doctor of Philosophy in Educational Management and Doctor of Criminology, Deans of Various Criminology Schools in Negros Occidental who are experts in the Field of Forensic Dactyloscopy (Personal Identification) studies. The instrument adopted from the study of Pillarina (2021) which assessed five aspects of the modules such as the objectives, contents, format and language, presentation, and usefulness. Results revealed an excellent rating on the five aspects resulting in an overall rating interpreted as excellent. Thus, this confirms that the developed and designed self-instructional modules are of good quality to be used for instructions.

Keywords: Self-Instructional Modules, Forensic Dactyloscopy, Personal Identification, Module Development, Instructional Materials, Criminology Education, Fingerprint Identification.

INTRODUCTION

Memorandum Order No. 05, series of 2018 was published by the Commission on Higher Education, listing the rules, regulations, and standards for the Bachelor of Science in Criminology Studies program. It outlines the fundamental skills required in BS. any graduates with a bachelor's degree in criminology, regardless of the kind of HEI they attended. Additionally, it gives HEIs plenty of room to reinvent their curricula in accordance with the evaluation of the most effective ways to accomplish learning objectives in their unique contexts and missions.

The BS CRIM curriculum includes Forensic 2-Personal Identification as one of its foundational courses. The nature and key components of dactyloscopy, a technique and approach used in fingerprint categorization and identification, are explained in this course. Criminalistics, another name for forensics, is the study of establishing innocence or proving guilt by a variety of scientific techniques. It is a crucial component of criminal investigations.

However, the researcher believes it is crucial to develop a self-instructional module to support the delivery of instruction in the new teaching and learning setup, given the COVID-19 pandemic's impact on the educational system, which brought about changes and threats, limiting the roles and capabilities of teachers and restricting the delivery of instruction. La Carlota City College is not yet prepared due to the amount of students, classrooms, and instructors, even though CHED mandated the complete implementation of in-person sessions. Therefore, the researcher believes that SIM development is still required.

Derek Rowntree first proposed the idea of "teaching through self-instruction" in 1986. Self-instructional materials are educational resources designed specially to help students learn about a subject, problem, etc. on their own. Teaching resources designed to let students learn about a subject, problem, etc. on their own are known as self-instructional materials (Hadijahjaffri, 2022).

In light of these presumptions, the researcher aims to investigate the creation of Forensic 2 Personal Identification modules for La Carlota City College's educational use.

METHODOLOGY

This study employed a developmental research design to develop and evaluate Self-Instructional Modules (SIMs) for Forensic 2 – Personal Identification. The development process was guided by the Input-Process-Output-Outcome (IPPO) Model of Brown (1996), as cited in Pillarina (2021), which provided the framework for the design, development, evaluation, and refinement of the instructional modules. The content and competencies incorporated into the modules were based on the Forensic 2 – Personal Identification syllabus and CHED Memorandum No. 05, Series of 2018. The developed modules were subjected to expert evaluation to determine their quality and suitability as instructional materials for students enrolled in the Bachelor of Science in Criminology program.

The respondents of the study were selected experts who evaluated the developed Self-Instructional Modules. They included qualified faculty members and academic personnel of La Carlota City College who were involved in curriculum implementation, instructional supervision, criminology instruction, and module development. The evaluation panel consisted of the College Dean, program heads, Criminology professors, and qualified external experts with relevant academic and professional expertise. The respondents were selected through purposive sampling, considering their educational qualifications, professional experience, and knowledge relevant to the development and evaluation of instructional materials. Since the study required expert judgment rather than a general student population, the respondents were deliberately selected based on their capacity to provide informed assessments of the developed modules.

The development of the Self-Instructional Modules was anchored on the Forensic 2 – Personal Identification syllabus and the provisions of CHED Memorandum No. 05, Series of 2018. The modules were designed specifically for students enrolled in the Bachelor of Science in Criminology program. To evaluate the developed modules, the researcher utilized the evaluation instrument developed by Torre Franca (2017), as cited in Pillarina (2021). The instrument consisted of 25 items covering five areas of evaluation, namely objectives, content, format and language, presentation, and usefulness. The evaluators assessed the modules using a five-point rating scale ranging from Strongly Agree to Strongly Disagree. The instrument used in the study was considered standardized and reliable; therefore, no separate validity and reliability testing was conducted by the researcher.

Prior to the conduct of the evaluation, the researcher secured approval from the appropriate office of La Carlota City College through a formal letter requesting permission to conduct the study. After approval was granted, the researcher coordinated with the identified panel of evaluators and requested their participation in assessing the developed Self-Instructional Modules. Copies of the SIMs and evaluation instrument were then provided to the selected evaluators, who were given sufficient time to review the modules and complete the evaluation. After the evaluation period, the accomplished instruments were retrieved and organized for analysis. The comments and recommendations of the evaluators were also considered in identifying portions of the modules that needed to be retained, revised, enhanced, or improved.

The evaluation results were analyzed using the mean to determine the quality of the Self-Instructional Modules in terms of objectives, content, format and language, presentation, and usefulness. The resulting mean scores were interpreted using the following scale: 4.21–5.00 as Excellent, 3.41–4.20 as Very Good, 2.61–3.40 as Good, 1.81–2.60 as Fair, and 1.00–1.80 as Poor. The evaluation results, together with the observations and recommendations of the expert evaluators, served as the basis for determining the quality of the developed modules and identifying necessary revisions. Through this process, the final Self-Instructional Modules were



refined to ensure their relevance, clarity, organization, and usefulness as instructional materials for Forensic 2 – Personal Identification.

RESULTS AND DISCUSSIONS

The Design and Development of the SIMs in Forensic 2

Creating a self-instructional module in Forensic 2 (Personal Identification) with the curriculum in Forensic 2 (Personal Identification) and the content anchored in CHED Memorandum No. 05; Series of 2018 is the aim of this study. A survey of relevant material and a reexamination of different resources were conducted to develop the module design. The evaluators' corrections and recommendations were implemented to enhance the module's design and make it more suitable and efficient for self-learning.

Module in Forensic 2

- I. Course Title:** Forensic 2 (Personal Identification)
- II. Number of Units:** 3 units
- III. Course Description:**

The goal of the course is to list and explain the various methods of personal identification used in crime investigation and detection. It focuses on fingerprint recording, latent print development, and fingerprint recognition and categorization for court presentation.

Course Outcomes:

At the end of the semester the students can:

- 1. Identify the importance of personal identity in the field of criminology.
- 2. Distinguished different types of fingerprint patterns.
- 3. Discuss the significance of fingerprints in crime detection and investigation.

Course Outline:

A. Preliminary Period

Module 1. Origin of Fingerprints

Module 2. Fingerprints and Friction Skin

B. Midterm Period

Module 3. Fingerprint Patterns

Module 4. Ridge Characteristics/ Core and Delta

Module 5. Ridge Counting and Ridge Tracing

C. Semi-final Period

Module 6. Techniques in Taking Fingerprints

Module 7. Classification of Fingerprints (Key Division)



Module 8. Major Division

Module 9. Primary Division

D. Final Period

Module 10. Secondary Division

Module 11. Sub - Secondary Division

Module 12. Final Division

Module 13. Classifying Amputated Fingers

Module 1.

Lesson 1: History of Fingerprints

Objectives: At the end of this lesson, the students will be able to:

1. Discuss briefly the history of Fingerprints
2. Determine the key personality traits and how they affect fingerprint identification.
3. Identify the important uses of fingerprints throughout human history.

Pretest: To what extent did you know about forensic dactyloscopy before the actual lesson? Respond to the following introductory questions:

1. Why do you want to learn more about forensic dactyloscopy?
2. What do you hope to learn from this lesson?

History of Fingerprints

One of the most reliable methods of identification has long been thought to be fingerprints. It is currently widely used in both public and private documents, ranging from basic clearance to highly significant documents. It is imperative that anyone studying fingerprint research and those working in the area be familiar with its historical evolution. Every scientific concept essentially depends on its discovery, the facts underlying its evolution, and its distinctions for its credibility and evidentiary value. Imagine a scenario in which the defense attorney, seeking to undermine the credibility of the expert witness, occasionally asks questions that are related to the historical context and fundamental ideas of the scientific data that has been provided. The author has enumerated some of the key figures and events that have shaped the history of fingerprint science in order to familiarize students, instructors, technicians, and other interested parties.

A. Origin Of Fingerprints

It is believed that the Chinese were the first to use fingerprints. The Chinese refer to fingerprints as "Hua Chi" in this context. In the early part of history, they employed fingerprints as a symbol as part of their "rituals" until they were used by illiterate people to sign contracts.

On the bamboo slip where the contract was written, the destitute thumb mark is placed. Every mother is familiar with her newborn's fingerprints, which were collected at the time for potential identification.

The fundamental features of fingerprints were well known to the Chinese. They name the arches and whorls "LO" (snail); they call the loops "KI" (sieve or winnowing basket), and they are considered lucky charms.



The first Chinese emperor to create a seal out of white jade was Emperor Te'in Shi (246–210 BC). The seal had the owner's name on one side and a thumb impression on the other. Documents were sealed with this type of seal as an indication of validity. Despite having a thorough understanding of the many fingerprint patterns, the Chinese did not create a method for classifying them.

B. Scientific Discovery And Development Of Fingerprint

1. The term "loops and spirals" was coined by Marcelo Malpighi (1628-1694), a professor of anatomy at the University of Bologna in Italy, whose book "De Externo Tactus Organo" described the structure of the layers of the human skin, especially the friction skin, which is made up of the epidermis and the dermis. As a result of his work, one of the thin layers of the friction skin was named after him, the "Malpighian layer."
2. J.C. "Although the arrangement of the skin ridges is never duplicated in two persons, the similarities are closer among some individuals," Mayer (1788) wrote in his book *Anatomische Kupfertafeln Nebst dazu Gehorigen*.
3. In his study of physiology, Professor Johannes E. Purkenje (1823) of the University of Breslau, Germany, found that the skin on the inside of the hands had patterns. He later named these patterns, established guidelines for classifying them, and even identified nine different kinds of patterns, but he did not link them to identification.

C. Fingerprints As A Method Of Identification

1. Herschel, Sir William J. (1868) of Hoogly, District of Bengal. In order to prevent impersonation among the locals, he used fingerprints as a stand-in for signatures while serving as the acting official representative of the English government in Bengal, India. The palm was originally Herschel printed by Raiyadhar Konai. Despite his success in this operation, the government disregarded his desire for the method to be formally adopted. Since he paved the way for the first real attempt to establish individuality via fingerprints, he deserves credit for creating the current fingerprint identification system.
2. The English journal "Nature dealing with latent prints found at the scene of the crime" was written by Dr. Henry Faulds (1877), a surgeon at Tsukiji Hospital in Tokyo, Japan. He asserted that the impression would enable the positive identification of criminals upon their capture. On the basis of the skin ridges of the fingers and toes, he also penned "A Manual of Practical Dactylography."
3. The first twelve (81 years old) is credited to Sir Francis Galton (182–1911). The three families of fingerprint patterns—Arches, Loops, and Whorls (A-L-W-Methods)—were discovered by the friction skin identification scientist who founded the first Civil Bureau of Personal Identification in London, England. subsequently created a classification scheme that was formally approved on February 12, 1894. Additionally, he said that there is a 1:64,000,000,000,000 chance that two prints will be identical.
4. Henry, Sir Edward R. (1859-1931). While employed at Scotland Yard, he created his own classification scheme after being influenced by several forerunners in the field of fingerprint analysis. Known as the "Father of Fingerprint," his system of classification was created with the assistance of two Hindu police officers, Khan Bahadur Azul Haque and Rai Hem Chandra Bose. It was widely accepted by almost all English-speaking countries, eventually replacing the Bertillonage system of identification in France (Alphonse Bertillon's Anthropology).
5. Vucetich, Juan (1891). He created his own classification scheme for prints, which was formally accepted in Argentina and utilized in the majority of Spanish-speaking nations.

