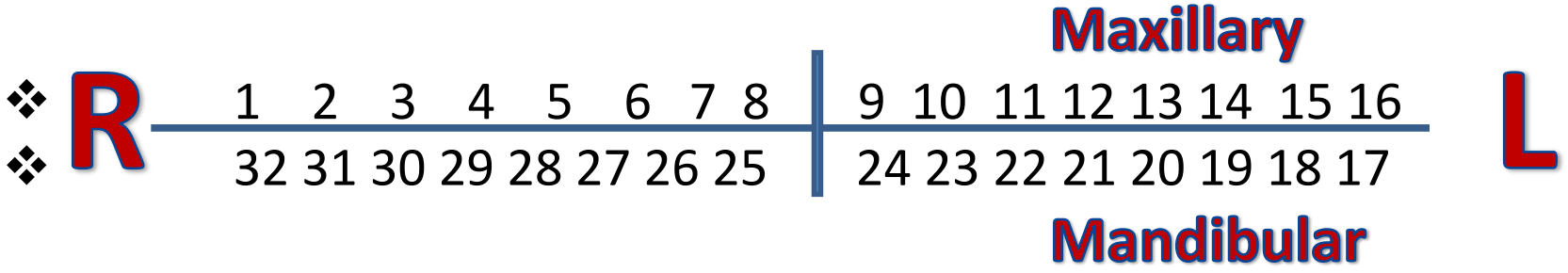
Dental Numbering Systems

Numbering systems

1.The Universal numbering system :is a dental notation system for associating information to a specific tooth, and is commonly used in the United States. The uppercase letters A through T are used for primary teeth and the numbers 1 - 32 are used for permanent teeth. The tooth designated "1" is the right maxillary third molar and the count continues along the upper teeth to the left side. Then the count begins at the left mandibular third molar, designated number 17, and continues along the bottom teeth to the right side. Each tooth has a unique number or letter.

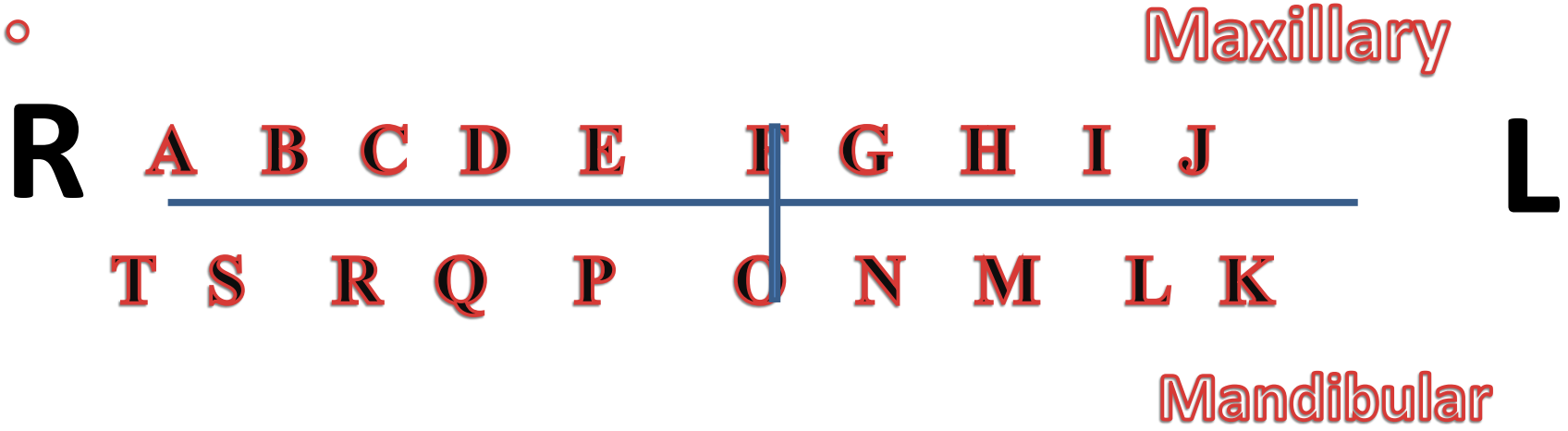
A.Permanent teeth:



Examples:

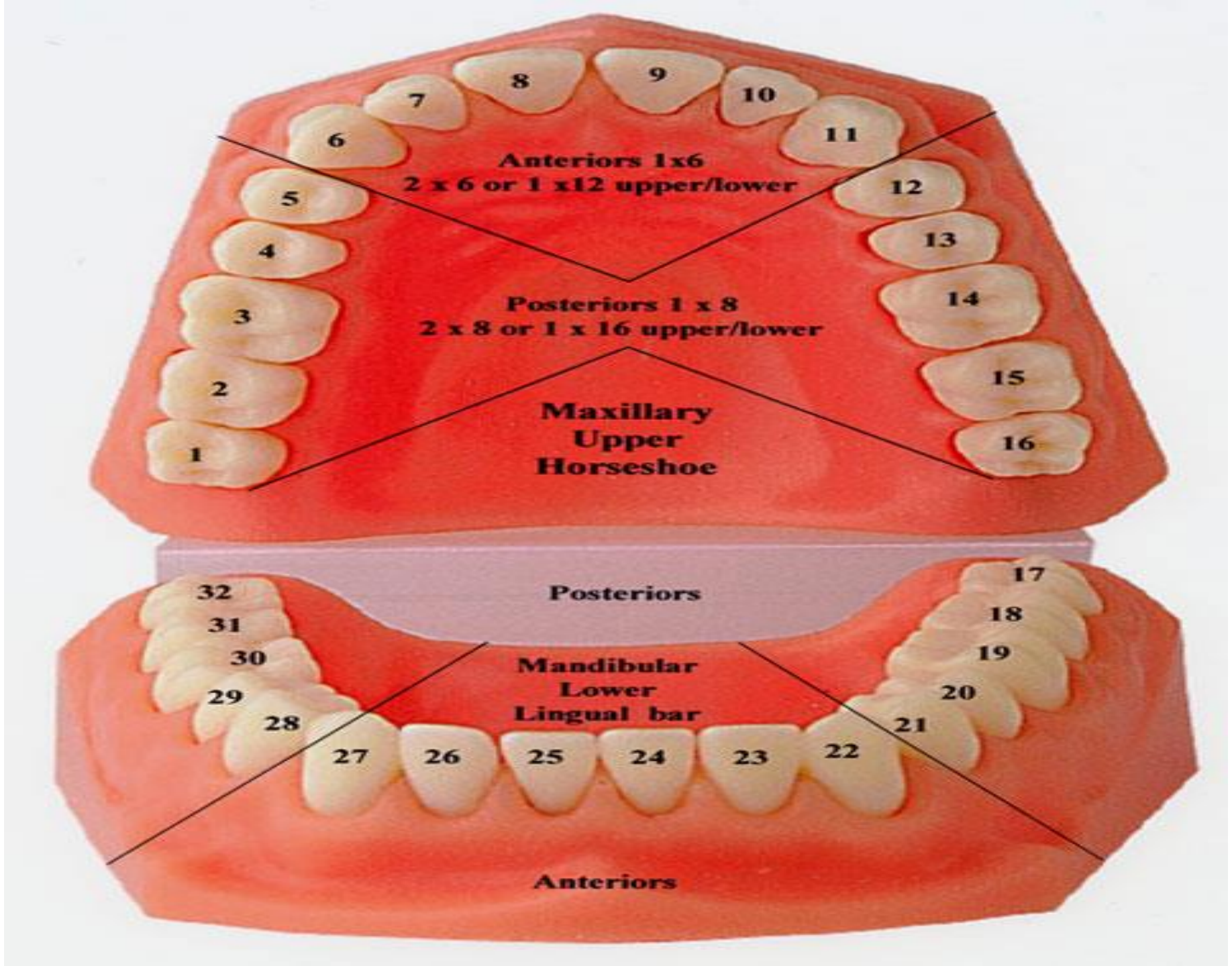
- #11: Permanent Maxillary Left Canine
- #29: Permanent Mandibular Right Second Premolar
- #8: Permanent Maxillary Right Central Incisor
- #22: Permanent Mandibular Left Canine
- #28: Permanent Mandibular Right First Premolar

