Veterinary Bioscience: Digestive System

PRACTICAL 2
DENTAL WETLAB

TEACHING STAFF

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LOCATION

- WEBS (Building 125) Dissection Laboratory (Room B104)

INTENDED LEARNING OUTCOMES

At the end of this class, you should be able to:

- Identify the following teeth in the different domestic species: incisors, canines, molars, premolars.
- Be able to describe how the shape and distribution of the teeth relate to diet and function.
- Understand the extent of tooth roots and their relationship with underlying structures and bone.
- Understand the basic process of removing an incisor tooth from a dog.
- Consider the potential difficulties in removing canines, premolars and molars in the dog and cheek teeth in the horse.
- Be able to identify the key dental features used in the aging of horses.
- Identify where sharp edges and steps might form on the occlusal surfaces of equine cheek teeth.
- Identify the dental pad and palatine ridges in the sheep.
- Approximately age sheep by their dentition.
- Understand the problems of overgrowing incisors in rabbits.

CLASS PREPARATION

- A suite of video tutorials is available on the LMS. Students should watch these **prior** to attending class. This will allow students to make the most of these hands-on learning opportunities.
- Students may wish to bring along a copy of the notes for Lecture 3, showing dental formulae for different species.

NB: This practical class will be composed of 5 stations. Each group of approximately 15 students will spend 30 minutes at each station.

STATION A: DOG AND CAT 1

You are presented with the body of an adult dog and/or cat. On the following page is a dog dental chart.

Examine the dog's mouth.

Identify the following teeth: incisors, canines, molars, premolars.

Q. What is the dental formula of the adult dog?

Identify the features on the surface of the teeth (refer to lecture notes).

Q. How does the shape and distribution of the dog's teeth relate to its diet and function?

Now complete a dental chart for this dog (over page).

Mark any missing teeth with a cross and indicate any damaged or diseased teeth.

Study the pictures of juvenile dogs' teeth, and examine the tables provided

Q. What is the dental formula for the temporary dentition of a dog?

Q. Using the tables provided (showing when the temporary and permanent teeth erupt), estimate the age of the puppy.

Supplementary questions to consider:

