

CHAPTER 2

CRIME SCENE INVESTIGATION



I. What clues can the police use in the context of a criminal investigation?

Answer the question.

II. What about blood?

Activity n°1: What is the difference between human and animal red blood cells?

Like most animal cells, red blood cells from fish, amphibians, reptiles and birds all contain DNA in nuclei, represented by shaded ovals in Gulliver's drawing. By contrast, the red blood cells of mammals lack nuclei and other internal structures found in most animal cells. This simplification allows mammal red blood cells to carry more gas-transporting proteins and to squeeze through smaller blood vessels.

1. Using the text, explain how it is possible to distinguish human and animal blood?

2. Observe the two slides provided and indicate which slide is corresponding to human blood.

3. Is it real blood? When a solution of hydrogen peroxide is added to human blood the peroxide is decomposed and oxygen is evolved.

Add a drop of hydrogen peroxide on the sample. What are you observing ? Is it real blood ??

➔ **How to determine blood type ?**

Activity n°2: How to determine blood type?

1. Watch the video and explain blood types.

<https://youtube.com/shorts/CC5-u7DB30Q?si=XoxQ-dakGeeaCJtj>

2. Watch the video and explain how blood type is determined

<https://youtu.be/iSADEOvYAhl?si=OYJ-QZ89oYxAjz94>

3. Using the kit, determine the blood type of the sample given.

III. What about fingerprints?

Activity n°3: Fingerprints.

Watch the video: <https://youtu.be/vxXOAyUTV6w?si=ww6lusaMDIIsL4g4>

1. Briefly explain how to dust and lift a fingerprint.

2. Using the material given, try to reveal your own fingerprints.

DON'T FORGET THE OTHERS CLUES!!!!

Activity n°4 : Your favorite teacher (Mrs Hanoux) has been cleansed.....

The suspects are:

- Mr Camus (AB+ blood type)
- Mr Mahieu (B- blood type)
- Mrs Challe (O- blood type)
- Mrs Busquet (AB+ blood type)

FINGERPRINTS

⇒ Using the various clues, you must find the murderer as well as the weapon and the crime scene.

SCENARIO :

Mrs. Hanoux was brutally murdered. Her body was found in the high school's SVT laboratory. Four suspects have been identified : Mr Camus, Mr Mahieu, Mrs Challe and Mme Busquet. Indeed, each of them has a reason to hold a grudge against Mrs. Hanoux : Mrs. Hanoux's dog bit each of them...



Mrs Hanoux's dog !!!

1. Blood and hair samples (from human or dog??) were found under Ms. Hanoux's nails.
 - a. Analyze the blood sample. Is it human blood?
 - b. Determine the blood group.
2. Two glasses were found in the laboratory, one with Mrs. Hanoux's fingerprints, and the other with unknown fingerprints....
 - a. Try to identify the unknown fingerprints.
3. Footprints containing pollen were found near the body. The various suspects were summoned to the police station, where a sample was taken from the soles of their shoes to determine the composition of the soil found there.
 - a. Compare the pollens found on the suspects' soles with the pollens found near the body.

⇒ **Write a text explaining how you were successful in completing this survey.**