B.Deciduous Teeth



Examples

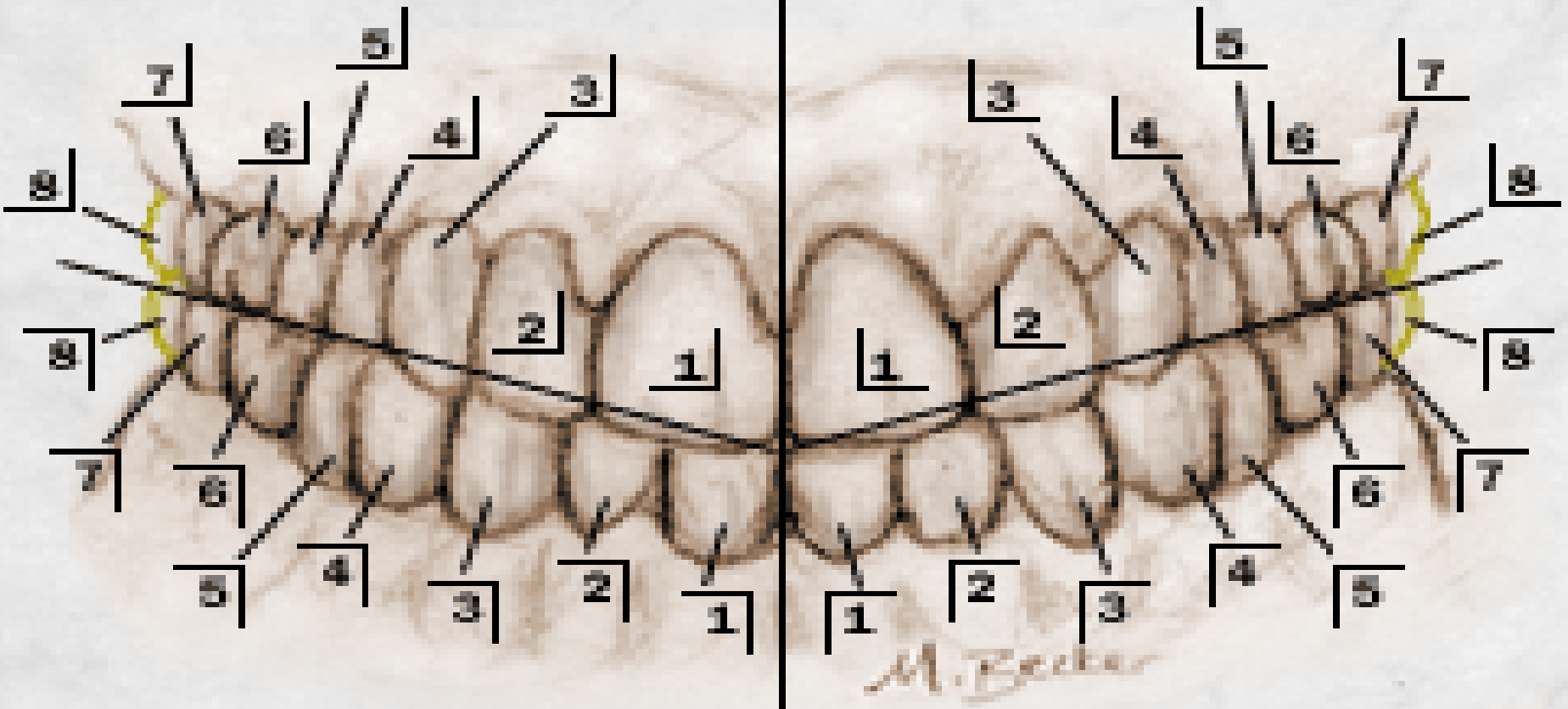
#B: Deciduous Maxillary Right first Molar
#O: Deciduous Mandibular Left Central Incisor
#D: Deciduous Maxillary Right Lateral Incisor


8
9
7
10
6
11
Anteriors 1x6
2 x 6 or 1 x12 upper/lower
5
12
4
13
Posteriors 1 x 8
2 x 8 or 1 x 16 upper/lower
3
14
2
15
Maxillary
Upper
Horseshoe
1
16
Posteriors
32
17
31
18
30
19
Mandibular
Lower
Lingual bar
29
20
28
21
27
26
25
24
23
22
Anteriors

2.The Palmer notation system

- The Palmer notation is a system used by dentists to associate information to a specific tooth. Although supposedly superseded by the FDI World Dental Federation notation, it overwhelmingly continues to be the preferred method used by dental students and practitioners in the United Kingdom.[1] It was originally termed the "Zsigmondy system" after the Hungarian dentist Adolf Zsigmondy who developed the idea in 1861, using a *Zsigmondy cross* to record quadrants of tooth positions.[2]. Adult teeth were numbered 1 to 8, and the child primary dentition (also called deciduous, milk or baby teeth) were depicted with a quadrant grid using Roman numerals I, II, III, IV, V to number the teeth from the midline distally. Palmer changed this to A, B, C, D, E.
- The Palmer notation consists of a symbol (┘└┐┌) designating in which quadrant the tooth is found and a number indicating the position from the midline. Adult teeth are numbered 1 to 8, with deciduous (baby) teeth indicated by a letter A to E. Hence the left and right maxillary central incisor would have the same number, "1", but the right one would have the symbol, "┘", underneath it, while the left one would have, "└".

Palmer Notation Method



3.FDI World Dental Federation notation

- The FDI World Dental Federation notation is widely used by dentists internationally to associate information to a specific tooth.
- Developed by the Fédération Dentaire Internationale (FDI), it is also known as ISO 3950[3] notation. The FDI system uses a two-digit numbering system in which the first number represents a tooth's quadrant and the second number represents the number of the tooth from the midline of the face. For permanent teeth, the upper right teeth begin with the number, "1". The upper left teeth begin with the number, "2". The lower left teeth begin with the number, "3". The lower right teeth begin with the number, "4". For primary teeth, the sequence of numbers goes 5, 6, 7, and 8 for the teeth in the upper right, upper left, lower left, and lower right respectively.
- For example: retention of a decidudous molar tooth in the otherwise regular intact lower right jaw, position 5, would be noted as: 41, 42, 43, 44, 45, 46, 47, 48.
- Beware of mixing up the teeth on the positions denoted as 11, 12, 13, 14, 15, 16, 17, 18 in the Palmer and FDI systems.

