



ATTENTION STUDENTS



BIOLOGY 463

PLANT TAXONOMY

LABORATORY #10



**ANGIOSPERM
FLOWER
MORPHOLOGY
&
ANATOMY**



ATTENTION STUDENTS 



REQUIRED MATERIAL

LAB EXAM #5

&

FINAL EXAM

PLANT FLOWER HABIT



SOLITARY FLOWER

**SOLITARY
FLOWER**



TRILLIUM



INFLORESCENCE



ORCHID

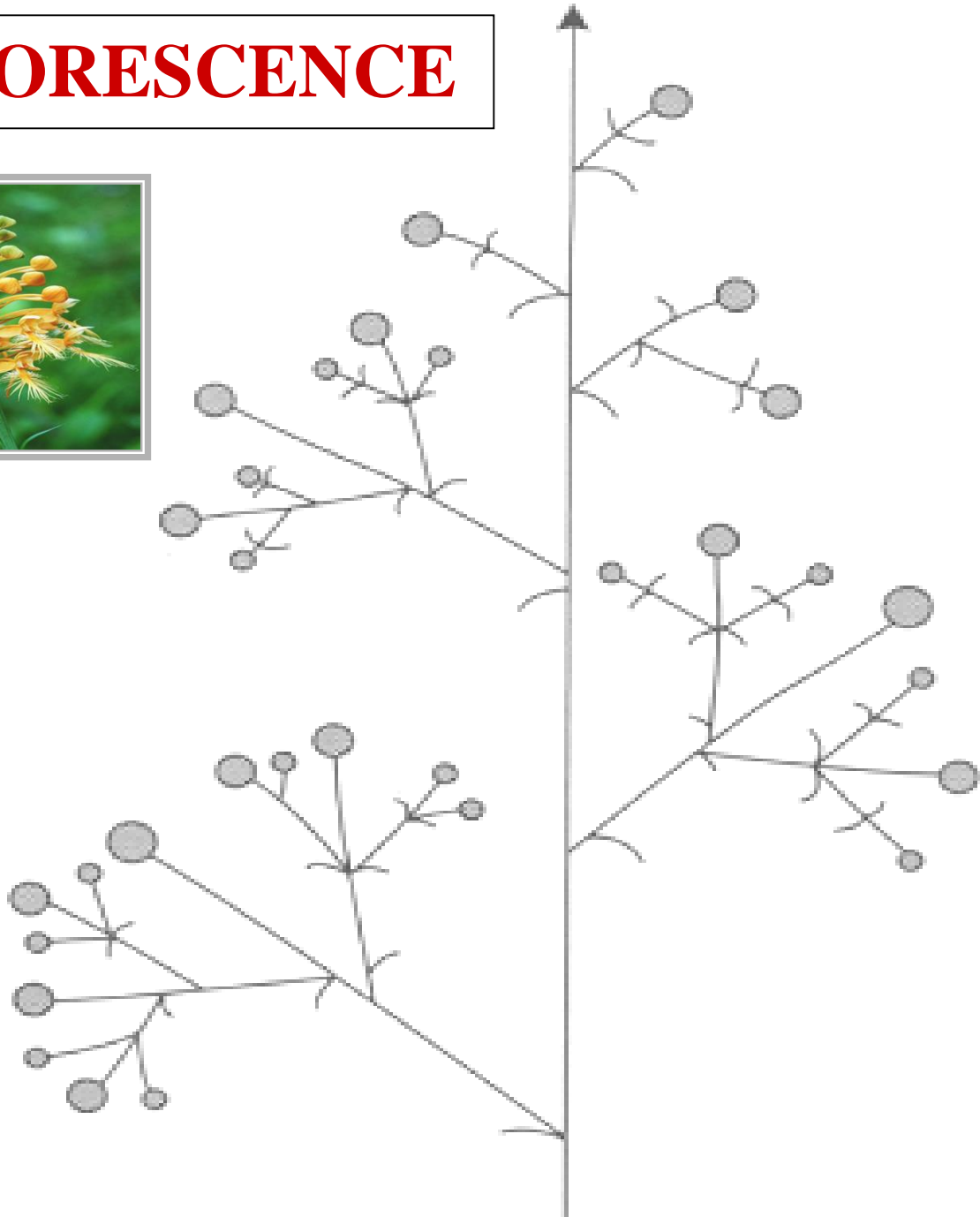


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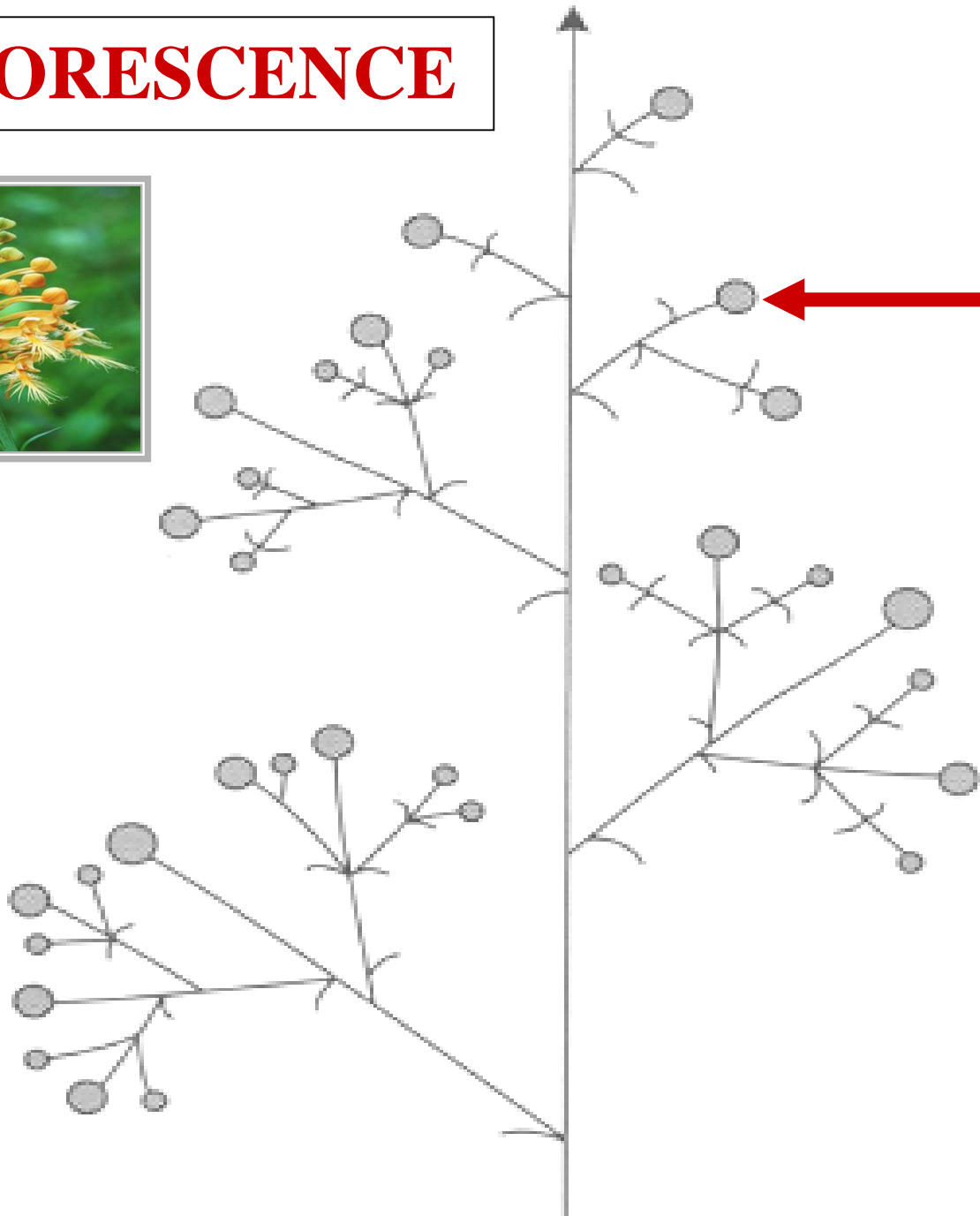


INFLORESCENCE MORPHOLOGY

INFLORESCENCE



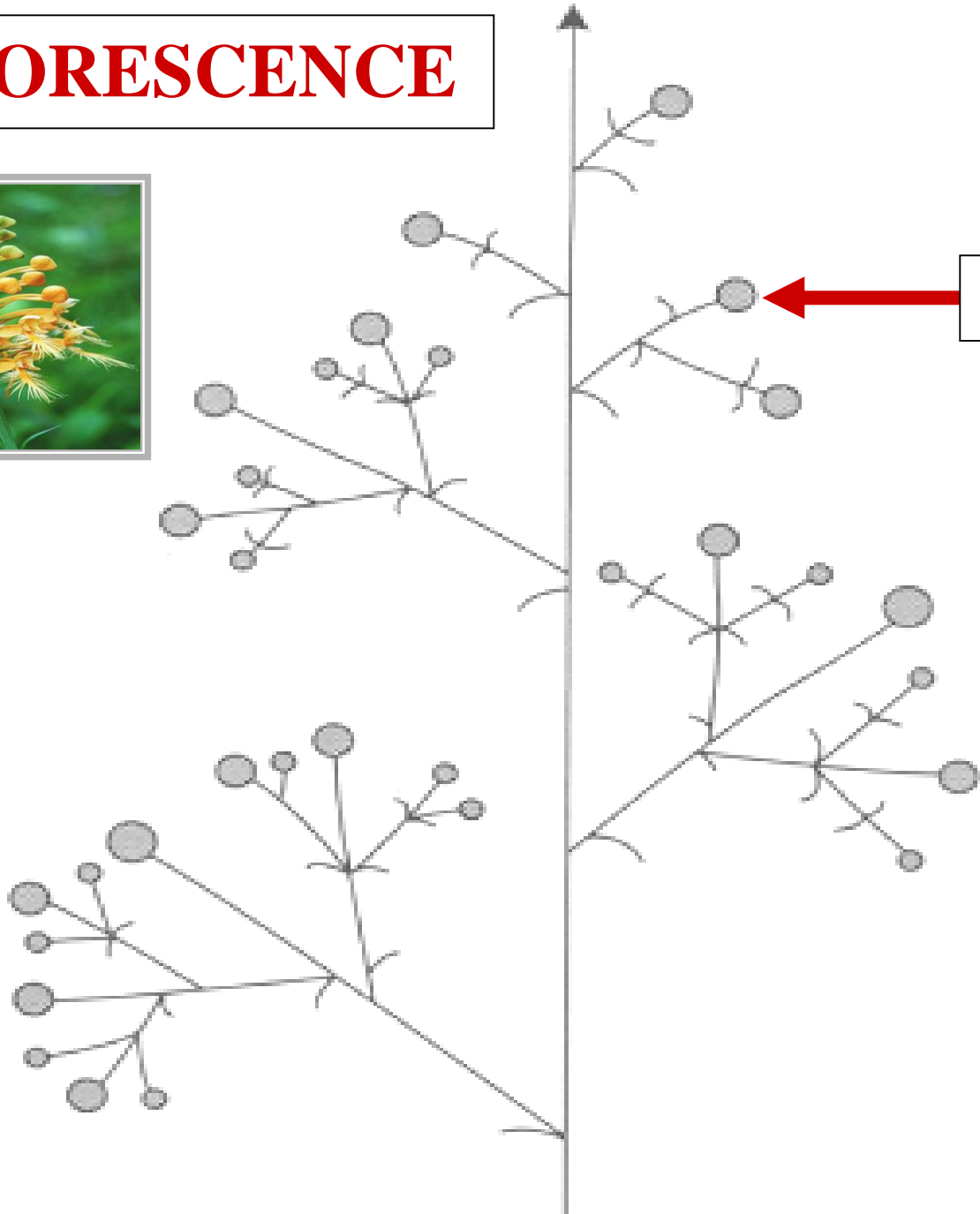
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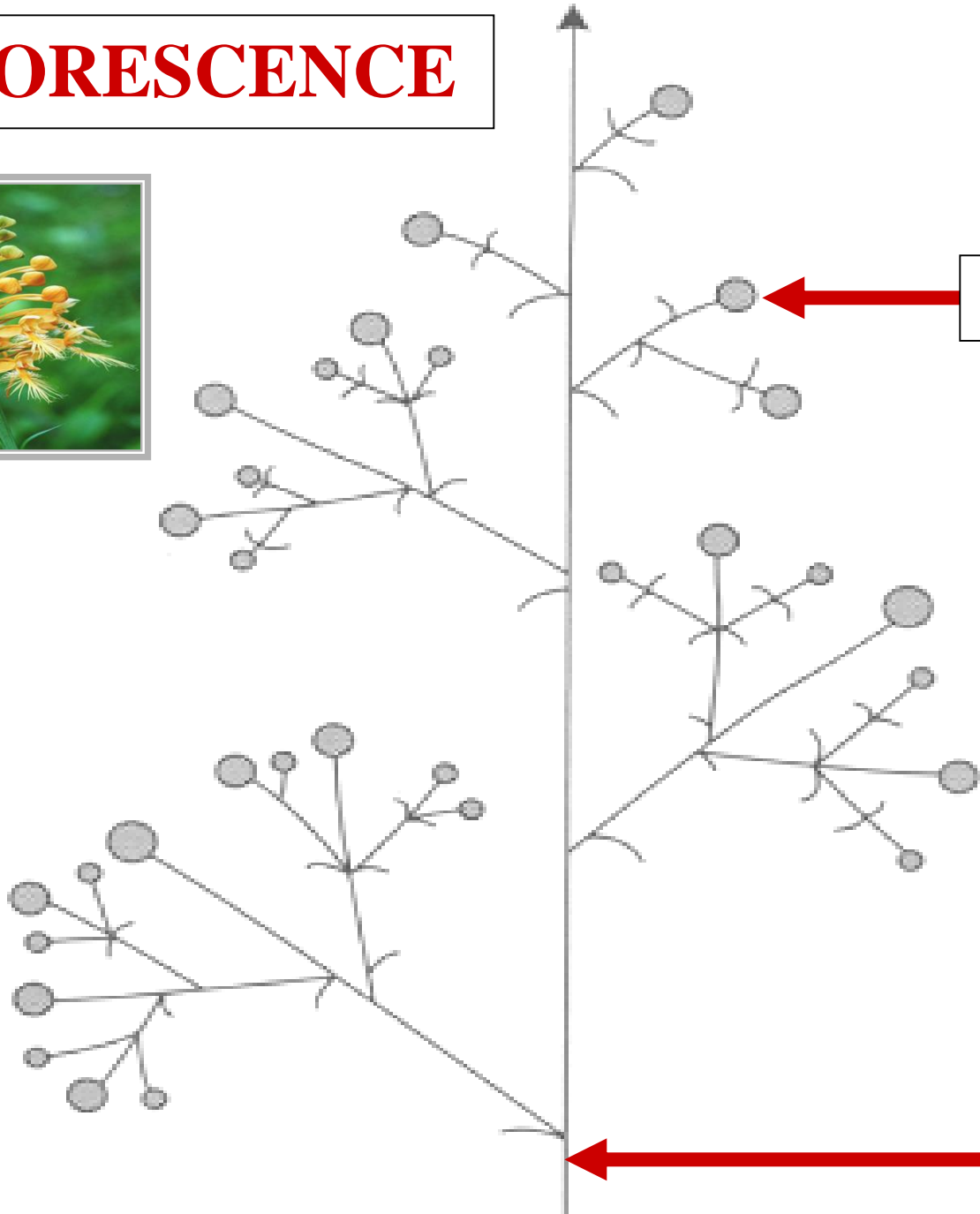
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FLOWER



