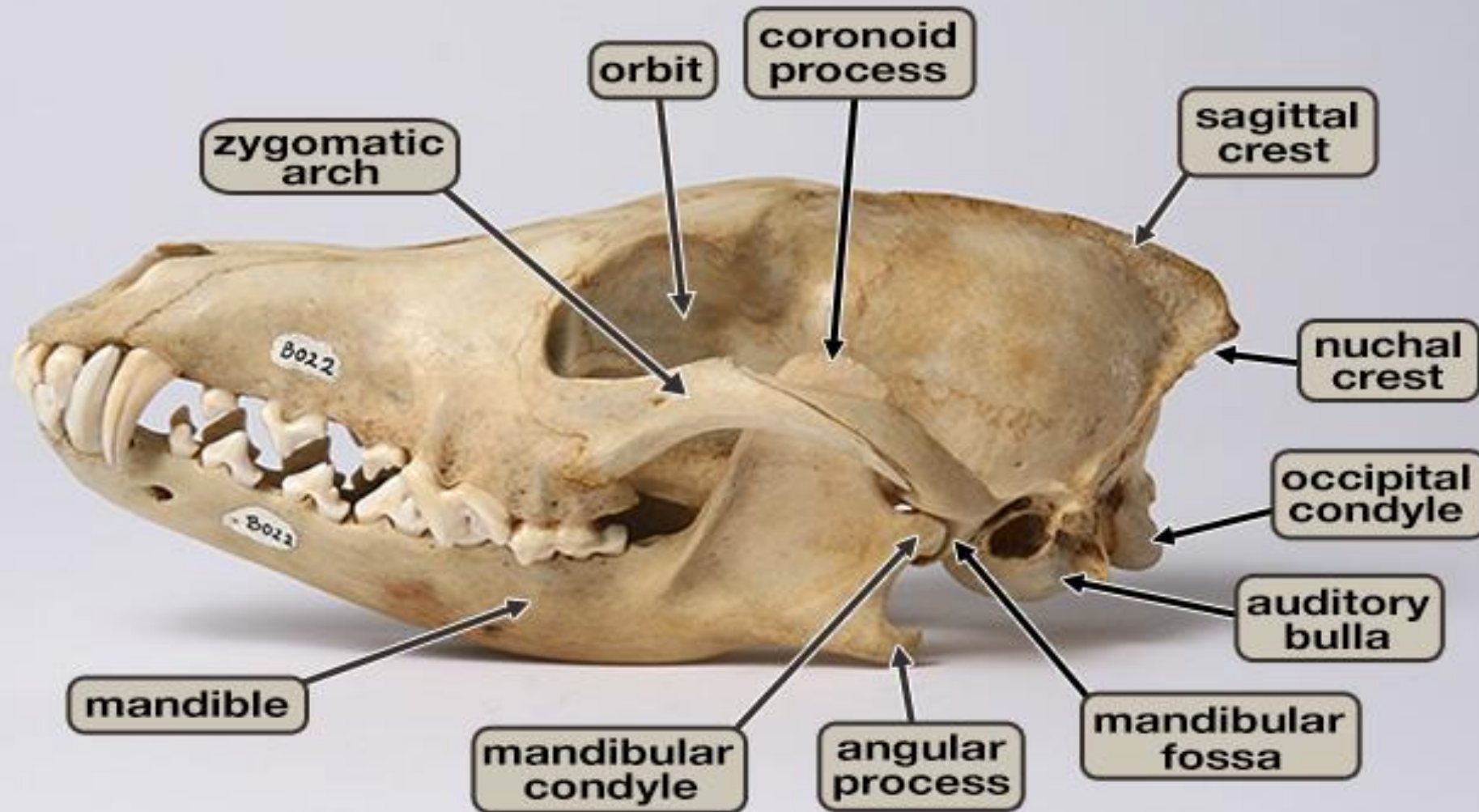


Mammal Phylogeny

Tuesday, March 29th

Part I - Identifying Structure and Function

- ▶ Observe different structures of mammal skulls
- ▶ Propose claims about the life history of 4 species based on skull structure