FDI World Dental Federation notation

adult

upper right - 1x | upper left - 2x

18 17 16 15 14 13 12 11 | 21 22 23 24 25 26 27 28

R ---------- ----------L

48 47 46 45 44 43 42 41 | 31 32 33 34 35 36 37

lower right - 4x | lower left - 3x

deciduous

upper right - 5x | upper left - 6x

55 54 53 52 51 | 61 62 63 64 65

R ---------- L

85 84 83 82 81 | 71 72 73 74 75

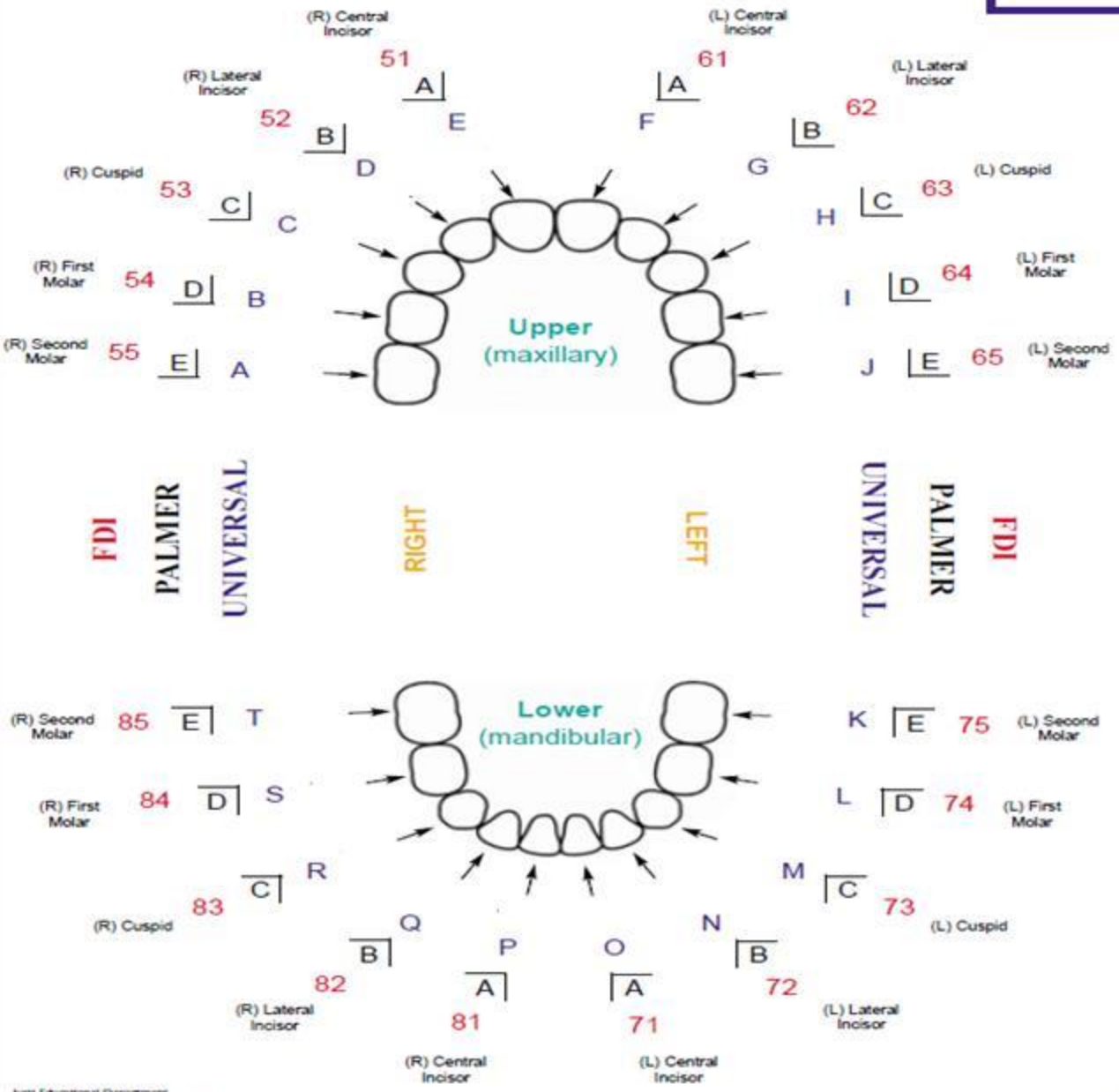
lower right - 8x | lower left - 7x

PRIMARY TEETH

DENTAL NUMBERING SYSTEMS

ILLUSTRATED

1



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PERMANENT TEETH

DENTAL NUMBERING SYSTEMS

2

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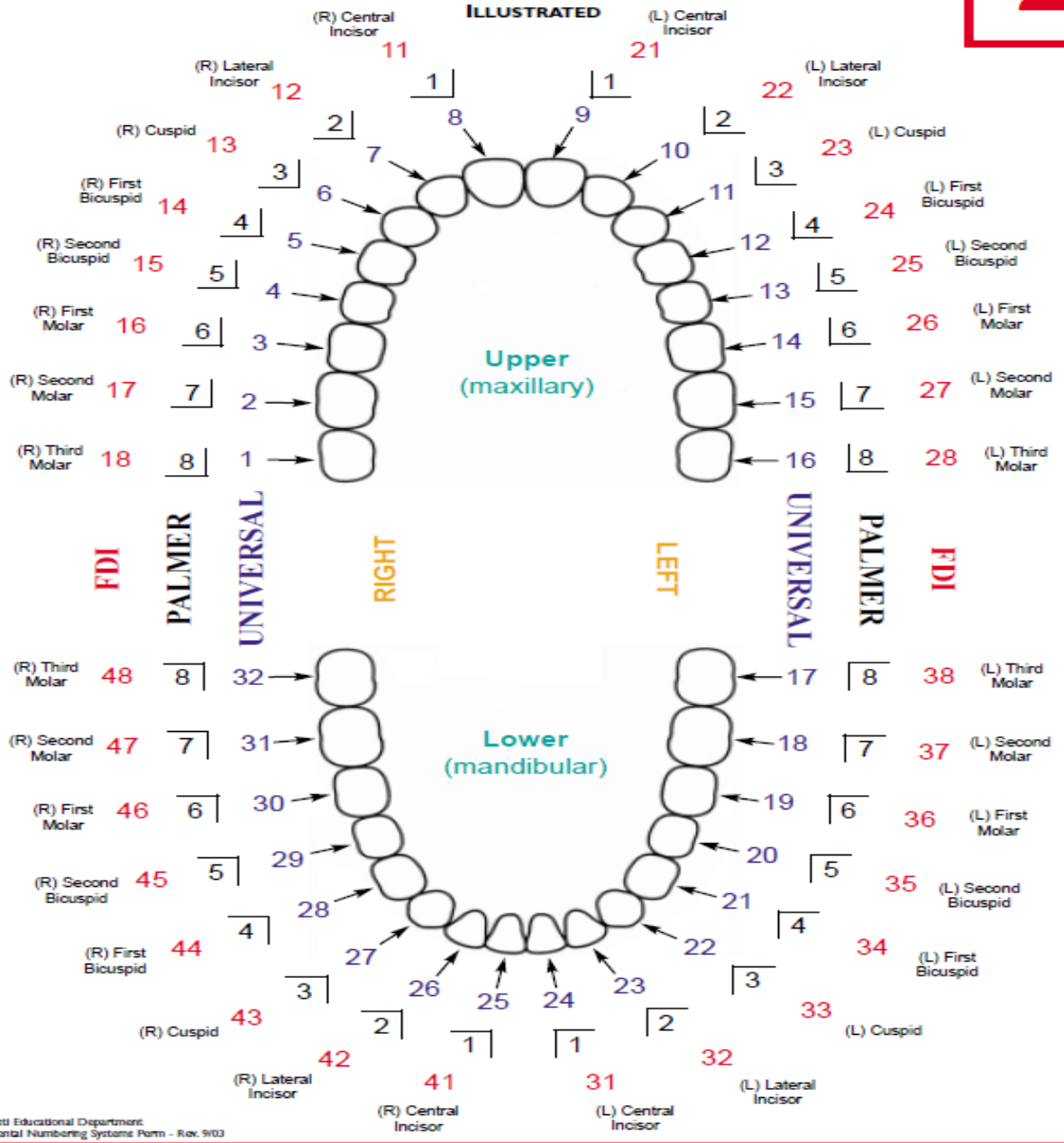

