

ANATOMICAL LANDMARKS OF TEETH

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SURFACES OF THE TEETH

Mesial: Surface of the tooth closest to the midline.

Distal: Surface of the tooth farthest from the midline.

Facial: Surface of the tooth closest to the face.

a. “**Labial**” (lips) used for ***anterior*** teeth

b. “**Buccal**” (cheek) used for ***posterior*** teeth

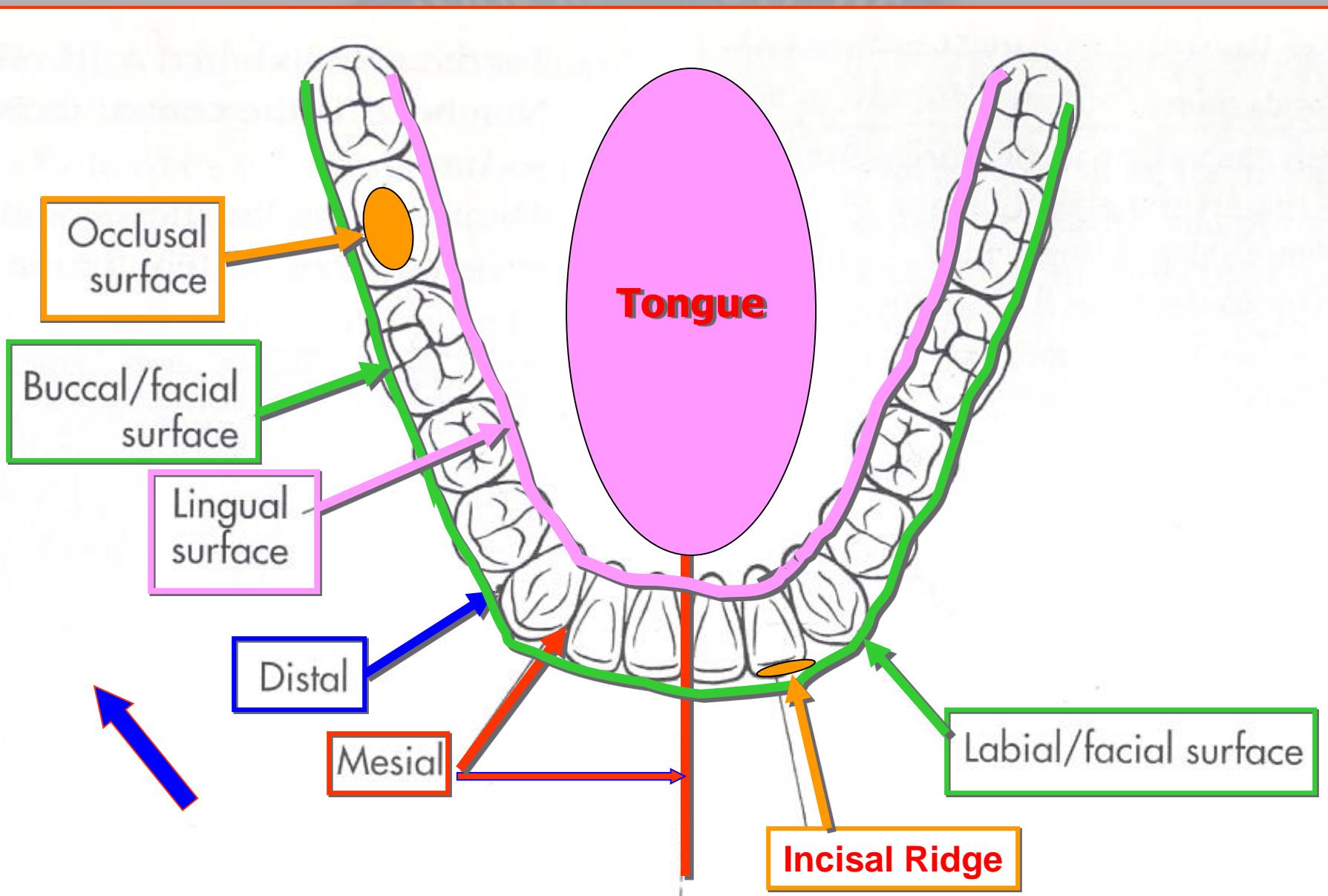
More Definitions:

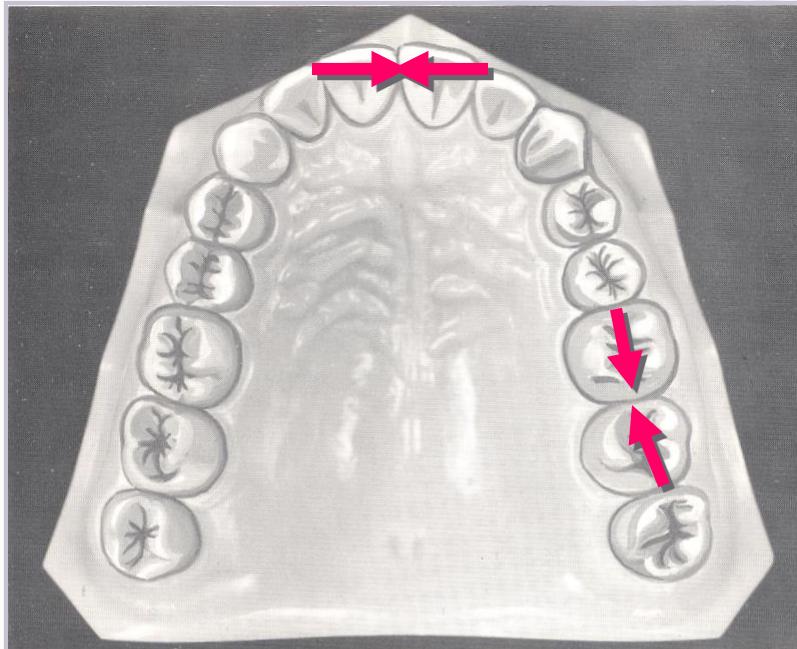
Lingual: Surface of the tooth closest to the tongue.

(“*Palatal*” some-times used for *Maxillary posterior teeth* because their surfaces are adjacent to the palate.)

Occlusal: Biting surface of *posterior* teeth.

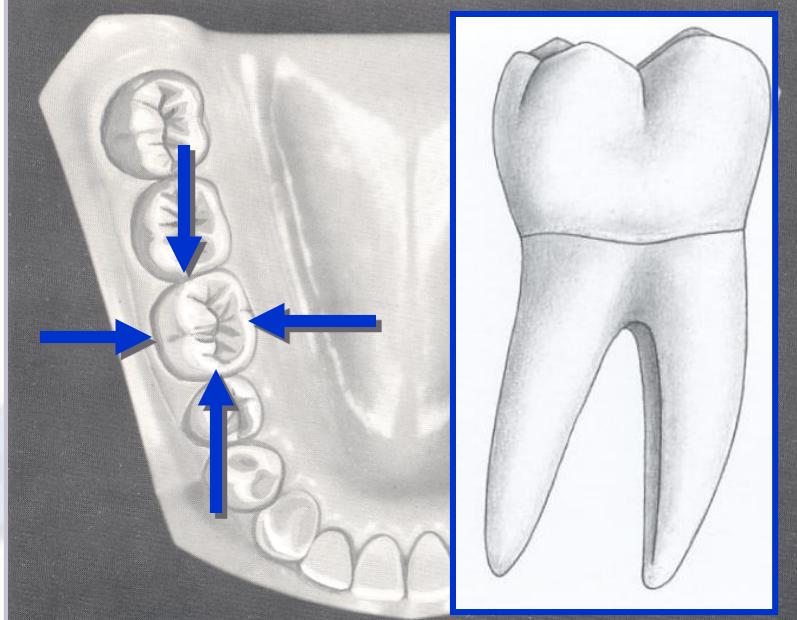
Incisal: Biting surface of *anterior* teeth





Proximal Surfaces

The surfaces of teeth facing toward adjoining teeth in the same arch



Axial Surfaces

The surfaces of teeth that are parallel to the long axis of the tooth, i.e. M, F, D, L

Positive Anatomical Landmarks of Teeth

Positive
(raised)
features of
Coronal
Anatomy:

CUSP(S)

RIDGES: Incisal, Marginal, Triangular, Cuspal,
Lingual, Facial, Cervical, Transverse, and Oblique

CINGULUM (*CINGULI*)

TUBERCLE(S)

Negative Anatomical Landmarks of Teeth

Negative
(depressed)
features of
Coronal
Anatomy:

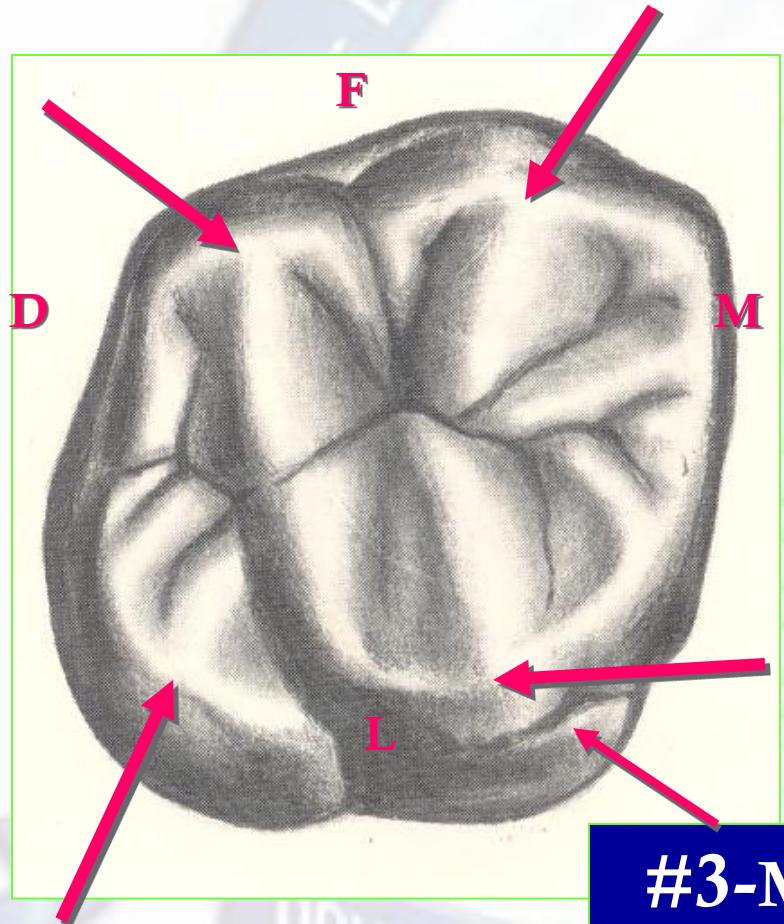
Fossa/fossae: Lingual, central

Sulcus (sulci)

