

# Forensic Anthropology



Let the bones tell the story!

Image: <http://upload.wikimedia.org/wikipedia/commons/4/4c/Punuk.Alaska.skulls.jpg>

Presentation developed by T. Trimpe 2010 <http://sciencespot.net>



**What role do anthropologists play in solving crimes?**  
Watch the [video](#) and then answer the questions.

1. What does a physical anthropologist investigate?
2. What four things do we want to know about a skeleton?
3. What bones are most useful for developing a profile of a person? Explain how they are used.

**FORENSIC ANTHROPOLOGISTS** analyze skeletal remains to determine the identity of a victim as well as his/her life history, cause of death, or other clues about a crime.

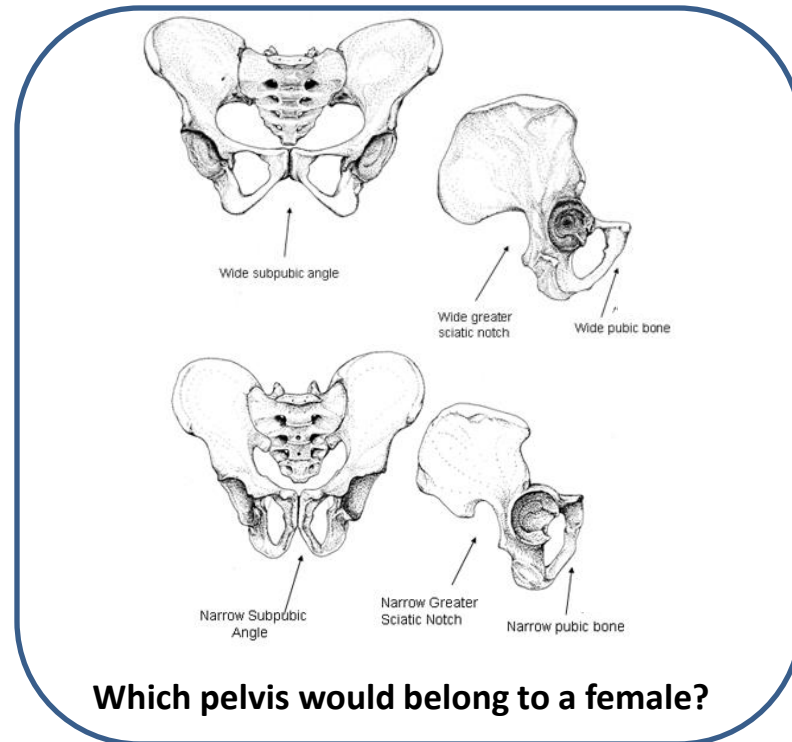
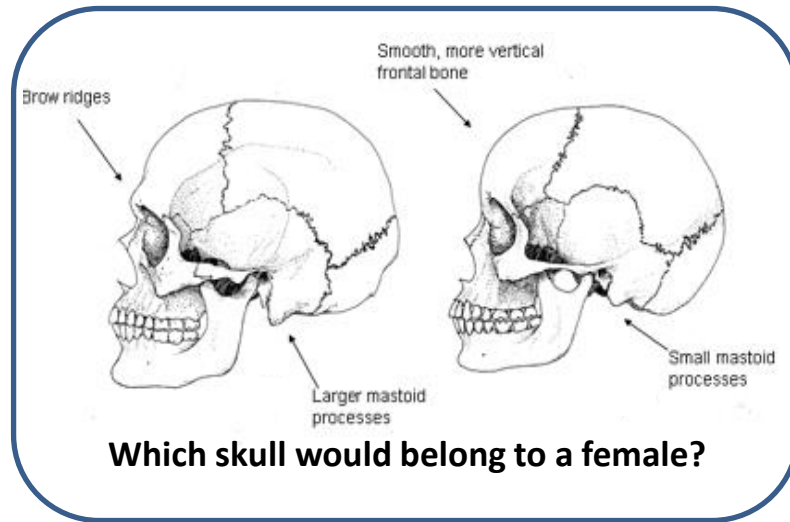
## Main Characteristics:

► **Sex** - Determined by examining the skull, pelvis, humerus, and femur

► **Age and stature** (height/build) – Determined by analyzing the development of the teeth, bone growth, cranial suture lines, and the length of specific bones, such as the femur.

► **Race** – Determined by analyzing the skull for characteristics that are common among people of different races.

