Arizona Peace Officer Standards and Training
Basic Curriculum Lesson Plan

LESSON TITLE: FINGERPRINTING 5.5

SUBJECT: Fingerprinting

AZ POST DESIGNATION: 5.5

HOURS: 4

COURSE CONTENT: A hands-on introduction to methods for identifying and recognizing fingerprint patterns. Techniques for developing and preserving latent and rolled impression fingerprints are demonstrated.

PERFORMANCE OBJECTIVES: Upon completion of this course of instruction, students using notes, handouts and other support materials as references, within the allotted time, will:

5.5.1 Demonstrate proper techniques for lifting, recording, and identifying latent fingerprints at a crime scene.

5.5.2 Define fingerprints and explain their importance to criminal investigations.

5.5.3 Explain the proper items needed in the fingerprinting kit.

DATE FIRST PREPARED:	June 1995	
PREPARED BY:	SME Committee	
REVIEWED – REVISED:	SME Committee	DATE: September 1999
REVIEWED – **REVISED**:	SME Committee	DATE: September 2002
REVIEWED **– REVISED:**	SME Committee	DATE: April 2006
REVIEWED – REVISED:	AZPOST Staff	DATE: March 2009
REVIEWED – REVISED:	Lt. Dave Kelly, ALEA	DATE: November 2009
REVIEWED – **REVISED**:	AZPOST (DocX)	DATE: February 2022
REVIEWED – **REVISED**:	AZPOST	DATE: November 2022
REVIEWED - **REVISED:**	AZPOST	DATE: March 2023
AZ POST – APPROVAL:	Richard Watling	DATE: November 2009
AZ POST – APPROVAL:	Lori Wait	DATE: February 2022
AZ POST – APPROVAL:	Lori Wait	DATE: March 2023

INSTRUCTOR REFERENCES:

CLASS LEVEL: Student

TRAINING AIDS: Drinking glasses, filler glass brushes, magnetic brushes, plastic bags, aluminum foil, lifting tape, lift cards, printers ink, rollers, inking plates, fingerprint cards (optional – card clamps or holders), cleansing fluid and dry cloths.

SUCCESS CRITERIA: Pass/fail on demonstration requirements.

COMPUTER FILE NAME: 5.5 Fingerprinting

DATE RELEASED TO THE SHARE FILE: August 2023

I. INTRODUCTION

A. Instructor – (self) introduction.

B. Preview of performance objectives.

II. FINGERPRINTS

A. What are Fingerprints?

1. Produced by friction ridge skin. **P. O. 5.5.2**

2. Present on the palmar surface of hands and fingers and the planter areas of the feet.

3. Skin is rough and corrugated consisting of ridges and furrows.

a. Forms patterns.

b. Patterns contain class and individual characteristics.

c. Contain pores which secrete sweat and oils.

B. Why fingerprint identification?

1. Fingerprints are a positive means of identification because they are unique and persistent to the individual.

a. Friction ridges develop during gestation and remain until death unless.

b. Scars or burns.

c. Intentional mutilation.

d. Occupational hands.

e. Identical fingerprints have never been found on two different people.

C. Fingerprint Pattern Types.

1. Loops.

2. Whorls.

3. Arches.

III. TYPES OF PRINTS AND SURFACES

A. Types of Prints.

1. Latent-hidden or invisible.

   a. Prints that need to be developed with powder or chemicals to be visible.

2. Patent- visible.

   a. Bloody prints.

   b. Prints in dust/oil/paint.

3. Plastic-3D.

   a. Impressed prints-putty, plastic, soap.

4. Patent, plastic, and some latent prints must be photographed as they are not conducive to lifting with tape.

B. Factors involved in leaving latent prints.

1. Friction Ridges need to be present.

2. Must have a transfer medium.

   a. Sweat, oil, dirt, paint, blood, etc.,

   b. Not all people secrete sweat to leave latent prints.

3. Conducive/Suitable surface.

   a. Smooth vs. Rough, Porous vs. Non-Porous.

C. Surfaces for latent prints.

1. Ideal surfaces for black powder are smooth and nonporous.

   a. Glass, metal, smooth plastics, porcelain, tile, varnished and painted woods, paper or cardboard with glossy finish, foam material, waxed containers, plastic bags, tin foil and tape.

2. Non-Ideal surfaces.

   a. Textured surfaces, rocks, bricks, unfinished wood, leather, cloth, galvanized

metals, currency.

