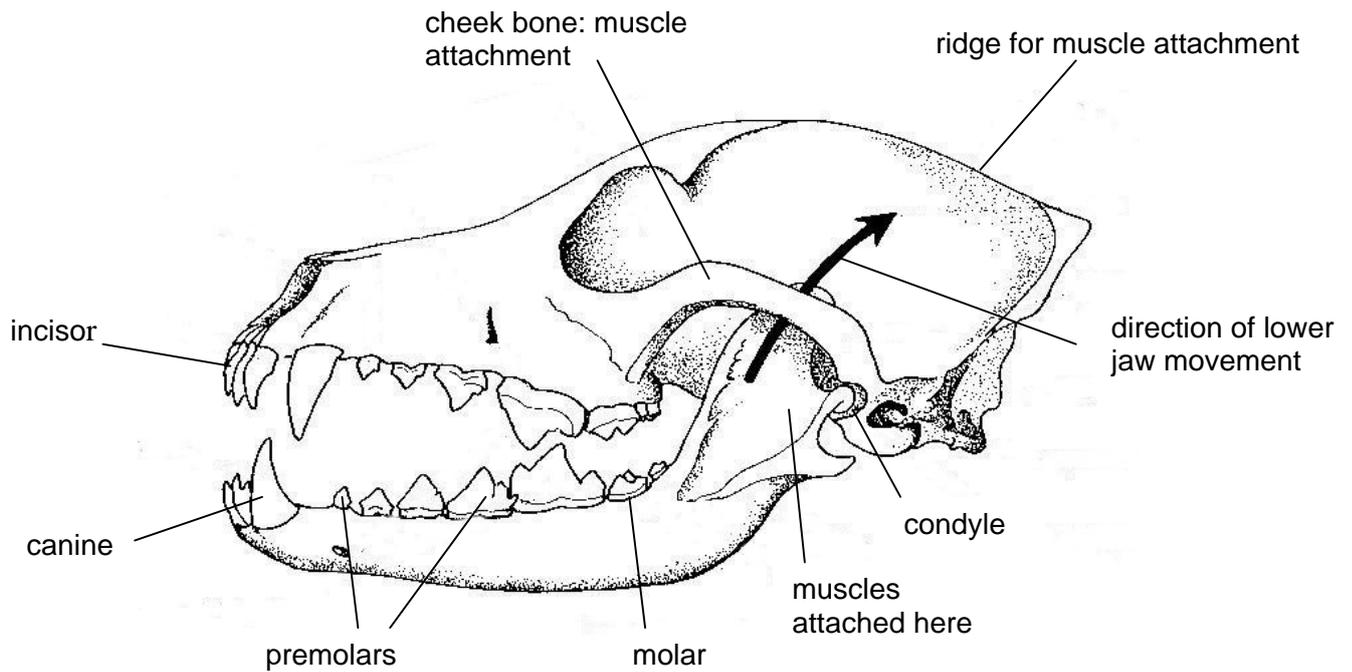


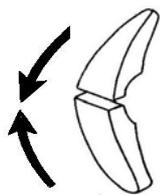
Teeth and Dentition

The teeth are set in the upper and lower jaws. The upper jaw is fused to the skull and cannot move. The lower jaw has a hinge joint (condyle) to the skull and can move. In carnivores such as the dog the condyle allows only up and down movement. In herbivores such as the sheep the condyles allow sideways movement as well.

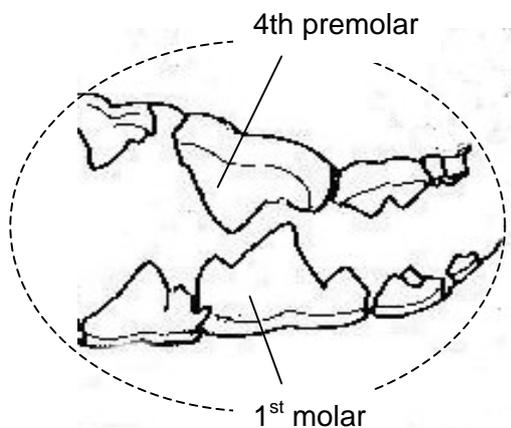
The teeth are named according to their position in the jaw. Their shapes vary according to their function.



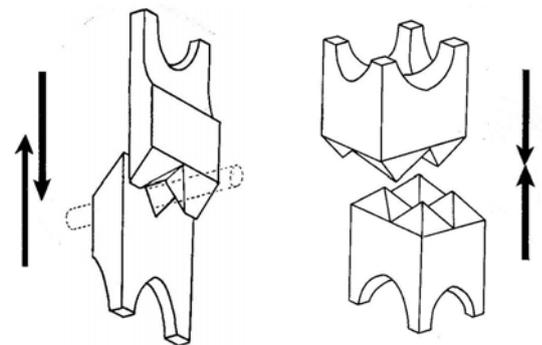
Dog's skull and teeth



The **incisor teeth** meet. They pull strips of flesh away from the bone.