**Career Connection**  
What does a forensic anthropologist do?



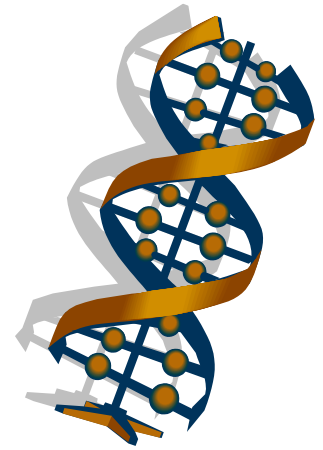
Source: <http://www.crime-scene-investigator.net/excavation.html>

Images: [http://www.wadsworth.com/anthropology\\_d/special\\_features/forensics/forensics\\_index/index.html](http://www.wadsworth.com/anthropology_d/special_features/forensics/forensics_index/index.html)

# What else can we learn from bones?

**DNA samples** can be collected from bone, teeth, and hair to provide clues to a person's identity.

Scientists may also be able to gain clues as to a person's past, recent **injuries**, or the **cause of death** based on bone fractures and other signs of trauma.



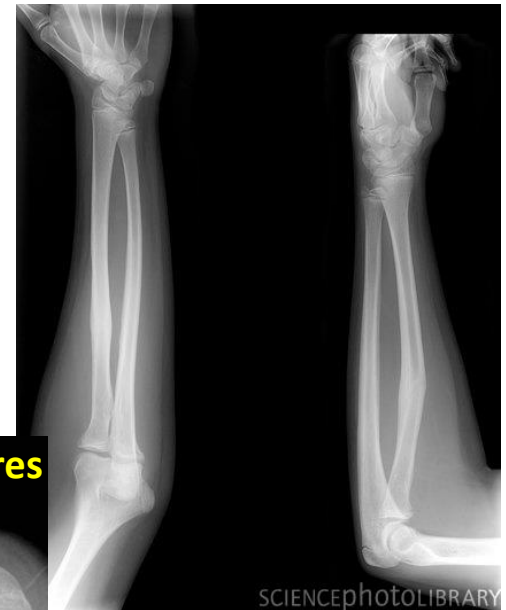
Damage from a hammer



Gunshot Wounds



Healed Fractures



SCIENCEPHOTOLIBRARY





# Forensic Tools & Techniques

Watch the [video](#) and then answer the questions.

1. What techniques or tools did the scientists use to find the body?
2. What is “disturbed soil”? What might it indicate?
3. How did they narrow down the areas to investigate?
4. Did they find a body?

[http://anthropology.si.edu/writteninbone/MeetSmithsoniansBoneDetectives\\_video.html](http://anthropology.si.edu/writteninbone/MeetSmithsoniansBoneDetectives_video.html)



# Reading the Remains

Watch the [video](#) and then answer the questions.

1. What information do they provide for law enforcement agencies?
2. How many skeletons do they have in their collection?
3. What do they learn about a skeleton from each tool?