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Dental anatomy

LEC. 3

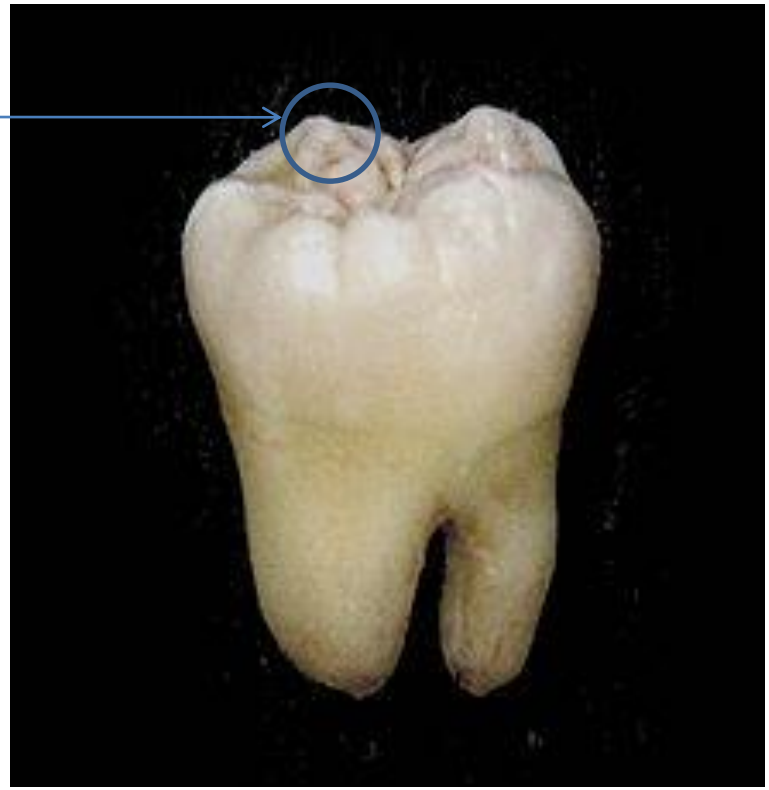
م.م.طبيب الأسنان
باسم كريم نصر

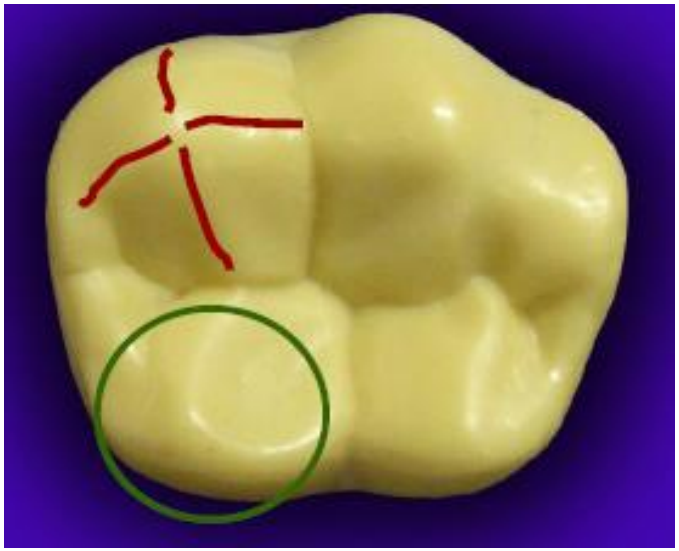
Anatomical landmarks

In order to study an individual tooth inteligently,we must be able to recognize all landmarks of importance by name. these include:

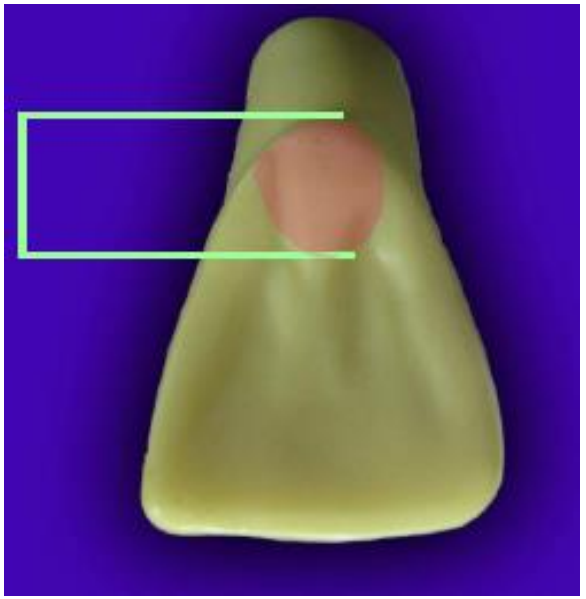
(1)Cusp: it is an elevation or mound on the crown portion of a tooth making up a divisional part of the occlusal surface.

Cusp

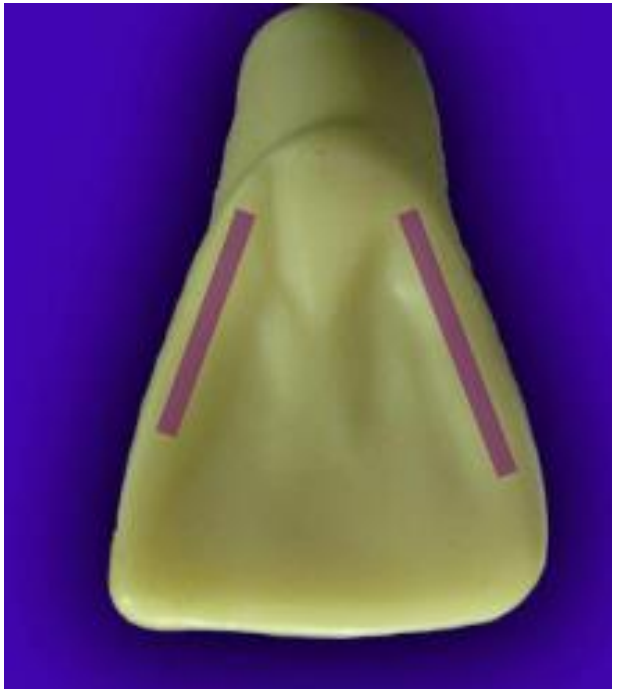




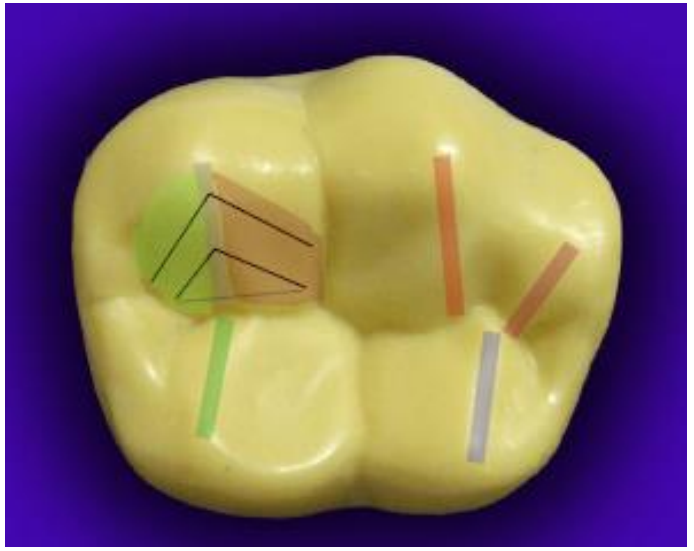
- (2)Cingulum {*Latin word for girdle*} :it is the lingual lobe of an anterior tooth.It makes up the bulk of the cervical third of lingual surface.Its convexity mesiodistaly resembles a girdle encircling the lingual surface at the cervical third.
- (3)Tubercle: it is a small elevation on some portion of the crown produced by an extra formation of enamel.Tubercles are deviation from the typical form.



- (4)Ridge : it is any linear elevation on the surface of the tooth and is named according to its location (e.g.*buccal ridge,incisal ridge,marginal ridge).*
- (a)marginal ridges: these are rounded borders of the enamel that form the mesial and distal margins of the occlusal surfaces of premolars and molars and the mesial and distal margins of the lingual surfaces of the incisors and canines.