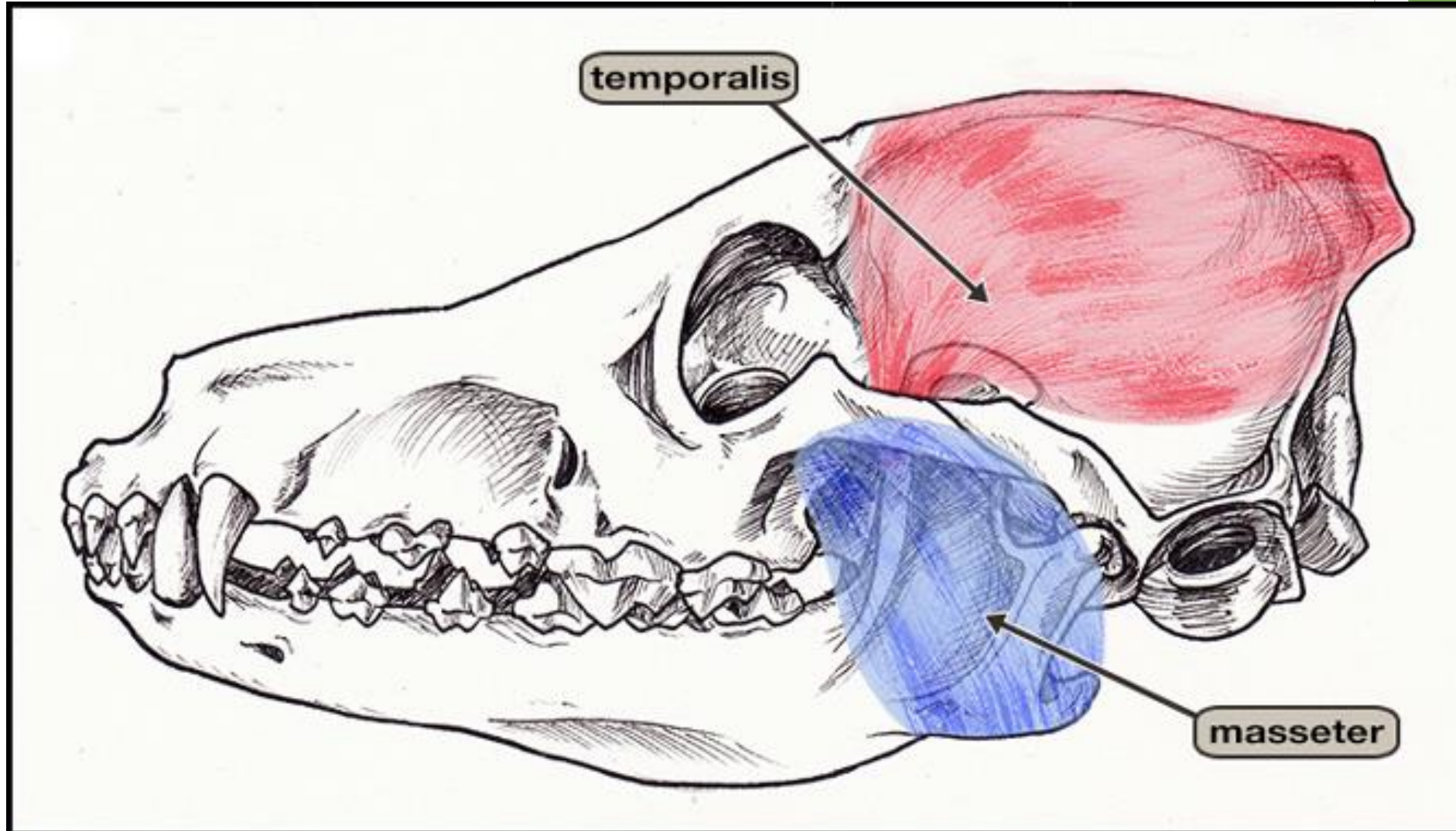


Coyote skull (*Canis latrans*), order Carnivora

Terms

- ▶ “mandible” = lower jaw
- ▶ “orbit” = eye socket
- ▶ “fossa” = depression or hole
- ▶ “process” = outward projection
- ▶ “condyle” = a knob such as the ball of a ball and socket joint