CT Scan –

X- ray –

Mass spectrometer –

Scanning electron microscope –

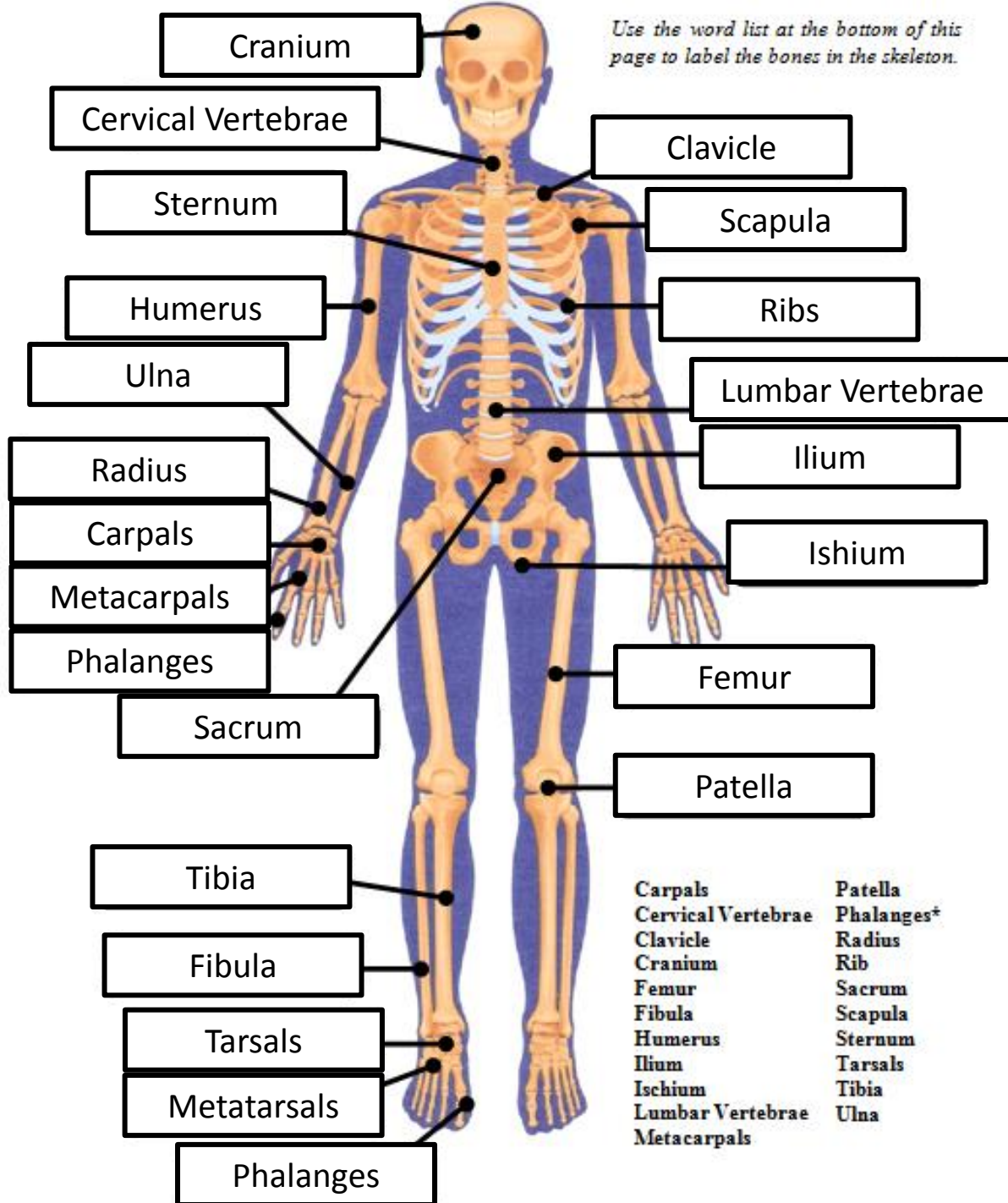
DNA Analysis –

## Directions:

Identify the bones in the skeleton. One label will be used twice!



## The Bone Dance



Use the word list at the bottom of this page to label the bones in the skeleton.

## Quick Quiz – Give the common name for each bone.

I should have known it was going to be one of those days, when I had stepped out of bed and stubbed my **(1) PHLANGE** on the night stand. While hopping up and down on one **(2) METATARSAL** and grasping the other, I slipped and fell onto my right shoulder breaking my **(3) CLAVICLE**. As I crawled on my **(4) METACARPALS** and **(5) PATELLAS** to my bed, I felt my **(6) CRANIUM** begin to ache. I found my phone and let my **(7) PHLANGES** do the walking as I called my friend to come help me out. My friend answered the phone with a loud scream; my **(8) MANDIBLE** dropped, I asked what had happened, and he replied that he had been startled by the ringing phone, fell out of bed landed on his **(9) COCCYX**. Following that while racing to the phone he hit his **(10) TIBIA** on a stool. I should have known it was going to be one of those days.

1. **TOES**
2. **FOOT**
3. **COLLAR BONE**
4. **HANDS**
5. **KNEES**
6. **SKULL or HEAD**
7. **FINGERS**
8. **LOWER JAW**
9. **TAIL BONE**
10. **SHIN**





# The End

Now work on your  
Case Studies

Row	Trauma caused by bullet	Trauma caused by bayonet
A.	Sharp force	Blunt force
B.	Comminuted	Projectile
C.	Projectile	Sharp force
D.	Blunt force	Strangulation





# Bag O' Bones Activity

## Get Ready ...

Get a long piece of butcher paper from your teacher.

Place it on the floor and have one of your classmates lay on it (back on the floor).

Use a marker to make an outline of your classmate's body.

## Make a Skeleton ...

Take the bones out of the bag and place them on the body outline in the approximate location where they would be found. You may refer to the skeleton model if you need help identifying a bone or its location.

## Are you ready for a challenge?





# Bone Challenge

## The Challenge ... How fast can you put together a skeleton?

### Directions:

- 1 - Find a partner and get a set of bones, blindfold, and timer from your teacher.
- 2 – Put on a blindfold and then have your partner spread out the “bones” on the table in front of you.
- 3 – When your partner starts the timer and says “go”, follow his/her directions to put the skeleton back together.
- 4 – Record your time on your worksheet.

Who had the best time? \_\_\_\_\_