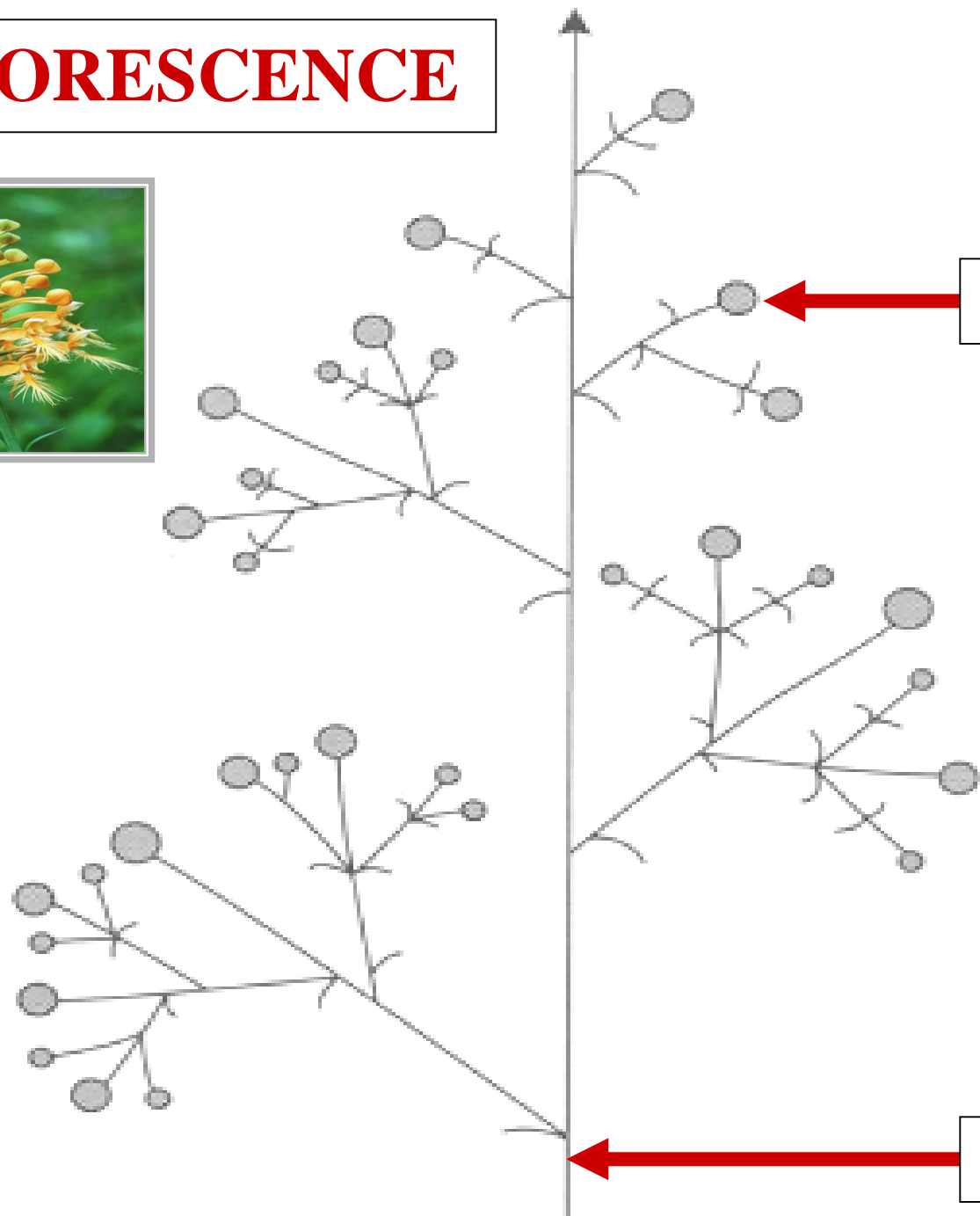
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FLOWER

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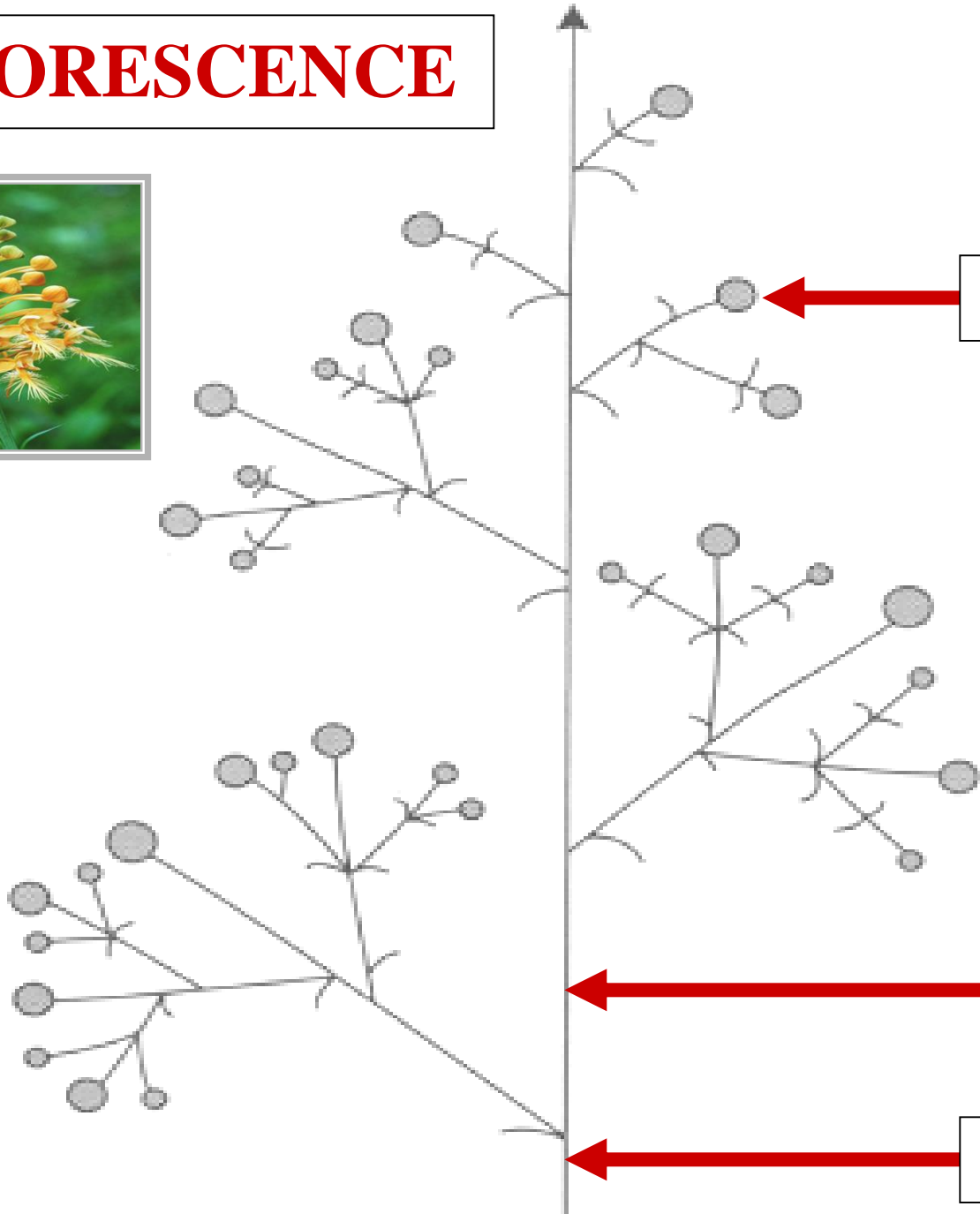
INFLORESCENCE



FLOWER

PEDUNCLE

INFLORESCENCE

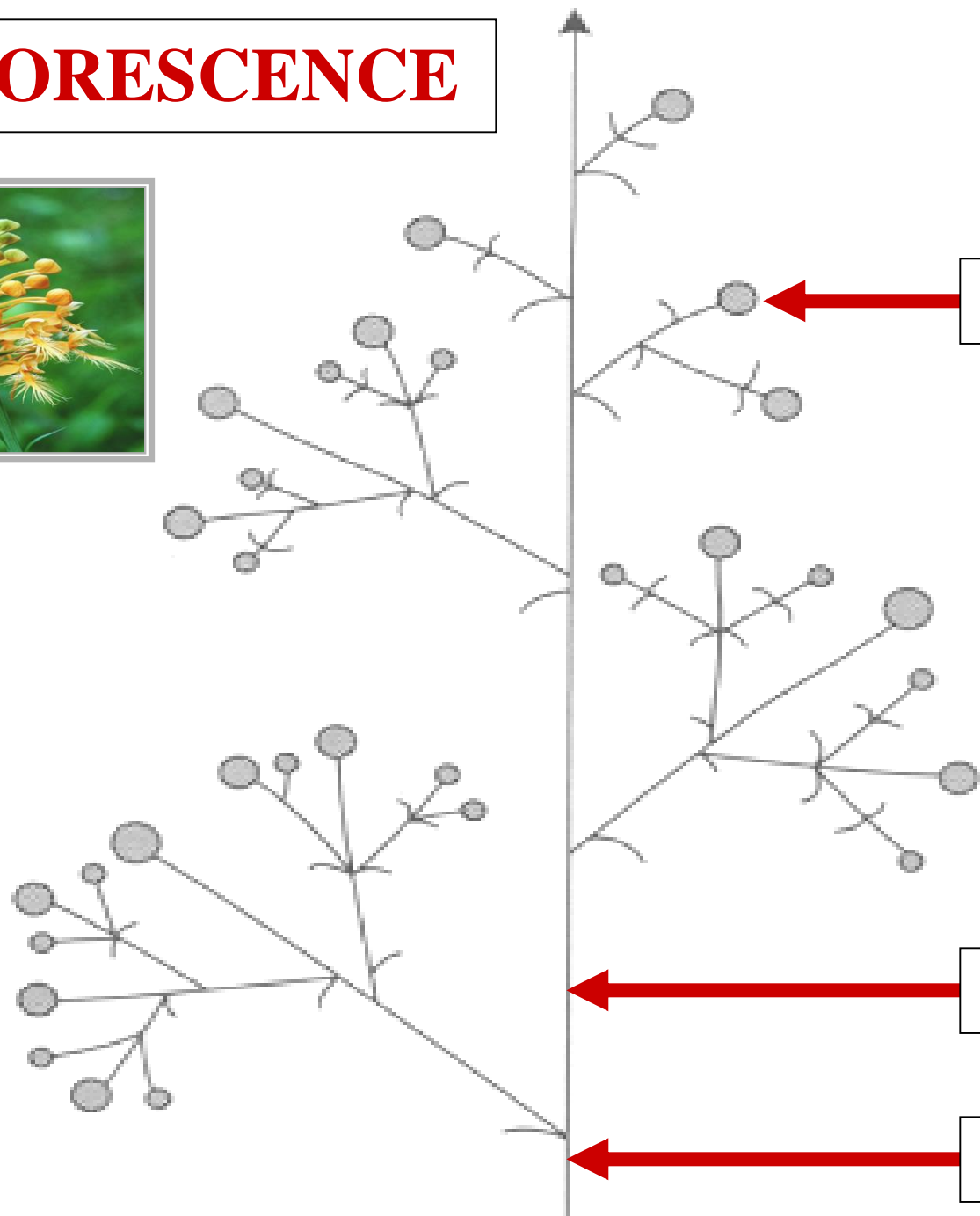


FLOWER

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PEDUNCLE

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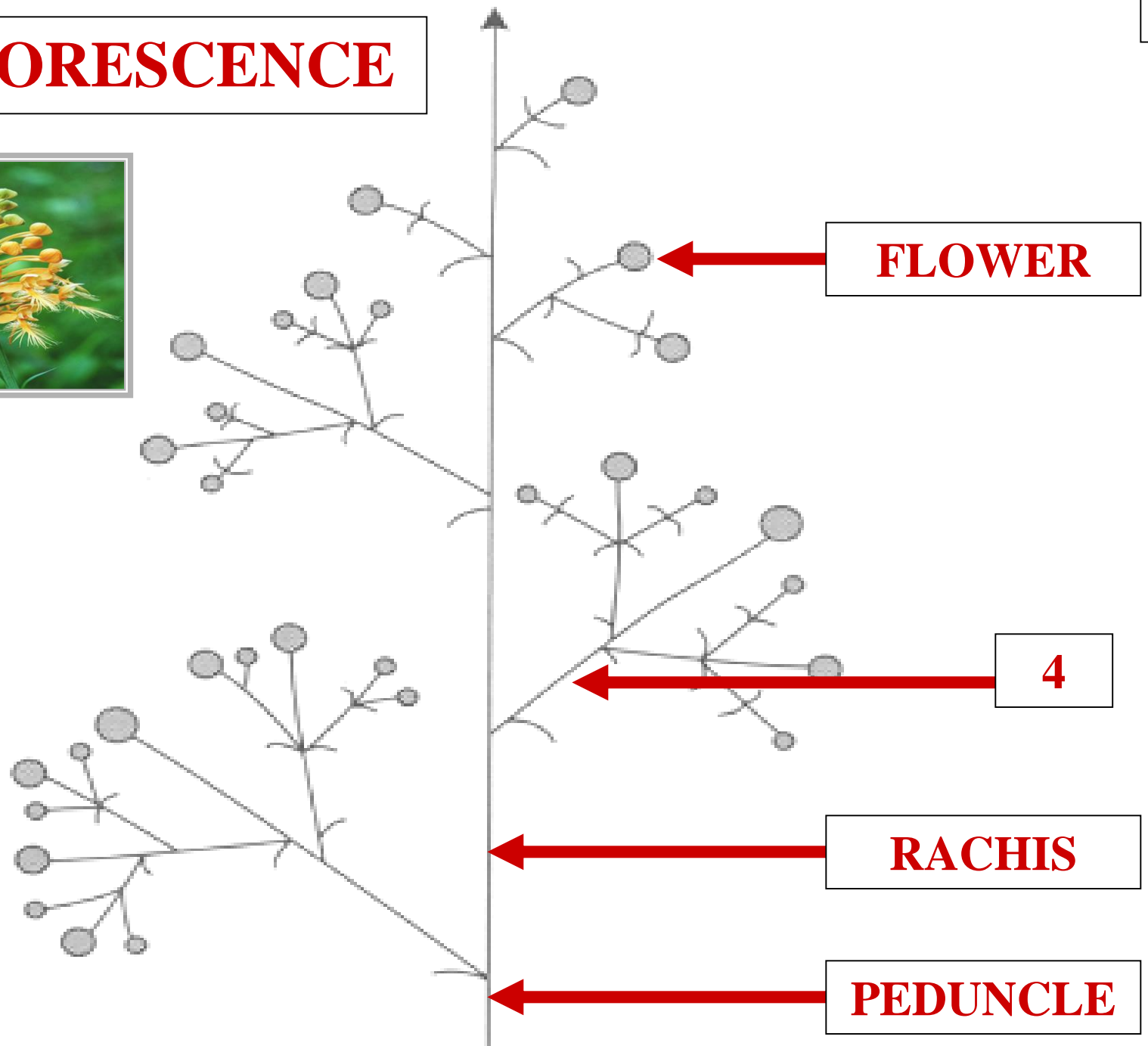