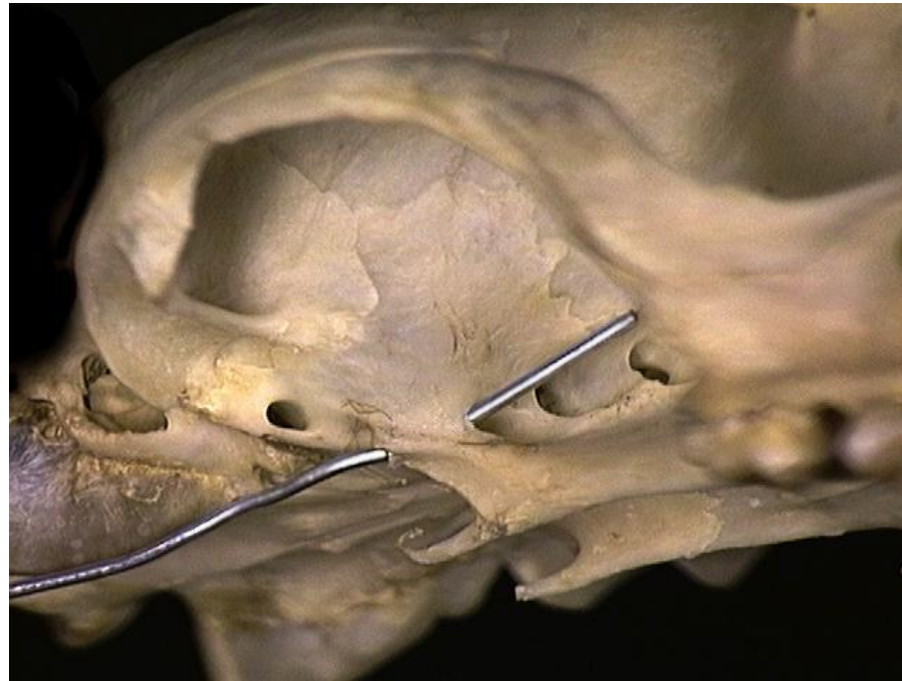
Important muscles



Coyote skull showing temporalis and masseter muscles

Blood vessels

- ▶ Skulls need depressions, channels, and canals for arteries and veins to allow for blood flow
- ▶ Alisphenoid canal found in some animals underneath upper jaw



Eyes

- ▶ Eye orientation
 - ▶ Predators have forward-facing eyes
 - ▶ Prey have side-facing eyes