Lesson 2. Fingerprints In The Philippines

Objectives: at the end of the lesson, the student will be able to:



1. Identify the personalities engaged in the Philippine finger print study.
2. List the several ways to identify a person besides using their fingerprints.
3. Describe why fingerprint identification was replacing the Bertillion System of identifying.

Pretest: respond to the following initial inquiries:

1. Regarding finger prints in the Philippines, what are your thoughts?
2. Are you aware of the contributions made by various personalities to the field of finger print science?

D. Fingerprints In The Philippines

1. In 1900, Mr. Jones became the first fingerprint instructor in the Philippine Constabulary.
2. According to records from the Bureau of Prisons, fingerprints were previously utilized in 1918 for CARPETAS (Commitment and Conviction Records).
3. During the American Forces' reoccupation of the Philippines, Lt. Asa N. Darby created a comprehensive and up-to-date fingerprint database for the Philippine Commonwealth.
4. Generoso Reyes was the Phil's first Filipino fingerprint technician. Constabulary
5. The first Filipina fingerprint technician is Isabela Bernales.
6. The first fingerprint examination was conducted in 1927 by Capt. Thomas Dugan of the New York Police Department and Flaviano Guerrero of the FBI Washington, and the winner was Agustin Patricio of the Philippines.
7. The first fingerprint-based conviction and the most important court ruling in Philippine jurisprudence (10 points of identify) occurred in People of the Philippines v. Medina.
8. The first government-approved institution to teach fingerprint science and other police sciences was Plaridel Education Institution, which is now the Philippine College of Criminology.

E. Other Methods Of Identification

1. Identification of Living Person:

1.1. Characteristics that may easily be changed:

- a. Growth of hair, beard and mustache;
- b. Clothing;
- c. Frequent place of visit;
- d. Grade or profession;
- e. Body ornamentation such as earrings, necklace, rings, bracelets, watch and others.

1.2. Characteristics that may not easily be changed.

- a. Mental memory
- b. Speech



- c. Gait or manner of walking (ataxic, cerebellar, cow's, paretic, spastic, wadding, and frog's gait).
- d. Mannerism
- e. Hands and feet
- f. Complexion
- g. Face
- h. Eyes
- i. Body built
- j. Left or right handedness
- k. Degree of nutrition
- 2. Identification applicable to both living and dead person.
 - 2.1. Occupational mark
 - 2.2. Race
 - 2.3. Stature
 - 2.4. Teeth (Odontology =identification through dental record)
 - 2.5. Tattoo marks
 - 2.6. Scar marks
 - 2.7. Birth marks
 - 2.8 Deformities
 - 2.9. Moles
 - 2.10. Injuries living a permanent result
 - 2.11. Tribal marks
 - 2.12. Sexual Organs (Presence of Testes and Ovaries)
 - 2.13. Blood Grouping (A-B-AB-O System) and Typing (M-N-MN)
 - 2.14. Hand writing ad signature
 - 2.15. Fingerprint (Dactyloscopy/Dactylography)
 - 2.16. DNA (Deoxyribonucleic Acid Fingerprinting)

The earliest scientific method of identification, anthropometry, was created by Alphonse Bertillon, the father of personal identification. It measures various bony structures in the human body. Records indicate that anthropometry was questioned because to the famous "West Case," which had two individuals (Will West and William West) who had the same face and nearly same height. It was employed in England for about 20 years prior to the advent of fingerprints.



Learning Assessment:

1. Give a brief summary of the important events that took place in the history of fingerprint.
2. Discuss famous personalities and their contribution in the field of fingerprint.
3. Compare the distinction of Anthropometric measurement to that of finger print.

Module 2

Lesson 1: Fingerprints And The Friction Skin

Objectives: At the end of the lesson the student will be able to:

1. Give definitions for key terminology used in fingerprint classification and identification.
2. Differentiate between other relevant fingerprint identification fields.
3. Describe the three key finger print principles.

Retest: Prior to the start of the finger print and friction skin lesson, respond to the following questions:

1. Regarding finger prints, what are your thoughts?
2. Are you aware of the various sciences that are used to analyze fingerprints?

The Law of Multiplicity of Evidence - asserts that the likelihood of the conclusion being accurate increases with the number of parallels or differences.

A. Definition of Terms:

Dactyloscopy - refers to the practical application of fingerprints (the making of identifications by fingerprints comparison and classification of fingerprints).

Origin

The term "dactyloscopy" literally means "the study of finger" because it was derived from two Greek words: "Dactyl," which means "finger," and "skopien," which means "to study" or "to examine."

Dactylography refers to the scientific study of fingerprints as a means of identification.

Dactylomancy is the study of fingerprint for purposes of interpreting one's personality.

Fingerprints is an impression design by the ridges on the inside of the last joint of the finger or thumb on any smooth surface through the media of an ink, sweat or any reagents capable of producing visibility.

B. Principles of Fingerprint identification

1. **Principle of Individuality** states that there are no two-person having the same fingerprints. It is based on statistical probability that it would be impossible for any two persons to have similar fingerprints.
2. **Principle of Permanency** states that once ridges are fully developed their general arrangement remains the same throughout life.
3. **Principle of Infallibility** states that fingerprints are a reliable positive means of identification.

Other Field of study related to Dactyloscopy:

- Poroscopy (derived from the Greek words "poros", and "skopien", to examine). It is then the study of the sweat pores. This was explored by Edmond Locard (Father of Poroscopy).
- Chiroscopy (derived from the Greek word "podo", the foot and "skopien", to examine) It is the study of the prints of the palms of the hand. Sir William Herschel utilized this.
- Podoscopy = (derived from the Greek word "cheir, a hand, and "skopien" , to examine) It is the study of the prints of the soles of the feet.

Lesson 2: The Friction Skin And Its Components:

Objectives: At the end of the lesson the student will be able to:

- List the components of a standard friction skin.
- Talk about how each component of the friction skin works.
- Describe how a child's finger print changes throughout the course of their life.

Pretest: Prior to the next class beginning, respond to the following preparatory questions:

- What does "friction skin" mean to you?
- Which elements make up friction skin?

Definition:

Friction Skin. The ventral or lower surface of the hands and feet has this epidermal hairless skin, which is devoid of pigment and coloration and has tiny ridges and furrows. Papillary or epidermal ridges are other names for it. are skin strips that form fingerprints on the inside of our thumb and finger end joints.

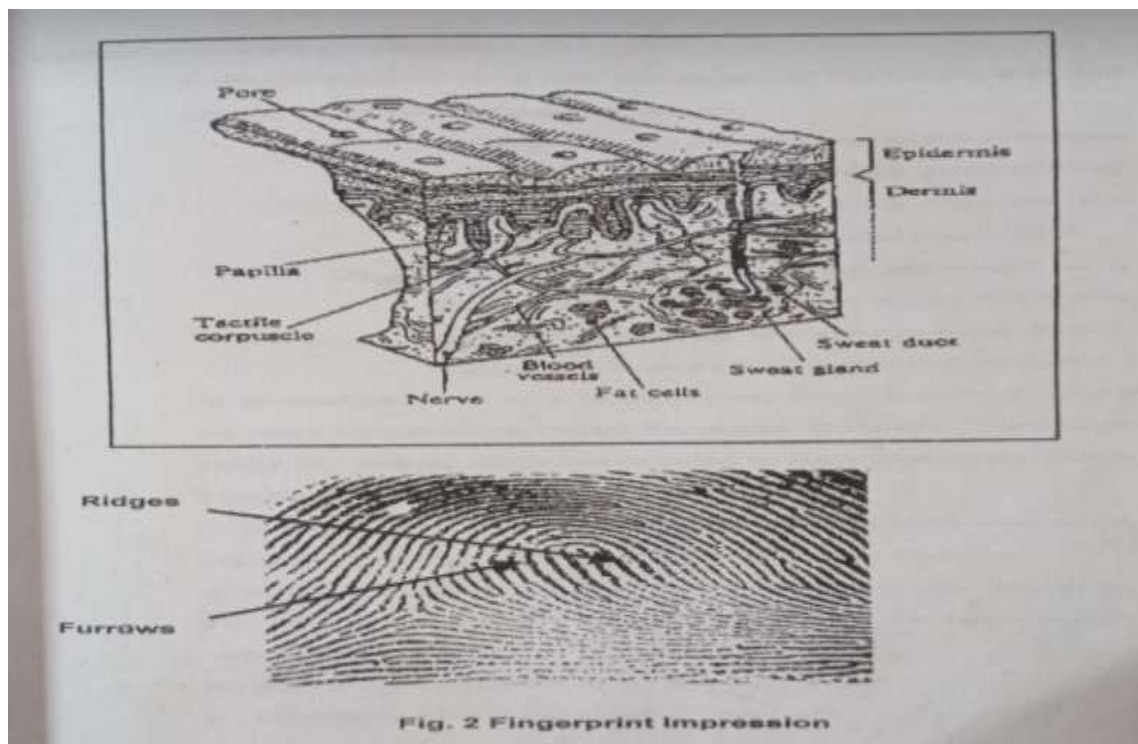


Fig. 2 Fingerprint Impression



2. Components of the Friction Skin:

- a) Ridge Surface is that component of the friction skin that actually forms the fingerprint impression.
 - 1. Ridges are tiny elevation or hill like structures found on the epidermis layer of the skin containing sweat pores. It appears as black lines with tiny white dots called pores in an inked impression.
 - 2. Furrows are the canal-like impression or a depression found between the ridges which may be compare with the low area in a tire thread. They appear as white lines in an inked impression.
- b) Sweat Pores is a small opening found anywhere across the ridge surface but is usually found near the center. Sometimes called an "islands which colors white in plain impression and is considered as individual as the fingerprints.
- c) Sweat Duct is a long-host like structure that serves as the passage way for the sweat that exits at its mouth, the pore.
- d) Sweat Glands is that glands found in the dermis layer of the skin which is responsible for the production of the sweat (watery substance).

3. Fundamental Layers Of The Friction Skin:

- 1. Epidermis - the outer covering of the skin

Two Main Layers of the Epidermis

- a) Stratum Corneum - the outer layer
- b) Stratum Mucosum - immediately beneath the covering layer.

Five Subdivisions of the Stratum Corneum:

- 1. Corneous layer
- 2. Transparent layer
- 3. Granular layer
- 4. Malpighian layer
- 5. Generating layer
- 2. Dermis - the inner layer of the skin containing blood vessels, various glands and nerves. It is where the dermal papillae are found.
- 3. Ridge Formation. Ridges begin to form on the human fetus during its 3 to 4h months of the fetus life (fifth to sixth months before birth). They seem to appear as continuous lines with some are short and curved, others are long and straight and few like islands containing a single pore structure. During the process of growth these is consists of a series of islands, each containing a small opening or pores.
- 4. Dermal papillae are irregular blunt pegs composed of delicate connective tissues protruding and forming the ridges of the skin on the fingers, palms, toes and soles of the feet. It does not contain coloring pigments (melanin).