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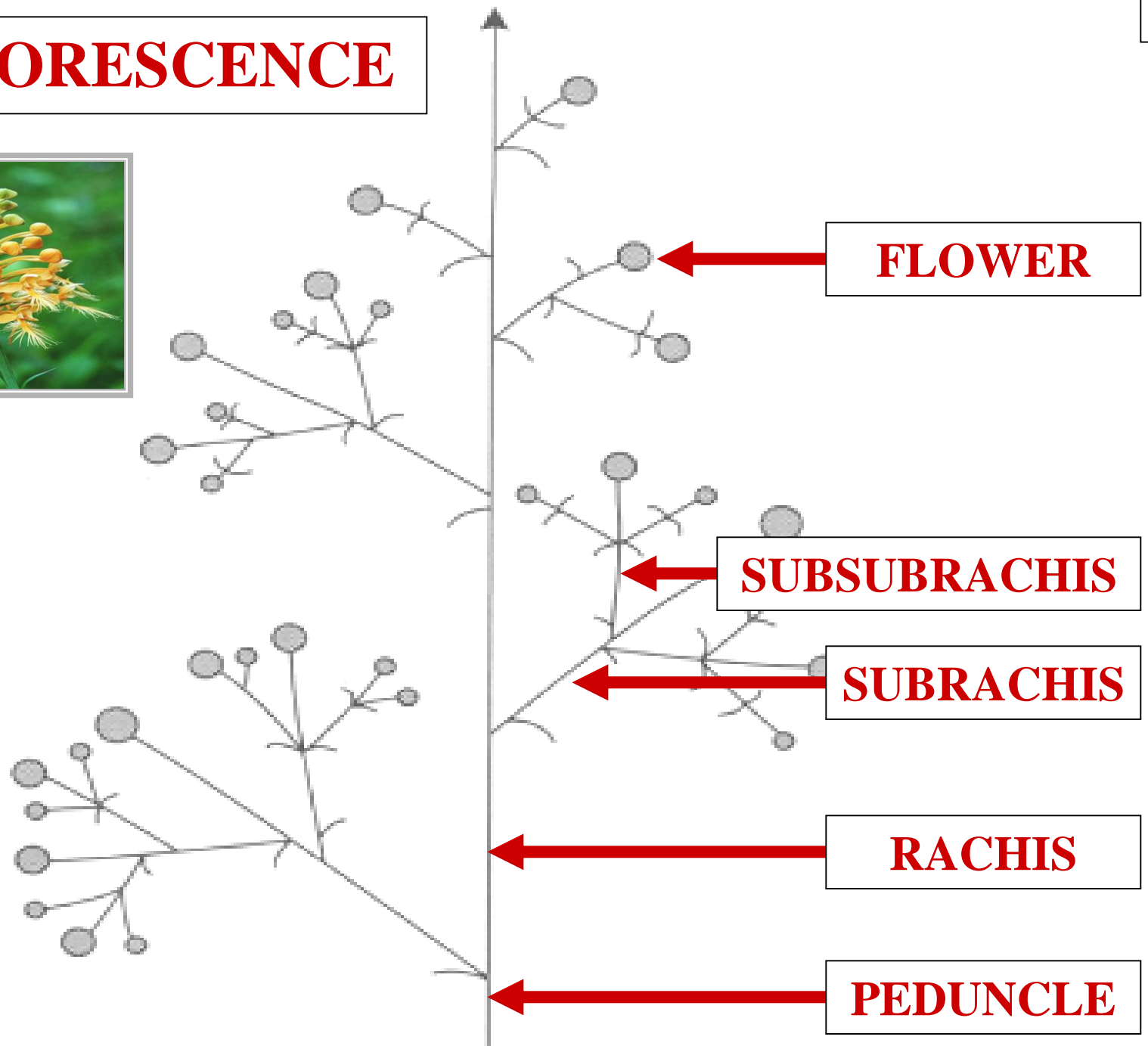
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PEDUNCLE

INFLORESCENCE



INFLORESCENCE



FLOWER

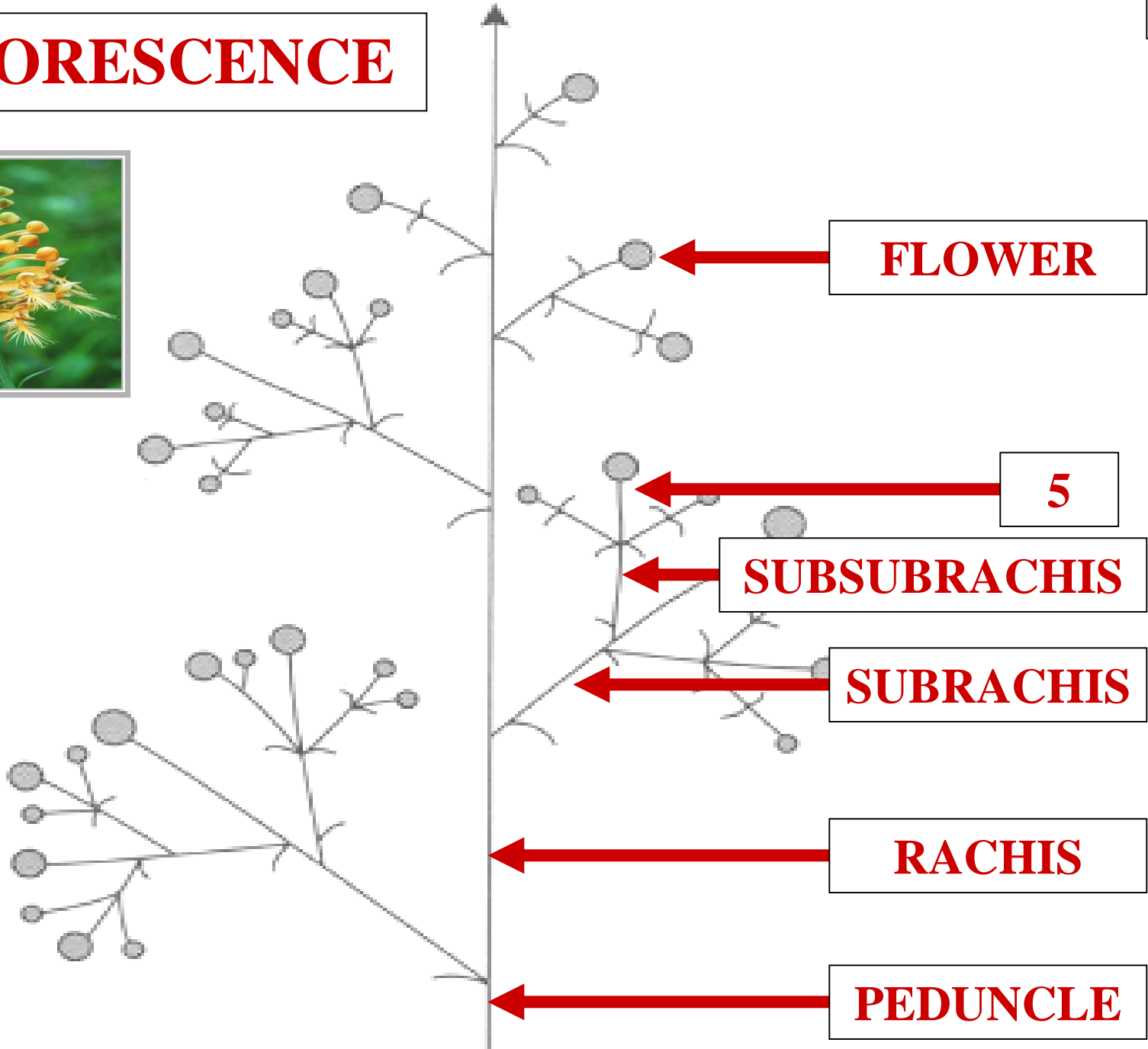
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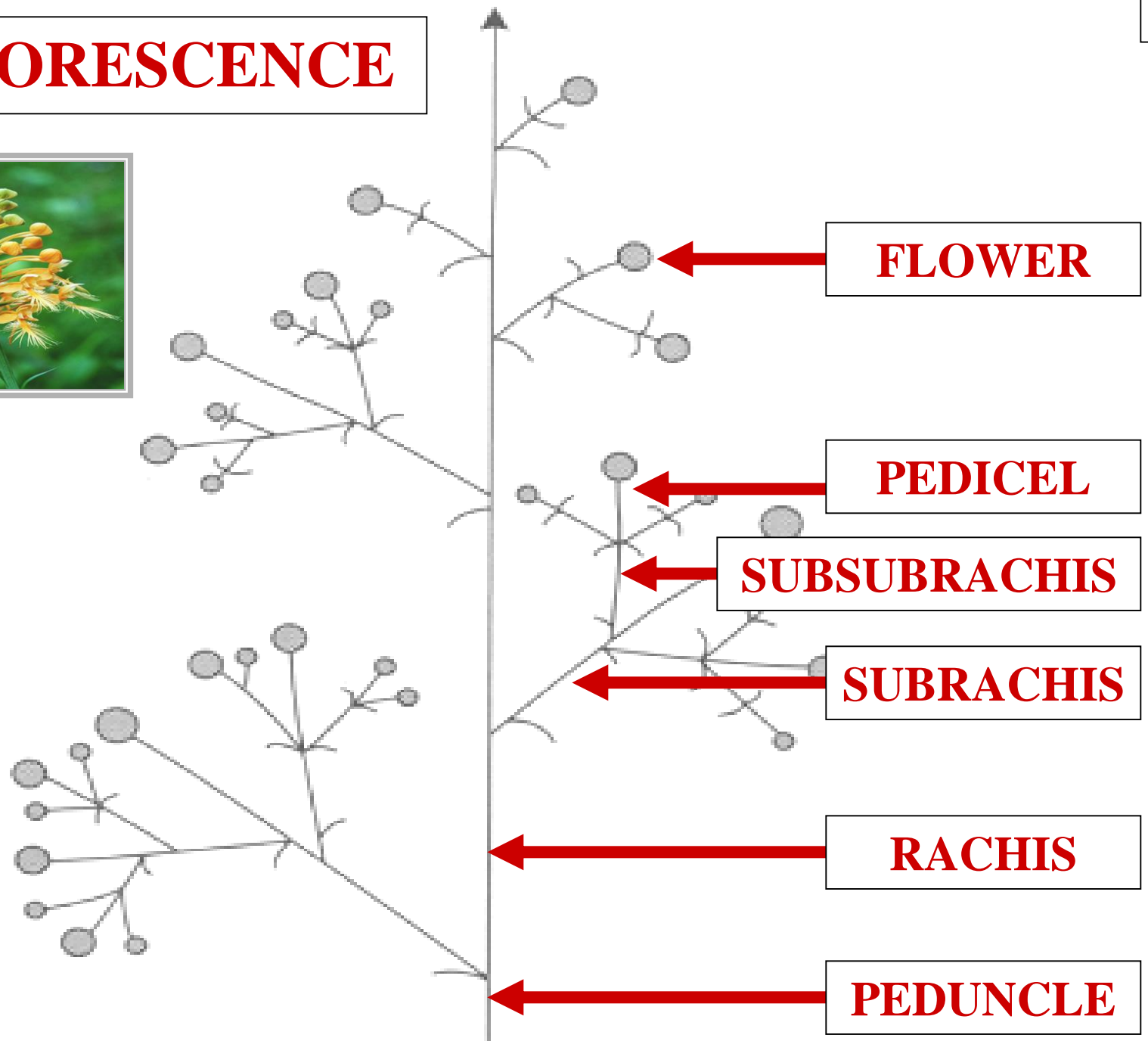
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INFLORESCENCE



INFLORESCENCE



FLOWER

PEDICEL

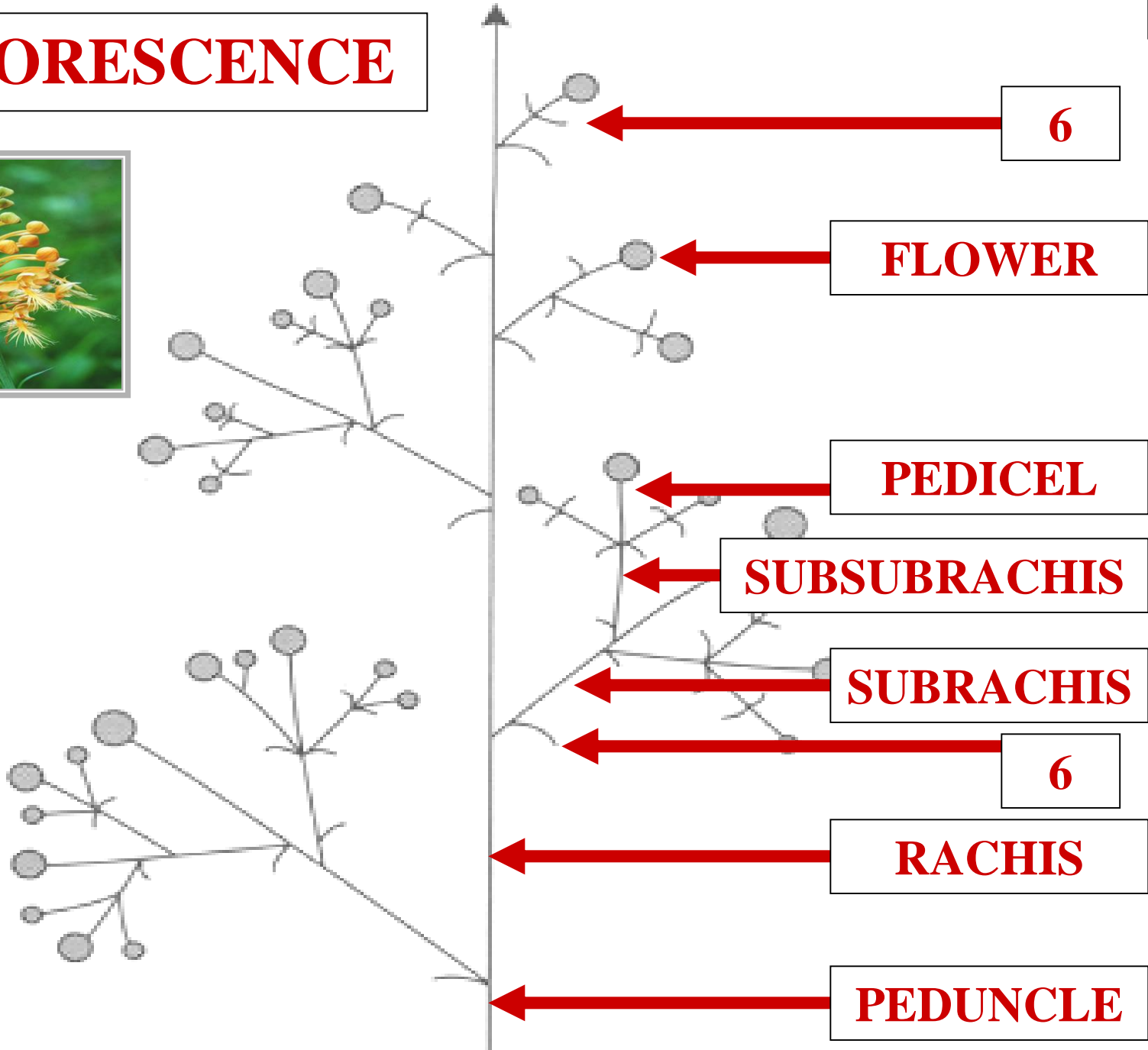
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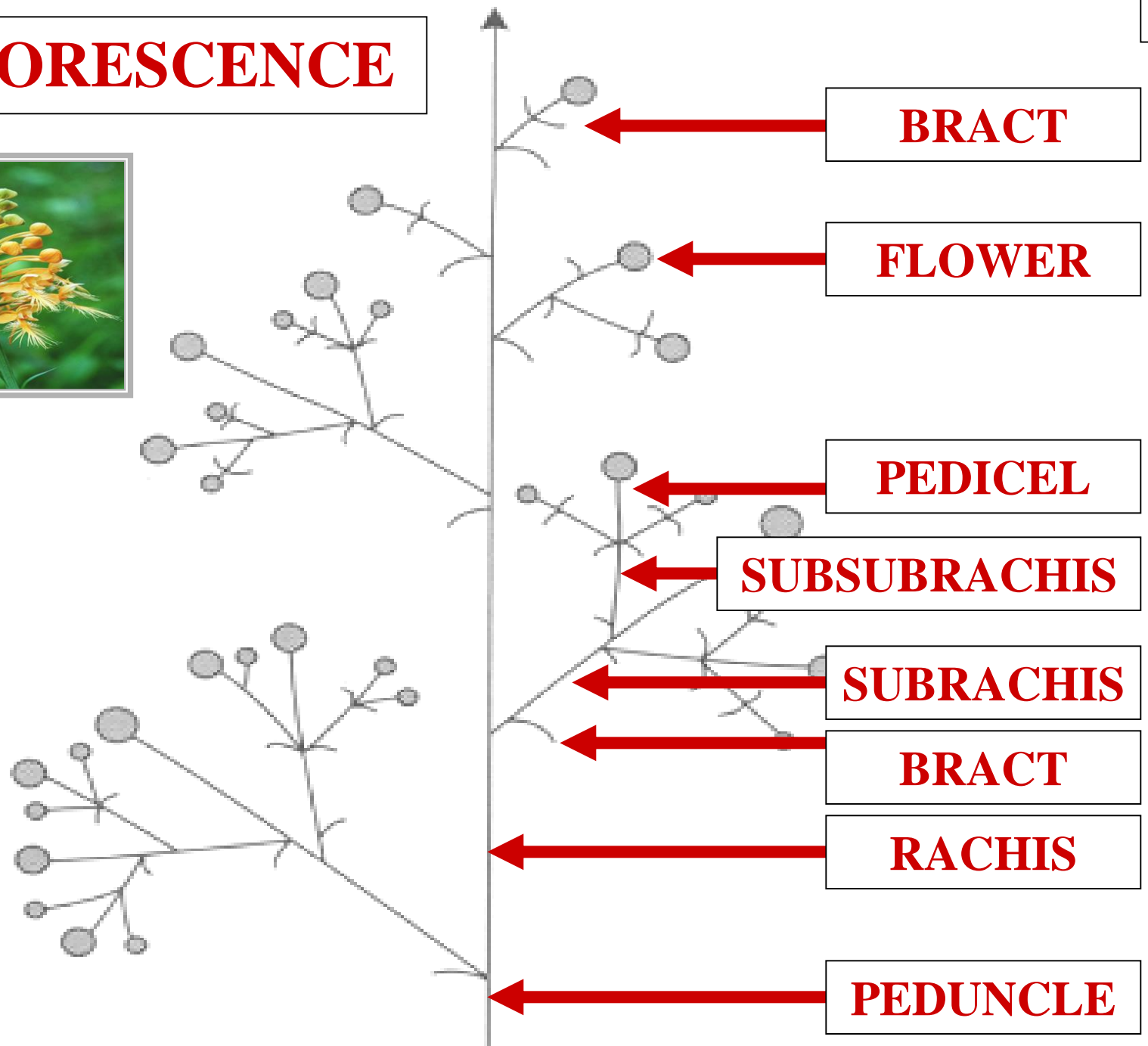
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PEDUNCLE