- ▶ Eye size
 - ▶ Nocturnal species have larger eyes
 - ▶ Noct



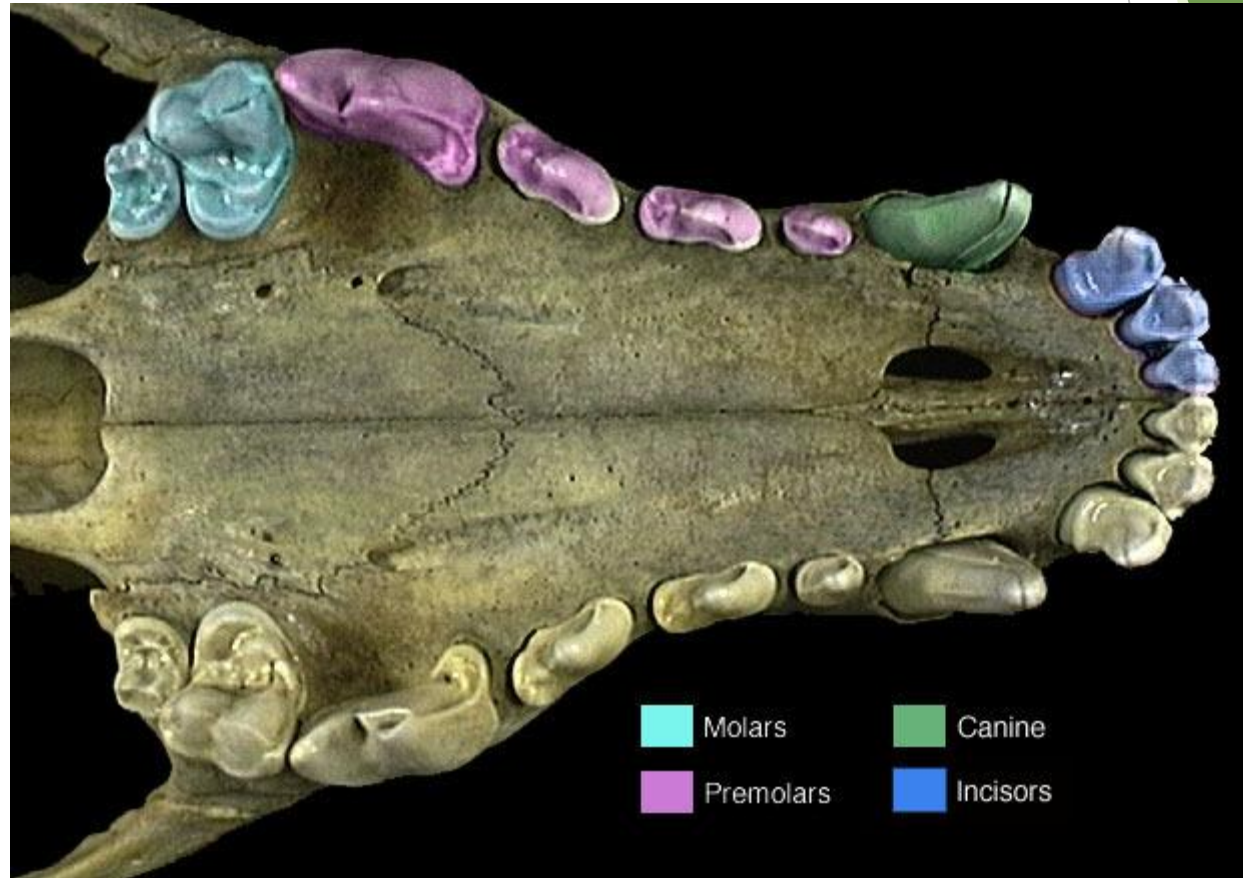
Teeth

- ▶ The lifestyles of mammals require being able to capture, ingest, and digest food efficiently
 - ▶ Mammalian teeth have been modified to obtain and ingest food more efficiently