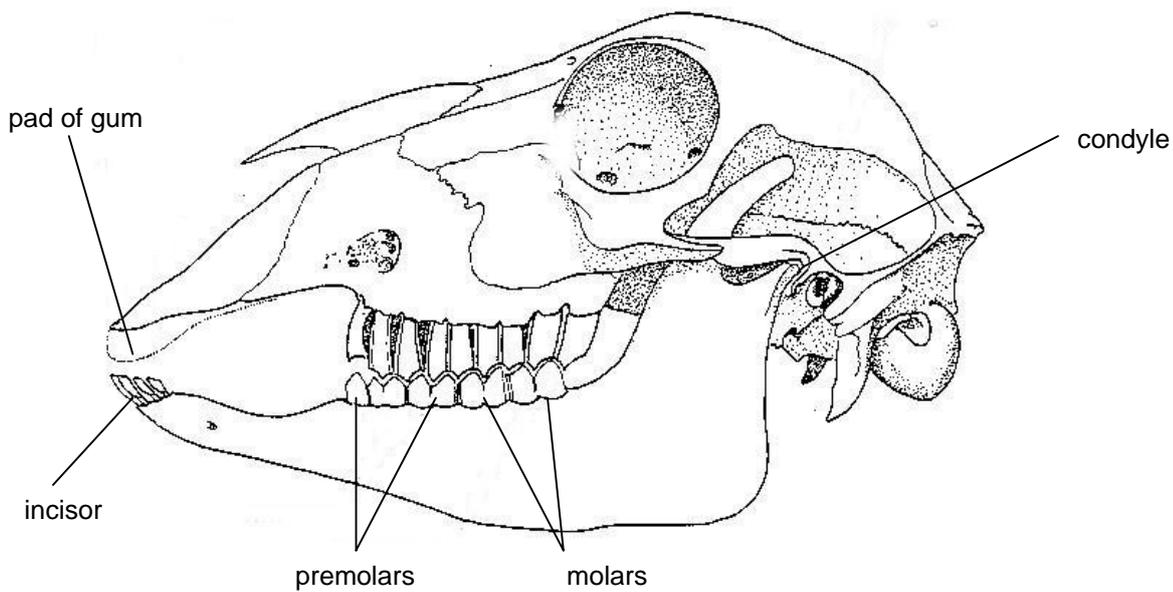
The 4th upper premolar and the 1st lower molar are the carnassial teeth. They are large and sharp and pass each other like shears to cut flesh from bones and crack small bones.



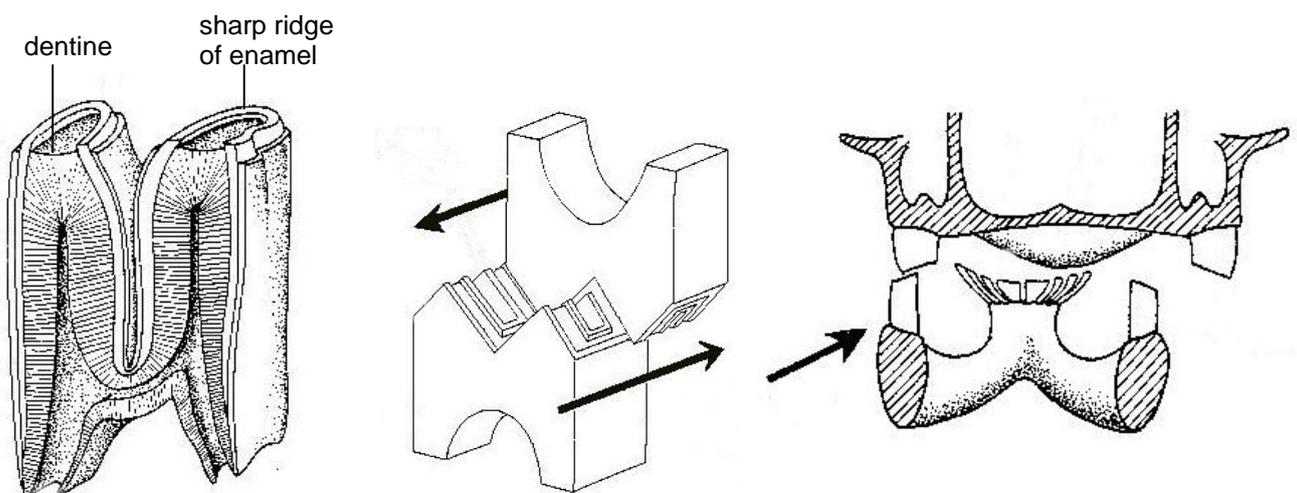
The **molar teeth** meet and crush flesh and bone fragments.