Lesson 3: Ridge Destruction

Objectives: At the end of the lesson the student will be able to:



1. Describe the elements that could harm or alter the patterns of the finger prints.
2. Talk about the motivation behind some people's attempts to remove their fingerprints.
3. List the different reasons why a fingerprint can get damaged.

Pretest: Respond to the following initial inquiries:

1. Is it possible for a fingerprint to be permanently destroyed?
2. Could you list a few reasons why a fingerprint might be destroyed?

With the exception of its size, the pattern that develops on the inside first joint of our fingers and thumbs remains constant throughout a person's lifetime. However, there are external pressures that could damage the ridges or have an impact. Such devastation is typically just transitory, although it might occasionally be irreversible. The pattern will never resurface in the affected area if the epidermal skin is irreversibly destroyed. The ridge returns in precisely the same way as before, if it was merely transitory. As soon as the area of the friction skin where the dermal papillae are found is damaged, permanent destruction may be conceivable.

1. Manual works

Person who used chemical like lime, cement, plasters; electric shop workers and assembly workers usually cause temporary destruction of the tissues.

2. Diseased Person

Skin diseases may cause temporary destruction similar with those persons handling lime, cements but such destruction ceases the moment that the diseased has been cured.

3. Warts:

Fibrous growths in the skin and are easily distinguished in impressions by the appearance of a light spot. Usually encircled by a black ring. Warts do not destroy the ridges just like creases, they are not permanent and when they are removed the ridges assume their natural conditions without even the appearance of a scar.

4. Ulcers

In case where ulcerous sores attack the ridges, they are permanently destroyed; for ulcers work so deeply into the flesh as to destroy the sweat glands, which characterized the surface of the skin. It is true throughout the entire body.

5. Burns:

Burns severe enough to leaves a scar will change the appearance of the skin and totally destroy the ridges. In fact, the destruction of the sweat glands from any because whatever will change the skin surface, by leaving as scar in some form.

6. Scars

It appears as a thin white line, with the ridges slightly puckered on both sides of the scar.

Some Attempts of Destroying Ridges and Disguised:

John Dillinger, US notorious public enemy number one, who tried to remove his fingerprints with acid but failed. Post-mortem fingerprints taken after FBI agents shot him proved that he was Dillinger



Roberts James Pitts gained fame as the man without fingerprints" knowing from an inmate of a possible destruction of fingerprints. He contacted a doctor. He removed the skin up to the generative layer and served thin into incisions on each side of Pitt's chest. Scar tissue was developed. Almost a year later, he was picked up and police was amazed to find that he had no fingerprints. The Texas Department of Public Safety was able to effect identification out of the second joints of his fingers. He is also known by the name of Roscoe Pitts.

Three points to remember when damaged or injury to a papillary skin causes a permanent scar.

1. A penetration of a depth of more than one-millimeter is necessary where the organs or process responsible for the growth of ridge elements are damaged or interrupted in their activities.
2. Due to the destruction of these organs and deprivation of the power to produce new ridge elements, the process of fission is affected.
3. Because of the extensive damage, the skin is rendered incapable to fusing skin deformities sometimes prevent correct pattern interpretation and classification but in totality do not prevent identification. As long as the pattern is not totally disfigured classification can still be worked out.

Lesson 4: Importance of Fingerprints:

Objectives: At the end of the lesson the student will be able to:

1. Describe how finger prints are used.
2. Compare the significance of fingerprints back then and today.
3. Talk about the importance of fingerprints in detecting and investigating crimes.

Pretest: Respond to the following initial inquiries:

1. What do you think about the various ways that fingerprints are used?
2. Do you know of any significant applications for fingerprints? Please briefly explain your response.

Importance of Finger print:

1. It is used for identifying suspects for investigation purposes.
2. It is used to provide identity for unidentified dead person.
3. It is used for the identification of missing person.
4. It is used for detecting a criminal identity through fingerprints collected at the scene and determining recidivism or habitual delinquency.
5. It is used as a means of verification or confirmation of public documents.
6. It is used as records in the police departments and other law enforcement agency for the purpose of issuing clearance.
7. Modern technology utilizes fingerprints in opening of locks or doors leading to confidential matters.
8. It is used as a means in checking or verifying entry of authorized personnel on certain business establishments.

Learning Assessment:

1. Explain the principles of fingerprint identification.
2. Discuss the fundamental layers of friction skin.



3. Activity Sheet No. 1. Draw or paste picture (Fundamental Layers of Friction Skin); used long bond paper.

Module 3

Lesson 1: The Fingerprint Patterns

Objectives: At the end of the lesson the student will be able to:

1. Determine the different kinds of fingerprint patterns.
2. Sketch or illustrate the patterns found in fingerprints.
3. Differentiate between each type of fingerprint.

Prior to the start of the new lesson, complete the following pre-test questions:

1. Can you give at least five finger print examples?
2. Identify each name by drawing five finger print examples.
3. Can you distinguish between an ulnar and radial loop?

They are as follows:

Arch (5%)	Loop (60%)	Whorl 35%)
Plain Arch	Radial Loop	Plain Whorl
Tented Arch	Ulnar Loop	Central Pocket loop
		Double Loop Whorl
		Accidental Whorl

2. The Basic Fingerprint Pattern Types:

A. Arch

1. **Plain Arch** is a pattern in which the ridges flow from one side to the other or flows towards the without recurving., usually having a slight upward curve in the center, making the pattern like an arch. No core and no delta.

Plain Arch



<https://www.google.com/imgres?q=fingerprint%20pattern>

Tented Arch



<https://www.google.com/imgres?q=fingerprint%20pattern>

2. **Tented Arch** is a type of pattern where majority of the ridges form an arch. It only differs from plain arch when one or more ridges at the center shape a tent or make a rise giving the pattern of a "Tet, giving an angle of 90 T degrees or less, or one with an up trust having an angle of 45 degree or more, or a pattern similar to a loop but lacking one or two of its essential elements.

B. LOOP is a pattern in which one or more of the ridges enters on either side of the impression, then turn or makes a recurve, passing or touching an imaginary line drawn between the delta and core, then flow toward the same side of the impression from where the ridges entered.

Two Divisions Of A Loop Pattern:

The two divisions of a loop were based on the fact that every human being has in their forearm two large bones extending from the elbow to the wrist. One is the radius bone or the inner bone of the forearm that runs to the wrist on the side where the thumb is located. The other one also running to the wrist is located or situated on the little finger and this is the ulna bone

Requisites of a loop pattern:

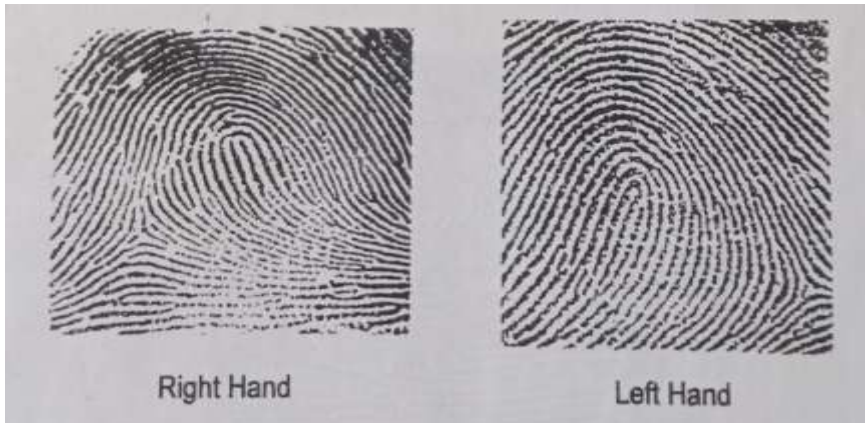
- a. It must have a delta
- b. It must have a core
- c. It must have a recurving ridge that passes between the delta and core.
- d. It must have a ridge count of at least one

1. **Radial Loop** is a loop in which the downward slope or the slanting ridges run towards the direction of the thumb.



<https://www.google.com/imgres?q=fingerprint%20pattern>

2. **Ulnar loop** is a loop in which the slanting ridges run towards the direction of the of the little finger. In other words, to differentiate a radial from an ulnar loop in the plain impression it is important to know from what hands it was taken.



<https://www.google.com/imgres?q=fingerprint%20pattern>

1. **Plain Whorl** is a pattern consisting of two deltas and which at least one ridge makes a turn through one complete circuit. An imaginary line drawn between the two deltas must touch or cross at least one of the recurving ridges within the pattern area. The pattern could be a spiral, oval, circular or any variant of a circle.



<https://www.google.com/imgres?q=fingerprint%20pattern>

C. WHORL refers to the pattern consisting of a core and Two (2) or more deltas **PLAIN WHORL (Symbol W)**

Elements of Plain Whorl:

- a. A complete circuit
 - b. Two deltas
 - c. At least one circuiting ridge is touched or crossed by an imaginary line traversing between the two deltas.
2. **Central Pocket Loop Whorl** is a pattern which possess two (2) deltas, with one or more ridges forming a complete circuit which maybe oval, spiral, circular or any variant of a circle; or it is a pattern consisting of two deltas, with one or more recurving ridges with an obstruction at right angle to the inner line of flow, between which an imaginary line would touch or cross no recurving ridge within the inner pattern area.



<https://www.google.com/imgres?q=fingerprint%20pattern>

Central Pocket Loop Whorl (Symbol C)

Elements of Central Pocket Loop Whorl:

- a. At least one recurving ridge or obstruction at right angle
 - b. Two deltas
 - c. No recurving ridge within the pattern area is touched or cross by an imaginary line drawn between the two deltas.
- 3. Double Loop Whorl** is a pattern consisting of two separate and distinct loop formation, with sets of shoulders and two deltas. The loops do not necessarily have to be of the same length and size.



<https://www.google.com/imgres?q=fingerprint%20pattern>

Double Loop Whorl (Symbol D)

Elements of Double Loop Whorl:

- a. Two separate loop formation
- b. Two separate and distinct sets of shoulders
- c. Two deltas

Types of core formation which *are not included* in the double loop whorl:

1. The "S" type core

2. The interlocking type core

3. The formation of a loop inside another loop.

4. **Accidental Whorl** is a pattern consisting of a combination of two different types of patterns such as a loop and a whorl, a loop and a central pocket loop, or any combination of two different loop and whorl type pattern, but it cannot be a combination of a plain arch with any other pattern. it can have two or more deltas.



<https://www.google.com/imgres?q=fingerprint%20pattern>

Accidental Whorl (Symbol X)

Elements of Accidental Whorl:

- a. Combination of two different type of pattern with the exceptions of the plain arch
- b. Two or more deltas.

Learning Assessment:

Activity Sheet No. 2 THE FINGERPRINT PATTERNS (Draw all the types of fingerprint pattern and give the meaning).

Module 4.

Lesson 1: RIDGE CHARACTERISTICS/Core and Deltas

Objectives: At the end of the lesson the student will be able to:

1. Identify the various ridge kinds.
2. Recognize and depict different ridges.
3. Talk about the guidelines for core and delta placement.

Before a new class begins, complete the following pre-test questions:

1. List at least ten different kinds of ridge characteristics and provide examples.
2. What factors are taken into account while determining the precise locations of the finger print core and deltas?