INFLORESCENCE



INFLORESCENCE



BRACT

FLOWER

PEDICEL

SUBSUBRACHIS

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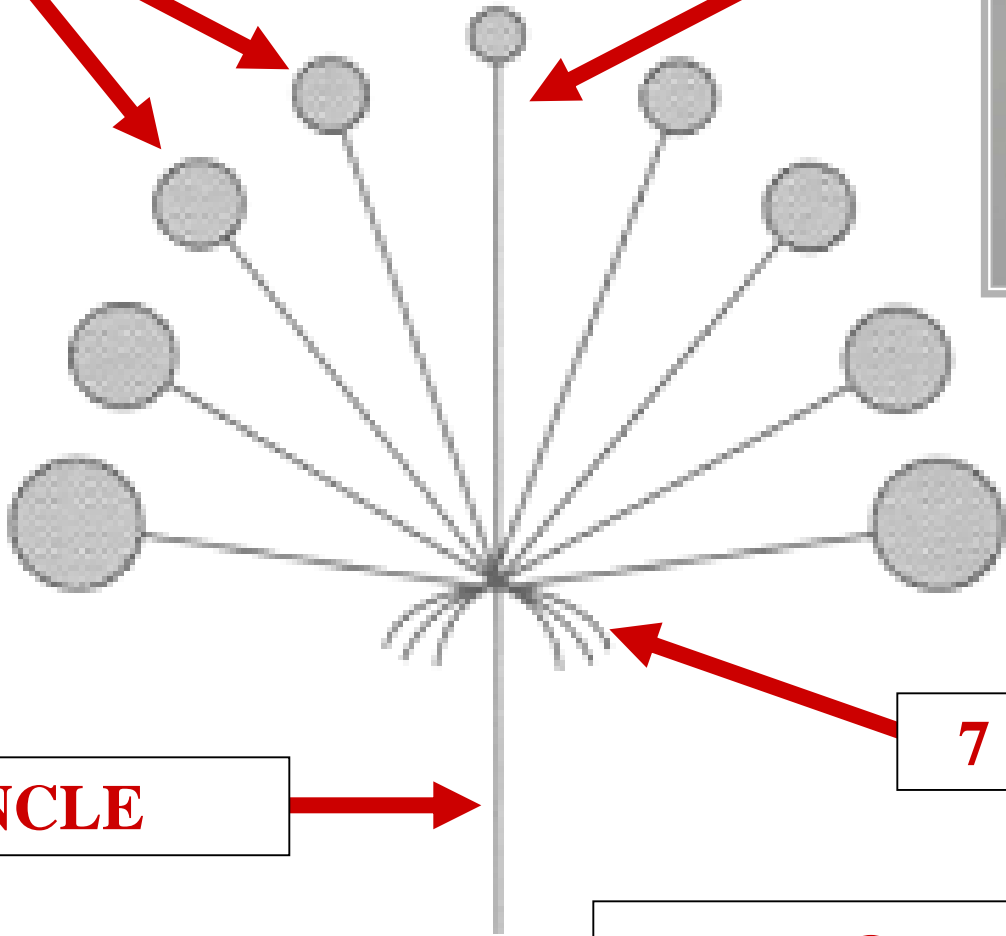
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RACHIS

PEDUNCLE

FLOWERS

PEDICEL



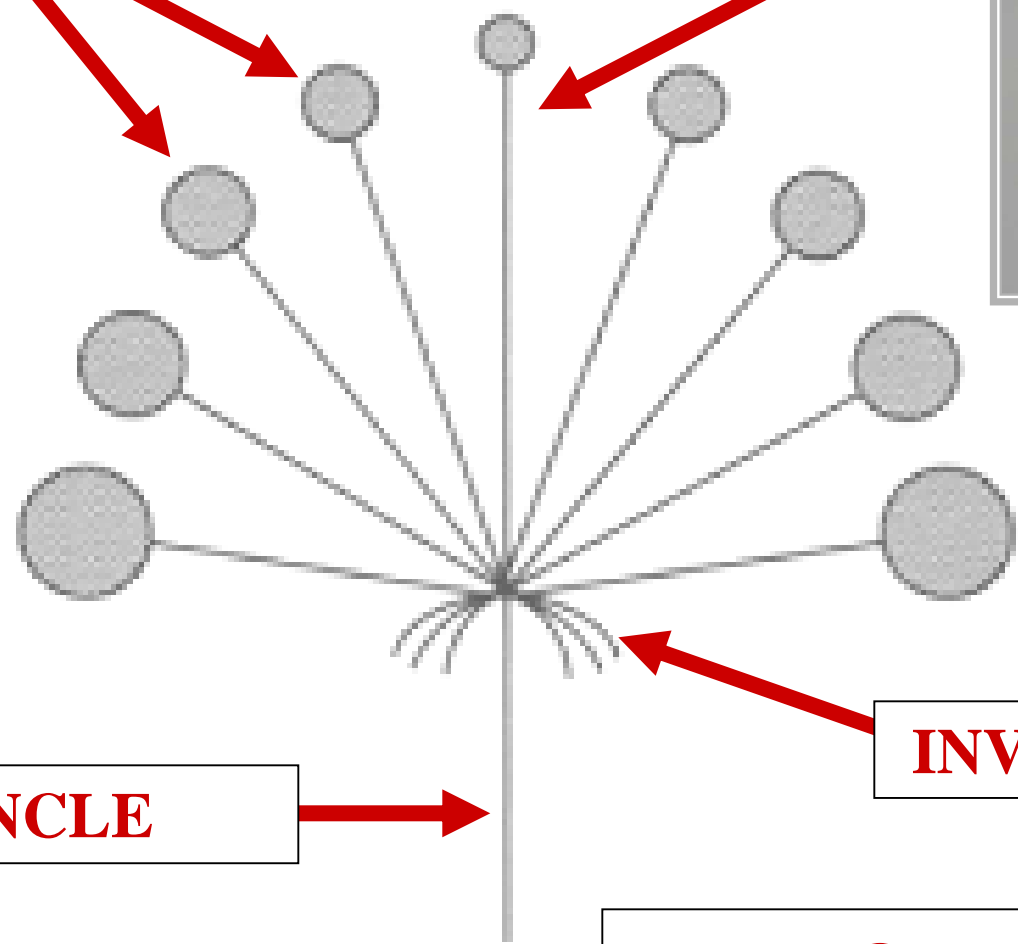
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PEDUNCLE