The **canine teeth** prevent the prey escaping and may kill it.

The sheep



The sheep is a typical herbivore and its teeth are adapted to pulling up grass and grinding it until the cell walls are broken open. There are no top incisors. The grass is gripped between the lower incisors and a pad of gum in the upper jaw. The condyle allows the lower jaw to move from side to side grinding the grass between the upper and lower molars and premolars. These teeth continue to grow throughout the lifetime of the animal and are worn down at the same rate. As the teeth grind sideways, the enamel is worn down, exposing the dentine. The enamel is harder than the dentine and forms sharp ridges. As the upper and lower molars are ground together the enamel ridges fit exactly and grind the grass to a pulp which is then swallowed. The large gap between the incisors and premolars allows the tongue to move freely and manipulate the grass.



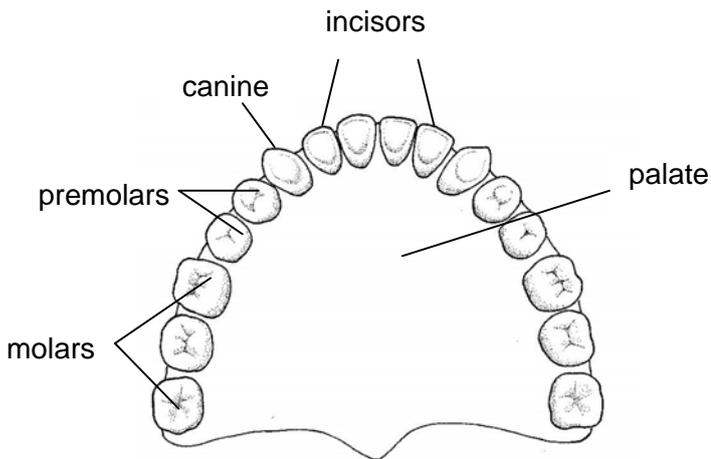
Vertical section through molar partially ground down.

Action of molars (diagrammatic). The teeth slide past each other grinding the grass between the enamel ridges.

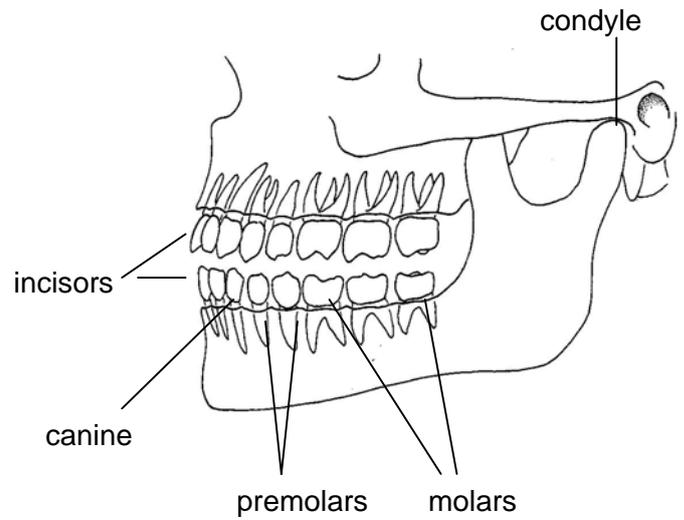
Vertical section through jaw bones to show grinding movement.

(After John Maynard Smith)

Human



Upper jaw seen from below

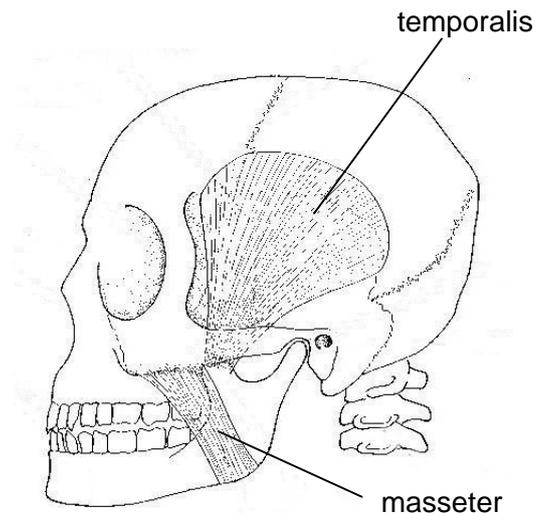


Position of teeth in jaws - side view

Humans are omnivores. That means they can feed equally well on meat or vegetables.

The teeth are not specialised for cutting flesh or grinding vegetation. The upper and lower incisors pass each other and bite off portions of food small enough to be taken into the mouth.

The upper and lower premolars and molars meet and crush the food into sizes that can be swallowed.



The principal chewing muscles