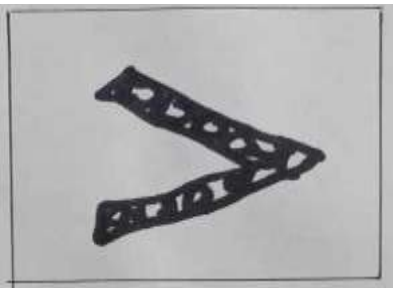
Ridge characteristics:

1. **Bifurcation** is a single ridge that divides itself into two or more branches. It is sometimes called as fork, making its impression.



<https://www.google.com/imgres?q=ridge%20characteristics>

2. **Converging Ridge** is a ridge formation characterized by a closed angular end and serves as a point of convergence (meeting of two ridges that were previously running side by side).



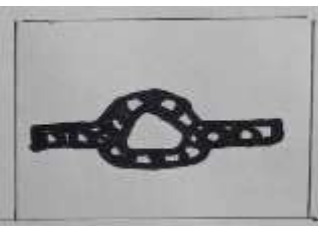
<https://www.google.com/imgres?q=ridge%20characteristics>

3. **Diverging Ridge** are two ridges that are flowing side by side and suddenly separating or spreading.



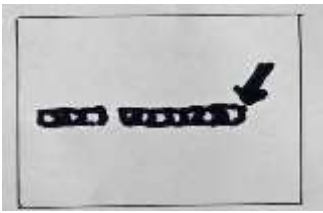
<https://www.google.com/imgres?q=ridge%20characteristics>

4. **Enclosure or Lake or Eyelet** is a ridge that divides into two branches and meets to form the original ridge.



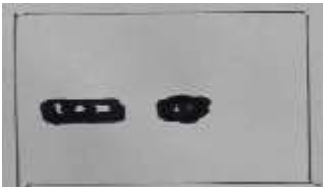
<https://www.google.com/imgres?q=ridge%20characteristics>

5. **Ending Ridge** refers to an end point of a ridge, or a ridge with abrupt ending.



<https://www.google.com/imgres?q=ridge%20characteristics>

6. **Islands or Dots** is a ridge that resembles a dot, fragment or a period.



<https://www.google.com/imgres?q=ridge%20characteristics>

7. **Type Lines** are basic boundaries of fingerprint patterns. They are the two innermost ridge that are running parallel or nearly parallel with each other which diverge at a certain point tending to surround the pattern area.



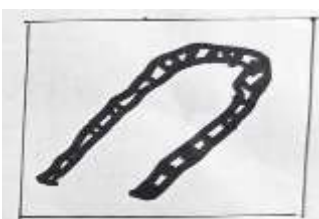
<https://www.google.com/imgres?q=ridge%20characteristics>

8. **Pattern Area** is the part of the fingerprint that lies within the area surrounded by the type lines. It is where the core, delta and other ridge characteristics used for classification can be found.



<https://www.google.com/imgres?q=ridge%20characteristics>

9. **Recurving Ridge or Looping Ridge** is a kind of ridge formation that curves back in the direction from which it started. It looks like a hair pin.



<https://www.google.com/imgres?q=ridge%20characteristics>

10. **Sufficient Recurve** is a recurving ridge complete in its shoulder and its free from any appendage.



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11. **Appendage** is a short ridge found at the top or at the summit of a re-curving ridge.



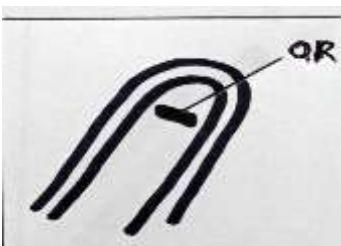
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12. **Rod or Bar** is a short or long ridge found inside the innermost recurving ridge of loop pattern.



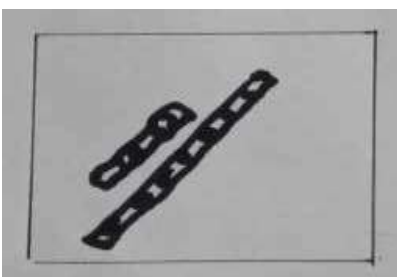
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13. **Obstructing Ridge** – is a short ridge found inside the innermost recurving ridge that spoiled the inner flow towards the center of the pattern.



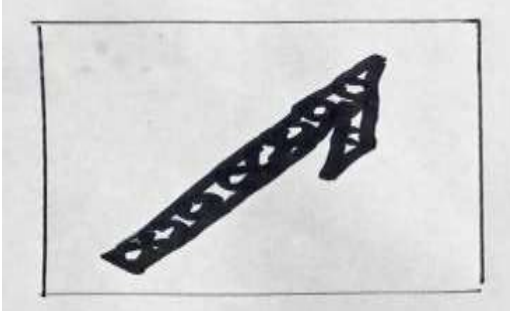
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14. **Long Ridge** literally is a type of horizontal or vertical ridge similar to rod or bar.



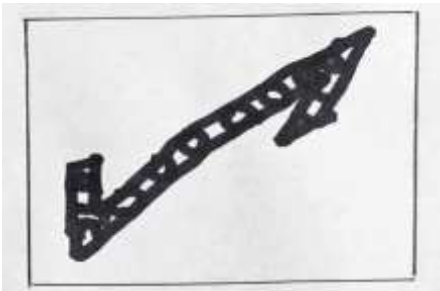
<https://www.google.com/imgres?q=ridge%20characteristics>

15. **Hook** is a type of ridge which has an angular ridge attached at the end of the ridge.



<https://www.google.com/imgres?q=ridge%20characteristics>

16. **Contra Hook** is a ridge that have two hooks at the bottom and to the end.



<https://www.google.com/imgres?q=ridge%20characteristics>

Learning Assessment:

Activity Sheet No. 3: The Ridge Characteristics

Illustrate each ridge characteristics and define each, write this in a one whole piece of yellow pad.}

Lesson 2: DELTAS AND CORE

Objectives: At the end of the lesson the student will be able to:

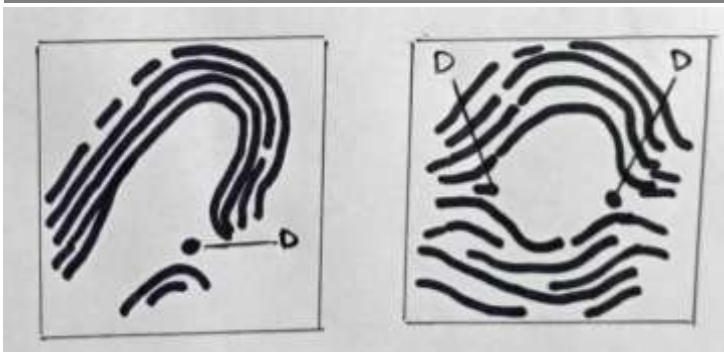
1. Explain the differences between the core and the delta.
2. Find the precise locations of the core and delta.
3. Using the guidelines for the precise location of the delta and core, provide examples or illustrations.

Pretest: Respond to the following initial inquiries:

1. What do you mean by the finger print pattern's core and deltas?
2. Are you able to depict and pinpoint the precise locations of cores and deltas? **Deltas and Core**

The Focal Points of Fingerprint Classification Also known as the *fingerprint terminus*.

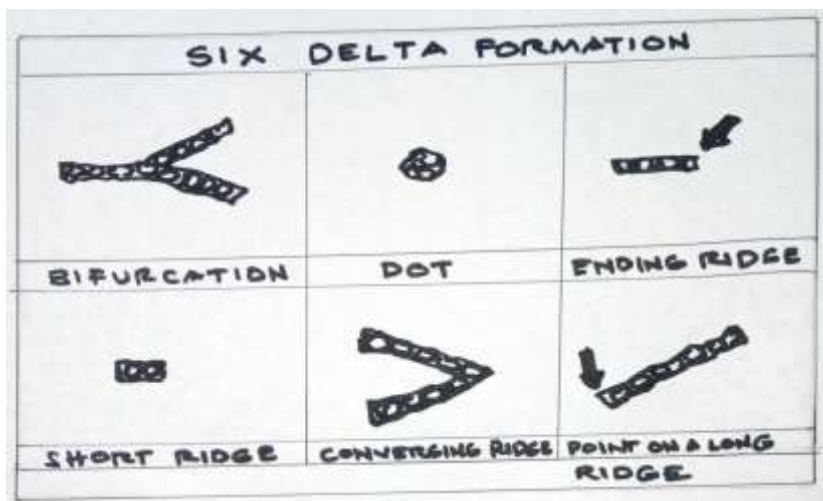
1. **DELTA** - is a point on the first ridge formation located directly at or in front of and nearest the center of the divergence of the type lines. The term "delta" is an old Greek Word. The original English meaning of the word refers to a deposit of earth at the mouth of a river.



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Six Delta Formation

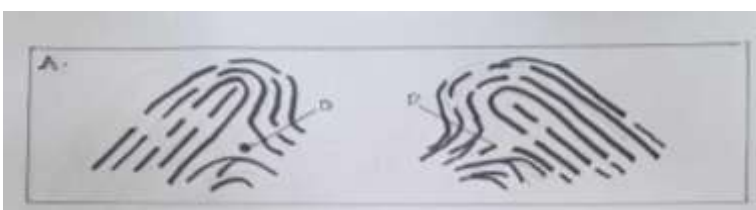
1. A bifurcating ridge
2. A dot
3. An ending ridges
4. A short ridge
5. A converging ridge
6. A point on a long ridge



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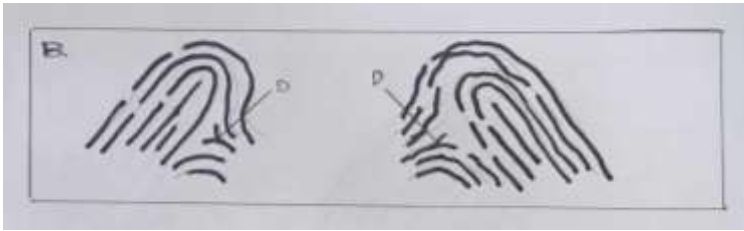
Rules governing the choice between two or more possible deltas:

1. A bifurcation may not be selected as a delta if it does not open towards the core.



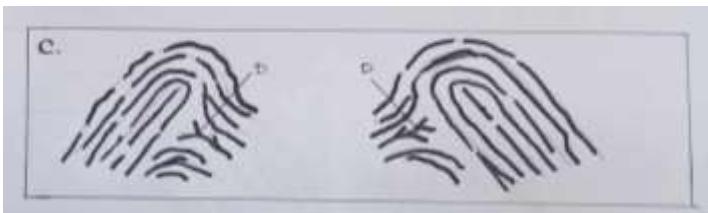
<https://www.google.com/url?sa=i&url=https%3A%2F%2Faccessdl.state.al.us>

2. A bifurcation should be the first ridge formation in front of the divergence of the type lines and it must open toward the pattern area.



<https://www.google.com/url?sa=i&url=https%3A%2F%2Faccessdl.state.al.us>

3. When there is a choice between two or more possible delta, the one nearest to the core will be selected.



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4. When there is a choice between two or more possible delta one of which is a bifurcation, the bifurcation should be selected.



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5. The delta may not be located on the middle of the ridge running between the type lines towards the core, but at the end of the that ridge.



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6. When a pattern shows a series of bifurcation opening towards the core at the point of divergences of the type lines, the bifurcation nearest the core is chosen as the delta. In case of a ridge near the center of the type lines despite several bifurcating ridge opening towards the core, the delta is located at the point of the first bifurcation just in front of the divergence of the type lines.