INFLORESCENCE

FLOWERS

PEDICEL

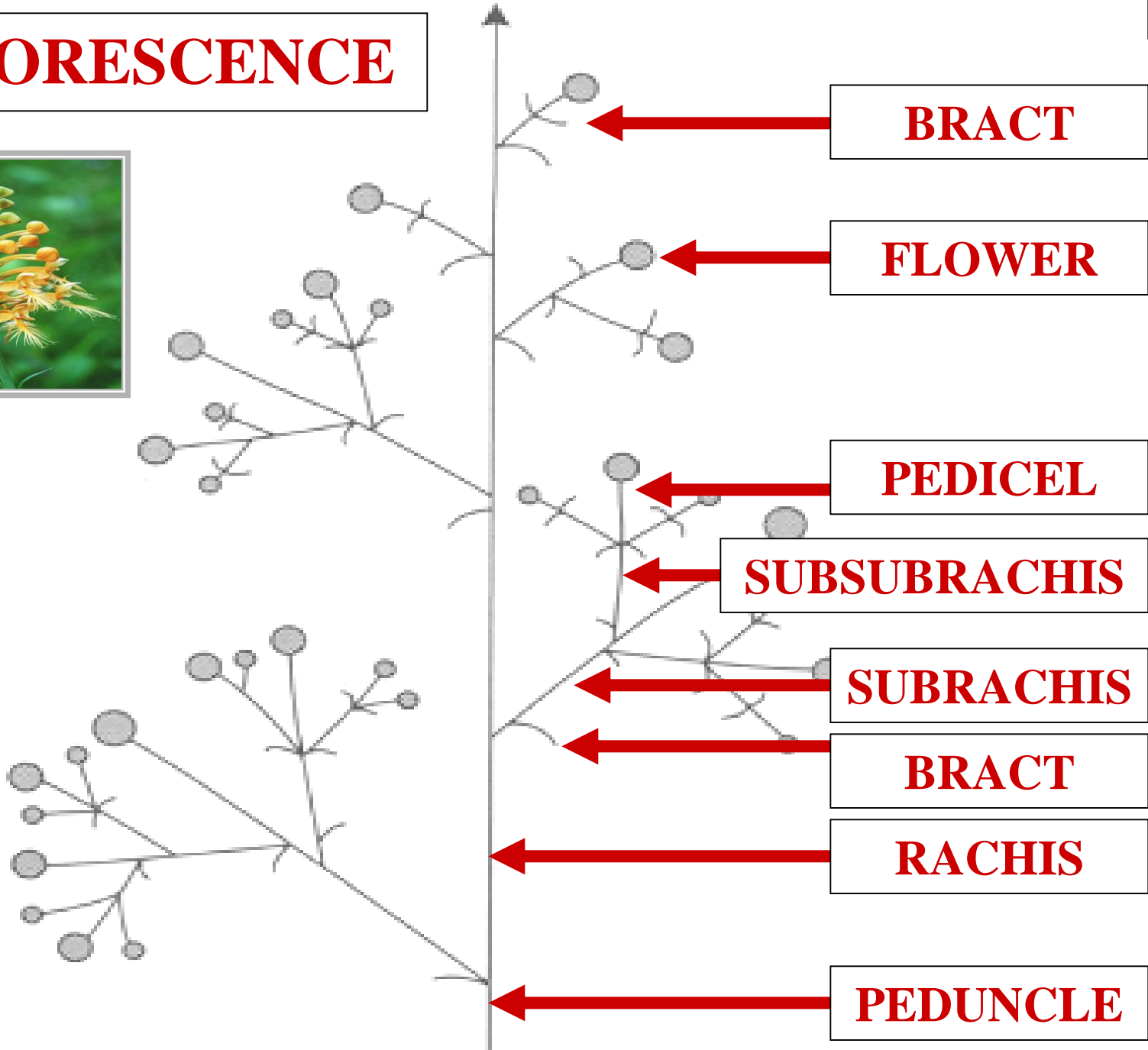


PEDUNCLE

INVOLUCRE

INFLORESCENCE

INFLORESCENCE



BRACT

FLOWER

PEDICEL

SUBSUBBRACHIS

SUBBRACHIS

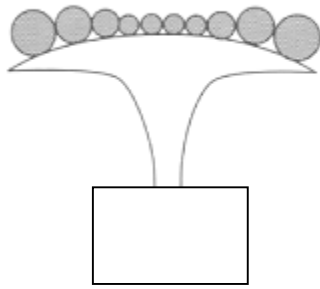
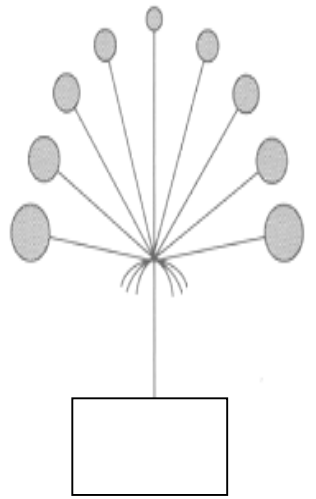
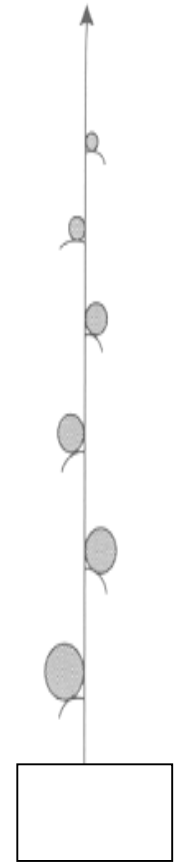
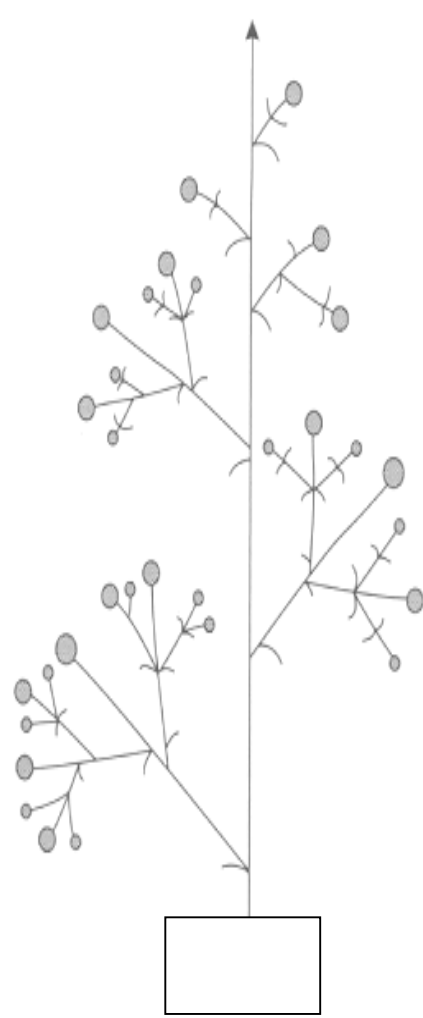
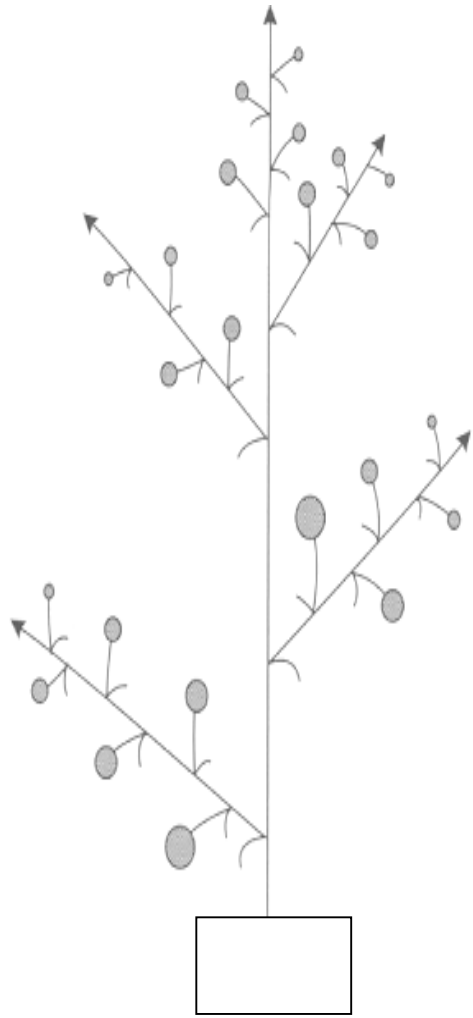
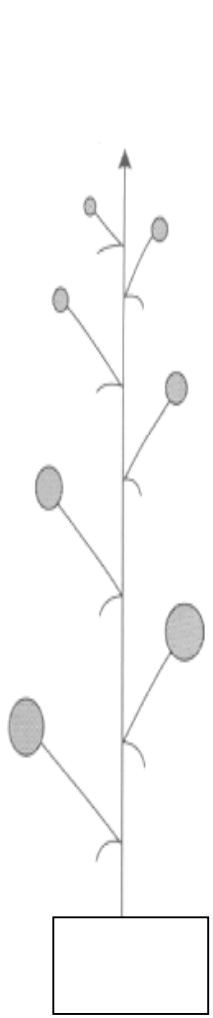
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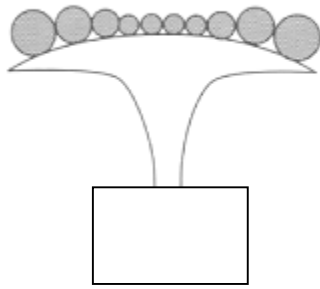
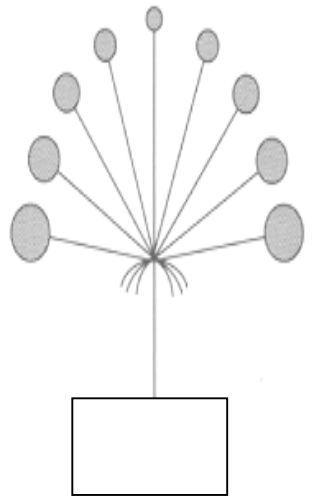
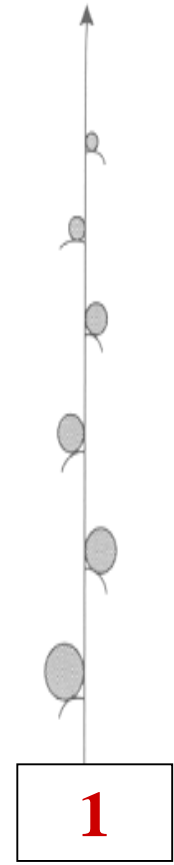
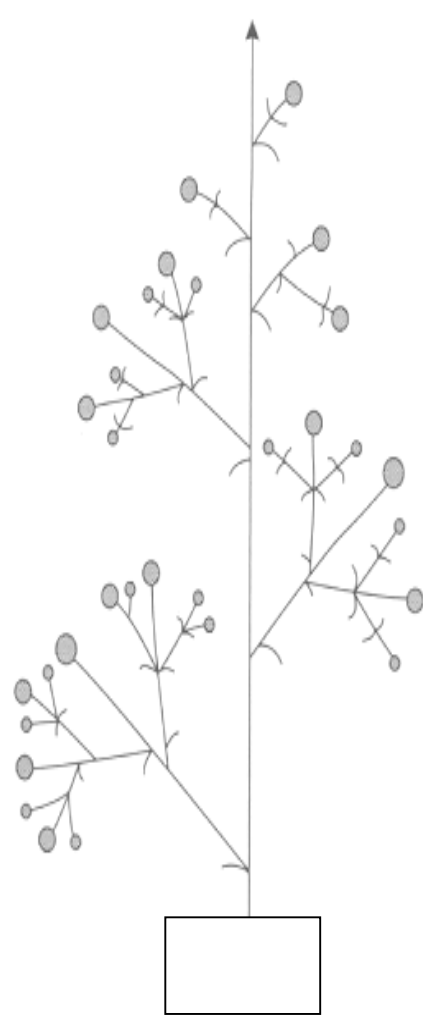
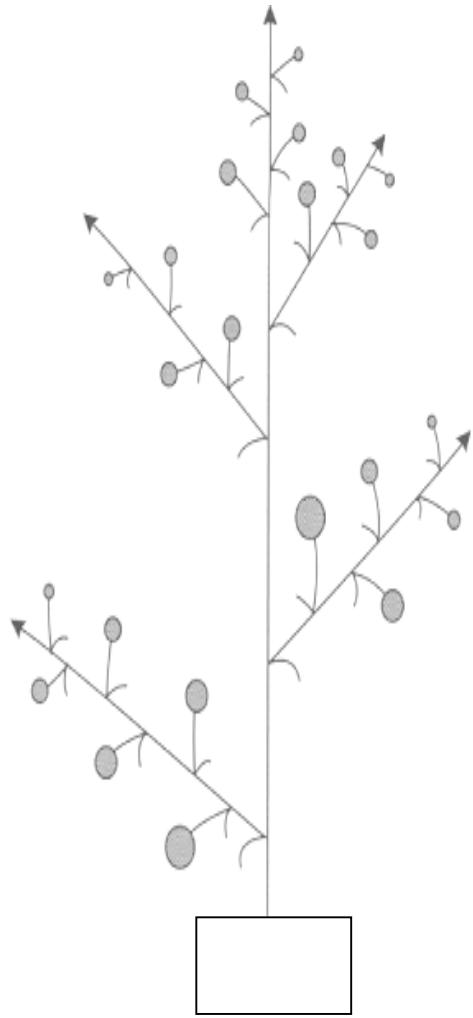
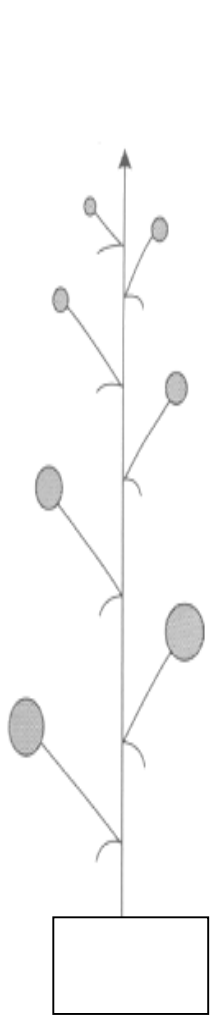
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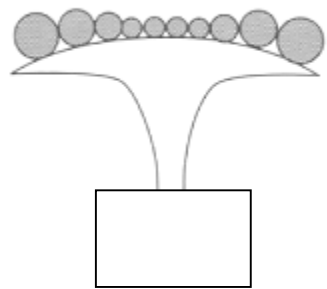
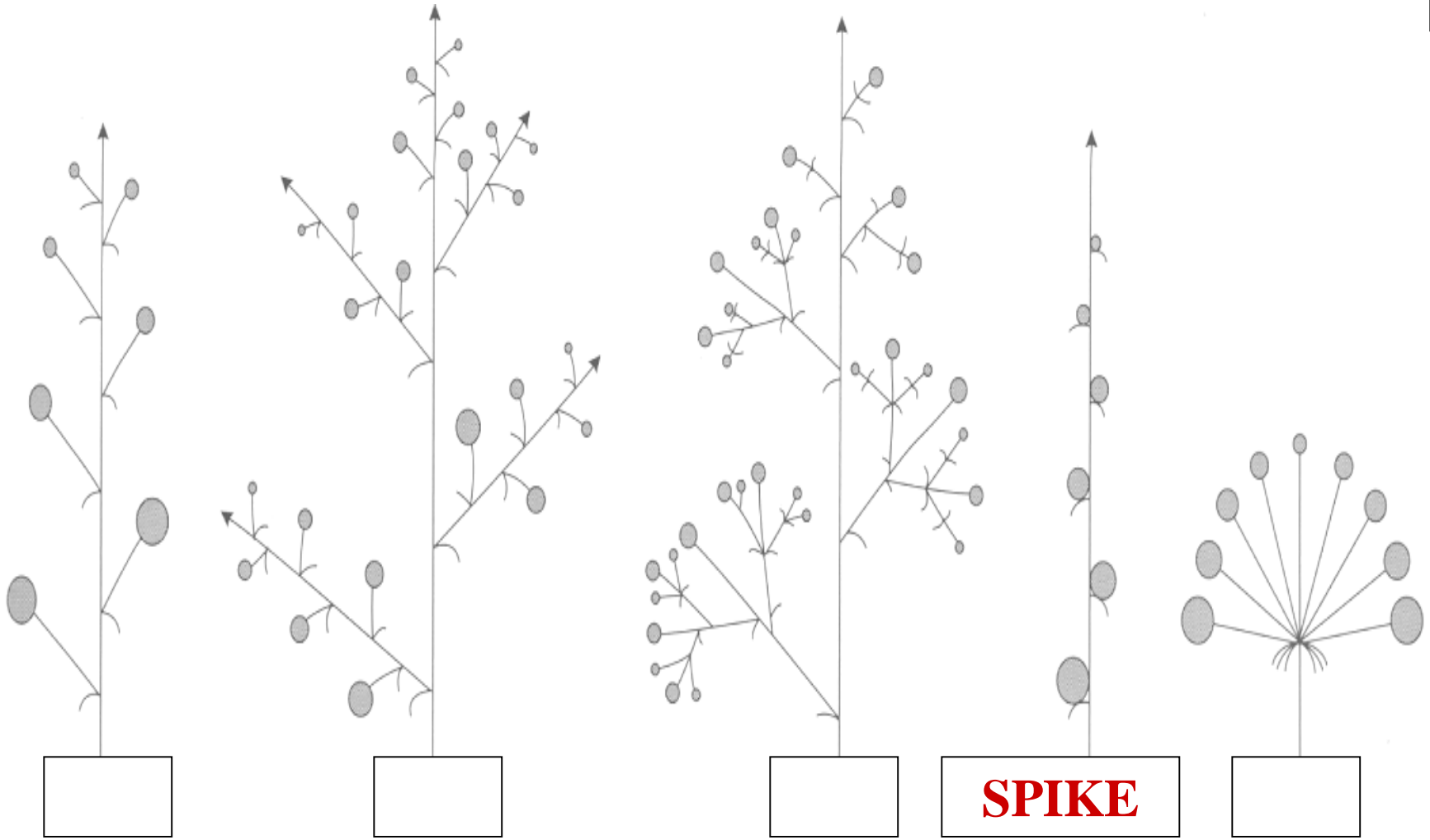
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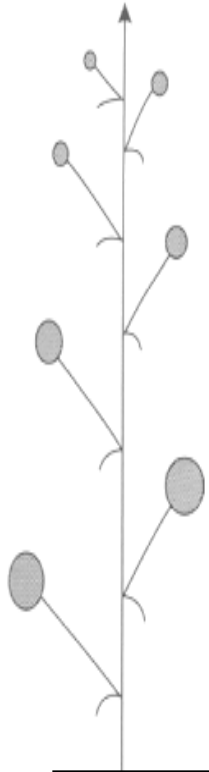


INFLORESCENCE TYPES

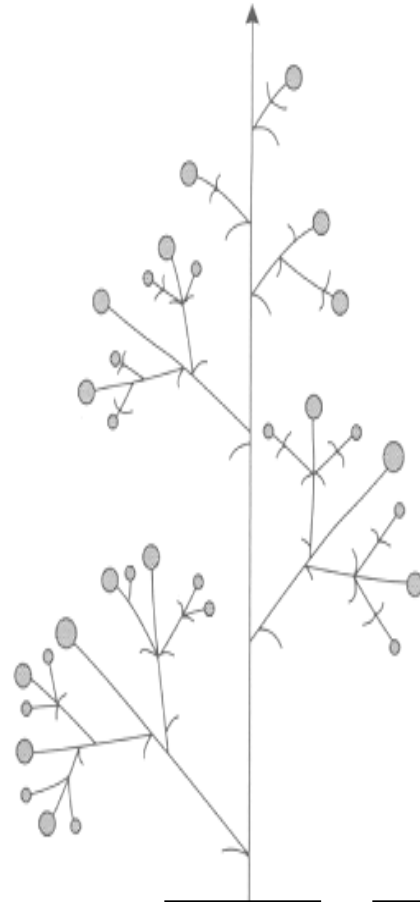
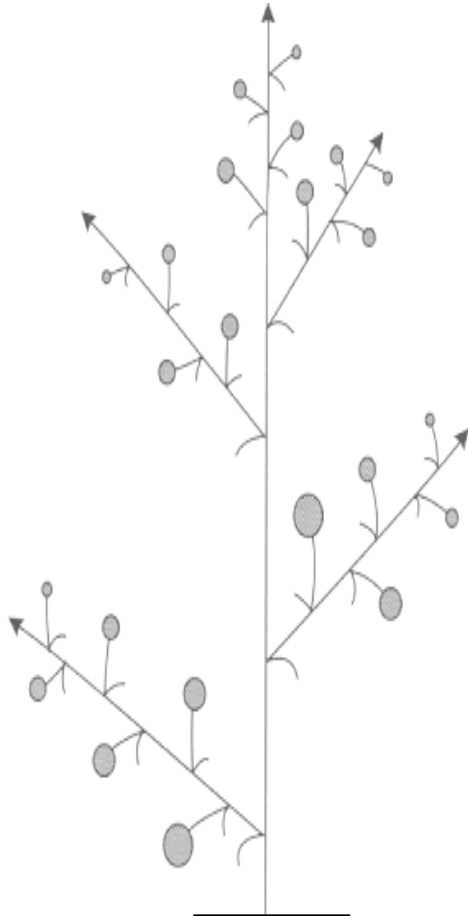




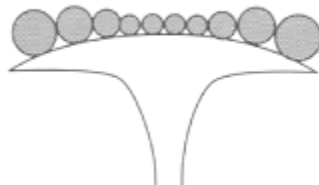
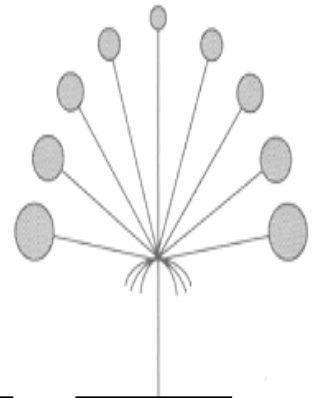


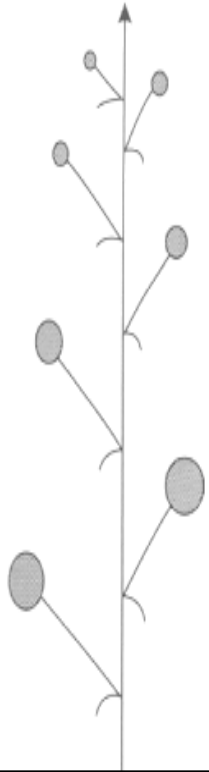


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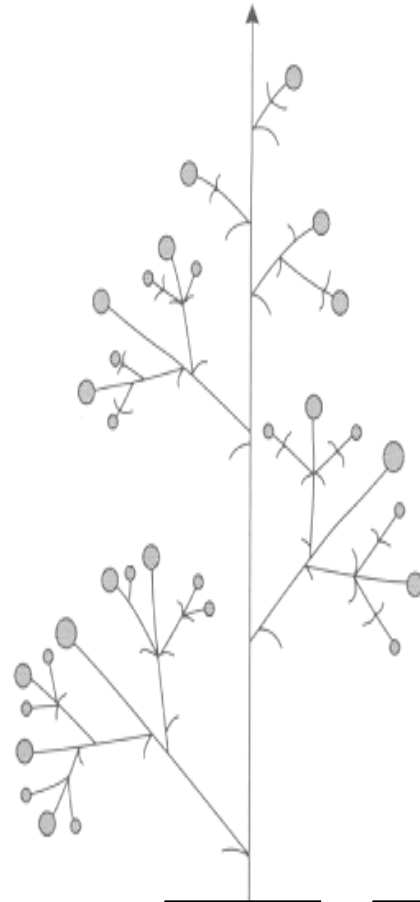
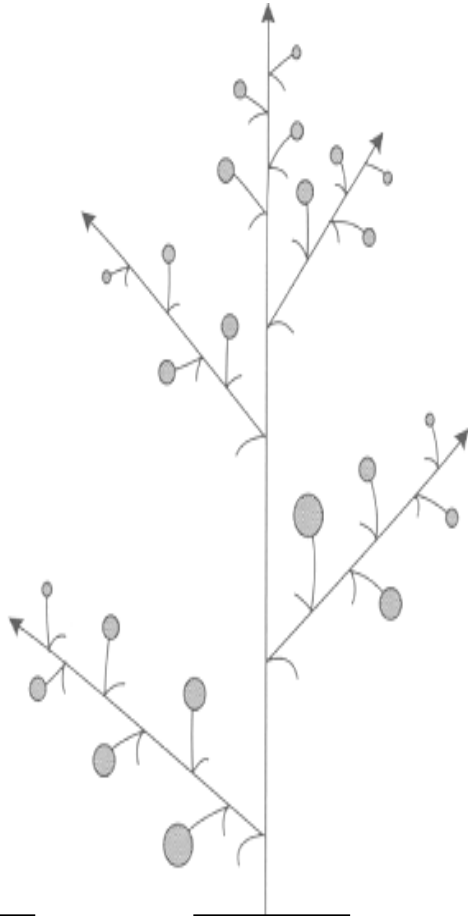