Grooves: Developmental and supplemental

Developmental Depression

Positive Anatomical Landmarks of Teeth

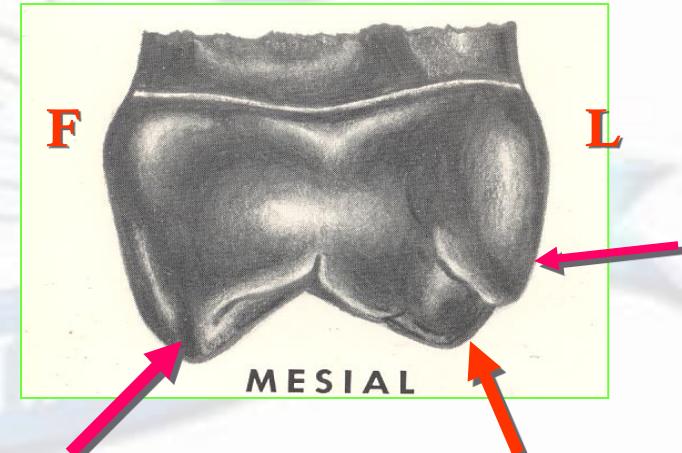


#3-Mx R
1st Molar

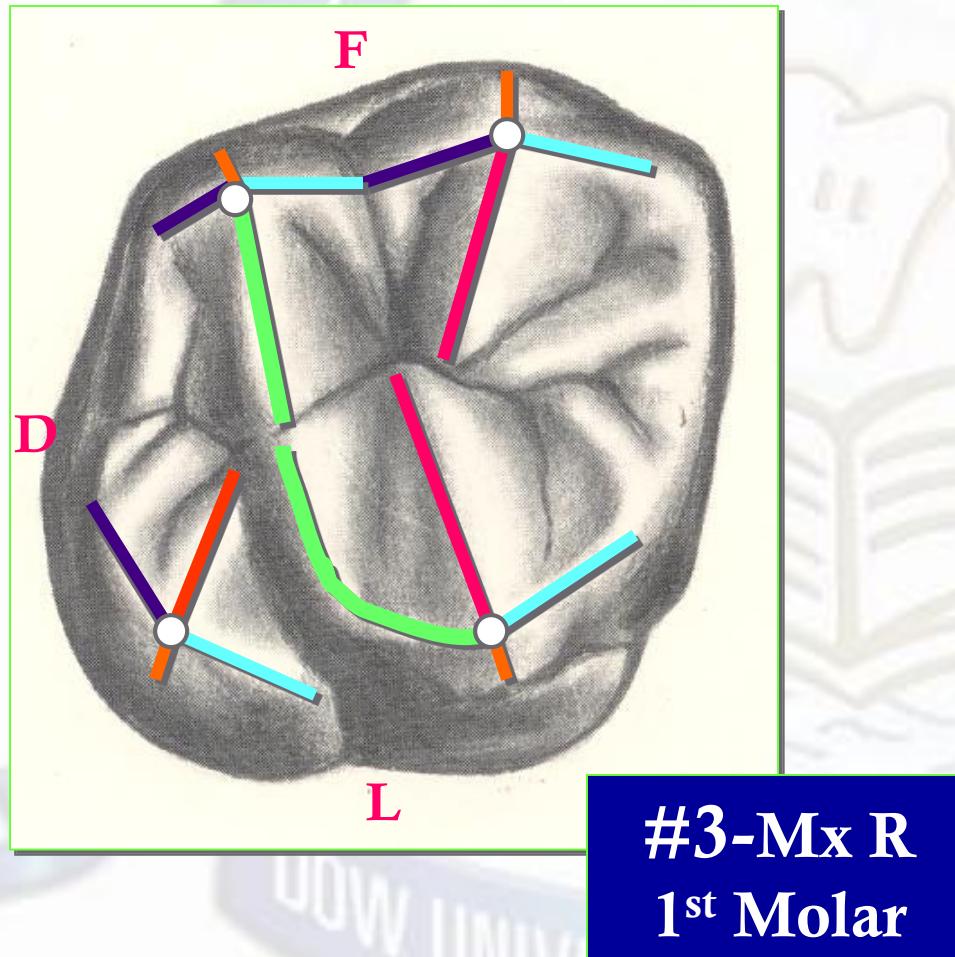
“Cusp” = an elevation or mound on the crown portion of the tooth

When naming cusps,
the proximal surface is stated first, then the other axial surface

5th Cusp or Cusp of Carabelli



Ridge Architectural Construct

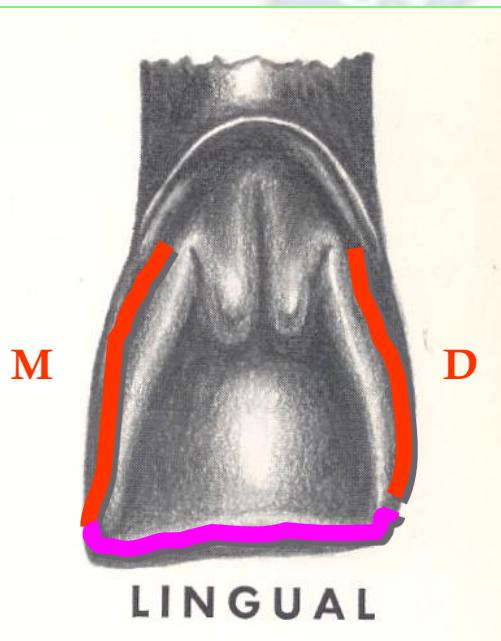


Gothic Pyramid

4-sided pyramid

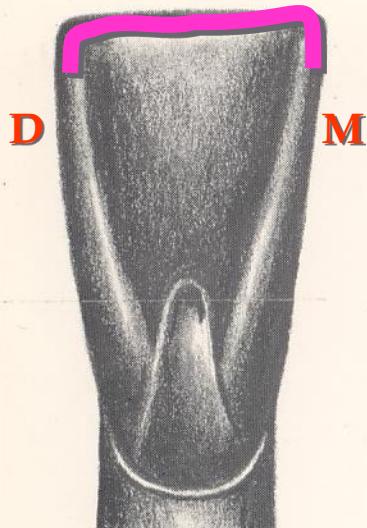


Incisal Ridges

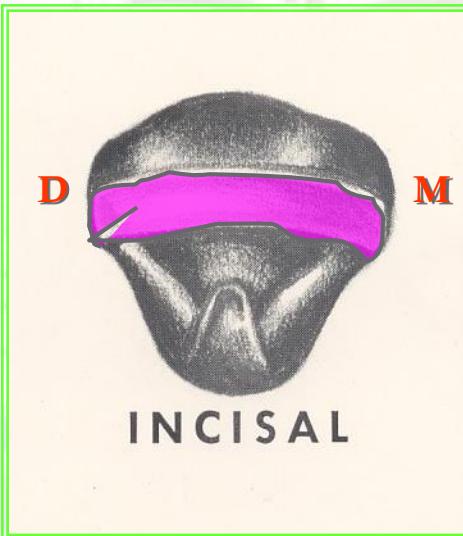


Incisal Ridge: extends mesiodistally from the incisal most portion of the **mesial & distal marginal ridges** of incisors

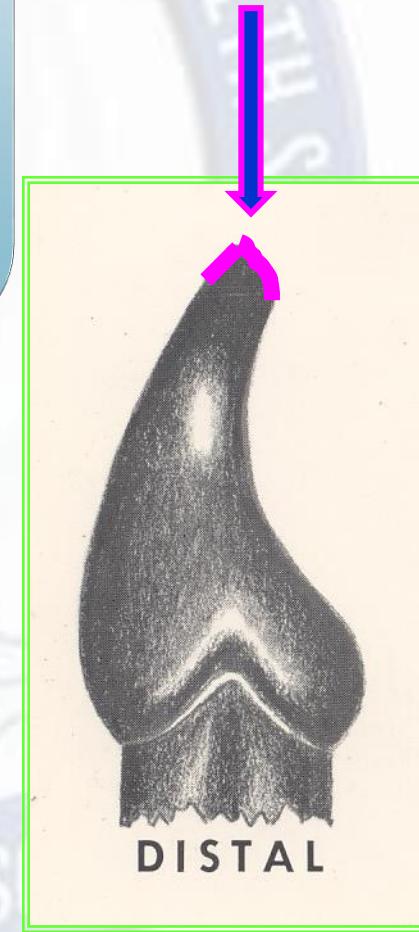
Incisal Edge



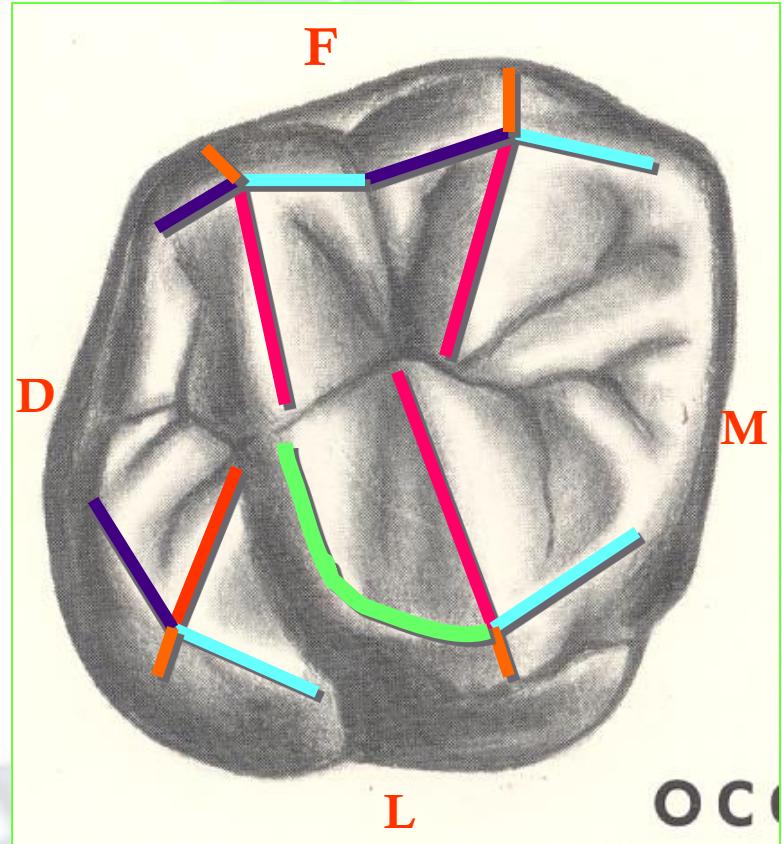
Incisal Ridge: extends mesiodistally from the incisal most portion of the mesial & distal marginal ridges of incisors