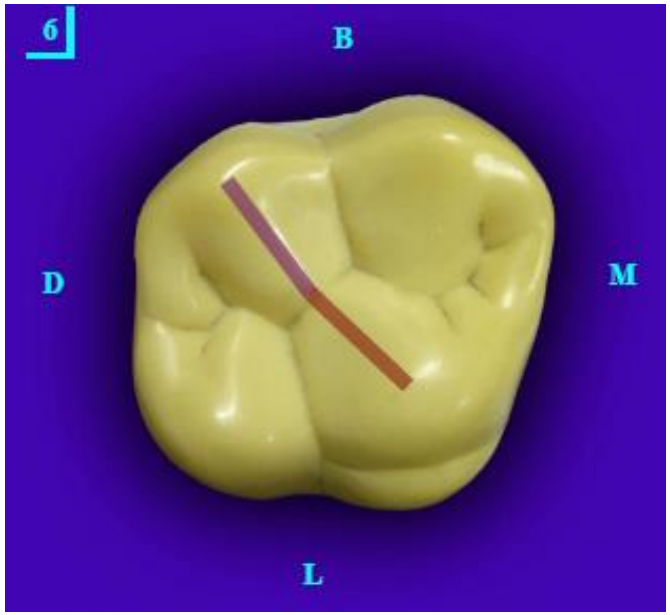
(b)Triangular ridges: these descends from the tips of the cusps of molars and premolars toward the central part of the occlusal surfaces. they are so named because the slopes of each side of the ridge are inclined to resemble two sides of triangle. They are named after the cusps to which they belong, (e.g.the triangular ridge of the buccal cusp of maxillary first premolar).



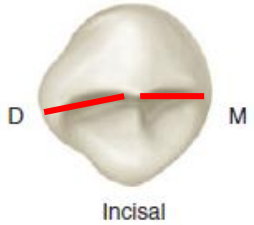
(c)Transverse ridge: it is the union of two triangular ridges crossing transversely the surface of posterior tooth.

(**d)Oblique ridge**: it is a ridge crossing obliquely the occlusal surfaces of maxillary molars.it is formed by the union of the triangular ridge of the distobuccal cusp and the distal cusp ridge of the mesiolingual cusp.

(e) **Cusp Ridge:** elevations which extend in a mesial or distal direction from cusp tips. Cusp ridges form the buccal and lingual margins of the occlusal surface of posterior teeth.




Facial/Labial



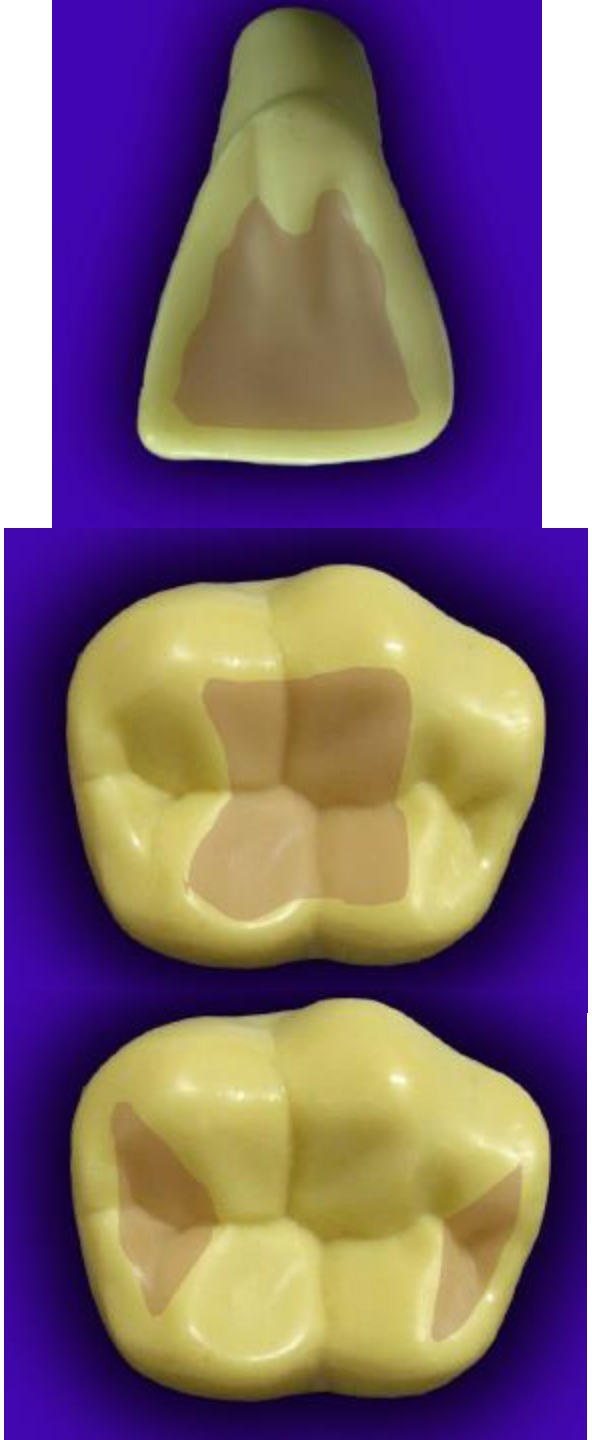
Incisal

(5) Fossa: it is an irregular depression or concavity.

(a)Lingual fossa:it is located on the lingual surface of anterior teeth.

(b)Central fossa:it is located on the occlusal surface of molars.

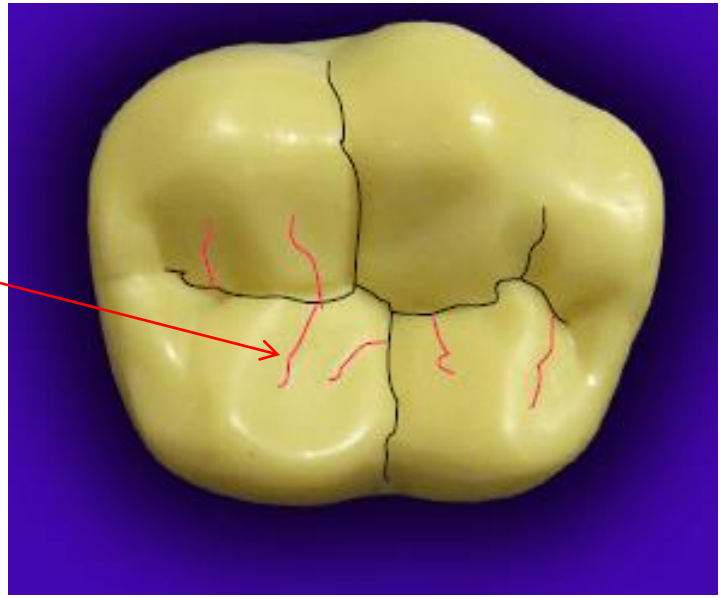
(c)Triangular fossa: it is located on the occlusal surfaces of molars and premolars, mesial or distal to marginal ridges.