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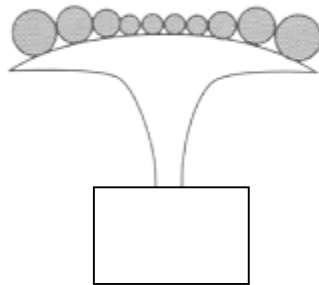
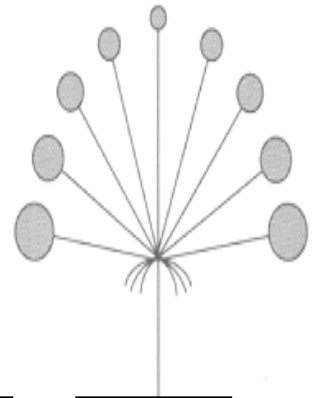


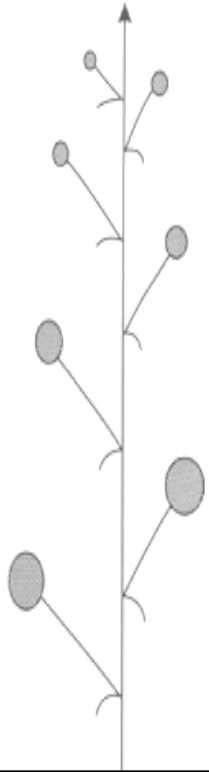


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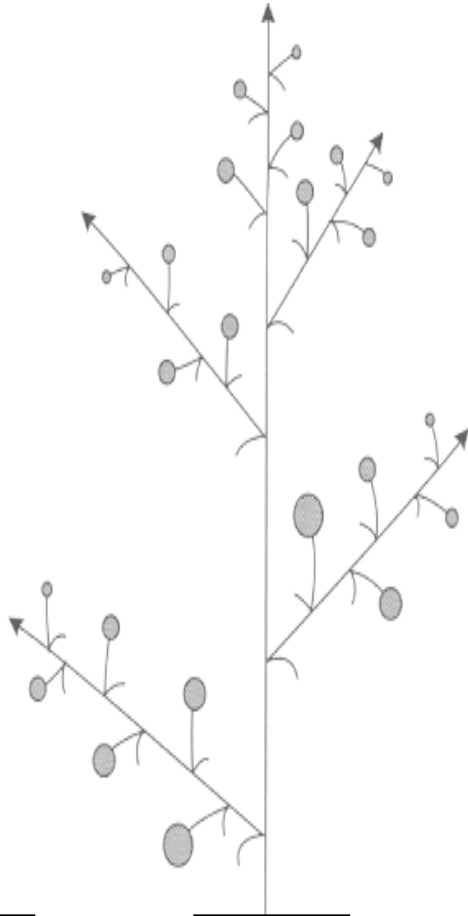


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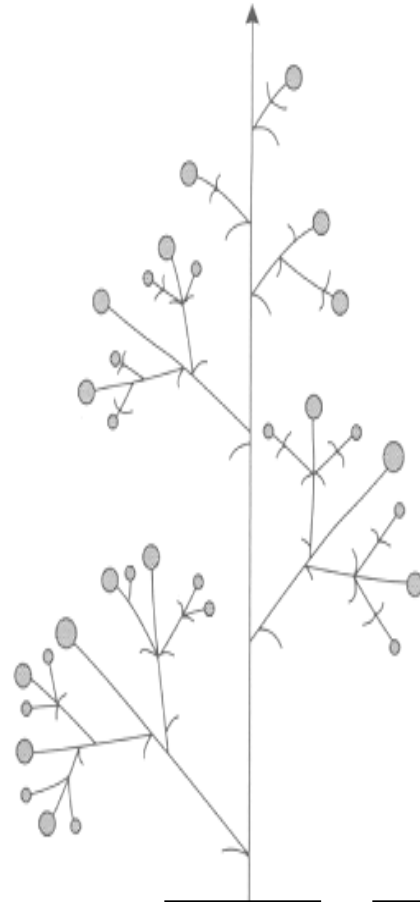




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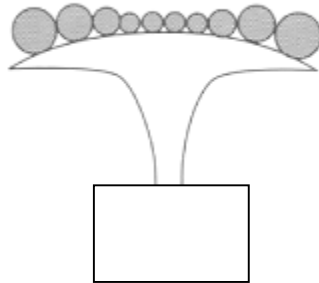
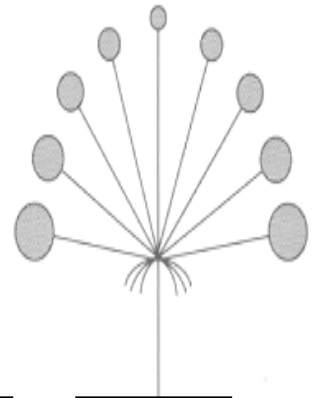
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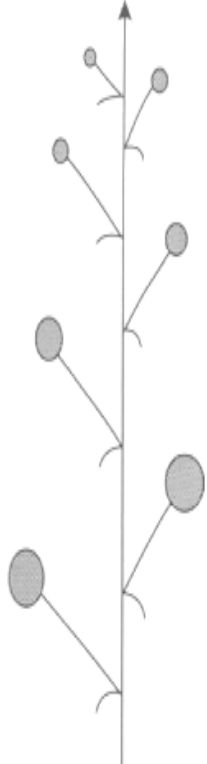


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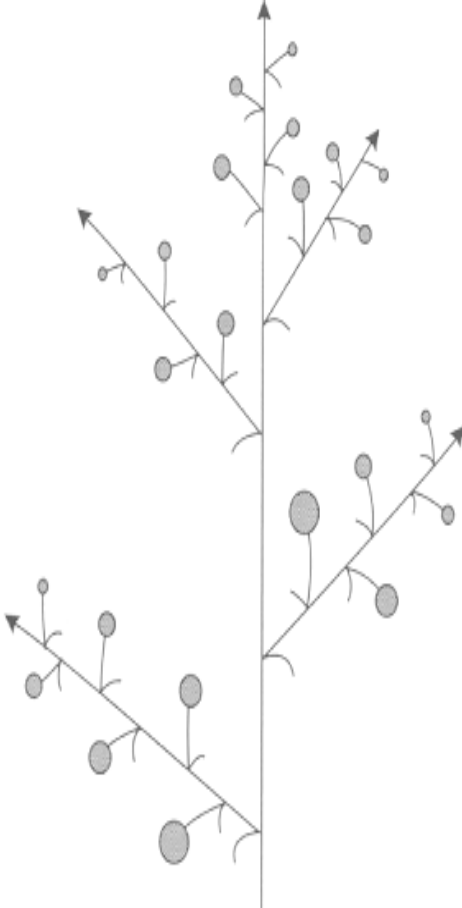


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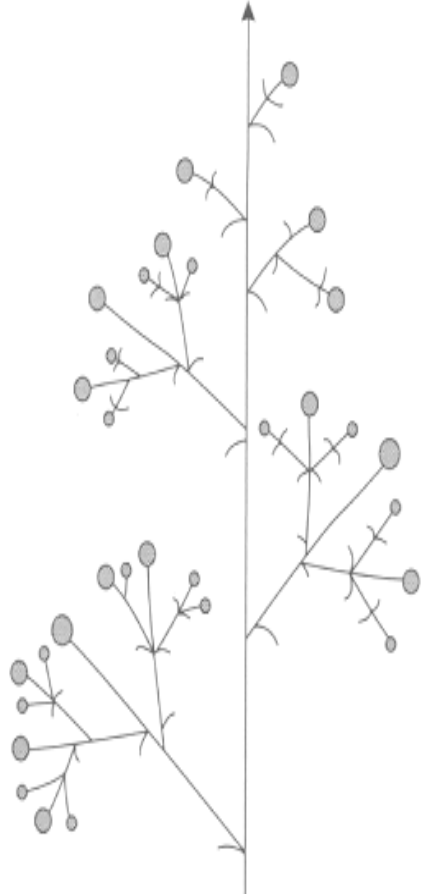




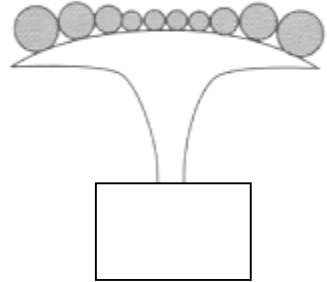
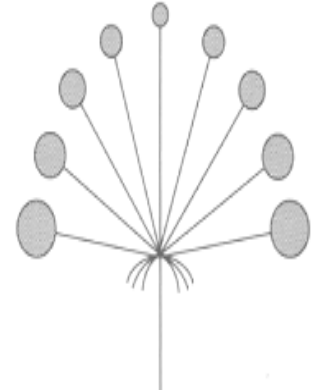
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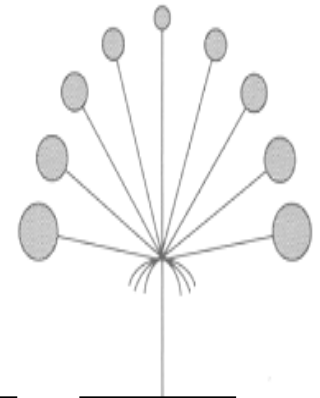
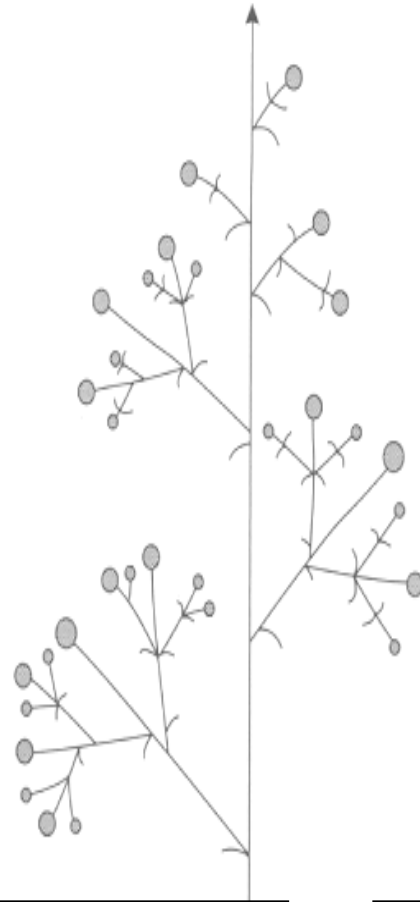
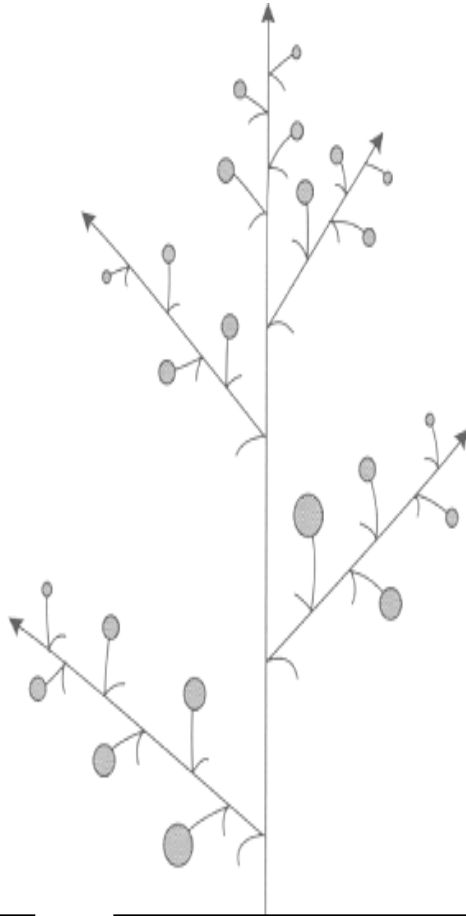
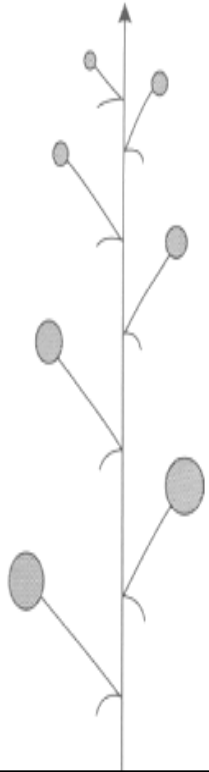


PANICLE



SPIKE



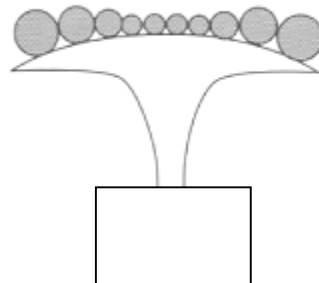


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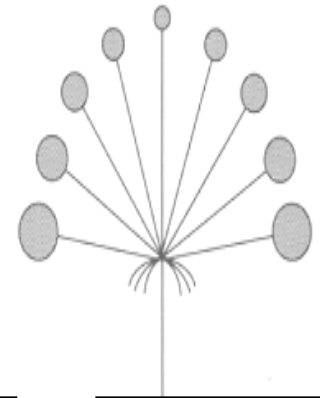
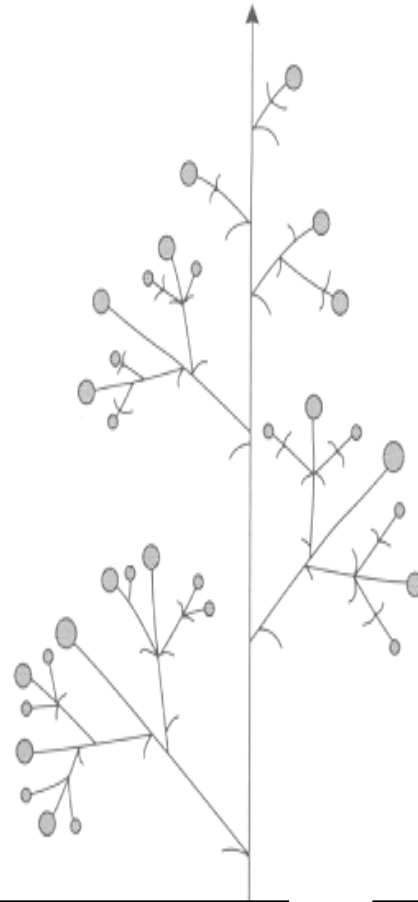
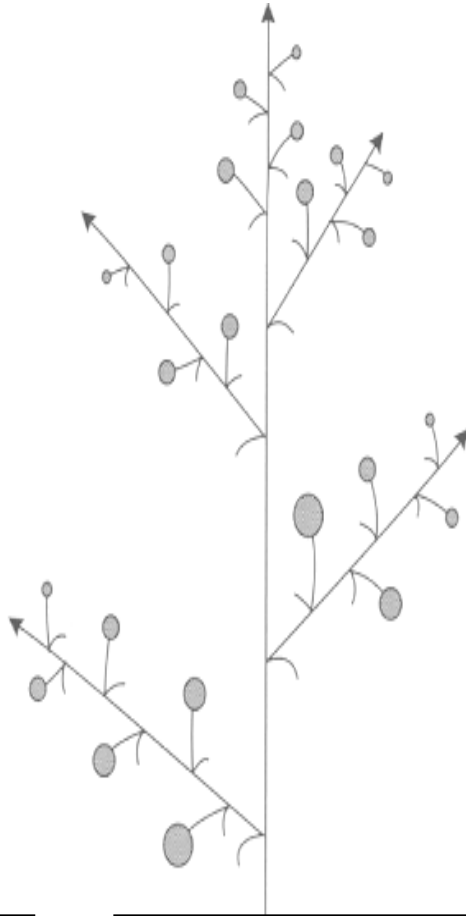
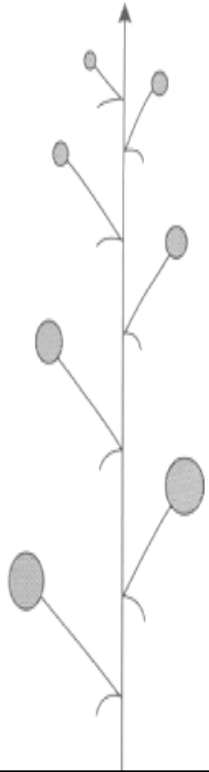
PANICLE