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7. When can a bifurcation be considered a type line?

The two legs of a bifurcation will serve as type lines when it opens towards the core, but it should be so far outside the pattern area that the legs of the bifurcation run parallel some distance before they diverge.



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Learning Assessment:

Activity Sheet No. 4: The Delta

Illustrate or draw the six-delta formation, according to its rules and give three examples each.

Lesson 3: RULES GOVERNING THE LOCATION OF A CORE

Objectives: At the end of the lesson the student will be able to:

1. Find the core's proper location.
2. Provide examples of how to locate the core using the rules.

Pretest: Respond to the following initial inquiries:

1. List at least three guidelines that should be followed while choosing a core.
2. What rule applies when choosing a core for an odd or even number of rods?

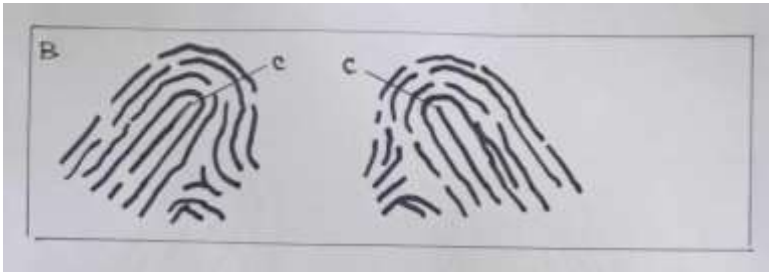
CORE - in a loop pattern are formed in a variety of ways but are always found on or within the innermost looping or recurving ridge.

1. The core on the shoulder of the recurving ridge further from the delta.



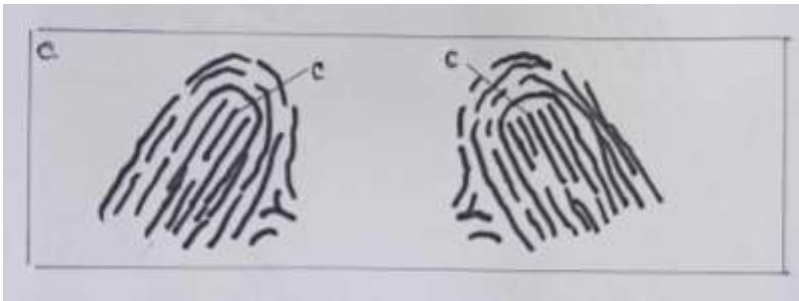
<https://www.google.com/url?sa=i&url=https%3A%2F%2Faccessdl.state.al.us>

2. When an innermost recurving ridge contains a rod or an ending ridge rising as high as the shoulders of the loop, the core is placed on the summit of the rod



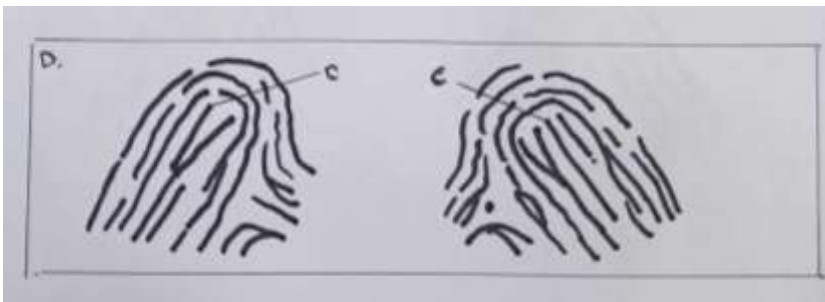
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3. When the innermost recurving ridge contains an uneven number of rods rising as high as the shoulder line or even higher the core is placed upon the end of the center ridge whether it touches the innermost recurved or not.



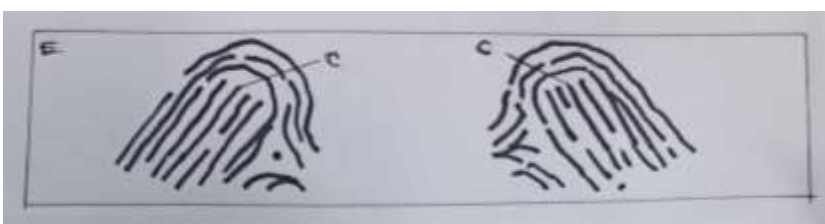
<https://www.google.com/url?sa=i&url=https%3A%2F%2Faccessdl.state.al.us>

4. When the innermost recurved contains an even number of ridges which are rising as high or higher than its shoulder line or even higher the core is placed upon the end of the center ridge whether it touches the innermost recurved or not.



<https://www.google.com/url?sa=i&url=https%3A%2F%2Faccessdl.state.al.us>

5. When the innermost recurve contains an even number of ridges which are rising as high or higher than its shoulder line, of the two-central ridge, the core is placed upon the end of the second ridge which is farther from the delta.



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Learning Assessment:

Activity Sheet No. 5: The Core

Give the rules and draw at least three examples each.

Module 5.

Lesson 1: RIDGE COUNTING

Objectives: At the end of the lesson the student will be able to:

1. Identify the ridge counting rules.
2. Follow the guidelines for correctly illustrating ridge counting.
3. Show at least three finger print examples with varying ridge counts.

Pretest: Respond to the following inquiries for your evaluation:

1. When processing a finger print for ridge counting, what factors should be taken into account?
2. Does ridge counting have the potential to be used in a whorl pattern as well?

Ridge Counting is the process of counting the ridges that touch or cross an imaginary line drawn between the delta and core of a loop. A wide space must always intervene between the delta and the first ridge to be counted.



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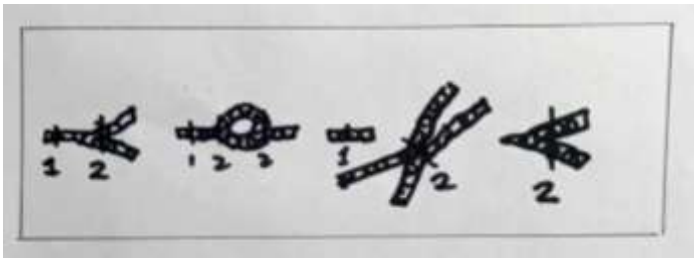
Rules in Ridge Counting

- a) Locate the exact points of the core and delta.
- b) Count all ridges which touch or cross an imaginary line drawn between the core and the delta. (In actual used of fingerprint card for classification, the lens is guided by a red line shown on the disk.
- c) Incipient ridges are never counted no matter where they appear, the general rule is that in order to be counted, the width of the ridge must be equal to the width of the other ridges in the pattern under consideration.

Ridges Subject to Ridge Counting:

- a. A ridge island or a dot gives one ridge count
- b. A short ridge is given one ridge count

- c. A long ridge is given one ridge count
- d. An abrupt ending is given one ridge count
- e. A bifurcating ridge is given two-ridge count when it was cross in the opening or at the center of the bifurcation.
- f. Ridge enclosure is counted as two ridges.
- g. Cross crossing or meeting of two ridges is counted as two.



<https://www.google.com/imgres?q=ridge%20count%20fingerprint&imgurl=https%3A%2F%2Fforensicreader.com>

Learning Assessment:

Activity Sheet No. 6: Ridge Counting

Draw 5 examples of ridge counting; include the meaning and rules.

Module 5

Lesson 2: RIDGE TRACING

Objectives: At the end of the lesson the student will be able to:

1. Determine the procedure on how to make a ridge tracing.
2. Differentiate the three types of ridge tracing.
3. Draw three examples each of different ridge tracing.

Pretest: answer the following preliminary questions:

1. Why there is a need to conduct a ridge tracing?
2. What are the three types of ridge tracing?

Ridge Tracing

It is the process of counting the ridges intervening between the tracing ridge (flows from the left delta to the right delta) and the right delta. This process is used to determine the three (3) subdivisions of whorls into inner, outer and meeting which is represented by capital I, M and O.

Rules in Ridge tracing:

- a) Look for the left delta and traced the delta towards the front of the right delta.

- ### Types of Whorl Tracing:

- <https://www.google.com/imgres?q=ridge%20count%20fingerprint&imgurl=https://www.researchgate.net/publication/325111117/figure/fig1/figure-figure1.png>

- <https://www.google.com/imgres?q=ridge%20count%20fingerprint&imgurl=https>

- <https://www.google.com/imgres?q=ridge%20count%20fingerprint&imgurl=https://www.researchgate.net/publication/326211117/figure/fig1/figure-pdf/5a900000-2211-4800-9000-000000000000/ridge-count-fingerprint.png>

Learning Assessment:**Activity Sheet No.7: THE RIDGE TRACING**

Draw 5 examples of ridge counting; include the meaning and rules.

Module 6.**Lesson 1. TECHNIQUE IN TAKING FINGERPINTS**

Objectives: At the end of the lesson the student will be able to:

1. Recognize the different fingerprint devices and understand how they work.
2. Learned the steps for taking fingerprints by heart.
3. Utilize each tool in the Criminology Forensic Laboratory to complete the necessary practical activities.

Pretest: respond to the introductory questions:

1. Do you have any experience taking or processing a person's fingerprints? Why, yes or no?
2. Do you know what the instruments used to take a finger print are?

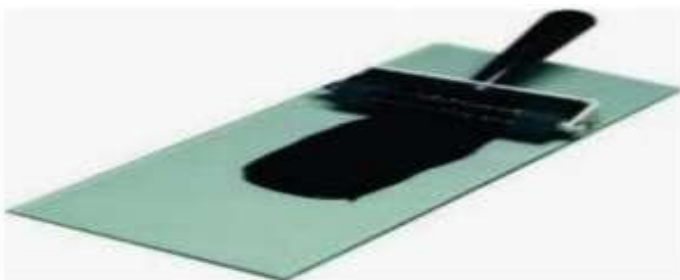
A. Fingerprint Laboratory Equipment

1. Ink Roller refers to an instrument used for spreading the ink into the slab.



<https://www.sirchie.com>

2. Ink Slab refers to a piece of metal or a plane glass with as much as 4 thick and 6 or more inches long where the fingerprint ink is distributed for fingerprinting.



<https://www.sirchie.com>

3. Card Holder refers to a gadget used for clipping the fingerprint card to avoid movement of the card during printing.



Fingerprint Card Hold...

<https://www.sirchie.com>

4. Fingerprint Ink refers to a specially manufactured ink for purposes of taking fingerprint. A printer's ink is sometimes used as a substitute.



SupremeInk Fingerprint...



Fingerprint Ink | Finge...

<https://www.sirchie.com>

5. Magnifying Glass refers to an instrument used for examination of developed prints:



<https://www.sirchie.com>

Two common types of magnifying lenses:

- a) Linen Tester is having an opening one-inch square, with fixed focus. and which can be folded and carried in the pocket when necessary.



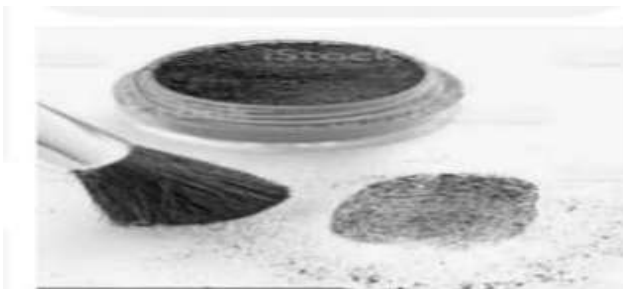
<https://www.sirchie.com>

- b) Bausch & Lomb Magnifier (also known as Horse Shoe Magnifier) is a magnifying glass with a built-in stand and an adjustable lens to suit the visual sight of the examiner.