“Incisal Edge”



Cuspal Ridges

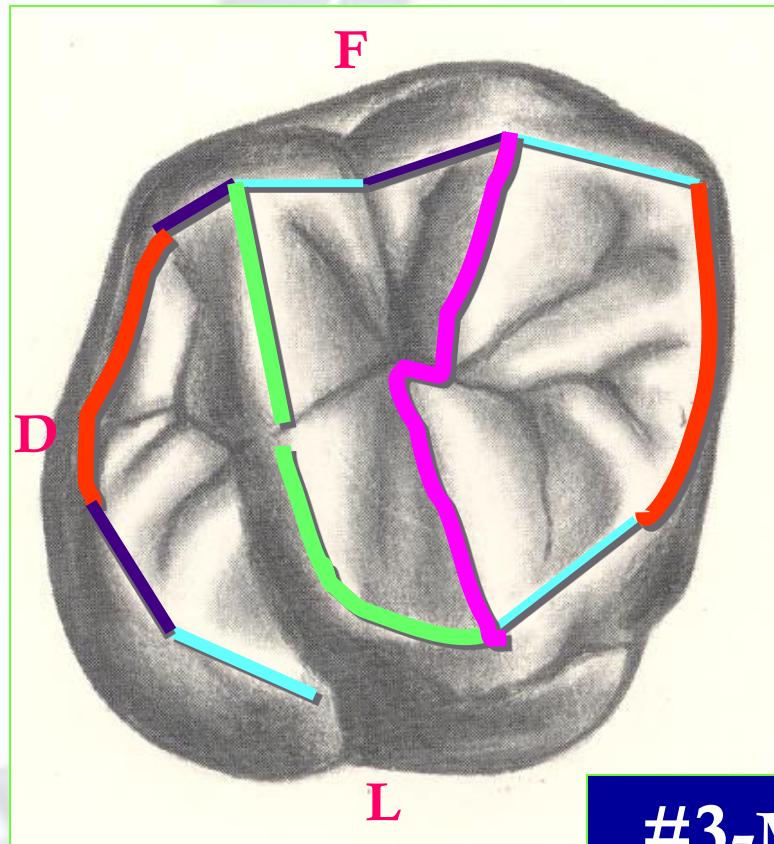


#3-Mx R 1st Molar

Cusp or Cuspal Ridge:
descends from the tips of
cusps in directions other
than toward the central
part of the occlusal surface

Every cusp has 4 Ridges but
only one is a triangular ridge

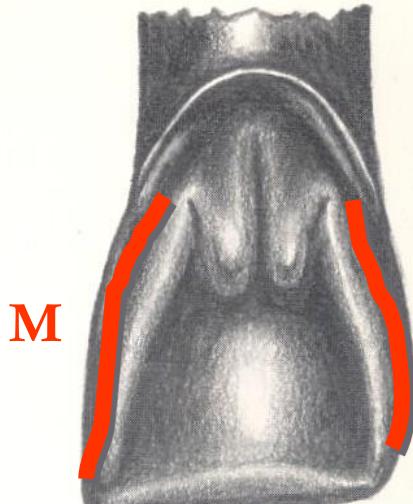
Marginal Ridges



#3-Mx R
1st Molar

Marginal Ridge: Those rounded borders of the enamel that form the mesial & distal margins of the occlusal surface of posterior teeth and....

Marginal Ridges on Anterior Teeth



M

D

LINGUAL

M

D

LINGUAL

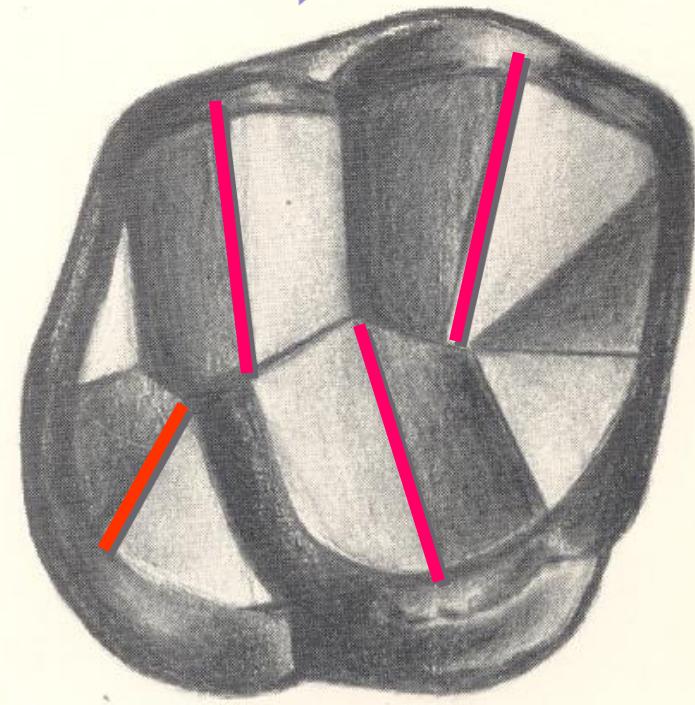
Marginal Ridge: ...the mesial and distal margins of the *lingual* surface of *anterior* teeth (incisors & canines)

Ridges:

“any linear elevation on the surface of a tooth”

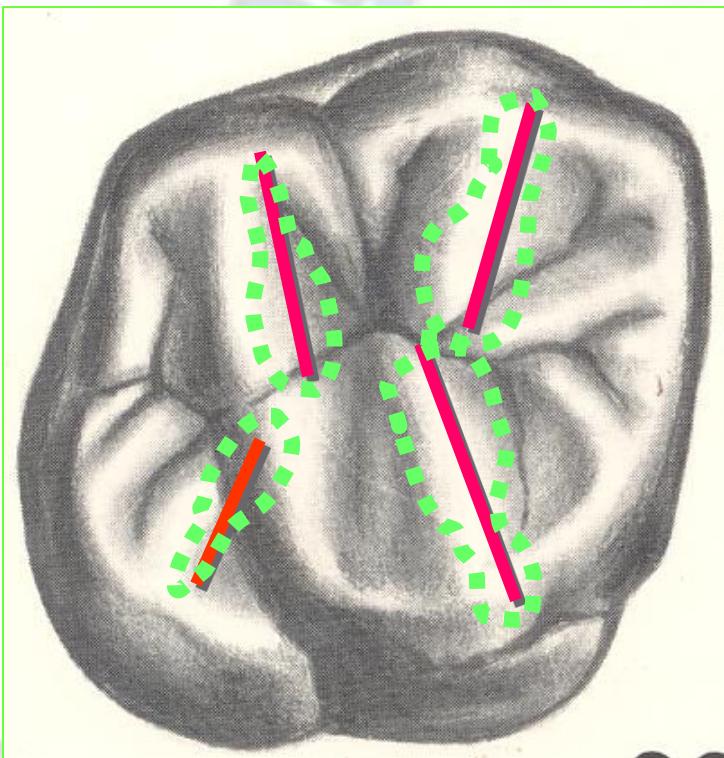
Triangular Ridge:

descends from the tips of the cusps of posterior teeth toward the central part of the occlusal surface



#3-Mx R 1stMolar

Triangular Ridges

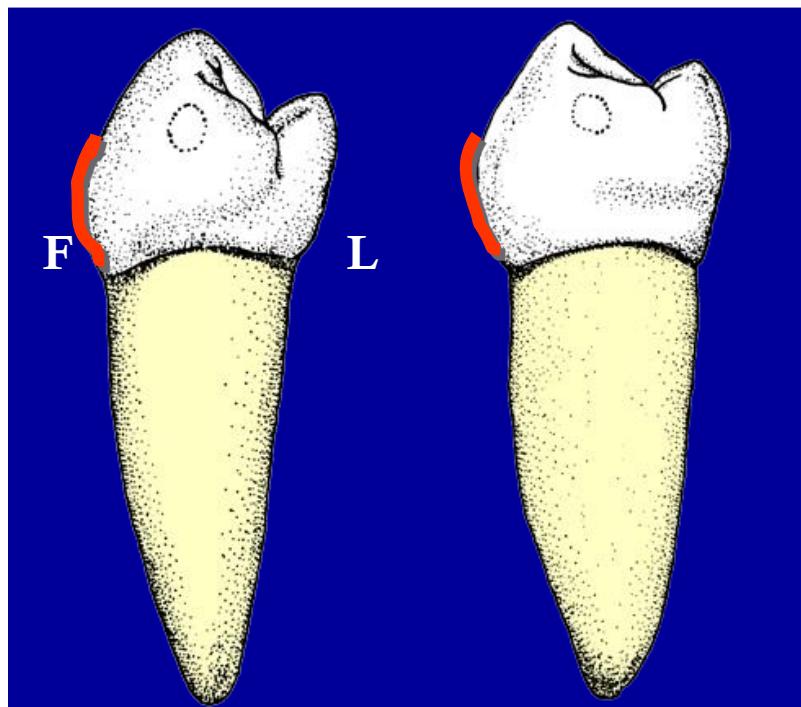
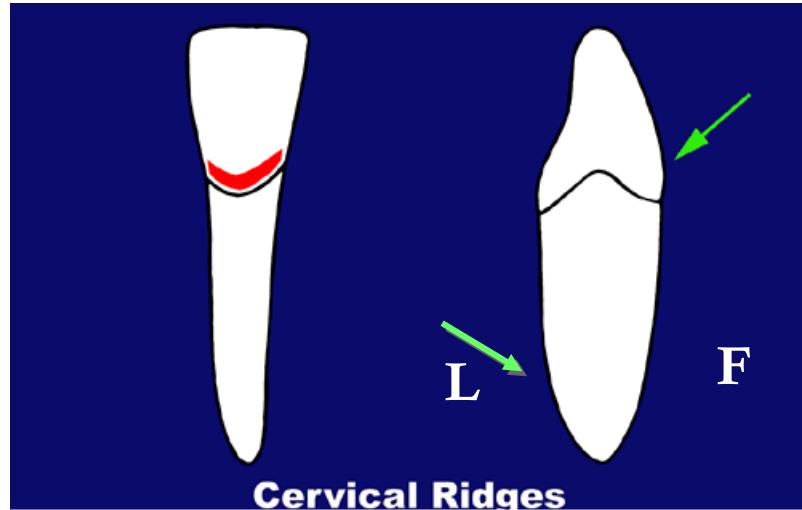


