



High School Science Virtual Learning

**Forensic Science**

**Determining Sex from Bones**

April 14, 2020



High School Forensic Science  
Lesson: Tuesday, April 14, 2020

**Objective/Learning Target:**

**The student will be able to determine the sex of an individual from skeletal remains.**

1. Determine if the following pelvis belongs to a male or female.  
Click on the link for the image.  
[Pelvis](#)
2. Determine if the following pelvis belongs to a male or female. Click on the link for the image. [Pelvis](#)



1. Male

2. Female



# Lesson Activity:

**Directions:** Watch the following video about how to determine the sex of an individual from their bones.

**Link(s):** [Sex and Bones](#)

# How To Distinguish Males From Females

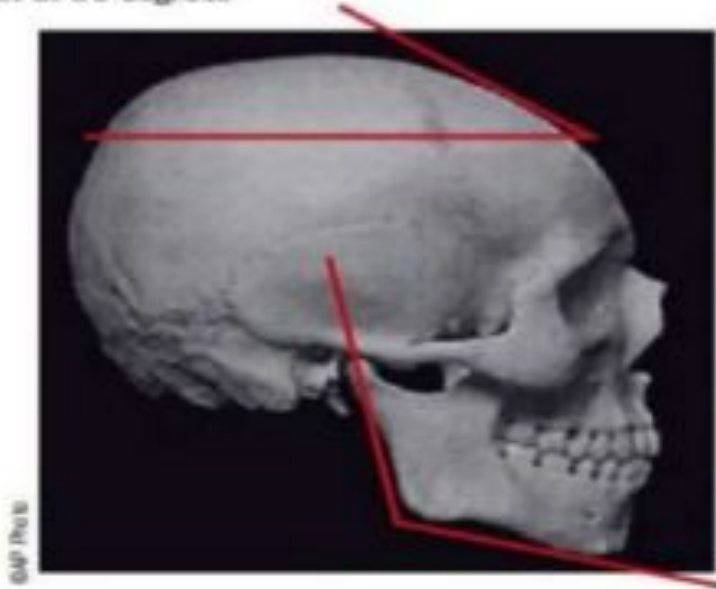
- A female's skeleton is usually much smoother and less knobby than a male's. A male's skeleton is usually thicker, rougher and appears more bumpy.
  - Due to the fact that males have larger muscles and therefore their skeletons require stronger attachment sites.

# How To Distinguish Males From Females

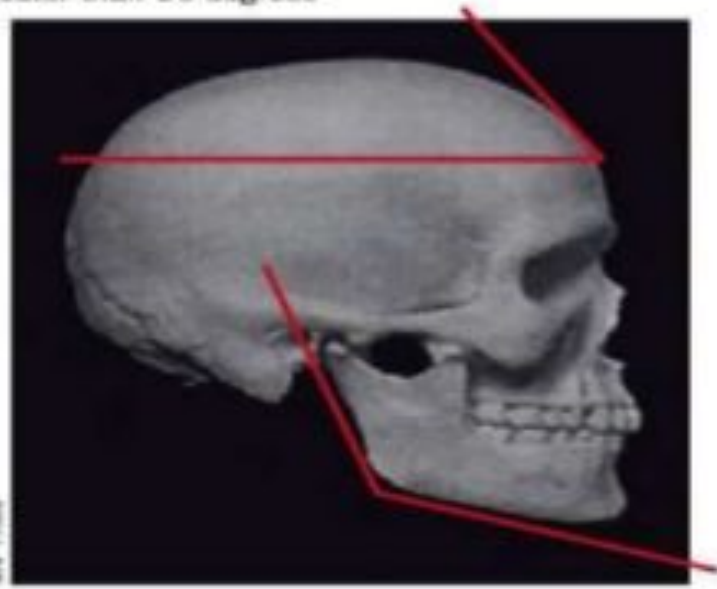
- A male's skull is usually bigger and bumpier than a female's.
- Also anatomical differences in:
  - Frontal brow
  - Eye orbits
  - Lower jaw
  - Shape of chin

