

## The Mystery of the Bones

### Objectives

- Understand what a forensic anthropologist does
- Reconstruct 4 "unknown" skeletons
- Determine the age, sex, height of the "unknowns"
- Investigate forensic art and its application in finding missing persons
- Determine the identities of the 4 "unknowns"

### Section 1 - Research and Background

As a group, visit the following sites to gain an understanding of forensic anthropology and what bones (or remains) can tell you about the deceased. Be prepared to take a quiz (as a group) when you are finished. Write all answers on a separate page, you can turn in a single page for your entire group.

<https://naturalhistory.si.edu/education/teaching-resources/written-bone/forensic-anthropology/forensic-facial-reconstruction>

1. How are facial reconstructions made using a skull? What are the limitations of these reconstructions? What materials are used?

<https://naturalhistory.si.edu/education/teaching-resources/written-bone/skeleton-keys/young-or-old#:~:text=Bone%20%22Remodeling%22,-Femur%20cross%20sections&text=Throughout%20a%20lifetime%2C%20bone%20makes,have%20fewer%20and%20larger%20osteons.>

2. How can bones be used to determine age?

<https://forensicmd.files.wordpress.com/2010/11/identification-of-skeletal-remains.pdf>

3. How three points on a skeleton are used to determine gender?
4. List four ways we can distinguish between males and females using the skeleton.

### Investigative Techniques of Forensic Anthropology

(<http://www.pbs.org/opb/historydetectives/technique/learning-from-skeletons/>)

Mouse over the skeleton to answer these.

1. What can the teeth tell you about the deceased?
2. How can the skull be used to determine age?
3. How is the pelvis of a female different from the pelvis of a male?
4. The wrist bones can help you determine what about the deceased?

[Explore Forensics \(https://www.exploreforensics.co.uk/category/analysingthebodycategory\)](https://www.exploreforensics.co.uk/category/analysingthebodycategory) – Explore the various links for answers to the questions below.

1. What is the first thing a forensic scientist looks at to identify a deceased's gender?
2. Where is the most accurate place to take the body temperature? Suppose a body is found and its temperature

is recorded at 34 degrees celcius, how long has the body been dead?

3. Why might a corpse be exhumed?
4. What insect is used to determine time of death? What type of scientist studies these insects?
5. What is rigor mortis and how long does it last?
6. What is lividity?
7. What are the four categories of death?

Written in Bone - Exhibit at the Smithsonian

([https://naturalhistory.si.edu/education/teaching-resources/written-bone/skeleton-keys/young-or-old#:~:text=The%20clavicle%20\(collar%20bone\)%2C,until%20bones%20have%20stopped%20growing](https://naturalhistory.si.edu/education/teaching-resources/written-bone/skeleton-keys/young-or-old#:~:text=The%20clavicle%20(collar%20bone)%2C,until%20bones%20have%20stopped%20growing))

### **Skeleton Keys --> Bone Basics**

1. What is the last bone to complete its growth?

<https://naturalhistory.si.edu/sites/default/files/media/file/wibidentifytheagefinal.pdf>

2. How are teeth used to estimate age?

<https://naturalhistory.si.edu/education/teaching-resources/written-bone/skeleton-keys/young-or-old#:~:text=Bone%20%22Remodeling%22,-Femur%20cross%20sections&text=Throughout%20a%20lifetime%2C%20bone%20makes,have%20fewer%20and%20larger%20osteons.>

3. What is bone "remodeling" and how can it be used to determine age?

<https://www.futurelearn.com/info/courses/forensic-archaeology-and-anthropology/0/steps/67882#:~:text=The%20male%20sciatic%20notch%20tends,to%20the%20'composite%20arc'.>

4. What is the sciatic notch? How can it be used to determine gender?

### **Forensic Case Files**

<https://naturalhistory.si.edu/education/teaching-resources/written-bone/forensic-case-files>

5. Browse the cases and choose one that interests you. Describe the case and the key evidence used to solve it.