Each cusp has only one triangular ridge

Triangular ridges are wider at the base than at the tip (bowling pin)

#3-Mx R 1st Molar

Cervical Ridges



Cervical Ridge: ...the height of contour on the facial or lingual surface of a tooth. This occurs at the cervical (neck) 1/3 of the crown

Posterior teeth have only a facial cervical ridge

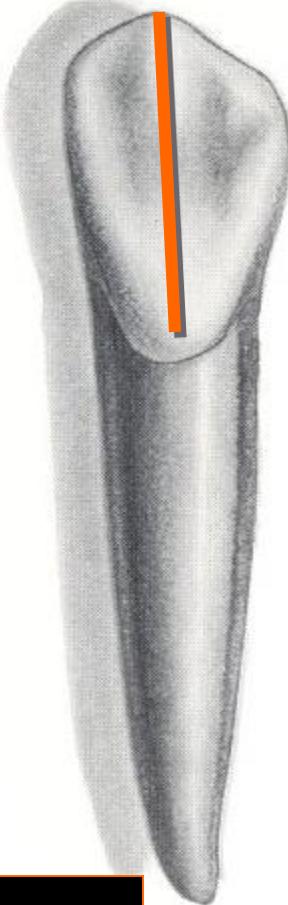
Anterior teeth have two (Facial & Lingual)

Lingual Ridges on Canines

#6-L



#27-L



Lingual Ridge

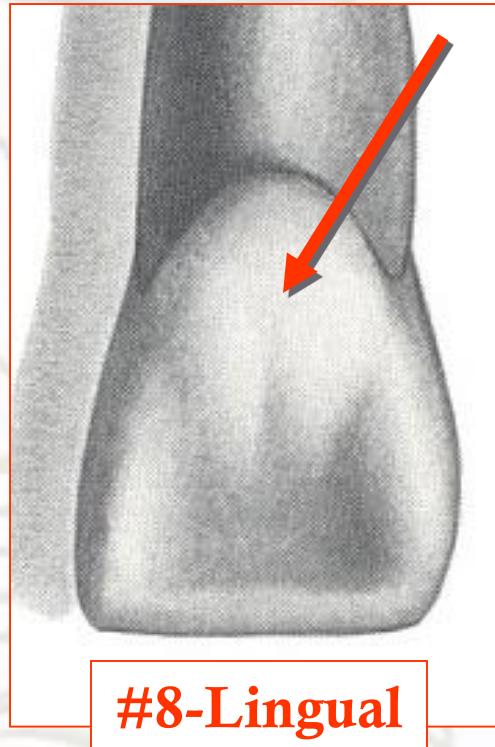
Anterior Teeth: Unique
to the lingual surfaces
of canines.

Extends from the cusp
tip to the cingulum

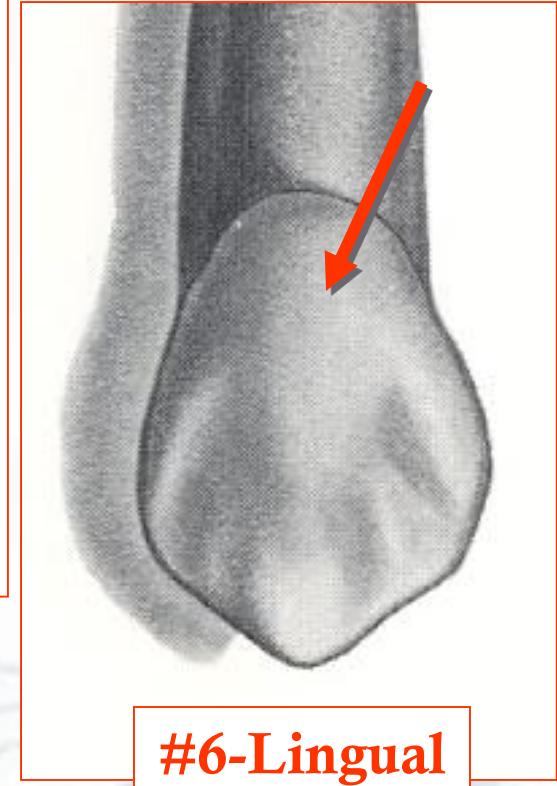
Cingulum on Anterior Teeth

Cingulum:

the lingual lobe of an anterior tooth making up the bulk of the cervical 1/3



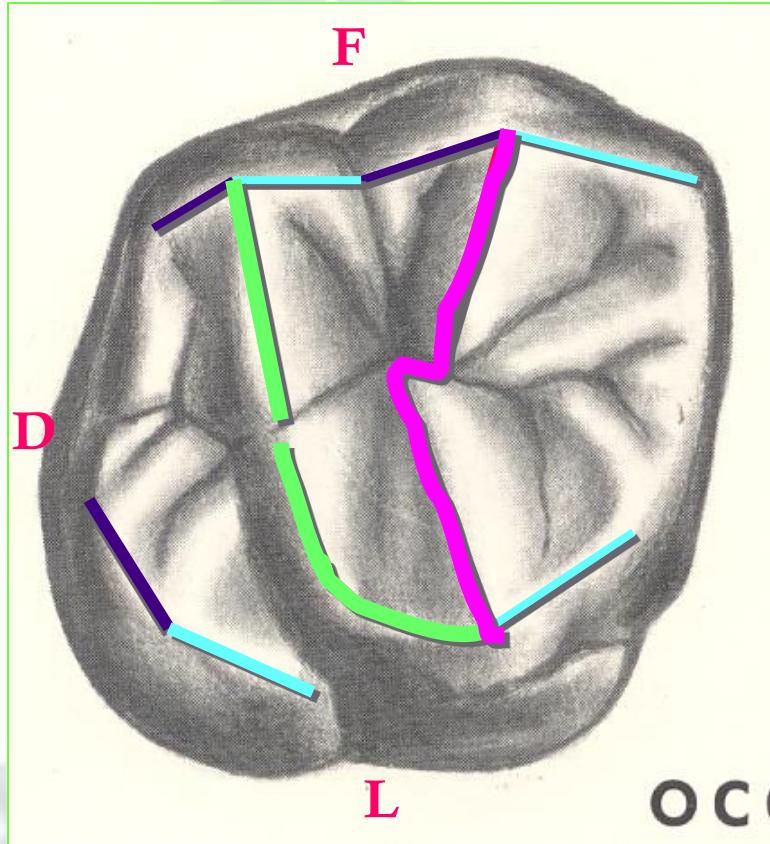
#8-Lingual



#6-Lingual

Tubercle: is a smaller elevation on some portion of the crown produced by an extra formation of enamel

Transverse Ridge

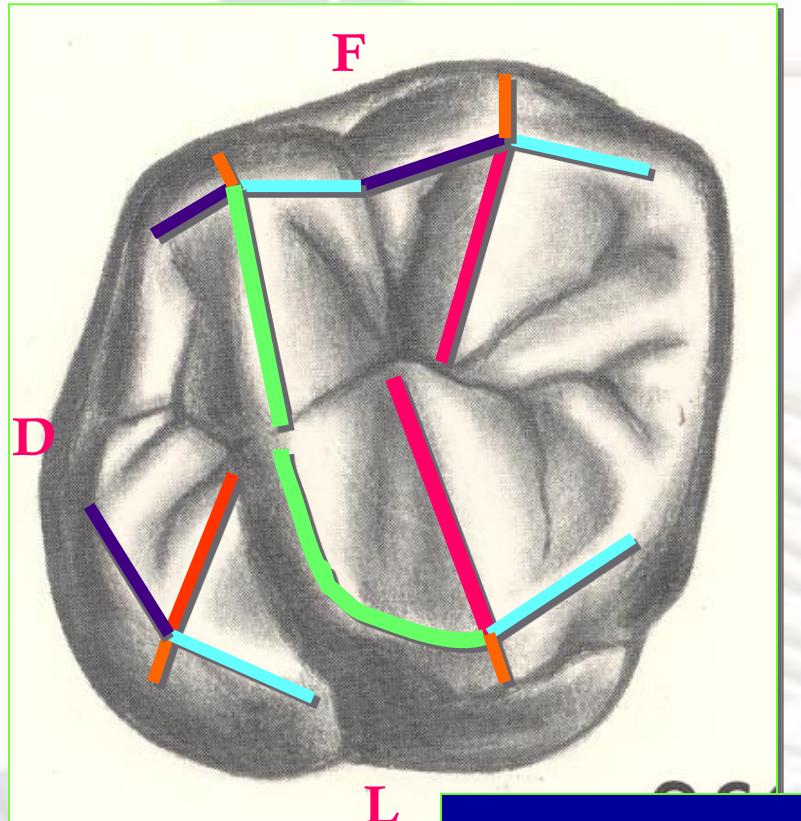


Transverse Ridge:

