

SI Forensics - Full Discipline Demo

Impression Evidence

Final Report - Answer Guide

Institution	Science Interactive University
Session	SI Forensics - Full Discipline Demo
Course	SI Forensics - Full Discipline Demo
Instructor	Sales SI Demo

Test Your Knowledge

Order the following steps in casting a shoeprint with the first step on the top and the last step on the bottom.

≡ Allow the cast to fully cure.

1 **Correct answer:** Identify the shoeprint.

≡ Clean any residual dirt from the mold.

2 **Correct answer:** Photograph the shoeprint with and without a photomacrographic scale.

≡ Identify the shoeprint.

3 **Correct answer:** Mix the casting powder with water.

≡ Remove the cast from the shoeprint impression.

4 **Correct answer:** Quickly pour the casting mixture into the shoeprint impression.

≡ Photograph the shoeprint with and without a photomacrographic scale.

5 **Correct answer:** Allow the casting mixture to sufficiently harden.

≡ Allow the casting mixture to sufficiently harden.

6 **Correct answer:** Remove the cast from the shoeprint impression.

≡ Quickly pour the casting mixture into the shoeprint impression.

7 **Correct answer:** Allow the cast to fully cure.

≡ Mix the casting powder with water.

8 **Correct answer:** Clean any residual dirt from the mold.

Classify each statement about bite mark analysis as true or false.

True	False
1	2

Correct answers:

1

Bite marks are easier to identify if the individual has distinctive dental imperfections.

Bite mark analysis focuses on the biting edge of a dental impression.

2

Bite mark evidence is only valuable if it is found in the skin of the victim.

Bite marks are most commonly analyzed in three-dimensions.

Exploration

Plaster of paris is weak while it is wet, but very strong once it has dried.

☐ True

☒ False



Which of the following will not result in a more distinctive bite mark?

- ☐ A chipped tooth
- ☒ A full set of dentures
- ☐ A missing tooth
- ☐ A severely crooked tooth



Exercise 1

Are you able to discern the distinctive tread pattern in your cast of the shoe impression? If not, what could be the potential source of this error?

Observe the dirt from which you removed your cast of the shoeprint. What does this tell you about the logic behind photographing the shoeprint before creating a cast of the impression?

What are some potential problems one might face performing this technique in the field?

Photo 1: Shoeprint with scale
(SAMPLE ANSWER BELOW)

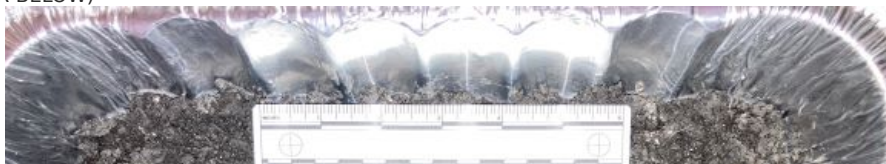




Photo 2: Cleaned cast of shoeprint
(SAMPLE ANSWER BELOW)





Exercise 2

Were you able to eliminate either of the suspects? If so, which one? If not, describe the source of your difficulties here.

In this exercise, why were you asked to eliminate a suspect and not determine who created the bite mark?

What are some potential problems one might face performing this technique in a real world scenario?

Photo 3: Volunteer 1 top
(SAMPLE ANSWER BELOW)

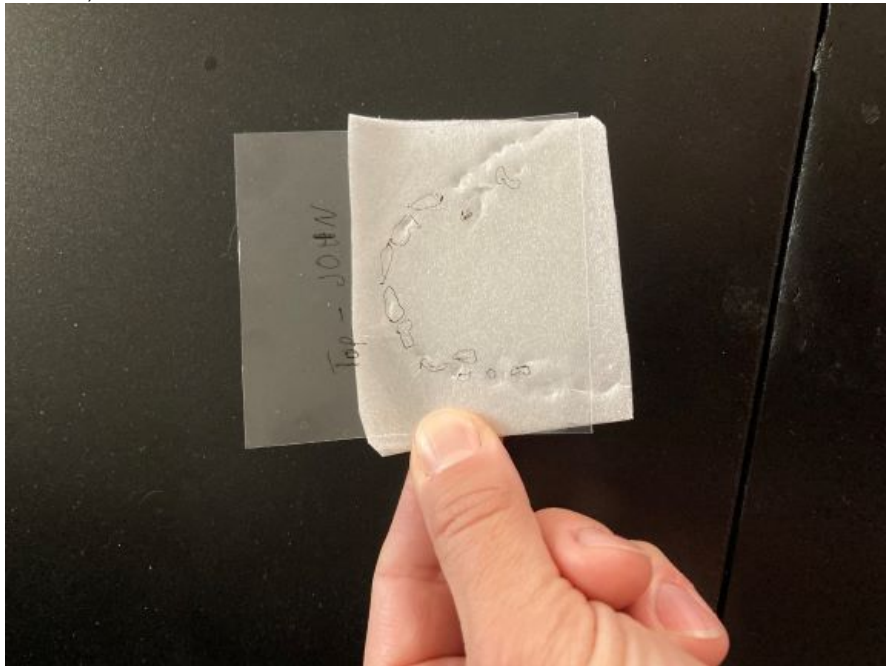


Photo 4: Volunteer 1 bottom
(SAMPLE ANSWER BELOW)