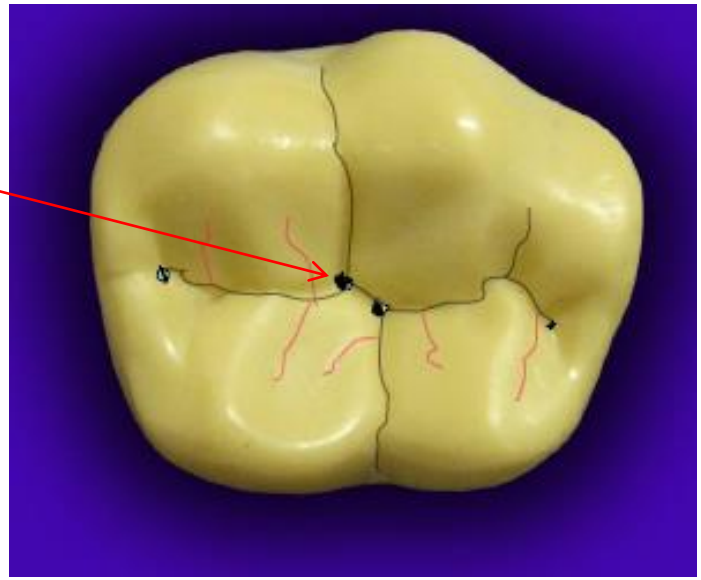
(6) Sulcus: it is a long depression or valley in the surface of a tooth between ridges and cusps, the inclines of which meet at an angle. A sulcus has a developmental groove at the junction of its inclines.

(7) Developmental groove: it is a shallow groove or line between the primary parts of the crown or root.

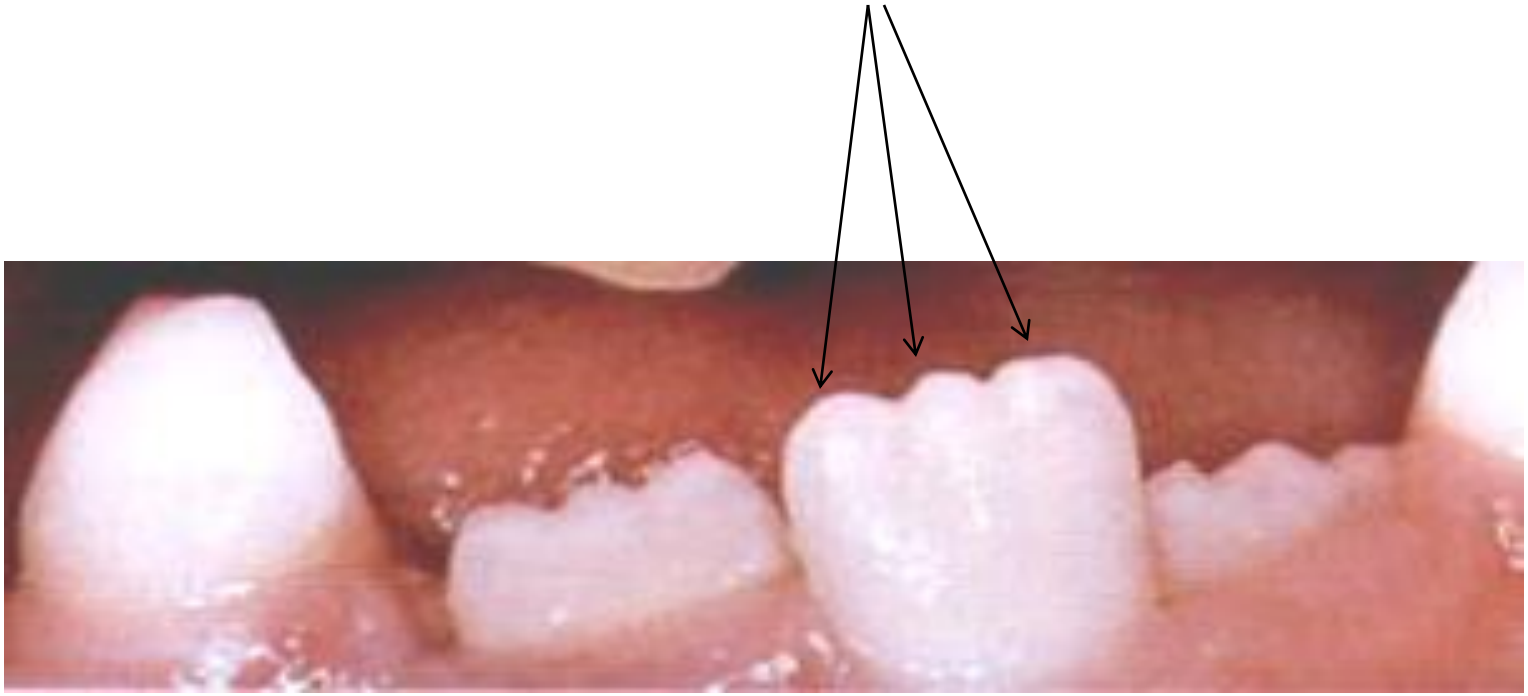
(8) Suplemental groove: it is a less distinct, shallow linear depression on the surface of the tooth, but is suplemental to a developmental groove and dose not mark the junction of primary parts.



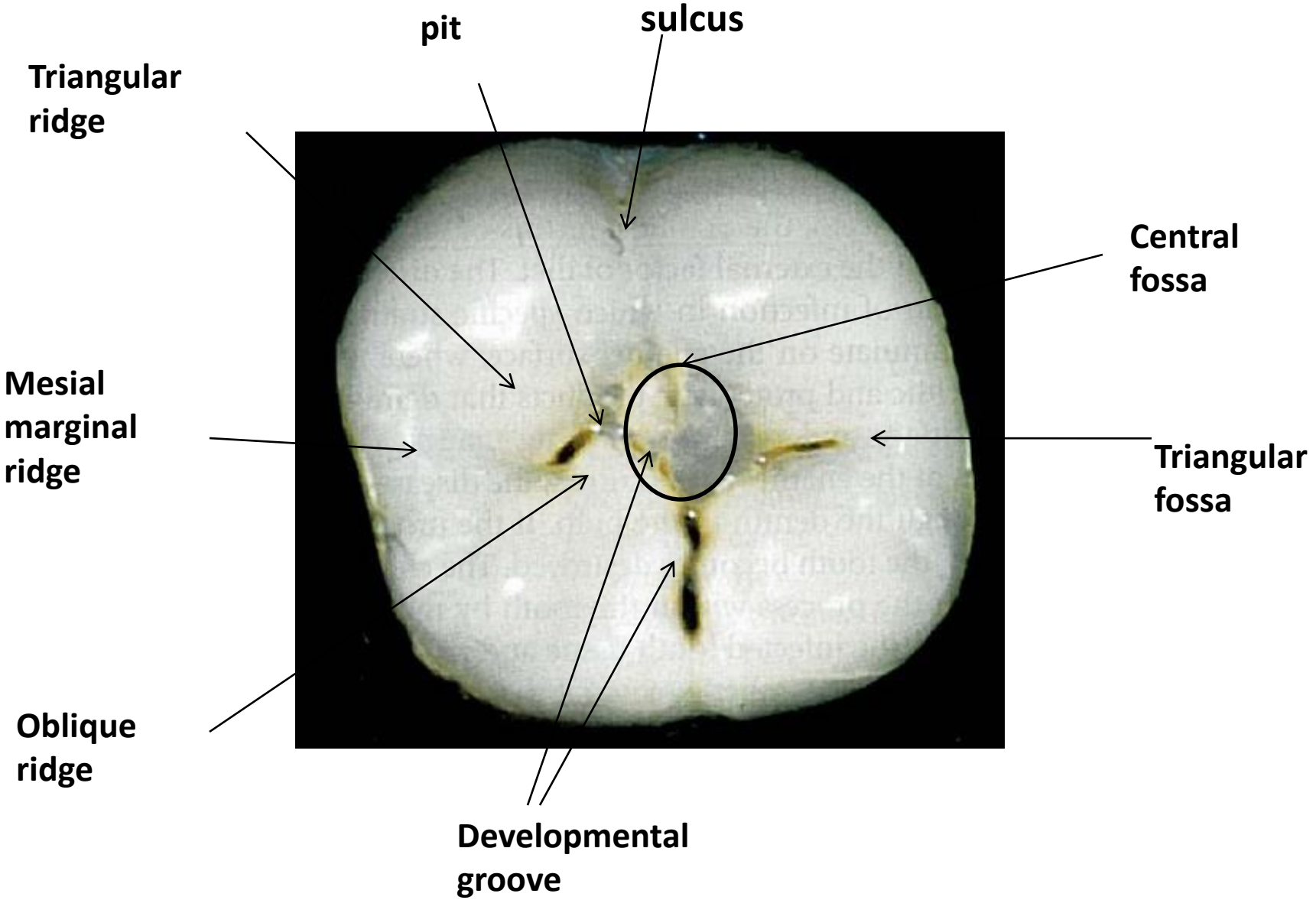
(9) pit: it is a small pin point depression located at the junction of developmental grooves or at terminals of those grooves, e.g. central pit is a term used to describe a landmark in the central fossa of molars where developmental grooves join.