The union of two triangular ridges crossing transversely the surface of a posterior tooth

#3-Mx R 1st Molar

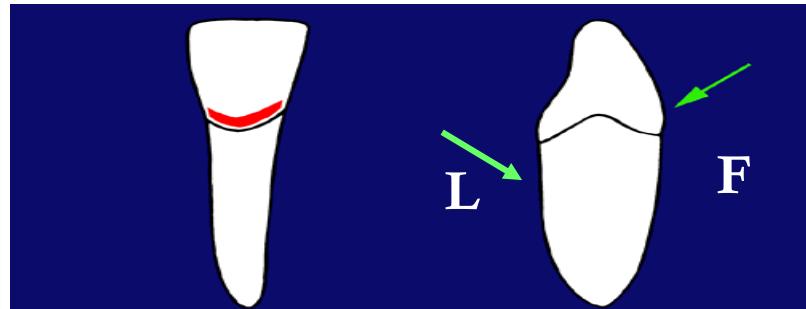
Oblique Ridges



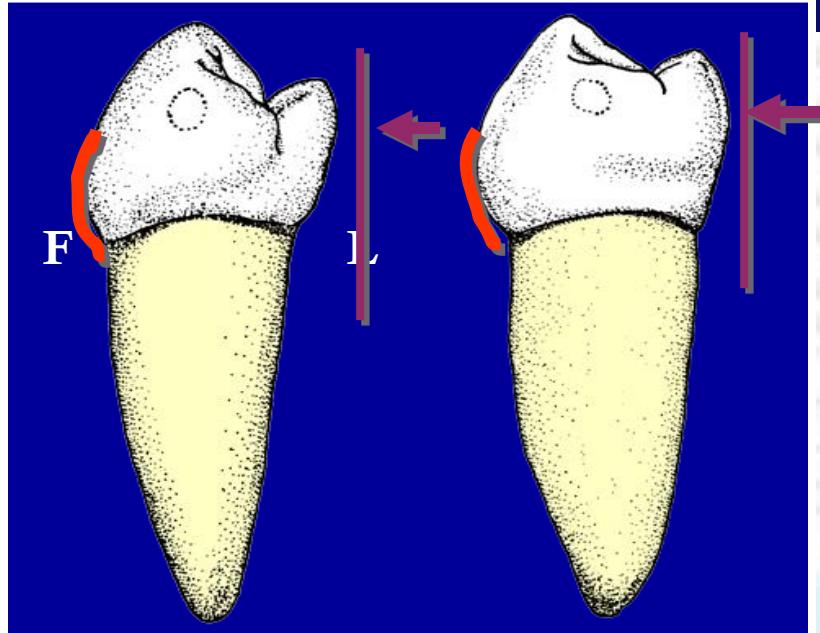
#3-Mx R
1st Molar

Oblique Ridge: Unique to *Maxillary Molars*; obliquely crosses the occlusal surface and is formed by the triangular ridge of the **DF** cusp & the distal cusp ridge of the **ML** cusp.

Lingual Heights of Contour



Cervical Ridge: ...the height of contour on the facial or lingual surface of a tooth. This occurs at the cervical (neck) 1/3 of the crown



Posterior teeth have only a facial cervical ridge

Anterior teeth have two (Facial & Lingual)

Fossa(e): Irregular depression or concavity

Central Fossa:

Found at the bottom of the occlusal surfaces of molars.

Formed by converging ridges ending at a central point where there is a junction of grooves.

Maxillary Molars:

The central fossa of the occlusal surface is a concave area bound by:

- D slope of the MB cusp
- M slope of the distobuccaDB cusp
- the crest of the oblique ridge,
- the crests of the two triangular ridges of the MB and ML cusps.

- ❖ The central fossa of the occlusal surface is a concave area bounded by
 - D slope of the MB cusp,
 - both M and D slopes of the DB cusp
 - the M slope of the D cusp
 - the D slope of the ML cusp
 - and the M slope of the DL cusp

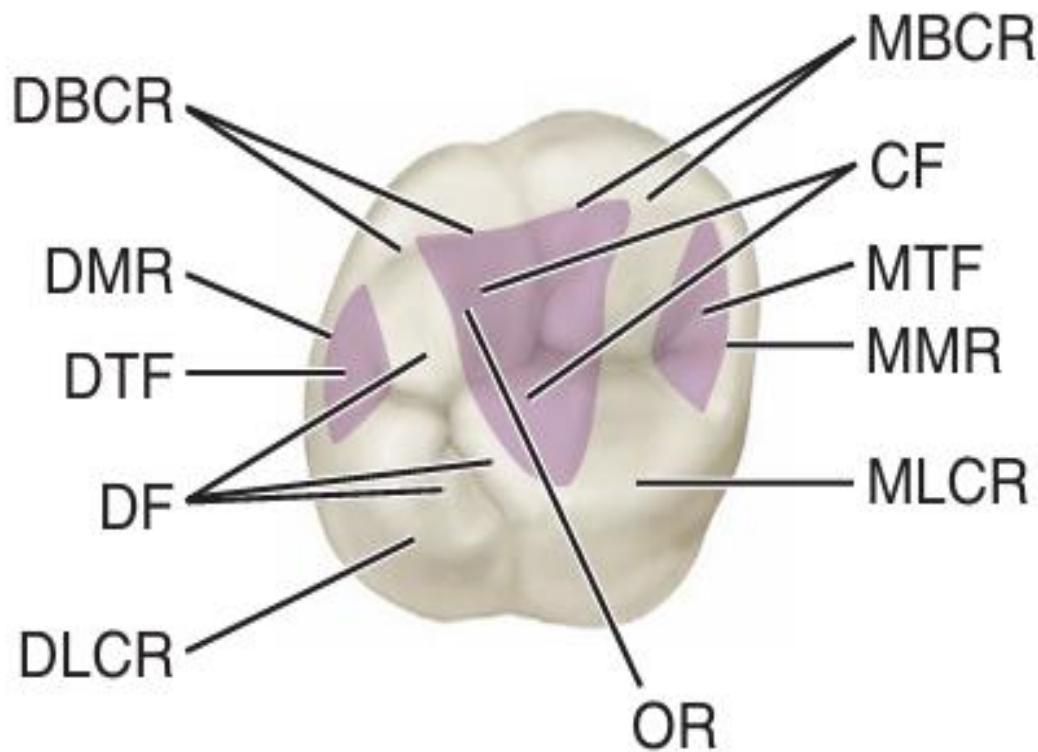


FIGURE 11-1 Maxillary right first molar, occlusal aspect. *MBCR*, Mesiobuccal cusp ridge; *CF*, central fossa (*shaded area*); *MTF*, mesial triangular fossa (*shaded area*); *MMR*, mesial marginal ridge; *MLCR*, mesiolingual cusp ridge; *OR*, oblique ridge; *DLCR*, distolingual cusp ridge; *DF*, distal fossa; *DTF*, distal triangular fossa (*shaded area*); *DMR*, distal marginal ridge; *DBCR*, distobuccal cusp ridge.