<https://www.sirchie.com>

6. Fingerprint Powders refers to the powder used in developing latent prints found in the scene of crime; They are normally found in two: the black and the white or gray. which is applied depending upon the contrasting background.



<https://www.sirchie.com>

7. Fingerprint Brushes refers to an instrument used for powdering latent prints. There are three variations of brushes use the fiberglass, magnetic and feather type.



<https://www.sirchie.com>

8. Fingerprint lifting tapes refers to a tape used for lifting of developed latent prints which is quite harder than an ordinary tape. It has three varieties: the frosted, rubber and transparent.



<https://www.sirchie.com>

9. Latent Prints Transfer Cards =Refers to a card used in preserving lifted latent prints which is either white or black in background.

10. Fingerprint Cards refers to a piece of card used for recording the ten fingerprints for comparison. The usual size is 8"x8".



<https://www.sirchie.com>

11. Flash light refers to a device used for searching and focusing on developed latent prints.



<https://www.sirchie.com>

12. Roller or Tape Measure is a roll type by in measuring a crime scene sketch.



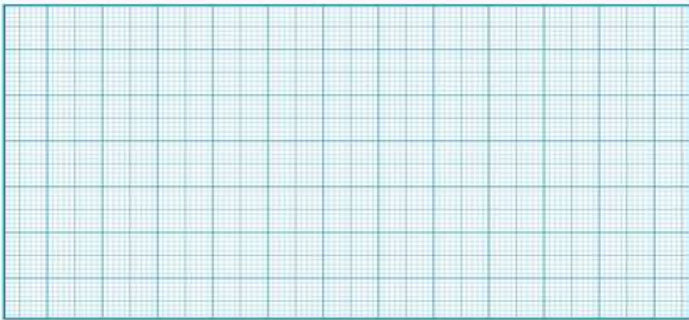
<https://www.sirchie.com>

13. Pair of forceps refers to an instrument used for picking up objects or taking evidence which should not be touched.



<https://www.sirchie.com>

14. Graph Paper is used for sketching purposes such as latent prints location, indicating measurements and exact location of objects.



<https://www.sirchie.com>

15. Evidence identification tapes or Tags are used to identify objects or physical evidence.



<https://www.sirchie.com>

16. Scissors refer to a simple instrument for cutting latent print tapes and for other purposes.



<https://www.sirchie.com>

17. Rubber Gloves are used to protect the technician's fingers from leaving his own prints on the object or on the scene.



<https://www.sirchie.com>

16. Post-Mortem Fingerprint Equipment refers to a set of equipment consisting of hypodermis syringe, spoon, tissue builder solvent, tissue cleaner etc. used for taking prints of dead persons.



<https://www.sirchie.com>

17. Carrying Case refers to a box-like structure or an attaché used for carrying necessary equipment at the scene of the crime.

18. Inkless Inking Device refers to a pore-ion pad sensitized fingerprint card purpose: not to stain the fingers. The finger is touched to the inkless pad and then to sensitized card and instantly a permanent readable print will be developed without staining the fingers of the subject.



<https://www.sirchie.com>

Lesson 2. Two types of prints found in a fingerprint card:

Objectives: At the end of the lesson the student will be able to:

1. Know the difference between rolled impression and plain impression of finger print.
2. Learn how to process finger printing in the fingerprint card using rolled and plain impression.



3. Determine the purpose of the two types of finger print impression.

Pretest: Answer the following questions for your assessment:

1. What do you understand by rolled and plain impressions of finger print?
2. What are the procedures in taking rolled and plain impression?

1. **Rolled Impression** is an impression made or place in the fingerprint card taken individually by rolling the ten fingers of the subject 180 degrees from tip to the second joints.

2. **Plain Impression** is an impression made simultaneously that serves as a reference impression.

Purpose of the plain impression:

- a) To serve as a guide in checking the rolled impression, whether or not the rolled impression was properly place on their respective boxes.
- b) To check on the ridge characteristics of the plain impression, if the rolled impression is somewhat faint, or indistinct due to the bad condition of the friction skin either temporary or permanently deteriorated or in case of a doubtful or questionable print.

Scientific way of taking Finger Prints:

1. Prepare the Set-up for printing (e.g., the table, the ink slab, the roller, the fingerprint card the card holder and the ink.
2. Clean the inking slab thoroughly before spreading the ink.
3. Place a small amount of fingerprint ink on each side of the slab and in the center, then start spreading the ink using the roller back and forth until the ink is evenly distributed.
4. To check whether or not the ink was spread properly or whether it is enough or not, try to print one of your fingers or put the slab near the light and if brownish reflection is observed it means you have a good ink for used.
5. Place the fingerprint card on the cardholder properly to ensure that proper entry will be easy.
6. Check the hands of the subject: Make sure that it is clean and dry. If it is perspiring freely, wipe them off with a soft, clean cloth dampened with alcohol.
7. The technician should stand at the left of the subject in taking the right-hand impression and take the right side in taking the left-hand impression of the subject.
8. Subject should be instructed to stand straight but relax and not to assist the technician in rolling his finger. Subject should be standing not too close or too far facing the ink slab.
9. In taking the rolled impression, technician should place first the right thumb to be rolled towards the body of the subject will the other finger not in use is either folded or closed. Then inked the remaining fingers (Index, middle, ring and little finger) and rolled it away from the body of the subject. Make sure to roll the finger from the tip down to the beginning of the next joint, and from one side of the nail to the other (180 degrees).
10. The same should be done in the left hand only that the technician will turn to the right of the subject.
11. Apply only moderate amount of pressure in printing subjects' fingers to avoid blurred prints but hold the subject's hand firmly so as to prevent pulling that may cause smeared impression.



12. To obtain the plain impression, all the fingers of the right hand should be pressed lightly upon the inking plate, then press simultaneously upon the lower right hand of the card and do the same to the left hand.

Learning Assessment:

1. Name at least (5) fingerprint equipment and discuss its function?
2. Differentiate between rolled and plain impressions?
3. **Activity sheet No. 8 TECHNIQUES IN TAKING FINGERPRINT**

Instructions: Make a hand print and finger print impression on a bond paper using any mediums, such as ink, paint, floor wax, etc.)

Module 7.

Lesson 1. Classification of Fingerprints

Objectives: At the end of the lesson the student will be able to:

1. Determine the process of blocking a fingerprint pattern.
2. Identify the different types of fingerprint pattern.
3. Draw examples of illustrations based on the different classification formula.

Pretest: Answer the following questions:

1. What do you understand by process of blocking of finger print?
2. What are the six types of finger print classification?

A. Preliminary to Classification of prints:

1. Check whether the rolled fingerprint impression was affixed in their proper place in the fingerprint chart using the plain impression as the guide.

Blocking the fingerprint is the process of writing below each pattern the corresponding symbols of the fingerprints in the space provided for each pattern.

Symbols of fingerprint patterns:

Plain Arch ----- A

Tented Arch. ----- T

Radial Loop (\) for left hand-

Plain Whorl ----- W

(/) for right hand

Central Pocket Loop----- C

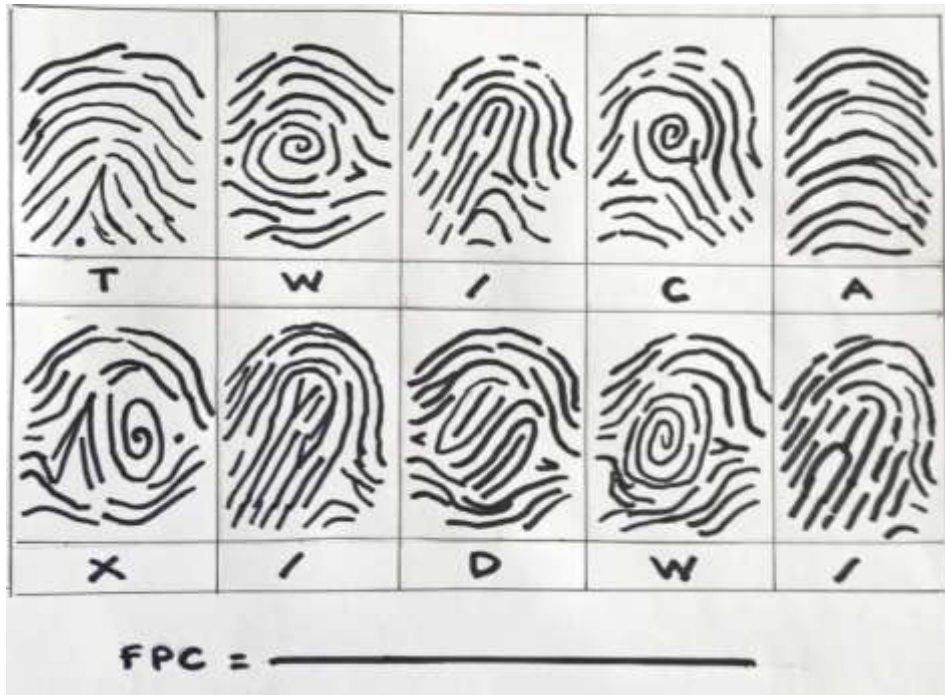
Ulnar Loop (/) for left hand.

Double Loop Whorl----- D

(\) for right hand

Accidental Whorl ----- X

Example of Blocking:



Lesson 2. The Fingerprint Classification Formula

Objectives: At the end of the lesson the student will be able to:

1. Determine how to apply the different types of finger print classification formulas.
2. Illustrate one example each of the types of finger print formulas.

Pretest: Answer the following preliminary questions:

1. What is Key division formula?
2. Is the primary division applied only to whorl pattern? Yes or No, why?
3. Why is it that the two little fingers are not included in locating the key division formula?

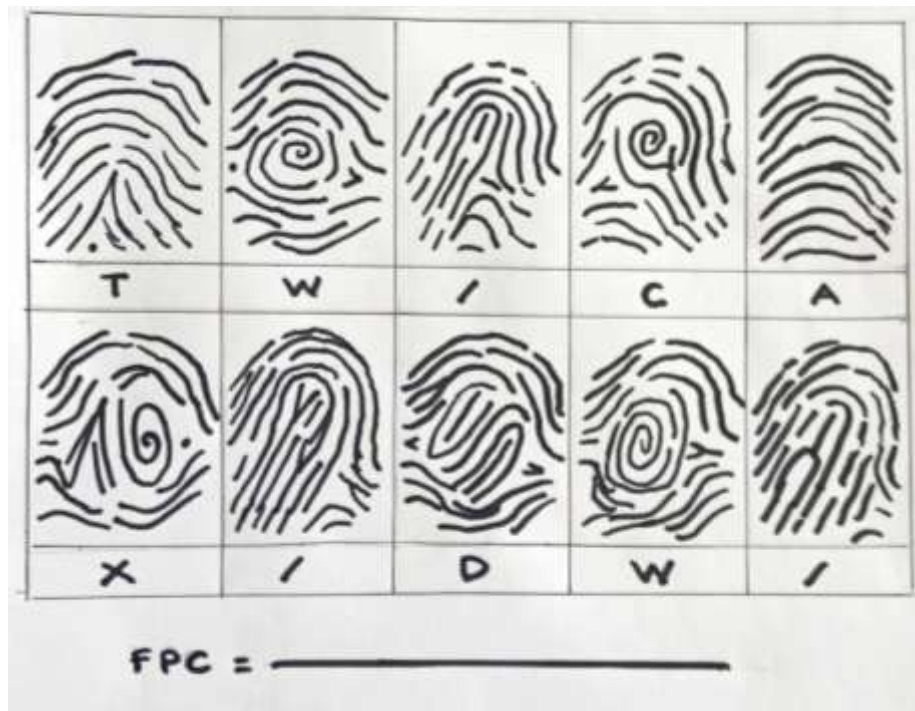
The Fingerprint Classification Formula

1. Key Division is represented by numerical value resulting from the first ridge counted loop.
2. Major Division just the same as the sub-secondary only differ in the ridge counting which resulting to S, M, L system but whorl tracing remains the same. The I, M, O system.
3. Primary Division is represented by numerical value.
4. Secondary Division is consisting of Capital and small letters.
5. Sub-Secondary Division is the product of ridge counting and ridge tracing resulting to I, M, O system.
6. Final Division is represented by number value as a result of ridge counting both whorl and loop of the little finger.