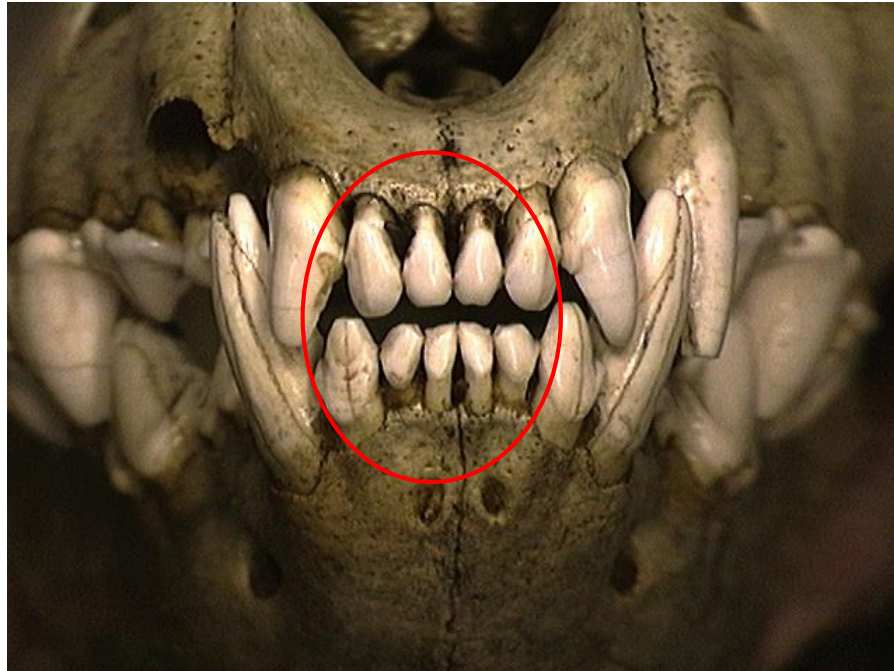
Types of Teeth

- ▶ Incisors
- ▶ Canines
- ▶ Premolars
- ▶ Molars



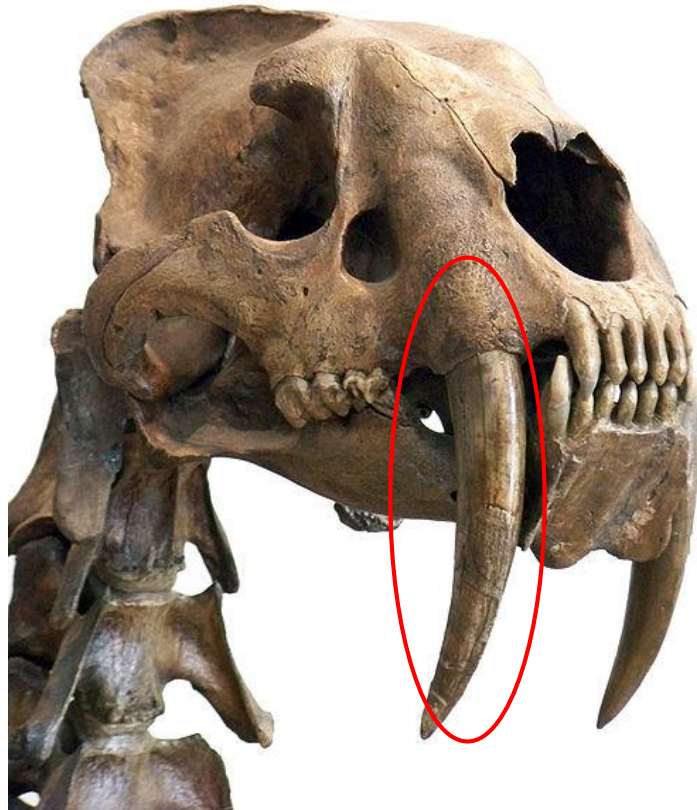
Incisors

- ▶ Thin teeth located at the front of the jaw
- ▶ Used for slicing food



Canines

- ▶ Located right next to the incisors (if they have them!)
- ▶ Used for tearing food

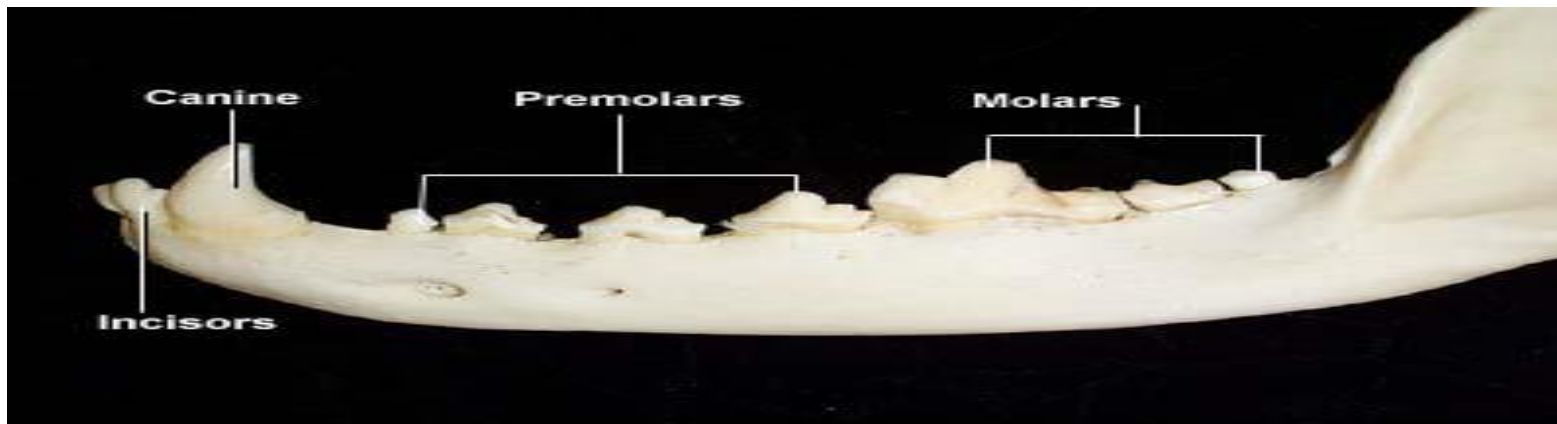


Premolars and Molars

- ▶ Located behind canines
- ▶ Used for chewing, generally with multiple cusps (points)
- ▶ Only adults have molars!