(10) Mamelon: it is any one of the three protuberances found on the incisal edge of newly erupted incisor teeth.

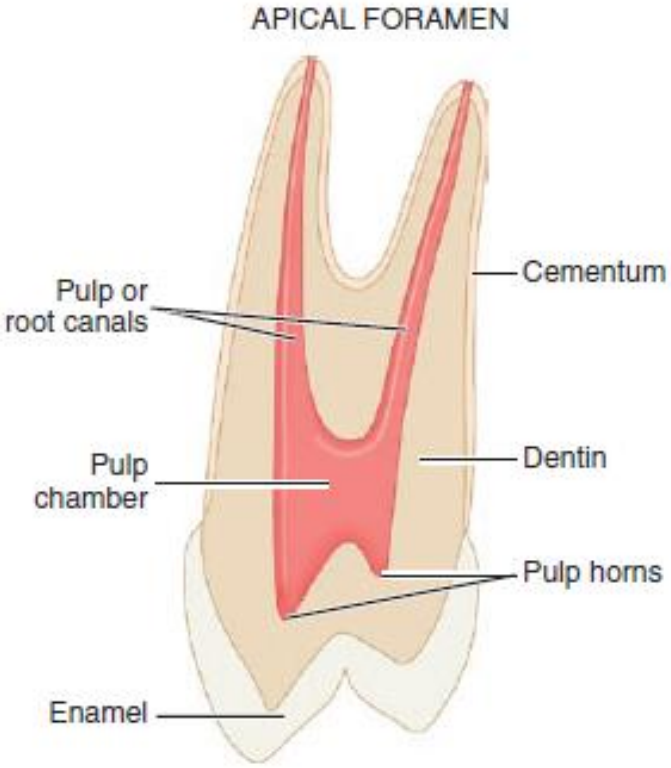


(11) Lobe: it is one of the primary sections of formation in the development of the crown. Cusps and mamelons are representative of lobes.


pit
sulcus
Triangular ridge
Central fossa
Mesial marginal ridge
Triangular fossa
Oblique ridge
Developmental groove

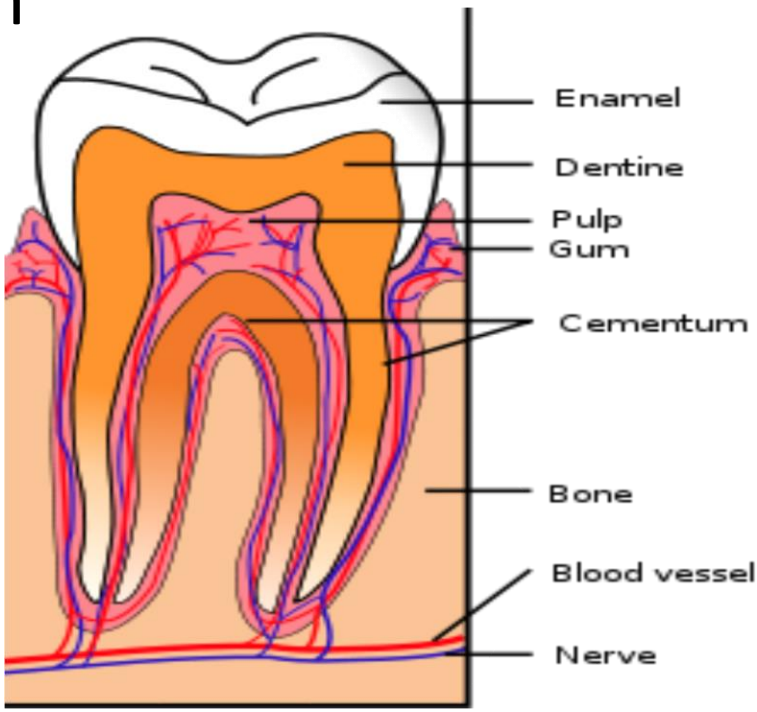
PULPAL ANATOMY

- 1. **Pulp Cavity:** entire cavity within the tooth which resembles the external shape of the tooth and houses the nerve and vascular supply of the tooth
- **2. Pulp Chamber:** the pulp cavity within the anatomical crown; may
- exhibit conical shaped peaks called pulp horns**.**
- 3. **Root Canal:** the portion of the pulp cavity within the anatomical root
- 4. **Canal Orifice:** an opening leading from the pulp chamber into the root canal



SUPPORTING STRUCTURES OF THE TEETH (THE PERIODONTIUM)

1. **Cementum:** bone like substance that covers the root of the tooth
2. **Periodontal Ligament:** fibrous attachment, which attaches the cementum to the alveolar bone
3. **Alveolar Bone:** that part of the facial skeleton, which forms around teeth, and crypts of developing teeth**.**
4. **Gingiva:** outermost soft tissue which covers the alveolar bone and from which the clinical crown erupts.



DENTITION, ERUPTION PATTERNS, PERIODS, DEVELOPMENT

- **Primary Dentition:** (Data from Wheeler's Dental Anatomy and occlusion)

Teeth	Age
$\overline{\underline{A}}$	6 months
$\underline{A}$	9 months
$\underline{B}$	12 months
$\overline{\underline{B, D}}$, $\underline{D}$	18 months
$\overline{\underline{C}}$, $\underline{C}$	24 months
$\overline{\underline{E}}$, $\underline{E}$	30 months

Eruption Times Of Permanent Teeth

Tooth		Eruption (Emergence) Years
Maxillary	#8 & #9 (Central Incisors)	7-8 years
	#7 & #10 (Lateral Incisors)	8-9 years
	#6 & #11 (Canines)	11 -12 years
	#5 & 12 (1st premolars)	10 -11
	#4 & #13 (2nd premolars)	10 -12
	#3 & #14 (1st molars)	6 -7
	#2 & #15 (2nd molars)	12 -13
	#1 & #16 (3rd molars)	17-21
Mandibular	#23 & #26 (Lateral Incisors)	7 -8
	#22 & #27 (Canines)	9 -10
	#21 & #28 (1st premolars)	10-12 years
	#20 & #29 (2nd premolars)	11-12 years
	#19 & #30 (1st molars)	6-7 years
	#18 & #31 (2nd molars)	11-13 years
	#17 & #32 (3rd molars)	17-21 years

Development of Teeth

3. General Dentition Periods

i. The Primary Dentition Period

1. Only primary teeth are present
2. Ends with the eruption or the first permanent molar (usually 1st mandibular molar)
3. Range - six months to six years of age