Q. How does the dental formula of a cat differ from that of a dog?

Australian Veterinary Dental Society

Canine Dental Record

Patient: _____ Owner: _____

Breed: _____ Age / Sex: _____ Phone No.: _____ Date: _____

Chief Complaint: _____

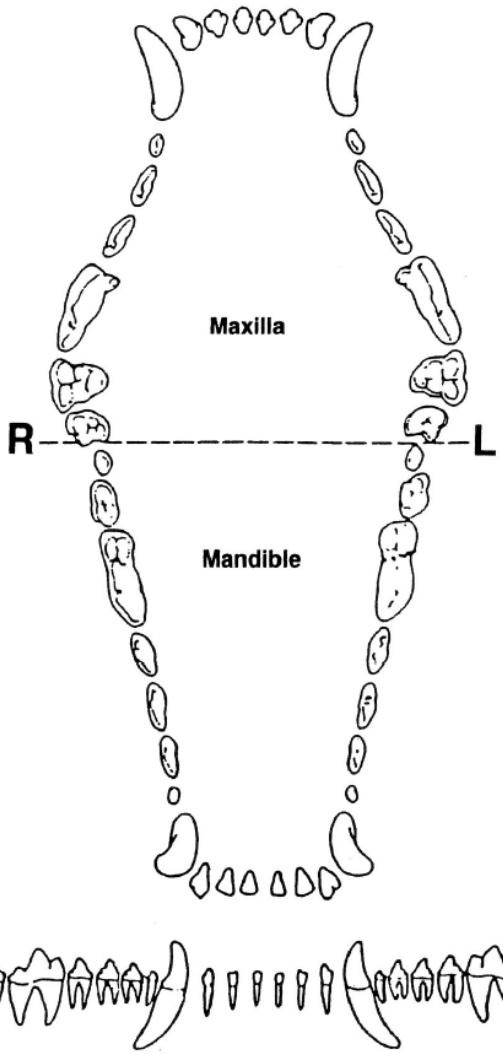
Past Dental History: _____

Existing home dental care: Brushing Oral Rinse Medication None

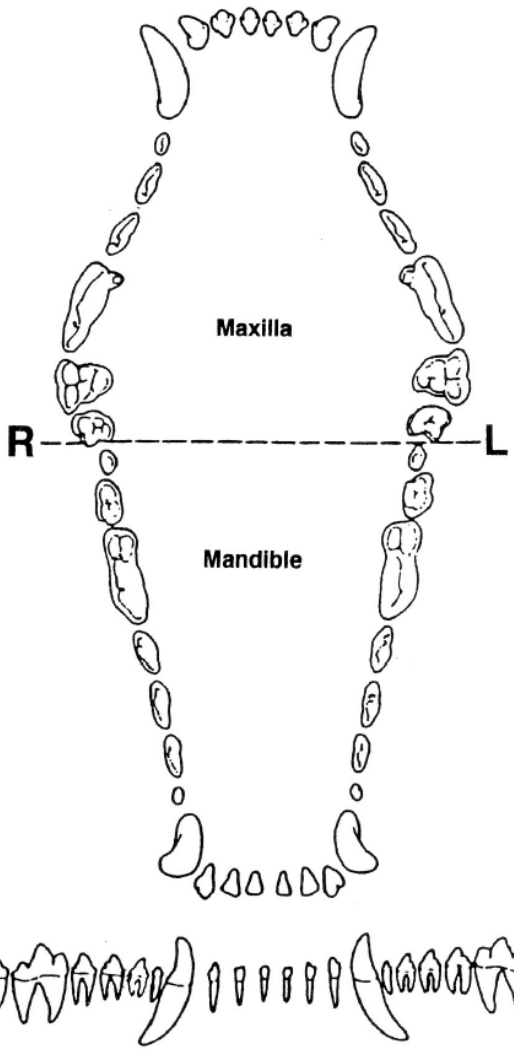
Diet / Oral Habits: _____

Occlusion: _____ Anaesthesia: _____ Temperament: _____

PRE-TREATMENT



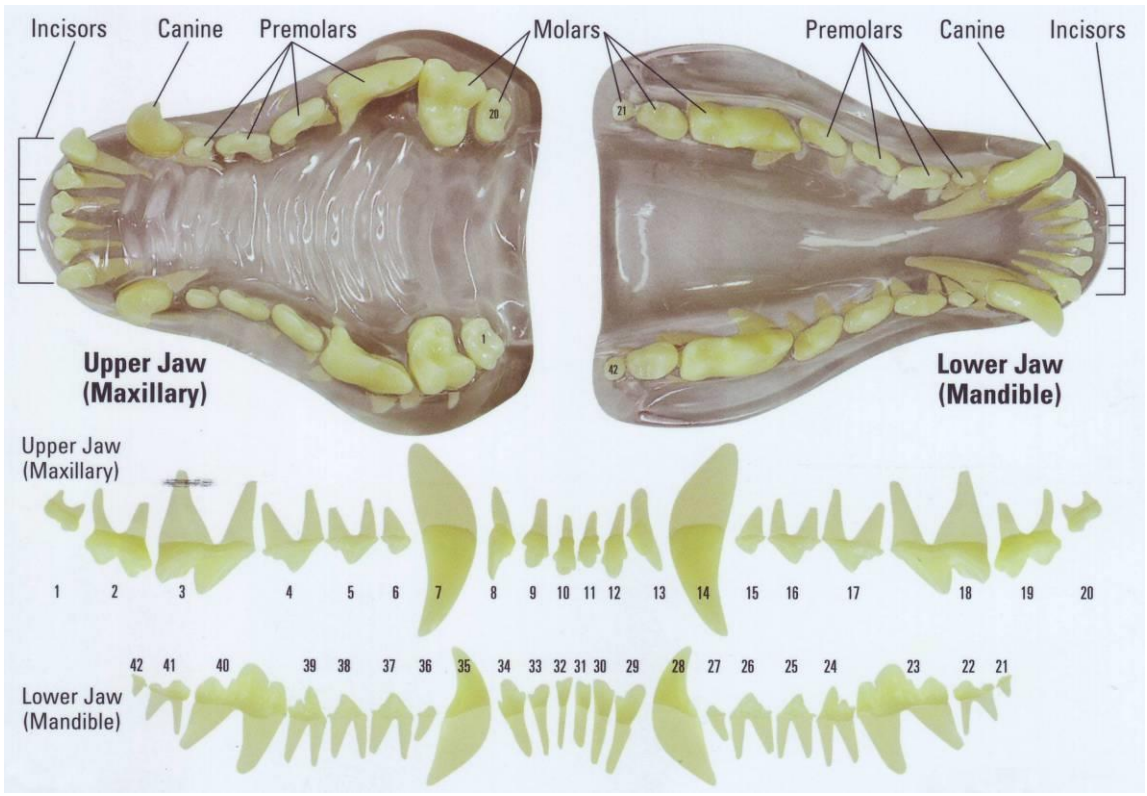
POST-TREATMENT



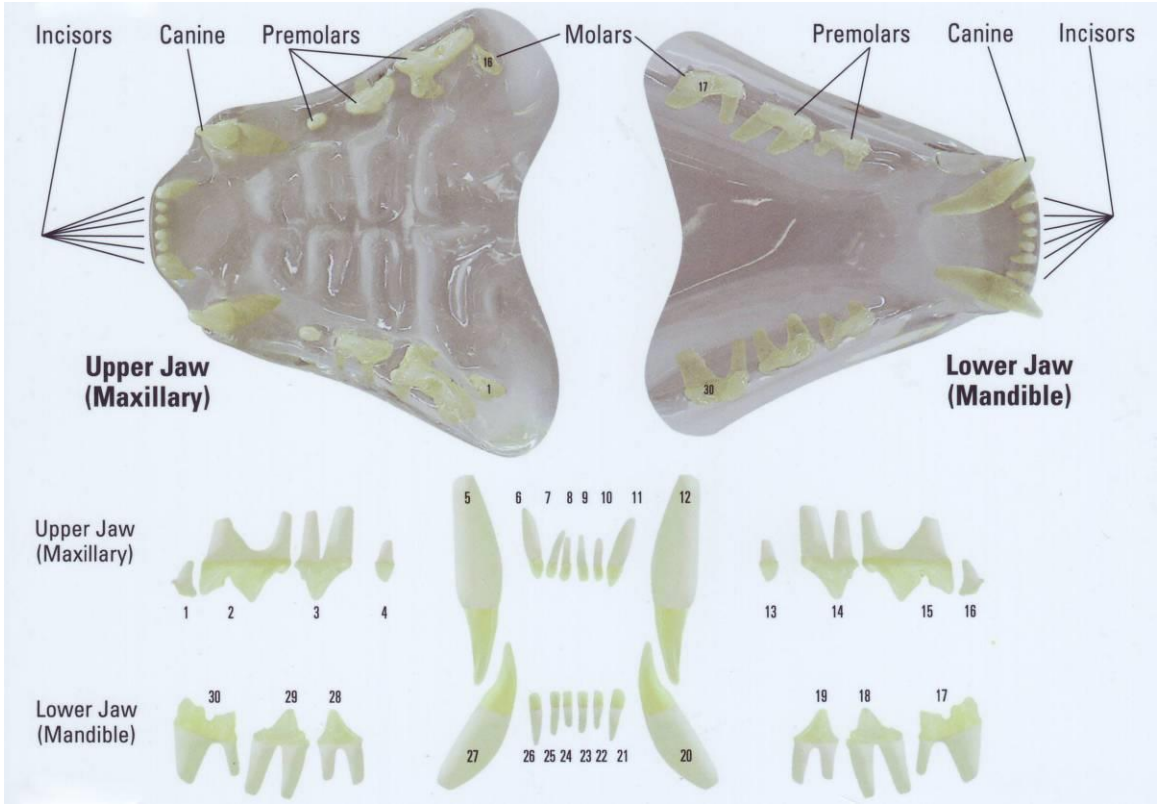
REMARKS

1. _____
2. _____
3. _____

Dog


Incisors
Canine
Premolars
Molars
Premolars
Canine
Incisors
Upper Jaw
(Maxillary)
Lower Jaw
(Mandible)
Upper Jaw
(Maxillary)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Lower Jaw
(Mandible)
42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21

Cat


Incisors
Canine
Premolars
Molars
Premolars
Canine
Incisors
Upper Jaw
(Maxillary)
Lower Jaw
(Mandible)
Upper Jaw
(Maxillary)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Lower Jaw
(Mandible)
30 29 28 27 26 25 24 23 22 21 20 19 18 17

STATION B: DOG AND CAT 2 – RELATIONSHIP OF TEETH TO UNDERLYING STRUCTURES

You are presented with the body of a dog and/or cat, and a clear perspex model of a dog and cat head, as well as radiographic images of dog jaws.

Examine the radiographs and head models.

Note the depth of the tooth roots into the underlying bone.

Q. How many roots does each tooth have?

Now examine the dog cadaver.

Examine the gums (gingiva). Place a probe into the gingival sulcus of one of the canine teeth.

Q. How deep is this sulcus?

Some dental instruments are provided. After a demonstration of their use by the demonstrator, two or three members of the group may gently remove one of the incisor teeth, or the first premolar.

Q. What structures have to be broken down in order to release the tooth from its attachments to the alveolar bone?

Do not attempt to remove the canines or molars.