# How To Distinguish Males From Females

*Male; note the low sloping frontal bone and a jawbone set at 90 degrees*



*Female; note the rounded frontal bone and jawbone greater than 90 degrees*





# How To Distinguish Males From Females

Male Front View	Male characteristics	Trait	Female Characteristics	Female Front View
	More square	Shape of eye	More rounded	
	More square	Mandible shape from underside	More V-shaped	
	Thick and larger	Upper brow ridge	Thin and smaller	
Male Side View	Male Characteristics	Trait	Female Characteristics	Female Side View
	Present	Occipital protuberance	Absent	
	Low and sloping	Frontal bone	Higher and more rounded	
	Rough and bumpy	Surface of skull	Smooth	
	Straight	Ramus of mandible	Slanting	
	Rough and bumpy	Nuchal crest	Smooth	

# How To Distinguish Males From Females

- Examination of the pelvis is the easiest method to determine the sex of a skeleton.
- Differences in:
  - Subpubic angle
  - Length, width, shape and angle of the sacrum
  - Width of the ileum
  - Angle of the sciatic notch
- Women who have borne children have scars on the surface of their pelvis.



see: <http://www.davidkdarling.info/encyclopedia/P/pelvis.html>

# How To Distinguish Males From Females

Female



©Video Surgery/Photo Researchers, Inc.

Male



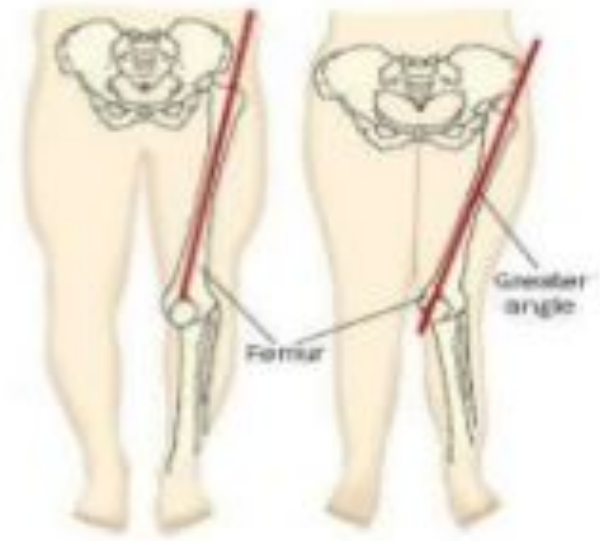
Source: Berlino & Berlino, 2012

# How To Distinguish Males From Females

Region	Bone	Male	Female
Pelvic	Subpubic angle	50–82 degrees	90 degrees
	Shape of pubis	Triangular pubis	Rectangular pubis
	Shape of pelvic cavity	Heart-shaped	Oval-shaped
Sacral	Sacrum	Longer, narrower, curved inward	Shorter, broader, curved outward

# How To Distinguish Males From Females

- The femur (thigh bone) of a male is thicker than a females.
- The angle of the femur in relation to the pelvis is greater in females than males.





# Lesson Activity:

**Directions:** Read the information provided in the following link to help you distinguish between male and female skeletons.

**Link(s):** [Human Remains](#) (only read pages 417-422)

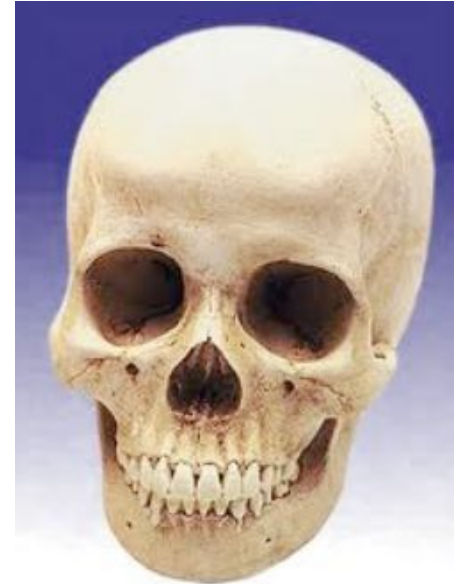
# Practice Questions

1. Does the following skull belong to a female or male?



## Practice Questions

2. Does the following skull on the right belong to a female or male?
3. What are the main differences between a male pelvis and a female pelvis?
4. Why is the pelvis the best bone for determining sex?







# Answer Key

Once you have completed the practice questions check with the work.

1. Male
2. Female
3. Female pelvises are larger and wider than male pelvises and have a rounder pelvic inlet.
4. The human pelvis provides the most reliable means for determining the sex of skeletal remains. The female pelvis is designed to offer optimal space for the birth canal, which is reflected in its morphology and the relationship of its parts to each other



# Additional Practice

[Is the Skeleton Male or Female?](#)

[Pelvis and Skull Bones](#) (Only complete page 1)