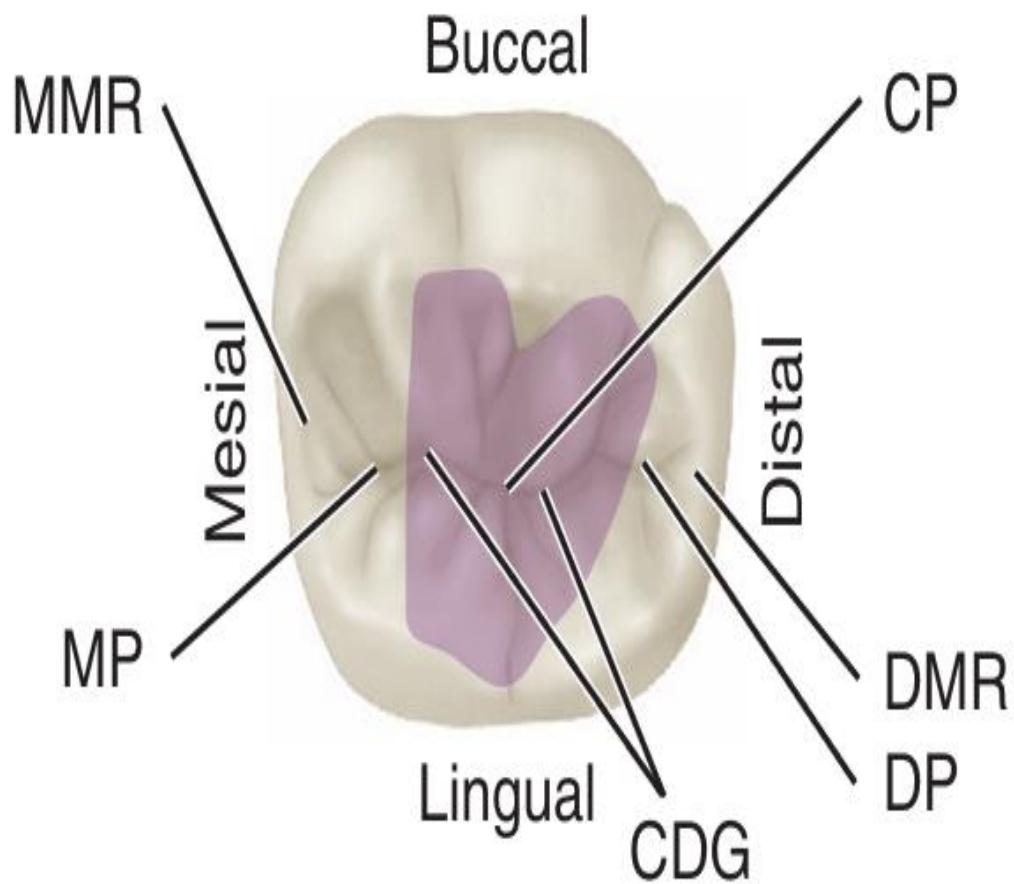


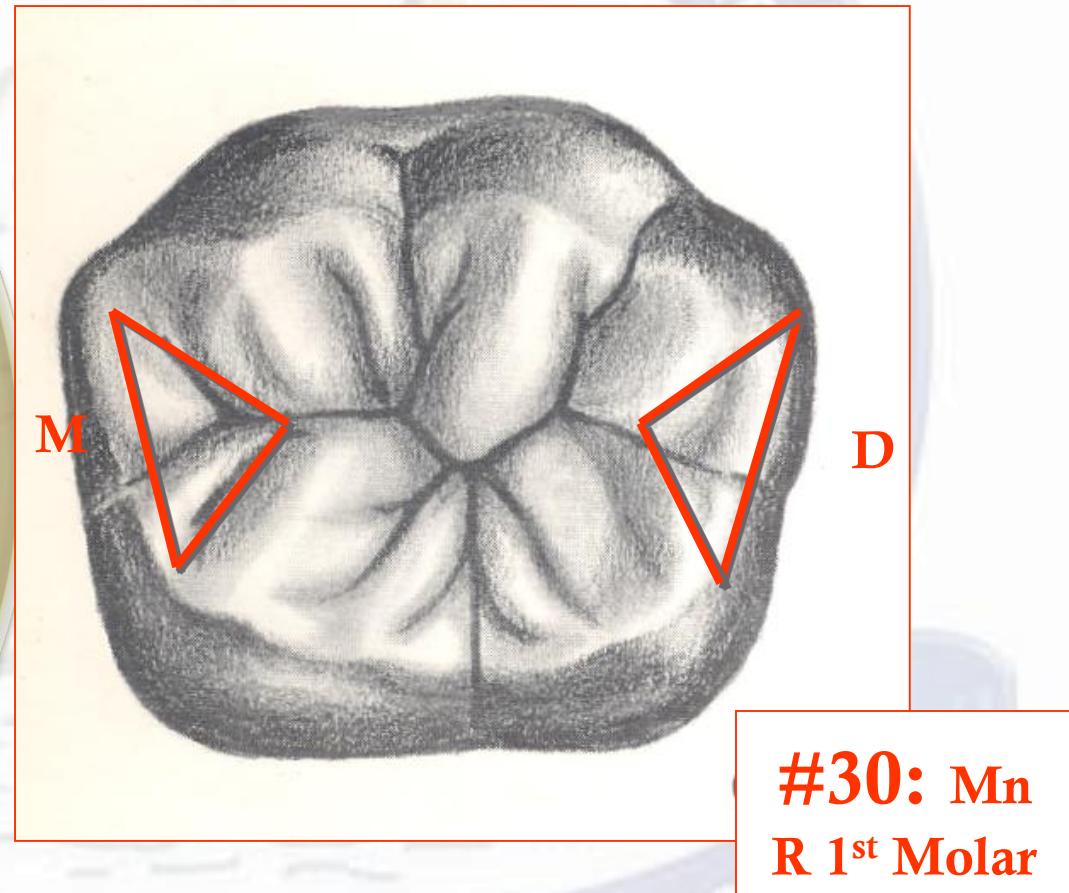
FIGURE 12-2 Mandibular right first molar, occlusal aspect. *Shaded area is the central fossa. CP, Central pit; DMR, distal marginal ridge; DP, distal pit; CDG, central developmental groove; MP, mesial pit; MMR, mesial marginal ridge.*

Fossa(e): Irregular depression or concavity

Triangular Fossa:

Triangular shaped depression found on the occlusal surface of posterior teeth.

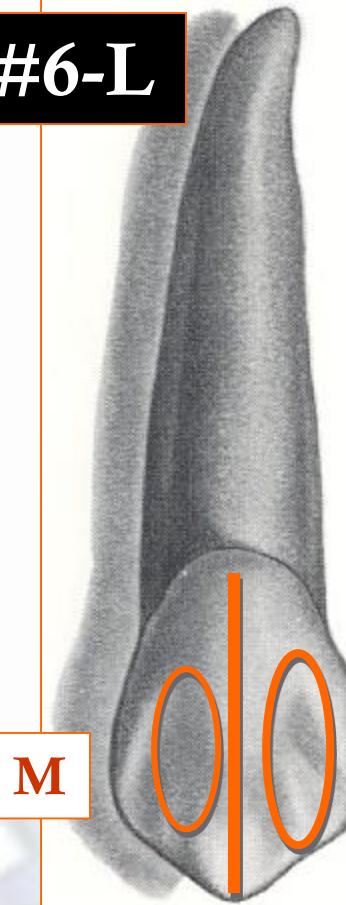
The base of the triangle is a marginal ridge.



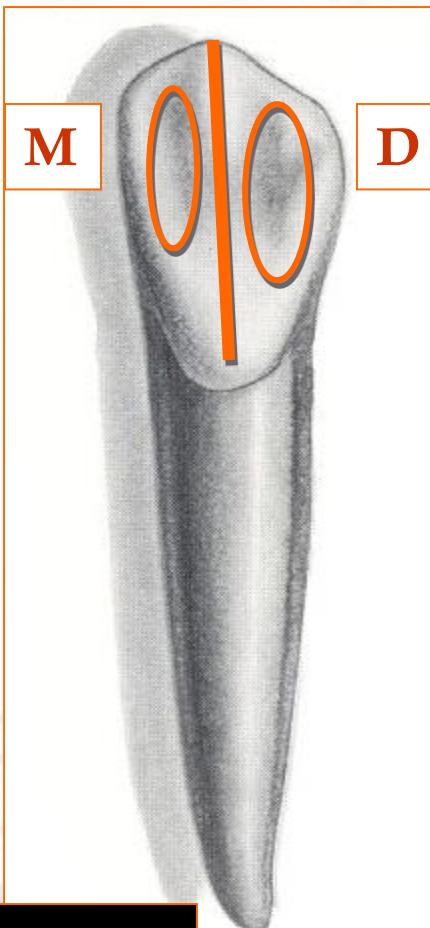
#30: Mn
R 1st Molar

Fossa(e): Irregular depression or concavity

#6-L



#27-L



Lingual Ridge

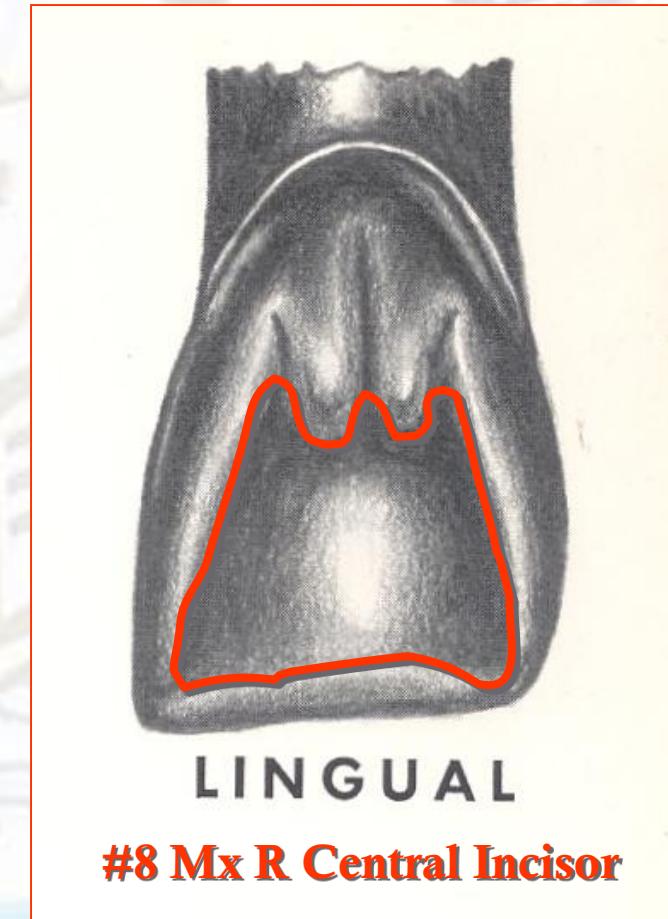
Unique to the
lingual surfaces of
canines.

Divides the lingual
fossa of canines into
ML & DL fossae

Fossa(e): Irregular depression or concavity

Lingual Fossa:

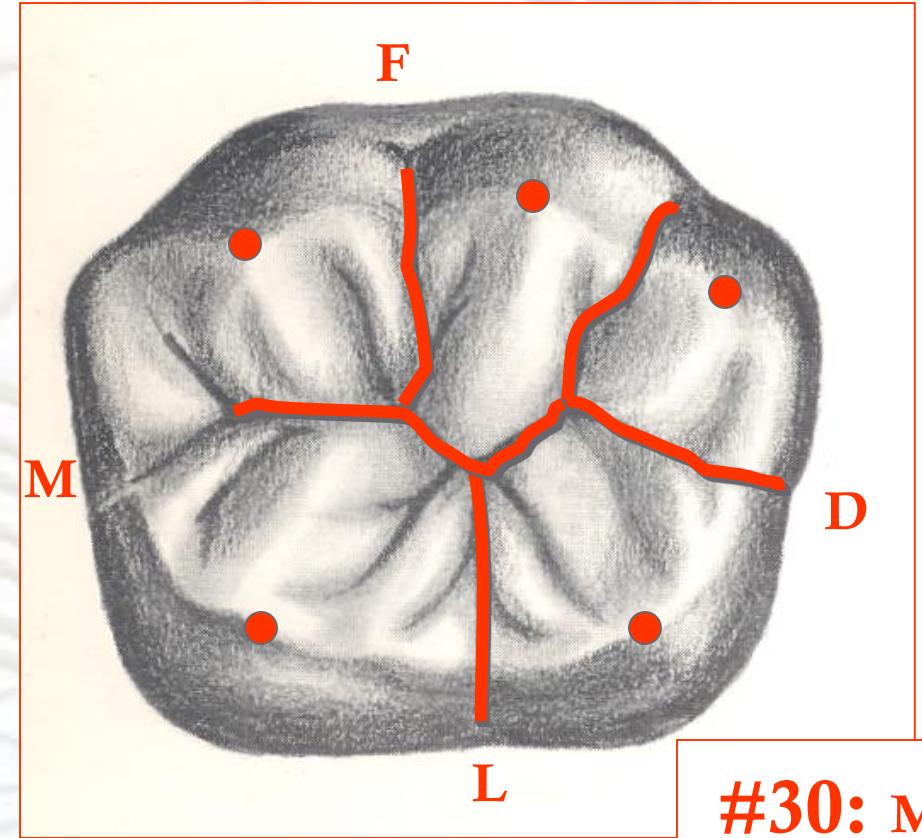
Found on the lingual surfaces of anterior teeth