Key: This division is derived by getting the ridge count of the first loop formation appearing in the ten fingers except the two little fingers, and the result will be exhibited at the left most top corner of the classification line.



Take note that it is only one and it should be a numerator not a denominator. In case of absence of loop, the first whorl will be ridge counted following the rules of ridge counting a whorl under final division. (sample illustration below):



ANSWER: FPC = 1

Learning Assessment:

Activity No. 9 The Key Division Formula (Make At Least Two Tables Of Illustration).

Module 8.

LESSON 1. Major Division Formula

Objectives: At the end of the lesson the student will be able to:

1. Memorized the table intended for loop patterns in the major formula.
2. Identify the ridge tracing applied to whorl patterns.
3. Make or illustrate at least two tables using the major formula.

Pretest: Answer the following preliminary questions:

1. What is the process in determining the major division formula?
2. When is the Table B values applied for?

Major Division - Is similar in process as the sub secondary division though it is applying to the thumbs only and ridge counting has been modified.

1. Whorl Patterns = Ridge tracing = I, 0, M.
2. Loop Patterns = Ridge Counting S, M, L.
3. Arch Patterns = Dash ()



Tables for Loop patterns:

Table A

Table B -1

1-11 S

1-17 S

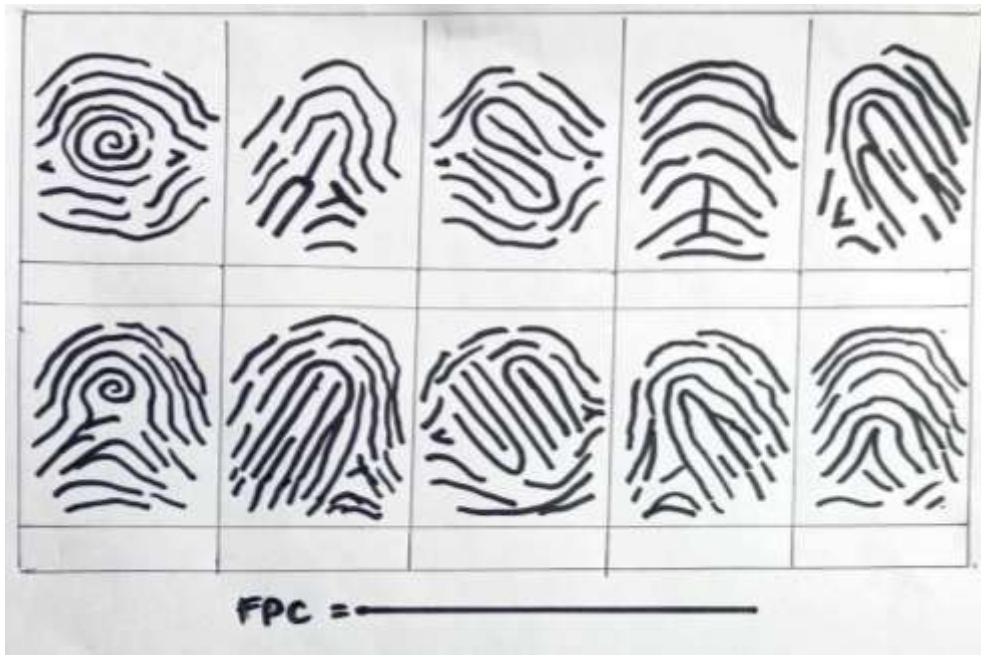
12-16 M

18-22 -M

17 or more = L

23 or more =L

Table A is used both on the left thumb and right thumb if they are both loops and the ridge count of the left thumb does not reach or exceed 17. If the left thumb reached 17 or more, it is classified, as **Exceptional**, and the Table B will now be used only for the right thumb.



ANSWER: FPC = 1 M
M

Learning Assessment:

1. Activity Sheet No. 10 THE MAJOR DIVISION FORMULA (make two tables of example).

Module 9.

Objectives: At the end of the lesson the student will be able to:

1. Learn how to compute for primary division formula.
2. Illustrate at least two tables' samples using the rules in the primary division.

Pretest: Answer the following preliminary questions:

1. What are the steps to be followed in looking for the primary division?
2. What finger prints have no values in the primary division formula?

Primary Division is the sum of all the numerical value assigned to whorl appearing in the fingerprint card expressed as numerator and denominator plus (=) the pre-established fraction of 1/1 to complete the primary division. It is that division of the fingerprint classification that is always represented by a numerical value.

Steps to be followed:

a. Look for the whorl patterns only.

b. Paring of the ten (10) finger print impression into five (6) groups that is:

Pair 1 Right thumb and right index (FINGER 1 AND 2)

Pair 2 Right middle and right ring (FINGER 3 AND 4)

Pair 3 Right little and left thumb (FINGER 5 AND 6)

Pair 4 Left index. And left middle (FINGER 7 AND 8)

Pair 5 Left ring and left little (FINGER 9 AND 10)

C. Assigning of Numerical Value:

(1) Patterns with numerical value = All Whorls such as plain, central double and accidental whorl)

(2) Patterns without numerical value The loops (radial and Ulnar) and the Arch (plain and tented arch).

Pair 1 16

Pair 4 = 2

Pair 2 = 8

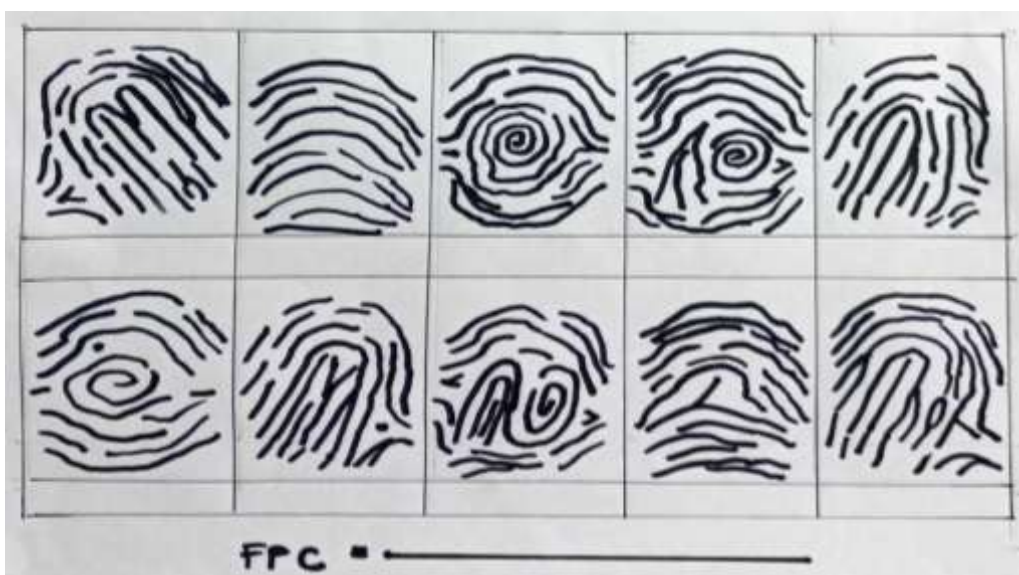
Pair 5 = 1

Pair 3 = 4

d. Determining the numerators and the denominators

(1) Numerators are fingers with even numbers such as 2, 4, 6, 8, 10.

(2) Denominators are fingers with odd numbers such as 1, 3, 5, 7, 9.



ANSWER: FPC = 4 S 15

**Learning Assessment:**

Activity Sheet No. 11 THE PRIMARY DIVISION FORMULA (make your own illustrations, at least two tables of examples).

Module 10.**LESSON 1: Secondary Division Formula**

Objectives: At the end of the lesson the student will be able to:

1. Determine the process of calculating the secondary division formula.
2. Make at least two tables of illustrations using the formula on secondary division

Pretest: answer the following questions:

1. Give the procedures in obtaining the secondary division formula?
2. What finger print are assigned in small letter values, how about the big letter values?

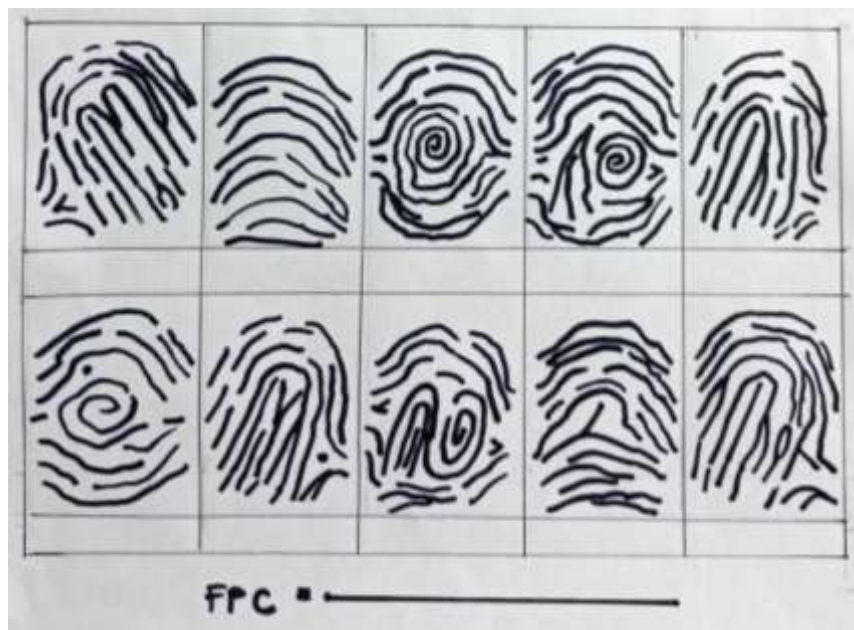
The Secondary Division

This division is obtained by writing (copying) the Capital letter symbols (taken from the index fingers) and the small letters (from the thumb, middle, ring and little fingers) The letters include the following:

Capital Letters

All letters appearing at the index finger with the right index as the numerator and left index as the denominator. (A, T, U, R, W, C, D, X).

Small letters (rat) - only letters r (radial), a (plain arch) and t (tented arch) is included.



ANSWER: FPC = 4 S 15 - A - - r

M 19 - U - t -

**Learning Assessment:****1. Activity Sheet No. 12 THE SECONDARY DIVISION FORMULA (make two examples).****Module 11.****LESSON 1: Sub-secondary Division Formula**

Objectives: At the end of the lesson the student will be able to:

1. Memorized the table values intended for loop patterns.
2. Illustrate at least two tables using the sub-secondary formula.