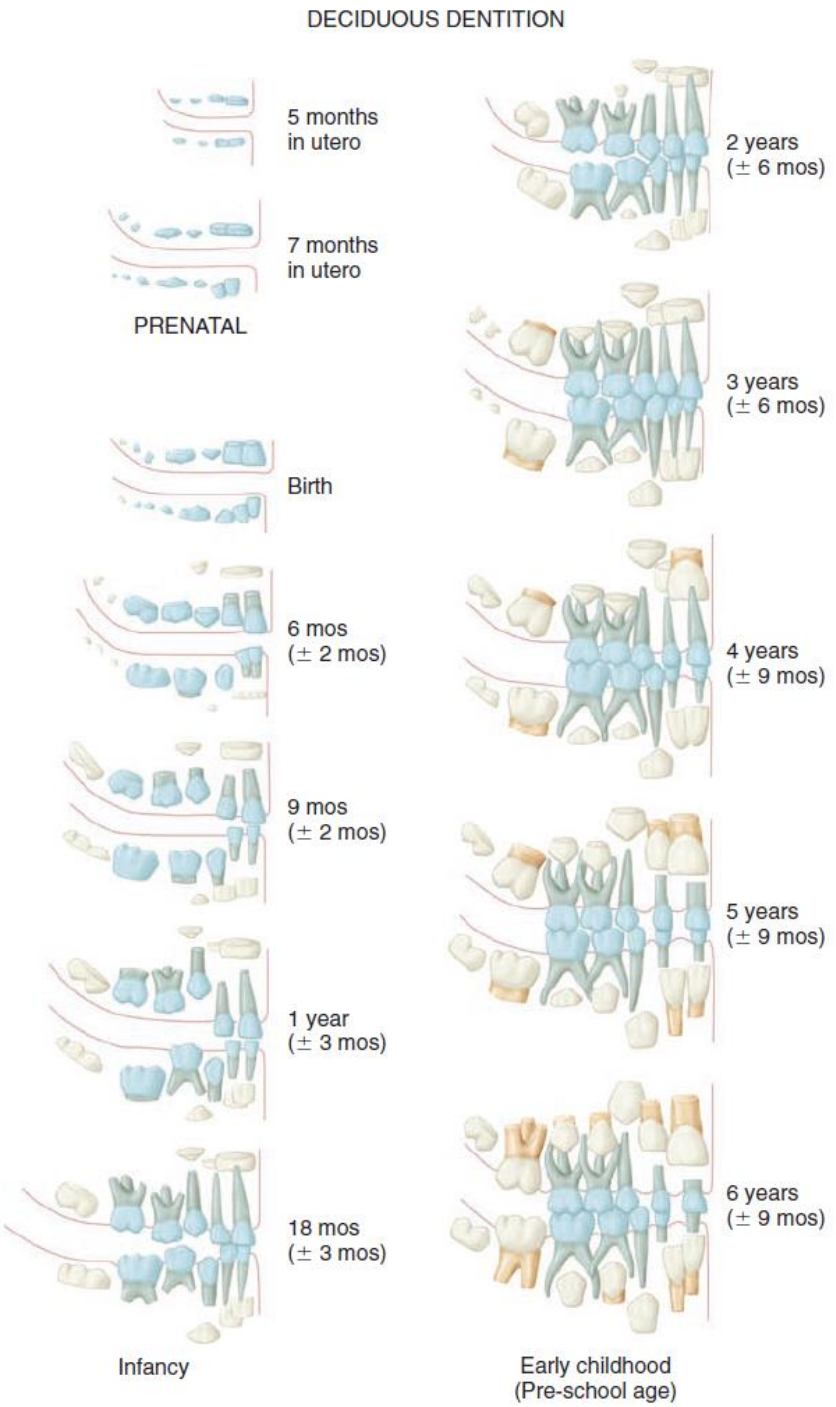
ii. The Mixed Dentition Period

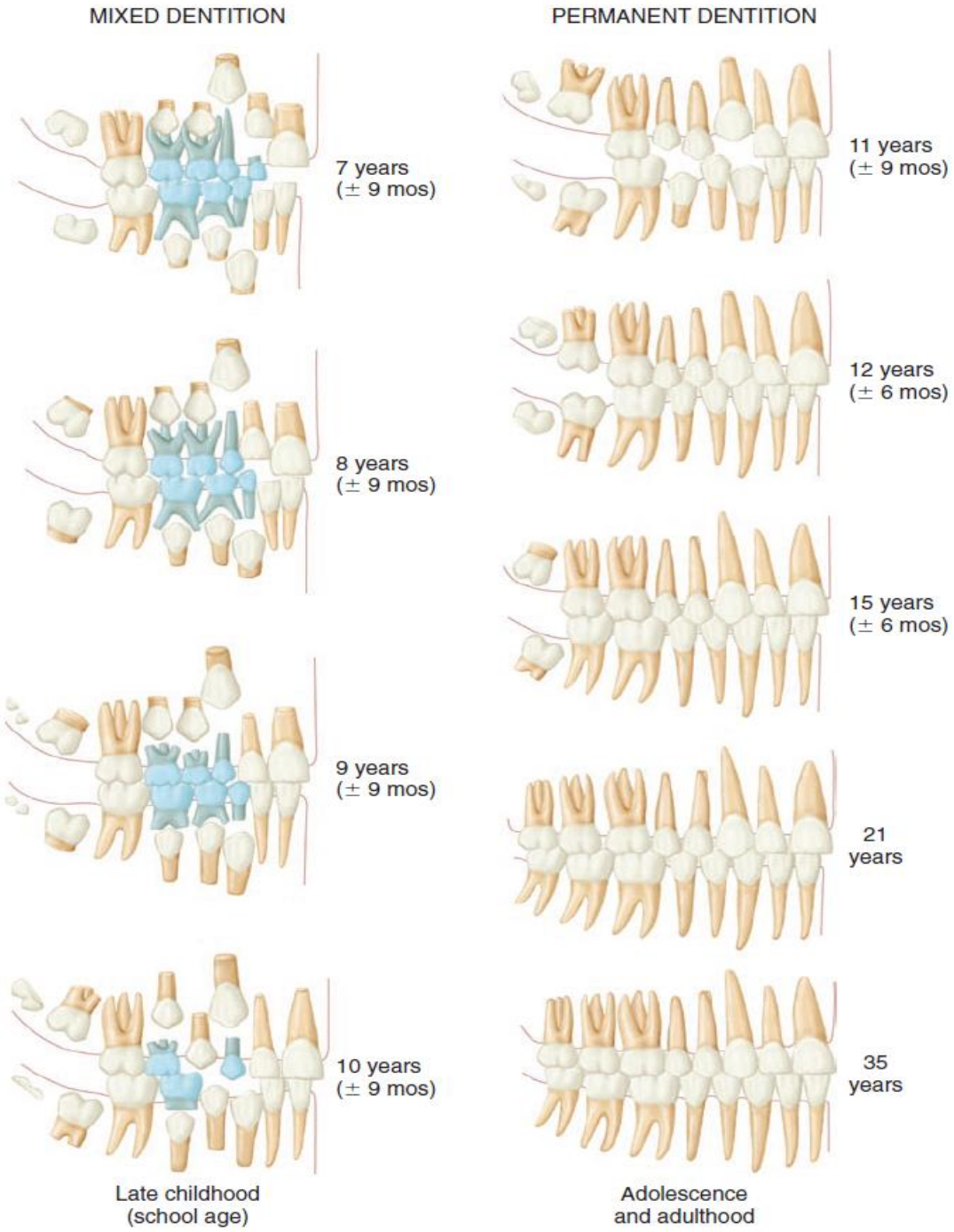
1. both primary and permanent teeth are present
2. range - six to twelve years of age
3. ends with exfoliation of the last primary tooth (usually maxillary canine)

iii. The Permanent Dentition

1. Only permanent teeth are present
2. Range- twelve years of age through the remainder of life

Estimation of the patient age according to dentition status




MIXED DENTITION
PERMANENT DENTITION
7 years
(± 9 mos)
8 years
(± 9 mos)
9 years
(± 9 mos)
10 years
(± 9 mos)
11 years
(± 9 mos)
12 years
(± 6 mos)
15 years
(± 6 mos)
21
years
35
years
Late childhood
(school age)
Adolescence
and adulthood