SPIKE

4



CYME

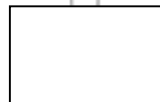
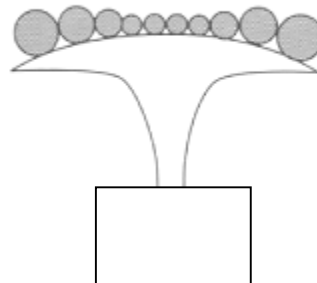


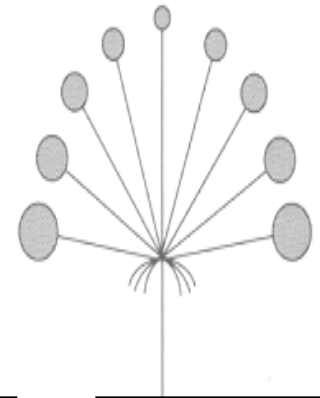
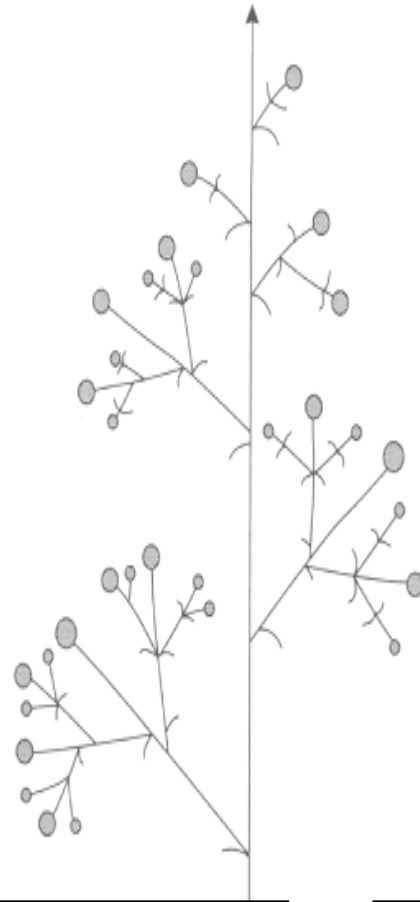
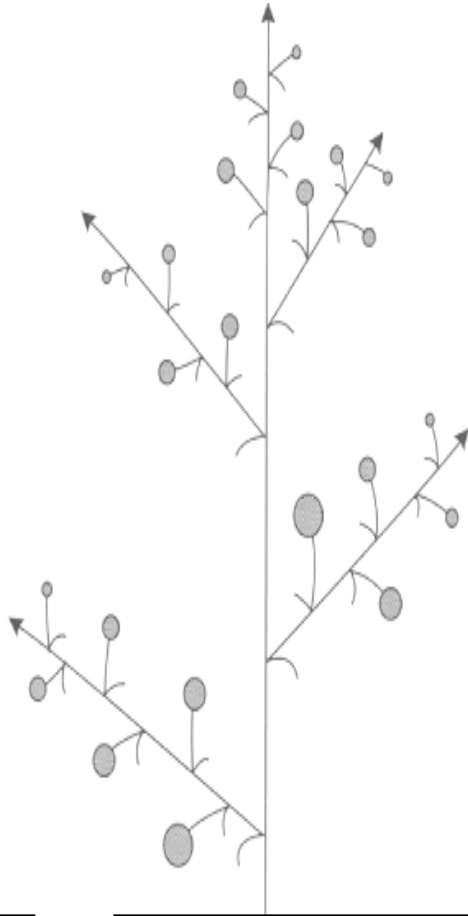
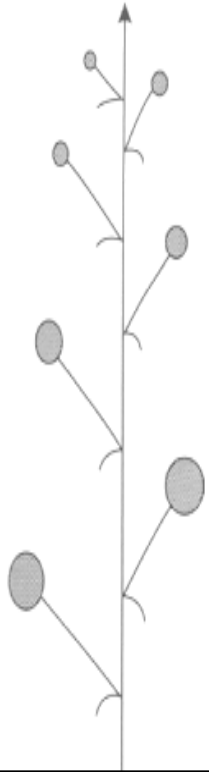
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PANICLE

SPIKE

UMBEL



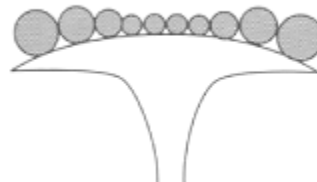


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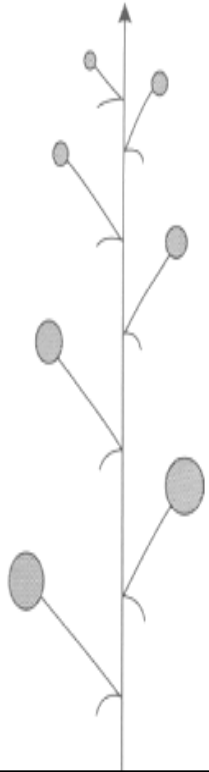
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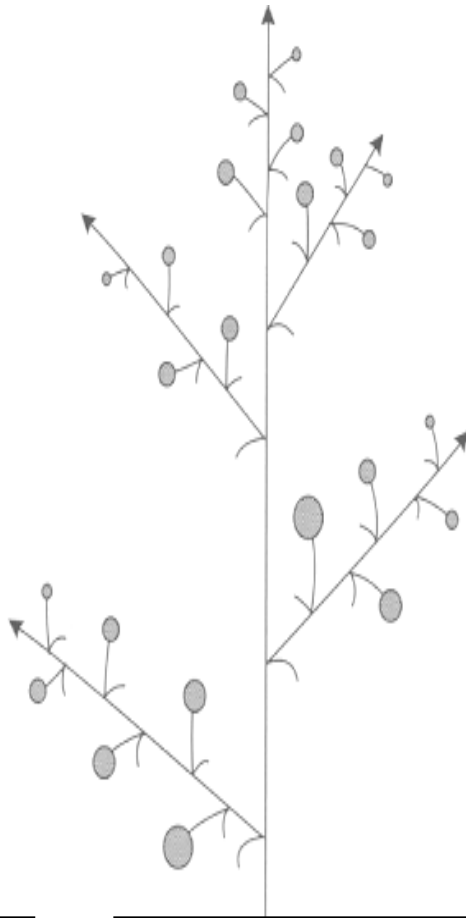
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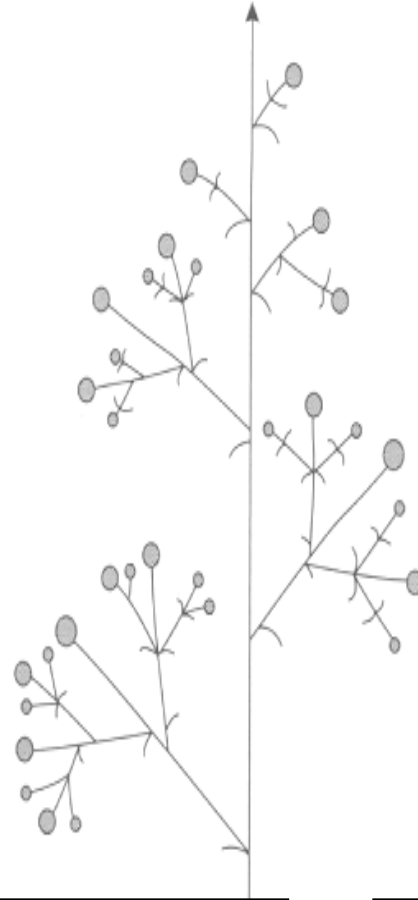
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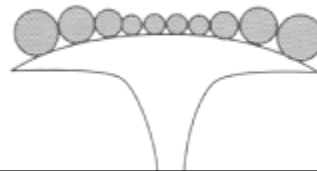
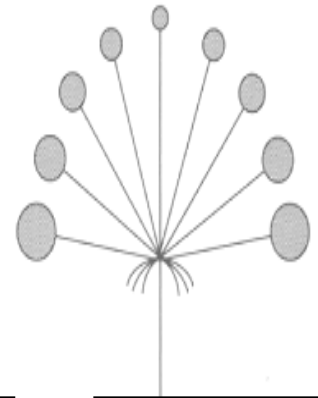
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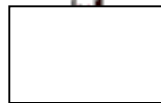
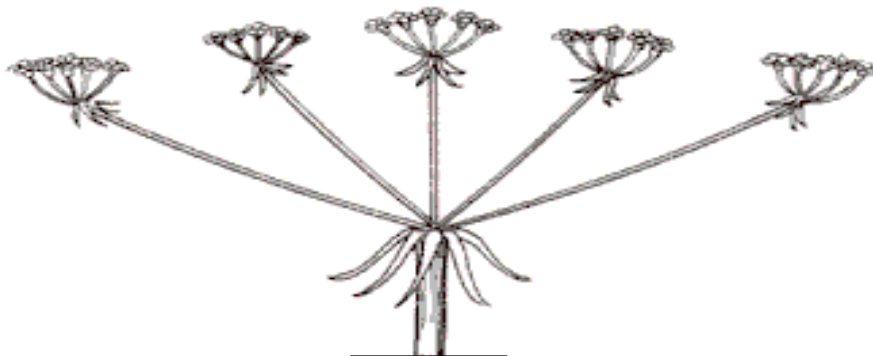
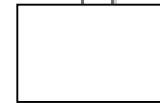
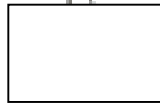
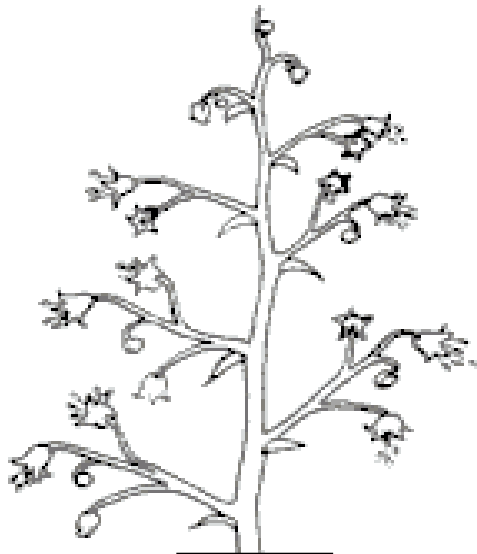


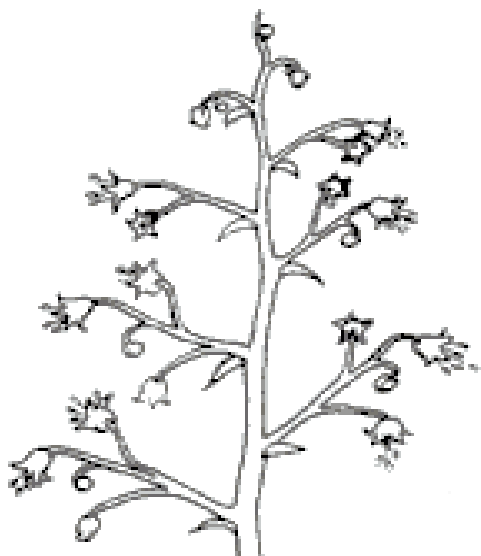
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CAPITULUM

INFLORESCENCE TYPES SUMMARY





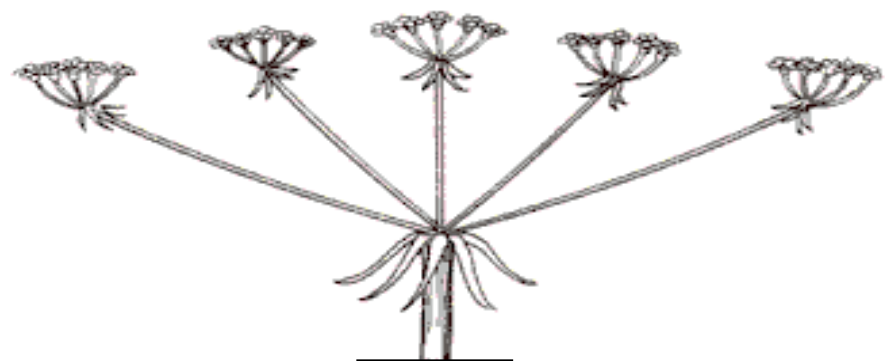
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SPIKE



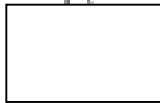
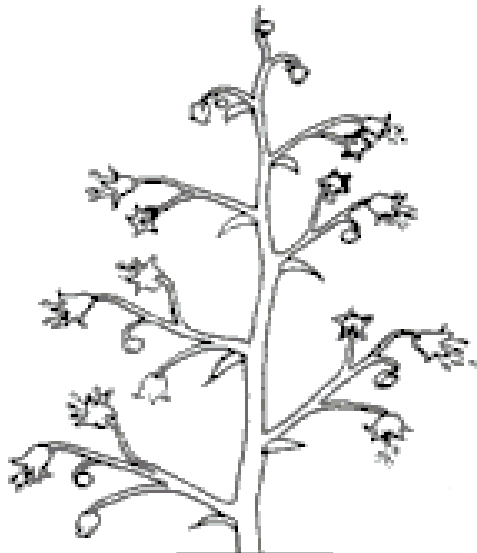
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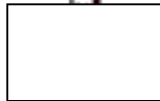
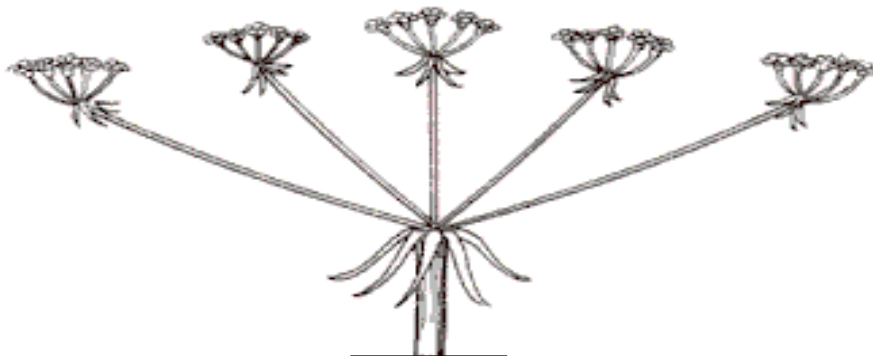
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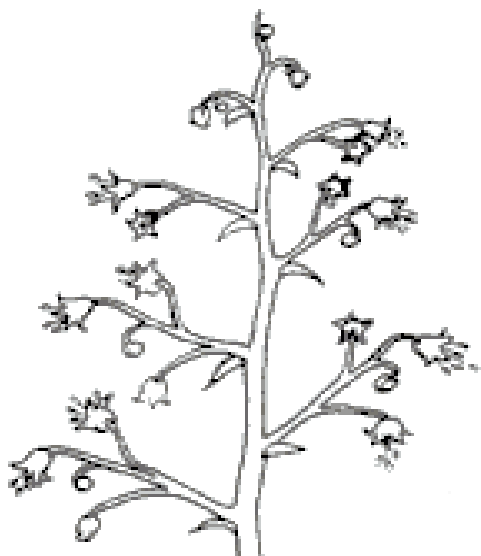


SPIKE



2





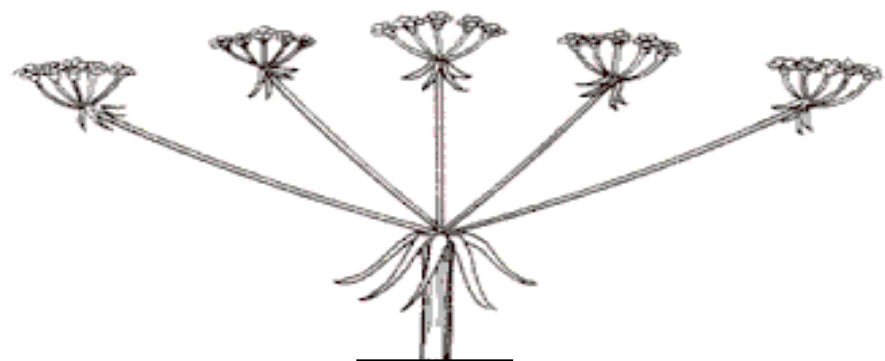
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SPIKE