Pretest: answer the following initial assessment:

1. What do you understand about sub-secondary division formula?
2. How will you compute for the values of sub-secondary division?

Sub Secondary Division is derived by ridge counting a loop and ridge tracing a whorl appearing at the Index, Middle and Ring fingers only. It is represented by only letters using the I- M-O System for the Whorl and the I-O (inclusive/ Outer) System for the Loop. It only shows that arches (plain and tented arch) are not included in the ridge counting and tracing but it is represented by a symbol dash (-).

Whorl Patterns: Plain, Central, Double or Accidental whorls will be ridge traced and the result will either be Inner (I), Outer (O) or a Meeting (M).

Loop Patterns: Radial and Ulnar will be ridge counted and the answer will be dependent on what finger they appear.

Index finger 1-9 = I

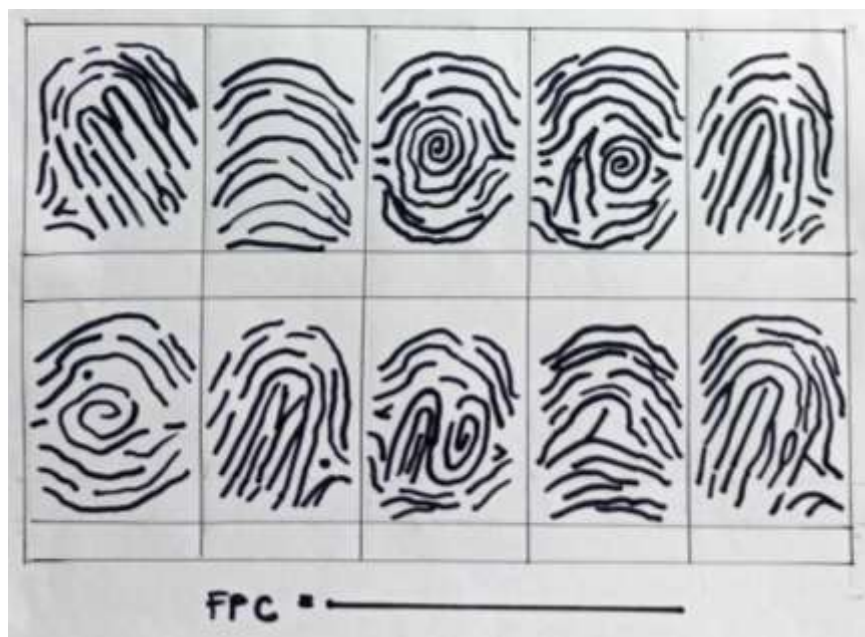
Middle Finger 1-10 = I

Ring Finger 1-13 = I

10 or More = O

11 or more = O

14 or more = O



ANSWER: FPC = 4 S 15 - A - - r - MM
M 19 - U - t - IM-

**Learning Assessment:**

1. Activity Sheet No. 13 THE SUB-SECONDARY DIVISION FORMULA (give at least two tables of examples).

Module 12.**Lesson 1: Final Division**

Objectives: At the end of the lesson the student will be able to:

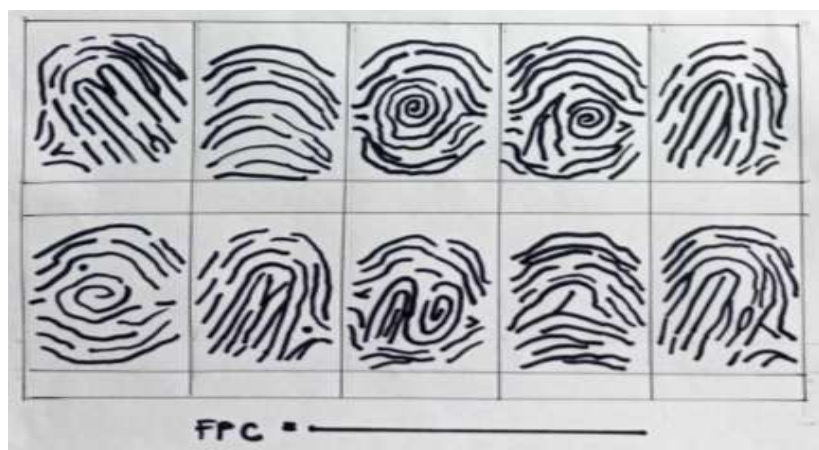
1. Learn how to calculate the value for final division.
2. Draw or illustrate at least two table samples using the final division formula.

Pretest: Answer the preliminary questions for your assessment:

1. Discuss the procedure in taking the final division formula?
2. How will you treat the whorl and loop pattern in obtaining the final division?

Final Division is the division in the classification formula that is derived from the two (2) little fingers; The results of the ridge counting of a loop or Whorl will be exhibited at the extreme right corner of the classification line. Take note that whorl will be ridge counted not to be ridge trace.

1. Loops= to be ridge counted in its conventional way.
2. Whorls
 - a) Plain whorl and Central pocket loop will be treated as ULNAR loop for purposes of ridge counting.
 - b) Double loop whorl will be ridge counted as to its top loop.
 - c) Accidental Whorl will be ridge counted in all but the least ridge counts will be used.



ANSWER: FPC = 4 S 15 - A - - r -MM 3
M 19 - U - t - IM- 4

Learning Assessment:

1. Activity Sheet No. 14 THE FINAL DIVISION FORMULA (give at least two tables of examples).

**Module 13. Classification of Amputated Finger/s:**

Objectives: At the end of the lesson the student will be able to:

1. Determine how to calculate the values for amputated fingers.
2. Make an illustration using different rules applied on cases of amputated fingers.

Pretest: answer the following assessment:

1. Are amputated fingers still being process in the classification of finger print formula? Yes or no, why?
2. What are the values assigned if all the fingers of both hands are missing?

Classification of Amputated Finger/s:

- a) In case of missing one or more finger on the same hand, the pattern of the corresponding digit of the other hand will be taken.
- b) When one or more fingers of both hands are missing, the said same fingers will be arbitrarily be interpreted as Plain Whorl with meeting as tracing.
- c) When all fingers of both hands are missing, they are all to be considered as Meeting Plain Whorl.

Sample illustration rule no. 1

(AMPT.)				
C	W	A	/	T
C	A	/	D	X

FPC = -----

Sample illustration rule no. 2

(AMPT.)	(AMPT.)			
C	C	W	W	T
C	C	T	/	D

FPC = -----

Sample illustration rule no. 3

(AMPT.)	(AMPT.)	(AMPT.)	(AMPT.)	(AMPT.)
W	W	W	W	W
(AMPT.)	(AMPT.)	(AMPT.)	(AMPT.)	(AMPT.)
W	W	W	W	W

FPC = -----

**Learning Assessment:**

Activity Sheet No. 15 CLASSIFICATION OF AMPUTATED FINGERS (make one table example for each rule).

Assessment:

Assignment Output (activity sheet)	20%
Quizzes	20%
Periodic Examination	<u>60%</u>
Total	= 100%

References

1. The Basics of Fingerprint, Veneranda Poschor-Depayso (Third Edition, 2025)
2. Dactyloscopy Manual and Workbook, Jonah B. Badua (2023).
3. Personal identification Techniques, Dr. Rhem Rick N. Corpuz and Dr. Jezreel B. Vicente (2025 Edition). <http://www.forensicsciencesimplified.org>
5. Fingerprints- Interpol <https://www.interpol.int>. forensics 2021
6. Personal Identification Techniques: Forensic Fingerprint Examination, Dr. Joar V. Uy (2024).

Evaluation of Self-Instructional Module

The table below presents the results of the evaluation of the Self-Instructional Modules in Forensic 2. The evaluation of the SIMs assessed the modules in terms of its objectives, contents, format and language, presentation, and usefulness.

Table 1. Evaluation of Self-Instructional Modules in Forensic 2 (Personal Identification).

Aspects of the Module	Mean	Interpretation	Overall Mean	Interpretation
Objectives	4.70	Excellent	4.62	Excellent
Contents	4.50	Excellent		
Format and Language	4.67	Excellent		
Presentation	4.50	Excellent		
Usefulness	4.73	Excellent		

With a mean score of 4.70, the evaluation of the Self-Instructional Modules in Forensic 2 (Personal Identification) is excellent in terms of its goals, according to the table above. This indicates that the assessors verified that the modules' goals are behaviorally explicit, well-planned, articulated, and well-organized; they are also specified, measurable, and achievable; they are pertinent to the subject matter of each module lesson; and they consider the requirements of the students.

The results showed a mean of 4.50 for the module contents, which is considered excellent. This rating attested to the fact that the modules' content is straightforward and easy to understand, that each lesson's topic is

covered in detail, that topics are backed up by (illustrative) examples, that practice tasks are appropriate for the students' comprehension level, and that each topic receives equal attention throughout the lesson. The statistics showed a mean of 4.67 for the courses' language and format, which is considered excellent. This indicates that the language and structure of the modules are well-structured, which adds interest to the lesson; the language is clear and concise; the ideas, concepts, and points are easy to understand; and the instructions in the instructional modules are clear and simple to follow.

The results indicated a mean of 4.50, which is considered outstanding for presenting. This demonstrates that the created and planned modules are presented in a logical and sequential order; that the lessons are presented in a distinctive and original way; that the learning activities are presented in an understandable manner; that each lesson is presented in a way that is appealing and engaging for the students; and that sufficient examples are provided for every topic.

Results indicated that the module's mean usefulness score was 4.73, which is considered excellent. This indicates that the course's instructional modules will encourage students to learn, help them grasp the material at their own pace, help them manage their time effectively, help them develop their analytical thinking and reasoning skills, and serve as supplemental material to meet their needs.

Overall, the results showed an overall mean of 4.62, meaning that the evaluators gave the modules outstanding ratings for all of their different characteristics. This suggests that the modules created and crafted for the Forensic 2-Personal Identification course are of high caliber and suitable for the students' educational needs.

CONCLUSIONS

Based on the findings of the study, conclusion was formulated:

The Self-Instructional Modules in Forensic 2 – Personal identification were excellently designed and developed and of excellent quality. Thus, this means that the modules can be utilized and are useful in delivering instruction.

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Finally, the researcher offers all praise and glory to Almighty God, to whom this achievement is ultimately dedicated.

REFERENCES

1. Badua, J. B. (2023). Dactyloscopy manual and workbook.
2. Brown, J. (1996). Input-process-output-outcome (IPPO) model.
3. CHED Memorandum No. 05, Series of 2018. (2018). Policies, standards and guidelines for the Bachelor of Science in Criminology program.



4. Corpuz, R. R. N., & Vicente, J. B. (2025). Personal identification techniques. JBC Bookshop.
5. Forensic Science Simplified. (n.d.). <http://www.forensicsciencesimplified.org>
6. Interpol. (2021). Fingerprints. <https://www.interpol.int>
7. Pillarina, R. (2021). Self-instructional module in General Education 1: Towards understanding the self. La Carlota City College.
8. Poschor-Depayso, V. (2025). The basics of fingerprint (3rd ed.).
9. Torre Franca, [initials unavailable]. (2017). Evaluation instrument for self-instructional modules.
10. Uy, J. V. (2024). Personal identification techniques: Forensic fingerprint examination.