IV. LATENT PRINT PROCESSING

A. Latent print processing.

1. Handle items to be processed for latent print with care and with gloves.

2. ALWAYS wear gloves and a mask when dusting for latent prints.

B. Your fingerprinting kit. **P. O. 5.5.3**

1. Fiberglass brush.

2. Fingerprint tape.

3. Latent lift cards.

4. Black Powder.

5. Gloves.

6. Other necessary materials: scissors, pens, flashlight.

C. Latent Print Processing.

1. Black Powder Processing.

a. Black Powder is the most common method of latent print processing.

b. Black Powder will not come out of certain porous materials. (white carpet and upholstery)

i. Make sure the homeowner understands this before processing is done.

ii. Powder can be cleaned off non-porous materials with soap and water.

2. Other methods can be used by Crime Lab Personnel only.

D. How To Powder and Lift.

1. Prepare the brush by twirling it to fluff up the fibers.

a. Video demonstration: Fluffing the fingerprint brush.

2. Lightly dip the brush into the black powder, then knock excess powder off the brush

back into the container.

a. Dipping the brush and knocking off excess powder.

3. Either twirl or wipe the brush against the surface, using a flashlight to see any latent prints.

a. Video demonstration of powdering.

4. Create a handle on the edge of the tape by folding the edge, hold the tape tight and flatten against the surface.

a. Use an object to flatten the tape to avoid air bubbles.

b. May have to use multiple lift cards for contiguous lift larger than one latent lift card.

c. For large prints, you may have to use multiple rows of tape.

d. Video demonstration of creating a tape handle.

5. Carefully peel the tape off and flatten onto a latent lift card.

a. Video demonstration of tape lifting and placing onto latent card.

b. Video demonstration of lifting latent palm prints.

c. Video demonstration of using latent lift card pad as an anchor.

E. Labeling a latent lift card.

1. Please be as specific as possible when labeling the back of the latent lift card.

a. Each field on the card needs to be filled out.

b. Draw pictures and be descriptive!

2. On the front of the card, draw arrows to show direction of the print (the upward direction)

F. Lift cards on Items: the right way.

G. Labeling a latent lift card: Palms.

H. Lifting latents the wrong way.

1. Video demonstration.

V. VEHICLE PROCESSING

A. Vehicles may be processed for latent prints, trace evidence, body fluids, evidence collection, trajectory, tire exemplars, accident reconstruction, etc.

B. Items can be collected for latent print processing from inside the vehicle.

C. High traffic areas (rear view mirrors, steering wheel, gear shift, door handles, windows,etc.,) can be processed for DNA/latent prints.

D. Vehicles for processing need to be towed to covered and secured parking garages.

E. Latent Lifts on Vehicles: The Right Way.

F. Latent Lifts on Vehicles: The Wrong Way.

G. Vehicle Processing Activity.

1. Practice processing a vehicle for latent prints.

2. Correctly lift and label several finger and palm prints.

3. The card must be correctly labeled on front AND back.

4. Please check with us to make sure your cards are correctly labeled.

VI. HOW TO TAKE INKED FINGERPRINTS

A. The equipment required for taking fingerprints is so inexpensive that this element should prohibit no one from taking advantage of this important branch of identification.

1. It consists of Printer’s ink (a black heavy paste).

2. A roller.

3. An inking plate upon which to ink the fingers.

4. A card clamp or holder – this item is not essential, but is very useful in holding the card in place to prevent slipping.

B. Ordinary writing ink, colored ink or a stamp pad ink are poor media because they are too light or thin and take too long to dry.

C. The roller (used to spread the ink thinly and evenly on the plate) best adapted to fingerprint work is similar to that used by printers in making galley proofs and its size is a matter to be determined by the individual needs and preference of the operator.

D. The usual one is about six (6) inches long and two (2) inches in diameter and may be obtained at a printer's supply store.

E. A good inking plate may be made by inlaying a block of wood with a piece of plate glass about one-half (½) inch thick, about six (6) inches wide and 14 inches long.

1. This glass plate alone, however, is sufficient.

2. The inking glass should be elevated to a sufficient height to allow the subject's forearm to assume a horizontal position when the fingers are being inked.

3. This equipment should be supplemented by a cleansing fluid and cloths to prepare the subject's fingers and to cleanse the roller and inking place thoroughly after each use.

F. Fingerprints should be taken on eight (8) x eight (8) inch cards, as this size has been adopted generally because of facility in filing and the desirability of uniformity.

1. To understand the importance of taking the rolled impressions carefully, it must be remembered that the comparison of fingerprints involves differentiation by patterns, ridge counting and ridge tracing and certain focal points must be included to make classification possible.

2. In preparing to take a set of fingerprints, several daubs of ink should be placed on the inking glass or slab and thoroughly rolled until a very thin, even film covers the entire surface.