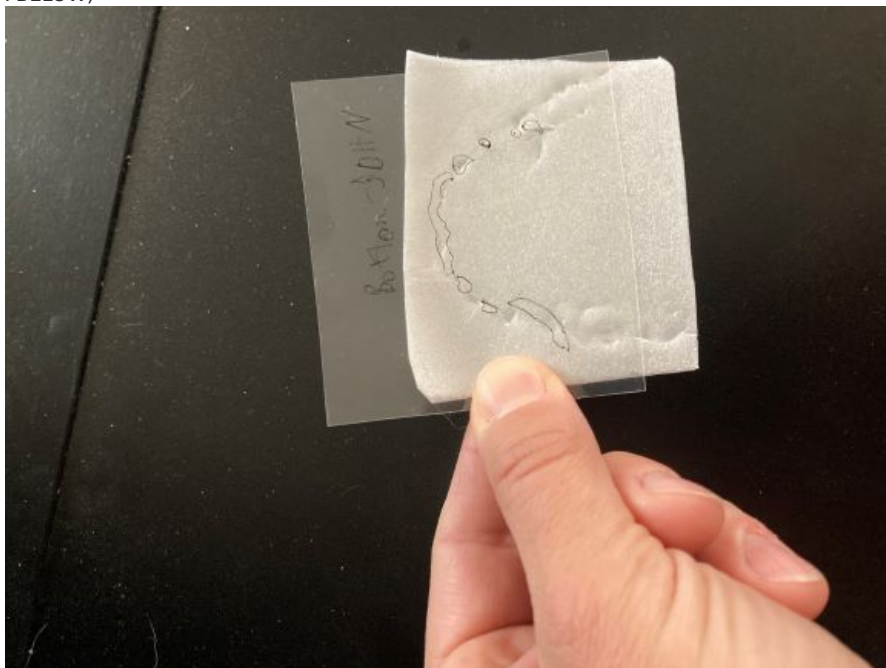
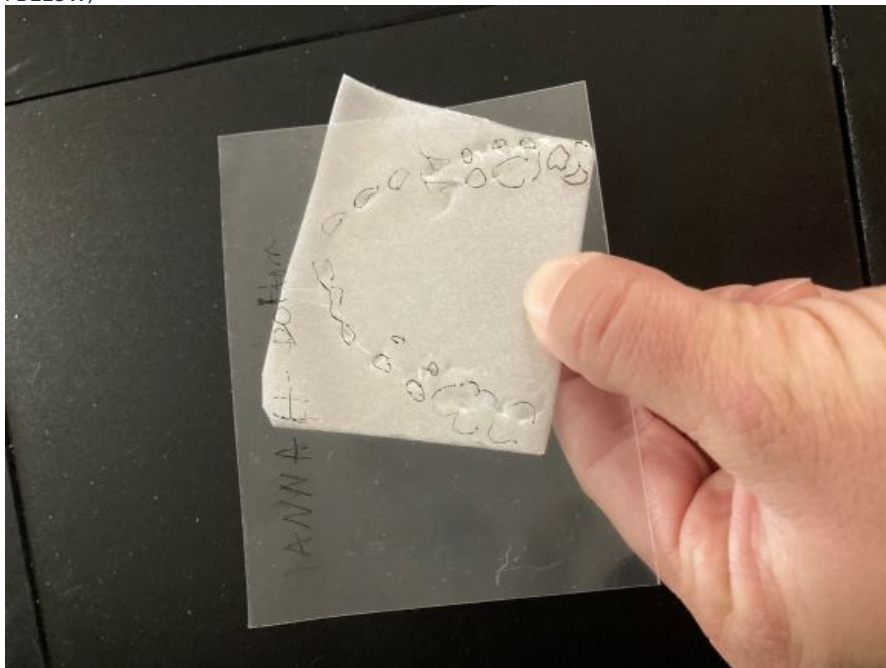


Photo 5: Volunteer 2 top
(SAMPLE ANSWER BELOW)



Photo 6: Volunteer 2 bottom
(SAMPLE ANSWER BELOW)



Competency Review

When photographing impression evidence, why must the camera be angled parallel or 90 degrees to the impression?

- ☐ To ensure proper lighting
- ☐ To ensure the impression is not damaged
- ☒ To ensure actual size of the impression is represented ✓
- ☐ To ensure all details are captured

Imperfections on the tread of a shoe may be present in the shoeprint impression, making it easier to identify the source.

- ☒ True ✓
- ☐ False

Bite mark comparisons are an excellent way to positively ID a perpetrator.

- ☐ True
- ☒ False ✓

Bite marks are most commonly analyzed in two-dimensions.

- ☒ True ✓
 - ☐ False
-

When creating a cast of your shoeprint, you first took a picture of the impression _____.

- ☒ with a photomacrographic scale ✓
- ☐ filled with plaster of paris
- ☐ with an object of known size for scale
- ☐ with your face to confirm you found the shoeprint first

Any dirt remaining on the mold of the shoeprint must be removed immediately or it will become permanently attached to the mold.

- ☐ True
- ☒ False ✓

The _____ of the impression was created on a transparent overlay to compare the bite marks.

- ☐ cast
- ☐ biting depth
- ☐ impression angle
- ☒ biting edge ✓

When taking known bite samples from the volunteers, impressions from both the top and bottom rows of teeth were collected.

- ☒ True ✓
- ☐ False

Extension Questions

This lesson focused on impression evidence from footwear and bite marks. Describe:

- a) One other potential source of impression evidence.**
- b) How this impression evidence would be collected and analyzed.**
- c) How it could lead to the identification of the perpetrator. (SAMPLE ANSWER BELOW)**

Student answers will vary. Likely answers may include

- a) Tire tracks or tool marks.

b) In the example of tire tracks, the tracks would first be photographed with a photomacrographic scale. Then a cast of the tire tracks would be created.

c) From this information, investigators would know the specific tread pattern of the tire and could use that to eliminate suspects that do not match that tread pattern. If there is some very distinctive wear and tear on the tire tread marks, investigators could use this to make a positive ID of the perpetrator if they find tires that match the unique wear and tear of the tread pattern.