Groove: A definitive line on the surface of the tooth

Developmental Groove:

A linear depression between the *primary* parts of the tooth

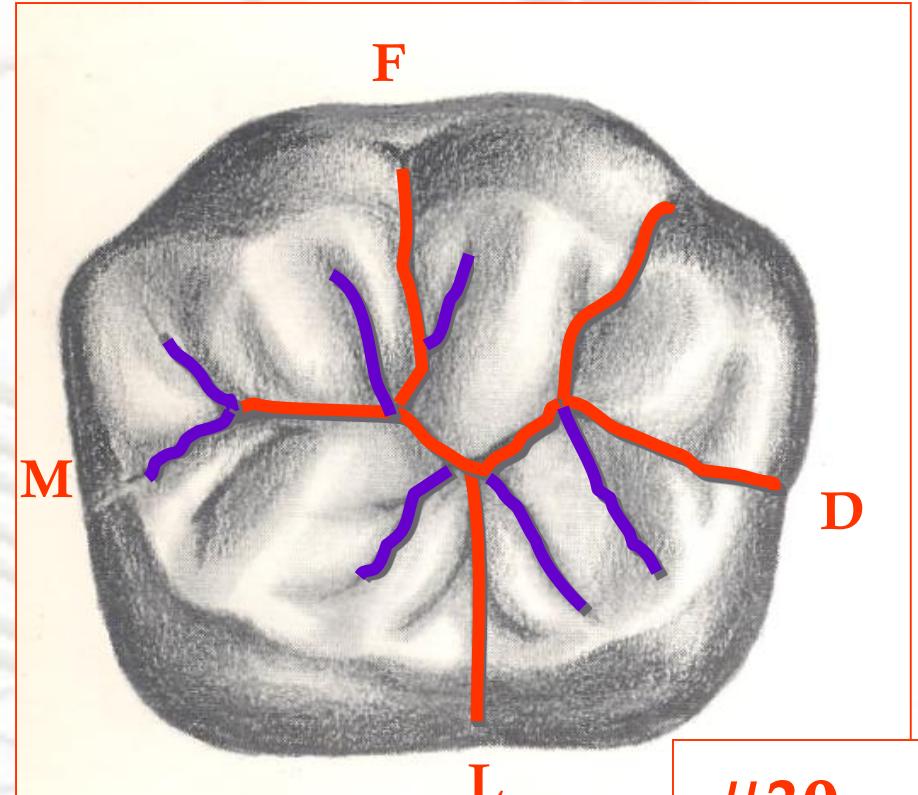


#30: Mn
R 1st Molar

Groove: A definitive line on the surface of the tooth

Supplemental Groove:

A less distinct linear depression on the surface of the tooth that is supplemental to a developmental groove.



A supplemental groove does not mark the junction of primary parts of the tooth.

#30: Mn
R 1st Molar

GROOVE

Developmental groove

- ❖ Is a shallow groove or line between the primary parts of the crown or root.

Supplemental groove

- ❖ Is less distinct, is also a shallow linear depression on the surface of tooth, but it is supplemental to a developmental groove and does not mark the junction of primary parts.

Buccal and lingual groove

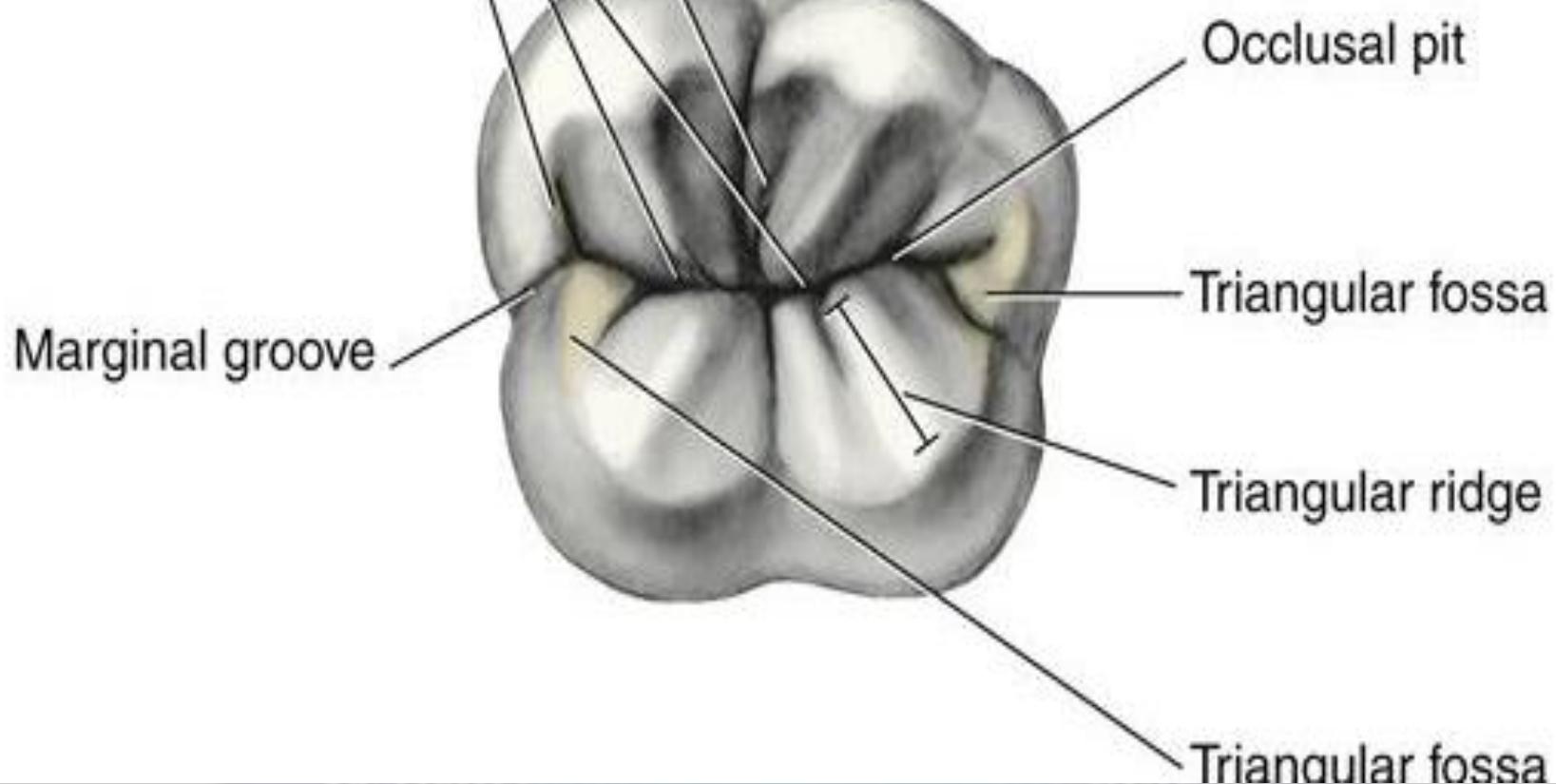
- ❖ Are developmental grooves found on the buccal and lingual surfaces posterior teeth.

Developmental grooves:

Supplemental groove

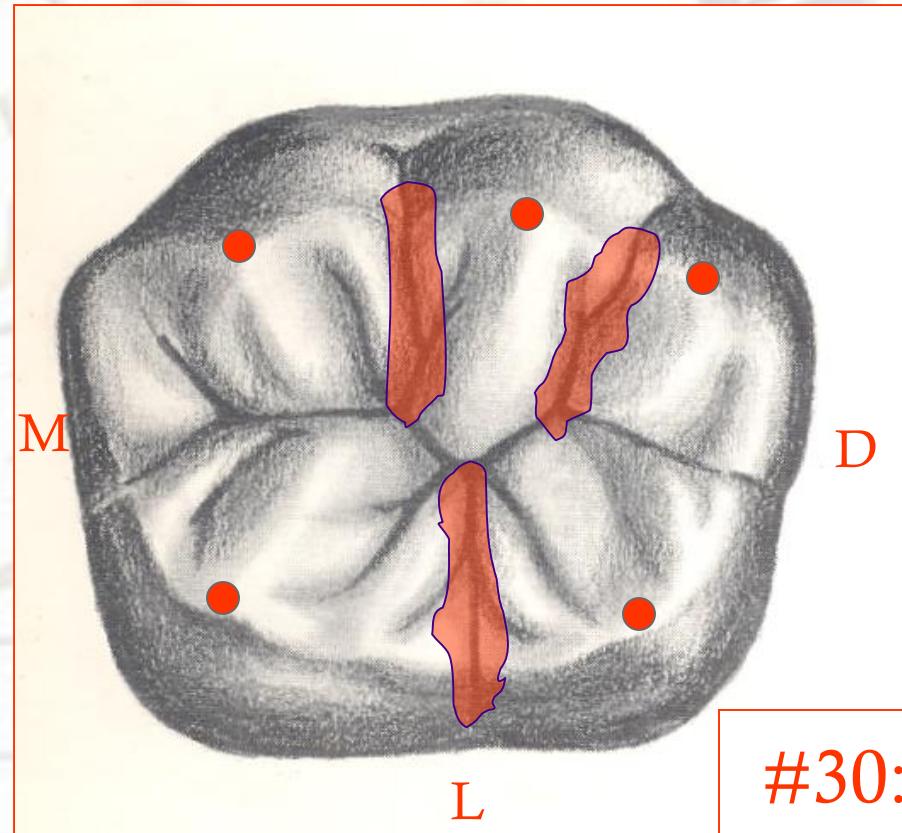
Central groove

Triangular groove



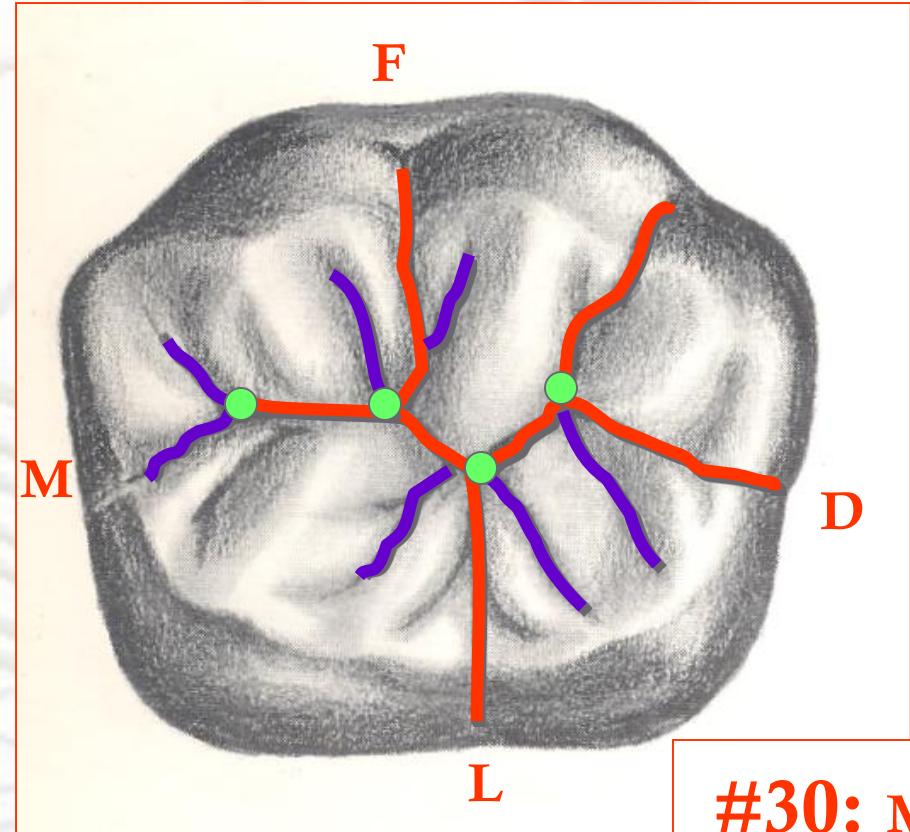
Sulcus: A depression or valley on the surface of a tooth between ridges & cusps of which the inclines meet at an angle.

A sulcus is a depression... do not confuse with a groove



#30: Mn
R 1st Molar

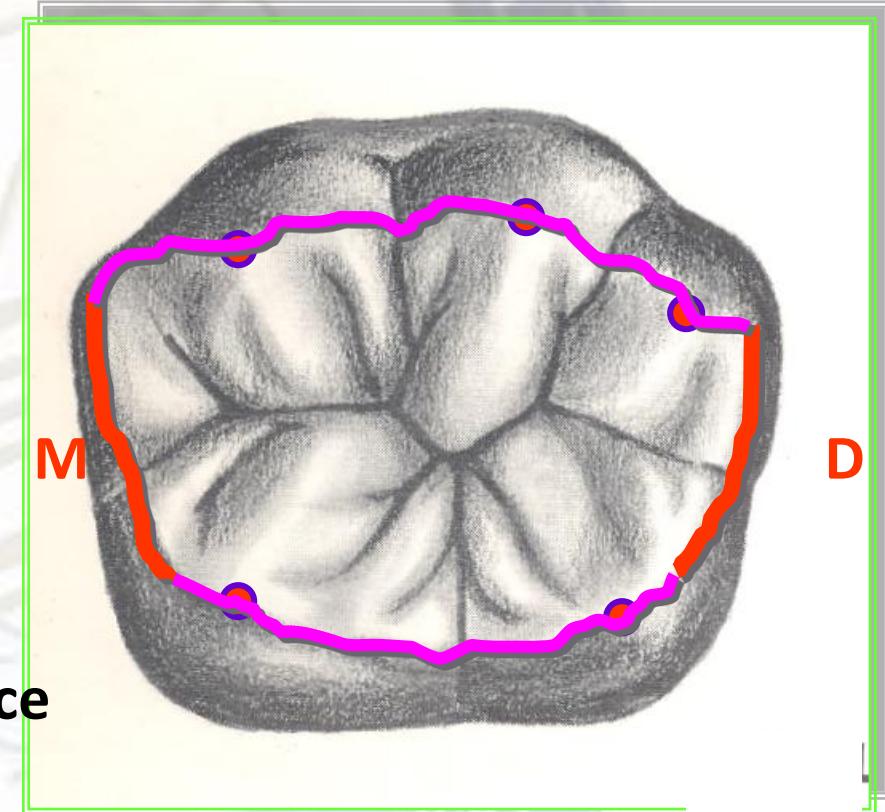
Pit: Pinpoint depressions located at the junction or terminus of developmental grooves.



#30: Mn
R 1st Molar

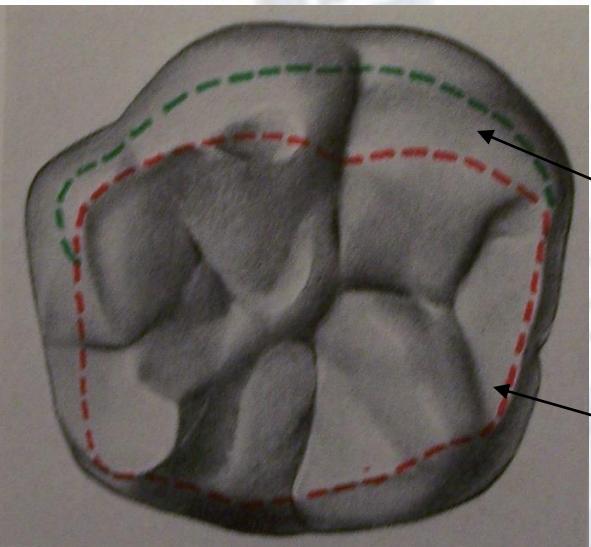
Occlusal Table

An area on the chewing surface of posterior teeth...bordered by the crests of the marginal ridges mesially & distally, crests of the cuspal ridges, and the cusp tips facially and lingually



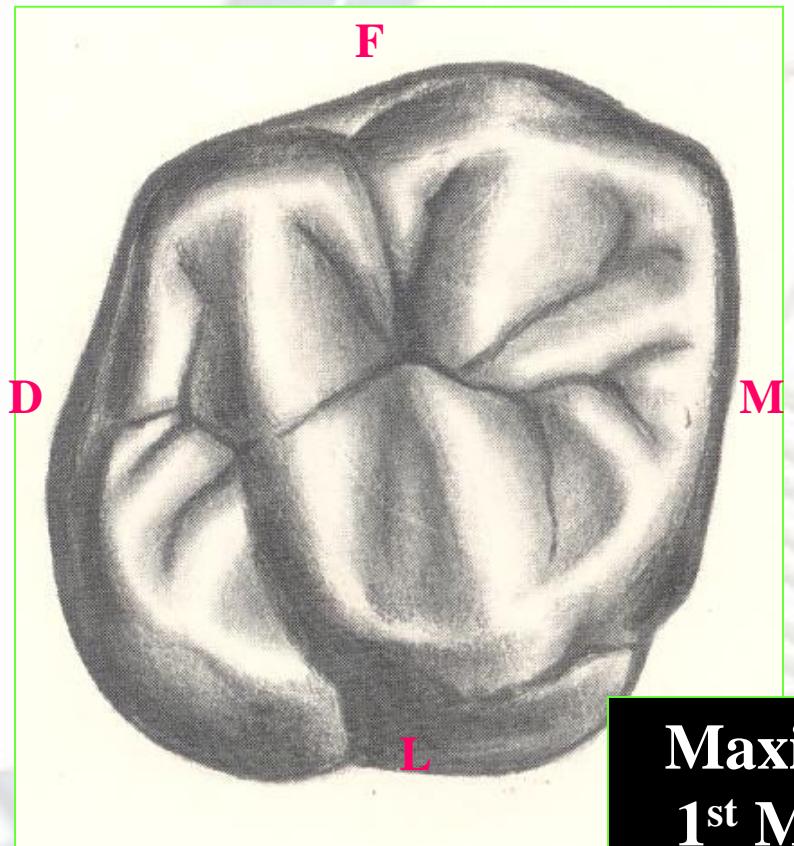
Occlusal Surface Extent

Occlusal table outline

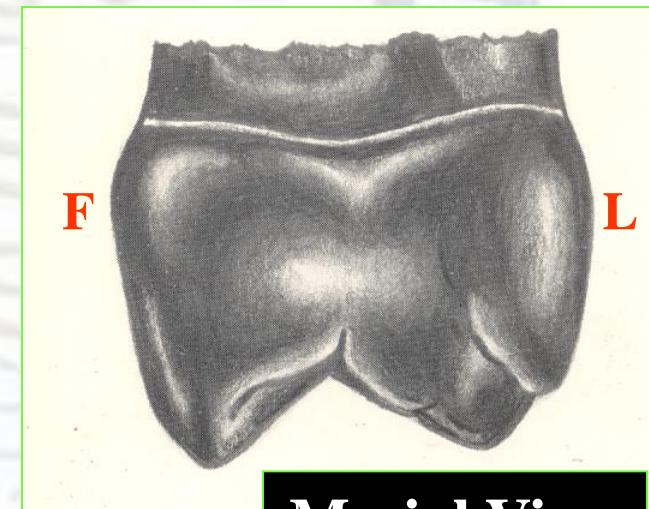


Significance of anatomical landmarks

“Design and structure of wax patterns for the construction of restorations in the oral cavity”



Maxillary
1st Molar



Mesial View

“Anatomical entities are arranged on tooth in a systematic and functional fashion.”

Thank you!