Q. What difficulties do you envisage in trying to remove a normal healthy molar or premolar?

STATION C: HORSE

You are presented with a horse skull with teeth in situ, and also lateral radiographs of horses' jaws and some loose / sectioned teeth.

Examine the horse skull.

Identify the following teeth: incisors, molars, premolars

Identify the diastema.

Q. Where might you expect to find canine teeth and wolf teeth? Can you find an example of these?

Q. What is the dental formula for an adult horse?

Look at the occlusal surfaces of the incisor teeth:

Q. What are the structures visible on their surface, and what causes these features to appear?

Q. What features of the teeth can be useful in aging horses?

Note the occlusal surfaces of the premolar and molar teeth:

Q. How are these teeth adapted to their function?

Q. On which sides of the teeth (buccal or lingual) may sharp edges develop?

Examine the radiographs. Note the extent of the tooth roots.

Q. Why are these roots so extensive, and how does this help the function of these teeth?

Supplementary questions to consider or discuss:

(Some additional material is provided on the LMS).

How do diet, pasture management and stabling impact dental wear?

Why is it important for a horse to have regular dental examinations?

How would you remove a molar tooth in a horse?

STATION D: SHEEP

You are presented with a sheep head.

Examine the sheep head.

Identify the following teeth: incisors, molars, premolars

Q. What structure is present in the upper jaw, which replaces the upper incisors of other species?

Q. How does this dental arrangement relate to the diet of this animal and the process of mastication?

Q. What is the dental formula for an adult sheep?

Examine the photographs of juvenile, adult and old sheep.

Q. What is the basis for ageing sheep by their dentition?

Q. Estimate the age of the mystery sheep.

Supplementary question to consider:

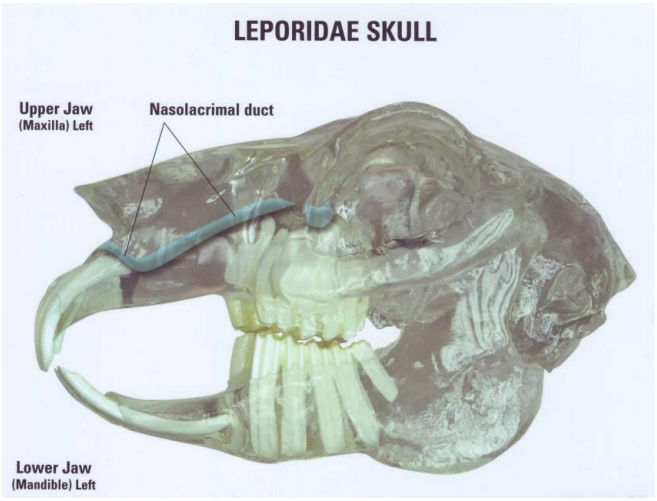
What is the implication of loss of incisor teeth in an older adult ewe?

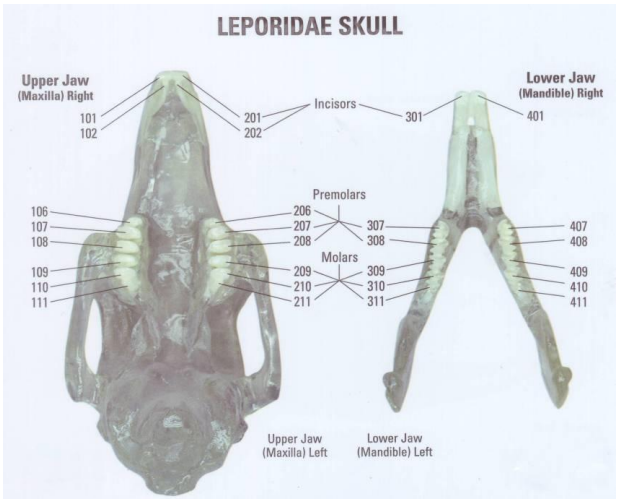
STATION E: RABBITS AND RODENTS

You are presented with rabbit and rodent skulls and rabbit dental models. Depending on availability there will be rabbit and various rodent specimens also provided.

Examine the rabbit head.

Q. Identify the following teeth: incisors, molars, premolars





Q. How does this dental arrangement relate to the diet of this animal and the process of mastication?

Q. What are the potential problems that may occur if the upper and lower incisors are not aligned to meet each other? How might this be managed?

Now examine the rodent specimens.

Q. How does rodent dentition differ from lagomorph dentition? (lagomorphs = rabbits, hares and pikas)

Q. How does rodent dentition differ between species depending on the diet?