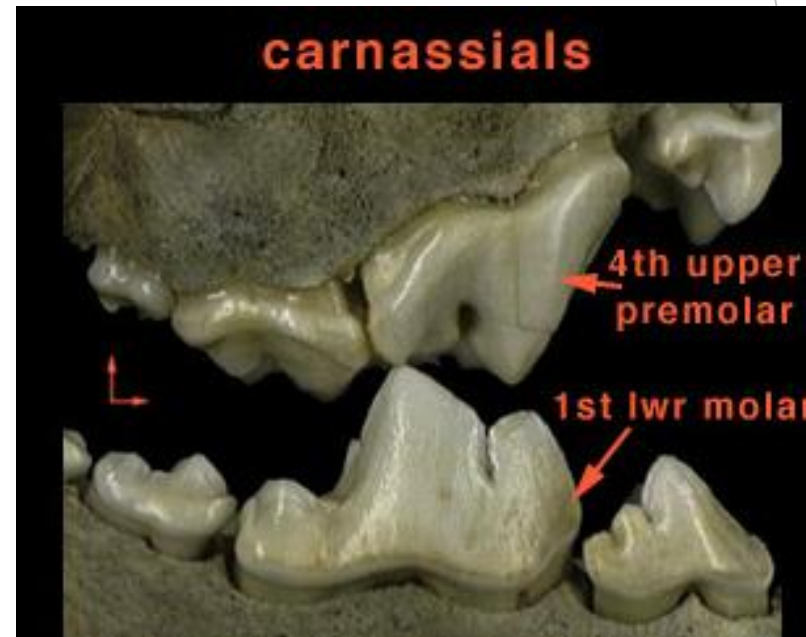
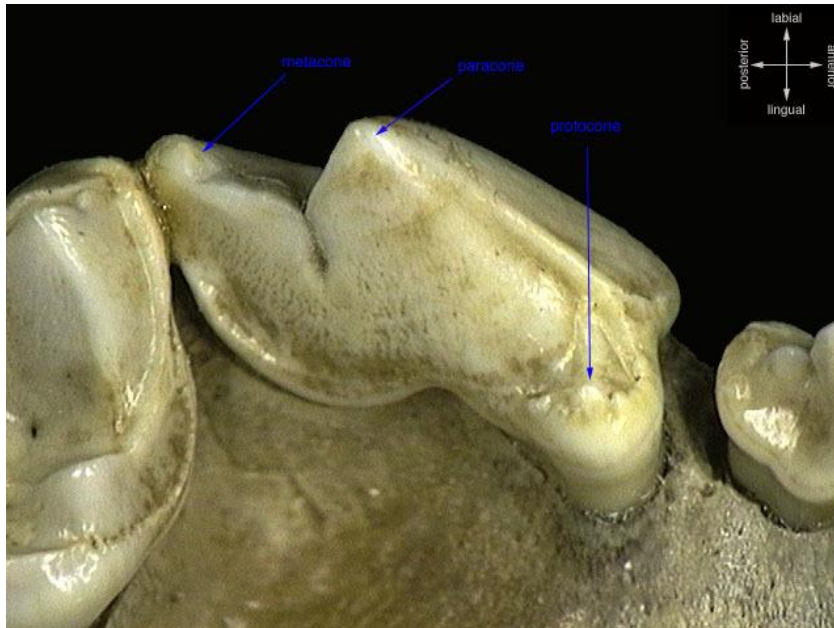
Eutherians (placental mammals) have maximum of 4 premolars and 3 molars

Metatherians (marsupials) have a maximum of 3 premolars and 4 molars



Carnassials

- ▶ Order Carnivora have these
- ▶ Specialized teeth which slide together to slice meat
- ▶ P^4 and M_1 = carnassial pair, overlap



Note

These skulls are fragile and expensive! Try not to handle them any more than you have to. When you do pick them up, do so over a padded surface so in case they are accidentally dropped they will be less likely to break.