3. The subject should stand in front of and at forearm's length from the inking plate.

4. In taking the rolled impressions, the side of the bulb of the finger is placed upon the inking plate and the finger is rolled to the other side until it faces the opposite direction.

    a. Care should be exercised that each finger is inked evenly from the tip to below the first joint.

    b. By pressing the finger lightly on the card and rolling in exactly the same manner, a clear rolled impression of the finger surface may be obtained.

5. It is better to ink and print each finger separately, beginning with the right thumb and then, in order, the index, middle, ring and little fingers.

6. While the degree of pressure to be exerted in inking and taking rolled impressions is important, this may best be determined through experience and observation.

a. It is quite important, however, that the subject be cautioned to relax and refrain from trying to help the operator by exerting pressure, as this prevents the operator from gauging the amount needed.

b. A method which is helpful in effecting the relaxation of the subject's hand is that of instructing him/her to look at the opposite wall and not to look at his/her hand.

VII. CHEMICAL PROCESSING OF LATENT PRINTS

A. Chemical processing is only done within the Crime Lab by the Crime Lab Personnel.

B. If items are being submitted for chemical processing:

1. Do not powder.

2. Handle carefully with gloves.

3. Package properly so the item does not move around.

4. Do not alter items or put anything on the items such as tape, paperclips, writing, etc.

VIII. SUBMITTING LATENT PRINTS

A. All latent prints collected by Sworn personnel in the field need to be submitted for analysis.

1. All latents from a scene can be submitted as a single item. (packaged in one paper bag)

2. Latents need to be listed on request as an item of evidence.

3. All latents collected by Crime Lab personnel will be retained by the Crime Lab Unit.

B. Court Preparations.

1. Testimony.

a. Location of latent print when lifted.

b. Description of item/vehicle.

c. Exact location on item/vehicle. (interior or exterior)

2. Address.

a. Where item/vehicle was located when processed.

3. Date and time.

C. Scientific Analysis Request.

1. Filled out within the proper system/form. (Property and Evidence)

2. Submit Request for Scientific Examination form as soon as possible.

D. Evidence Examination.

1. If you have special concerns note them on the form.

a. Special processing requests. (chemical processing on one item but not others)

i. Some items belonging to victims (ex: cell phone) may need to be returned and not chemically processed.

ii. Latent print comparison-comparing latents to a subject. (person of interest, investigative leat, NOT victim, complainant)

IX. WHAT HAPPENS AFTER LATENT LIFTS ARE SUBMITTED?

A. If subjects are listed.

1. A comparison will be done to the listed subject if they are in the ABIS (AFIS) system archives.

2. After that subject is compared, any remaining ABIS (AFIS) quality latent prints will be entered into the system.

a. If subjects are developed at a later date, a new Request for Scientific Examination should be submitted.

B. Order to obtain.

1. An Order to Obtain evidence may need to be completed to obtain Major Case Prints if the subject is not in the archives or if not enough data is present in existing ten-prints.

2. Major case prints- recorded prints of all friction ridge surfaces on the hands.

a. Includes fingerprints, finger tips, full finger rolls (from fingertip to joint at base of finger), palm prints, writers palm impressions, and flat impressions.

C. If there is no subject listed.

1. AND the latent prints are ABIS (AFIS) quality.

a. The latent print will be entered into the AFIS database.

2. AND the latent prints are not ABIS (AFIS) quality.

a. The lifts will be filed by IR# in the Crime Lab Unit for future comparison if a subject is developed.

D. ABIS - Automated Biometric Identification System. (previously known as AFIS (Automated Fingerprint Identification System)

1. Database housed at DPS for the state of Arizona. (contains arrestees, job applicants, law enforcement employees)

2. NGI-Federal database for anyone fingerprinted within the federal system.

E. Comparison Results.

1. Identification.

2. Exclusion.

3. Inconclusive.

a. Insufficient ridge detail in latent print for identification/exclusion.

b. No known prints on file.

4. Insufficient Ridge Detail.

F. Comparisons.

1. Comparisons MUST be done by qualified personnel, under controlled circumstances, using ACE-V methodology.

a. A cursory “Sure looks the same to me” does not qualify as a comparison.

b. “Looks like him/her on the driver’s license, ID card, or picture on the wall” does not establish a positive ID.

c. Visible ridge detail does not necessarily constitute a comparable latent print.

d. A latent print may contain enough detail to exclude a subject but not enough

detail to identify a subject.

G. Court Display.

X. PRACTICAL EXERCISE: P. O. 5.1.1

A. Students will participate in processing a variety of surfaces and lifting actual latent prints from glass, metal, plastic, paper and vehicle surfaces.

B. The instructor will demonstrate chemical techniques used in the crime lab for lifting prints.

XI. CONCLUSION

A. Review of performance objectives.

B. Final questions and answers.

C. Instructor closing comment(s).