



Fingerprinting

Fingerprints are impressions made by the ridges on the skin. When you touch an object you usually leave an impression of the ridge pattern on your fingers. This is what we call a fingerprint. A fingerprint is unique to you because no one else has the same fingerprints as you! Forensic scientists use this unique feature to figure out who touched which objects.

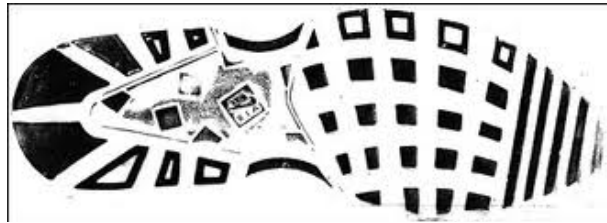
As forensic scientists, your group will take each other's fingerprints. Here are the **materials** you will need: **sharpened pencils, magnifying glass, transparent tape, a scratch piece of paper and a white piece of cardstock.**

What to do:

1. Rub the lead of the pencil on the scratch paper until you create a small dark area.
2. Press and rub one of your fingers in the small dark area.
3. Place your dusted finger on the sticky side of the transparent tape.
4. Take the tape with the fingerprint on it and tape it to the white piece of cardstock.
5. Label the fingerprint so you now which finger you printed.
6. Repeat steps #2 – 5 for each of your fingers.
7. Now use your magnifying glass to look closely at your fingerprints.
8. Compare your fingerprints with your fellow scientists.

What did you notice about your fingerprints?

How do fingerprints help us identify a person?



Footprints

Investigators use footprints as clues in identifying or eliminating suspects of a crime. Foot prints tell us a lot of information about the person who made the prints.

In your group you will investigate and match the footprints you or your classmates have made. Here is what you will need: **plaster of Paris, water, hair spray.**

What to do:

1. Divide your group in half.
2. One half of the group (the criminals) will go outside and make footprints in soft soil. Some of the footprints should be with shoes on and some without shoes.
3. The other half (the investigators) will stay in the classroom to prepare the plaster of Paris. Simply mix the plaster of Paris with water. Make sure to keep the mixture thick so that the impressions can pick up small details.
4. The investigators should then go out and find the criminal's foot prints. Follow these steps for each foot print you find: a) spray the inside of the foot print with hair spray so that the soil stays in place, b) pour some of the plaster of Paris into each footprint, c) allow it to set and take out when dry.
5. The investigators should then try to match the footprints to the criminals.

What did you discover about footprints? Was it easy to match the footprint to the "criminal"?

How can footprints help you identify a particular shoe?



Teeth Impressions



Teeth impressions are often used to help identify people. If you have ever visited a dentist, he or she has probably taken x-rays of your teeth. These x-rays are part of your dental records. Dental records are very helpful in crime investigations.

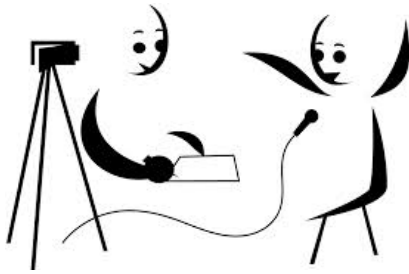
As forensic scientists, your group is going to take teeth impressions to discover who took a bite out of the chocolate bar! Here is what you will need to complete this activity: **scissors, Styrofoam plates, markers.**

What to do:

1. Cut the Styrofoam plate into 6 equal wedges.
2. Stack two wedges together. Cut an inch off the pointy end.
3. Place the stacked wedges as far into your mouth as possible.
4. Bite down hard on the wedges and remove them.
5. Label the wedges "Top teeth" and "Bottom teeth".
6. Take a close look at the teeth impressions.

What do you notice about the teeth impressions? Do you see spaces, missing teeth, chips, etc.?

Now one person in your group will need to step outside. Then one person from your group should bite down on the thick chocolate, without taking a bite. Can the person who went outside identify who took the bite based on your dental records (Styrofoam wedges)? Write your observations on the back side of this page.



Interviews

Investigators and reporters will often interview people who have witnessed an event in order to obtain information about the event. The questions they ask are very important because it can help them to gather detailed information or even solve a crime.

As investigators, your group will need to formulate some interview questions. You will travel back in time in order to interview Roman citizens and/or soldiers who may have been the last to see the Ninth Legion. Think carefully about the types of questions you would ask. Avoid questions that can be answered with one word answers, such as yes and no. Your goal is to obtain as many clues as possible in order to find the whereabouts of the Ninth Legion.

Write your questions here:

1. _____

2. _____

3. _____

4. _____

5. _____

Session One

Ticket to Leave

Name: _____ Date: _____

Write three things that you learned today about the Roman army and the Ninth Legion.

1. _____

2. _____

3. _____

Name one way that today's Roman army is different from the Roman army in ancient times.

1. _____



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Session Two

Ticket to Leave

Name: _____ Date: _____

In the same order as you completed each investigation, describe what your group did to get evidence. Use complete sentences.

1. _____

2. _____

3. _____

4. _____



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Student Names _____

Forensic Activities Written Opinion Scoring Guide

Requirements	Points	Small Group (Self-evaluation)	Teacher
Written opinion included the mystery surrounding the Ninth Legion and the reason for the forensic activities.	4		
Written opinion included reasons for or against the use of each of the four forensic activities to solve the mystery.	4		
Written opinion included data or evidence from the forensic activities to support reasoning.	4		
Written opinion included the key vocabulary words*.	7		
Written argument had correct grammar and mechanics.	3		
Written opinion included visuals to help communicate information.	3		
Total Points			
Total Points Possible	25	25	50

***Key vocabulary words:** legion, legionary, empire, emperor, forensics, impression, and interview

Student Names _____

Oral Presentation Scoring Guide

Requirements	Points	Score
Students show appropriate posture for an oral presentation.	2	
Students speak clearly and are audible.	3	
Students speak at an understandable pace.	3	
Students engage the audience.	3	
Students each take responsibility for part of the presentation.	4	
Total Points		
Total Points Possible	15	

Student Names _____

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Students show appropriate posture for an oral presentation	2	
Students speak clearly and are audible	3	
Students speak at an understandable pace	3	
Students engage the audience	3	
Students each take responsibility for part of the presentation	4	
Total Points		
Total Points Possible	15	