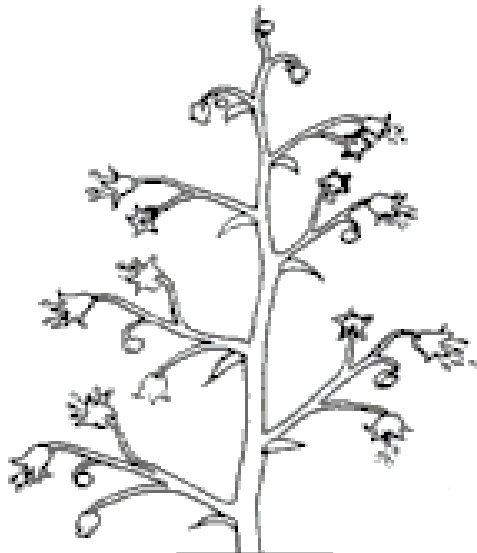
RACEME



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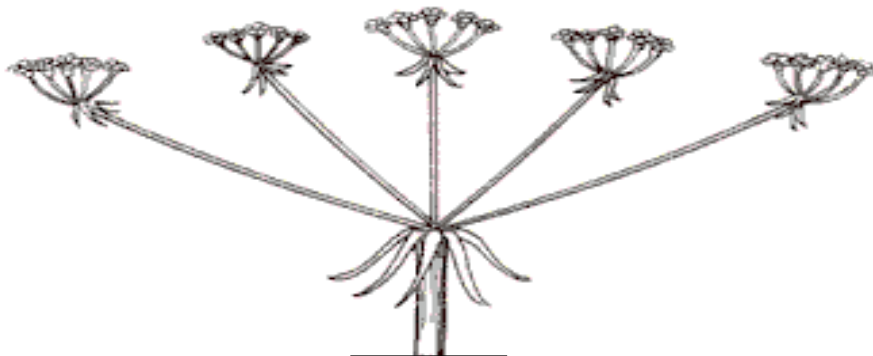
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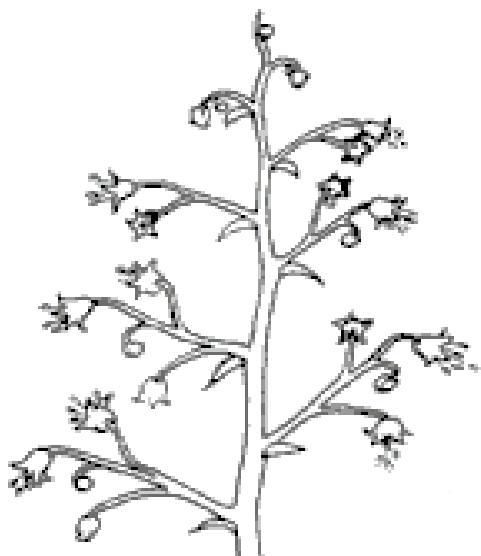


SPIKE



RACEME





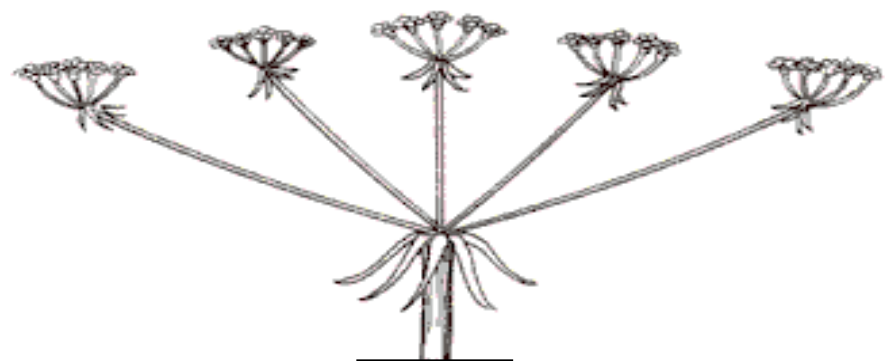
PANICLE

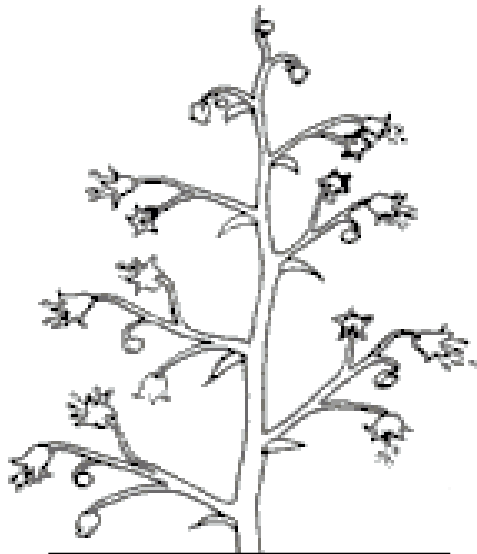


SPIKE



RACEME





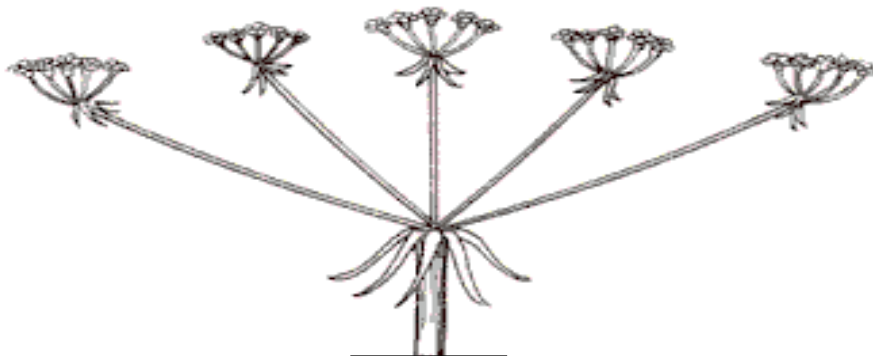
PANICLE



SPIKE

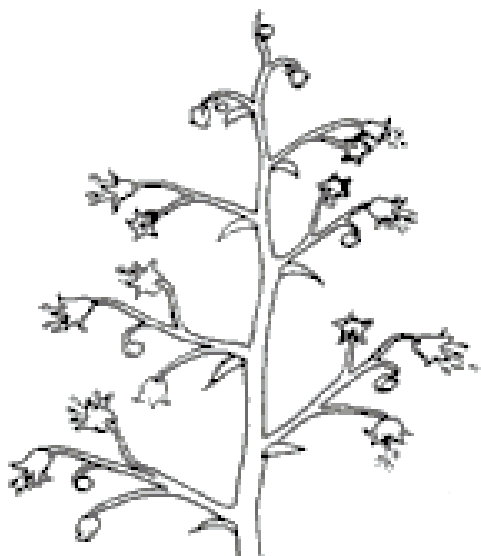


RACEME



4





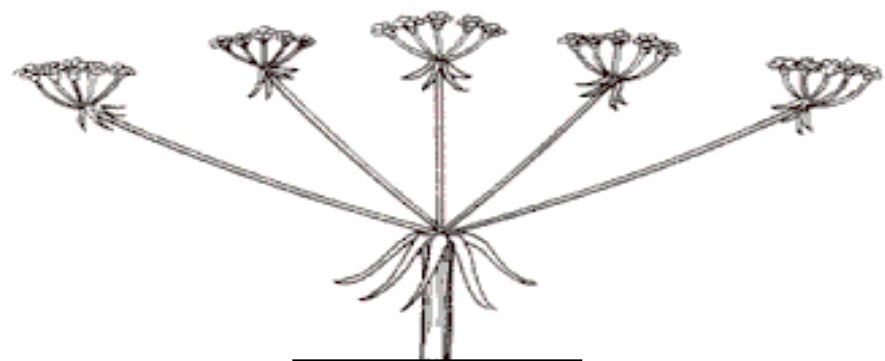
PANICLE



SPIKE

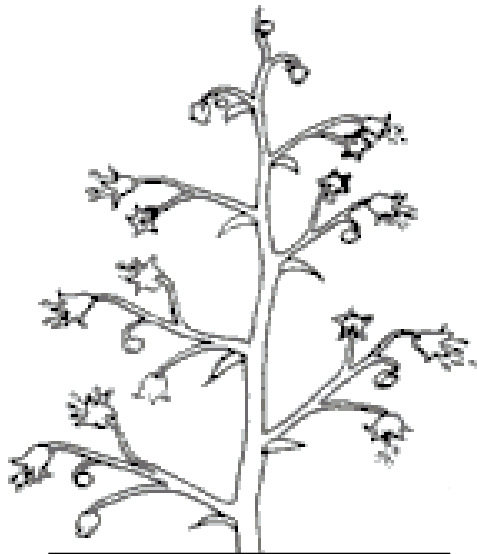


RACEME



UMBEL





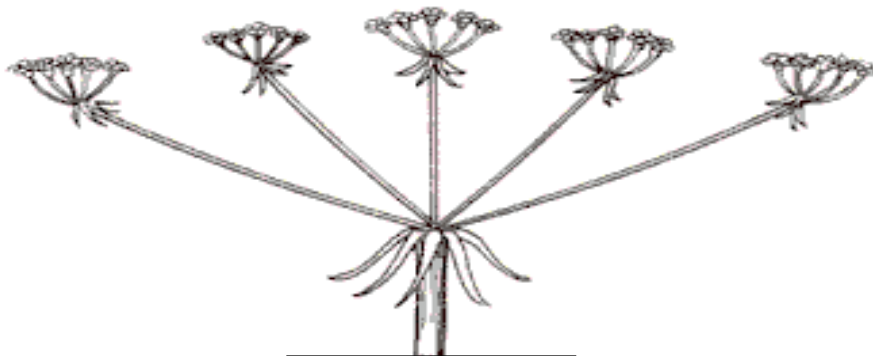
PANICLE



SPIKE



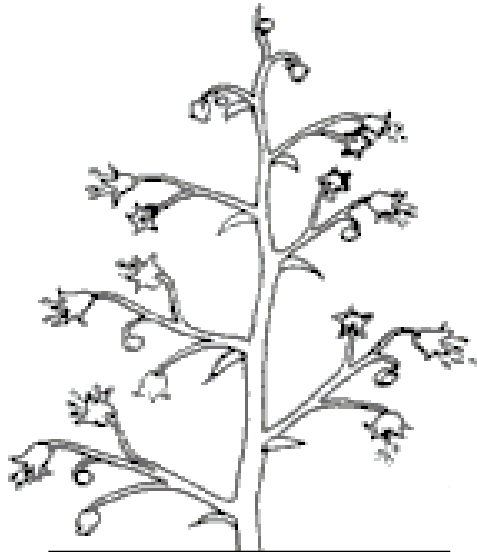
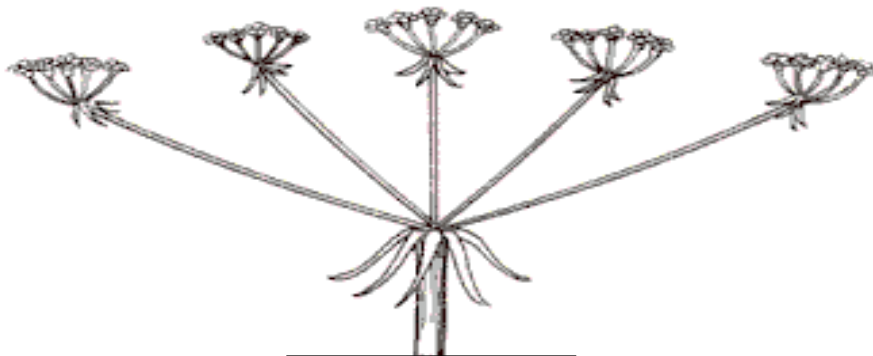
RACEME



UMBEL



5

**PANICLE****SPIKE****RACEME****UMBEL****CAPITULUM**



INFLORESCENCE TYPES APPLIED



RACEME





UMBEL





CAPITULUM



**FLOWER
MORPHOLOGY
&
ANATOMY**



FLOWER

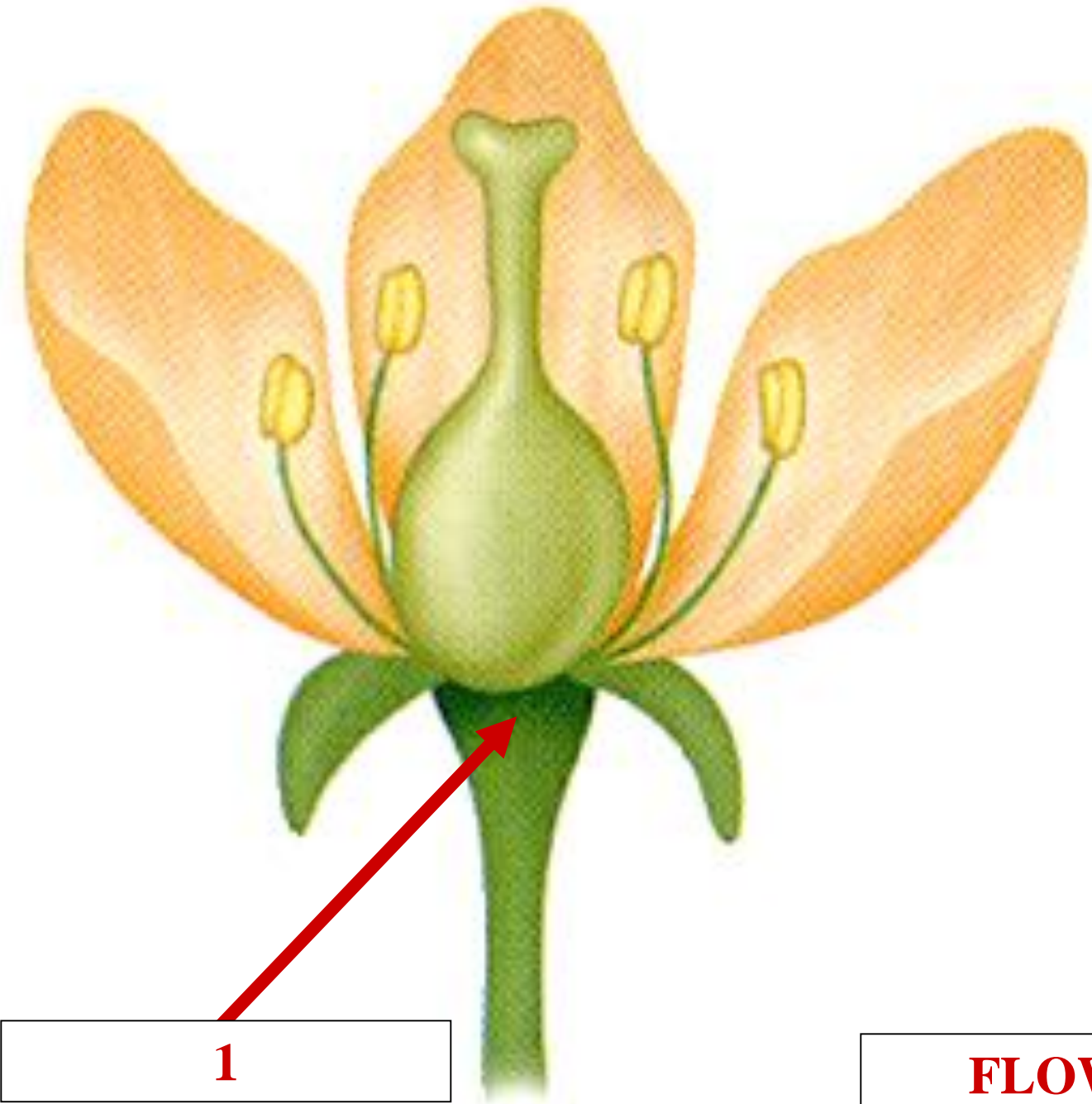




FLOWER SEGMENTS & WHORLS

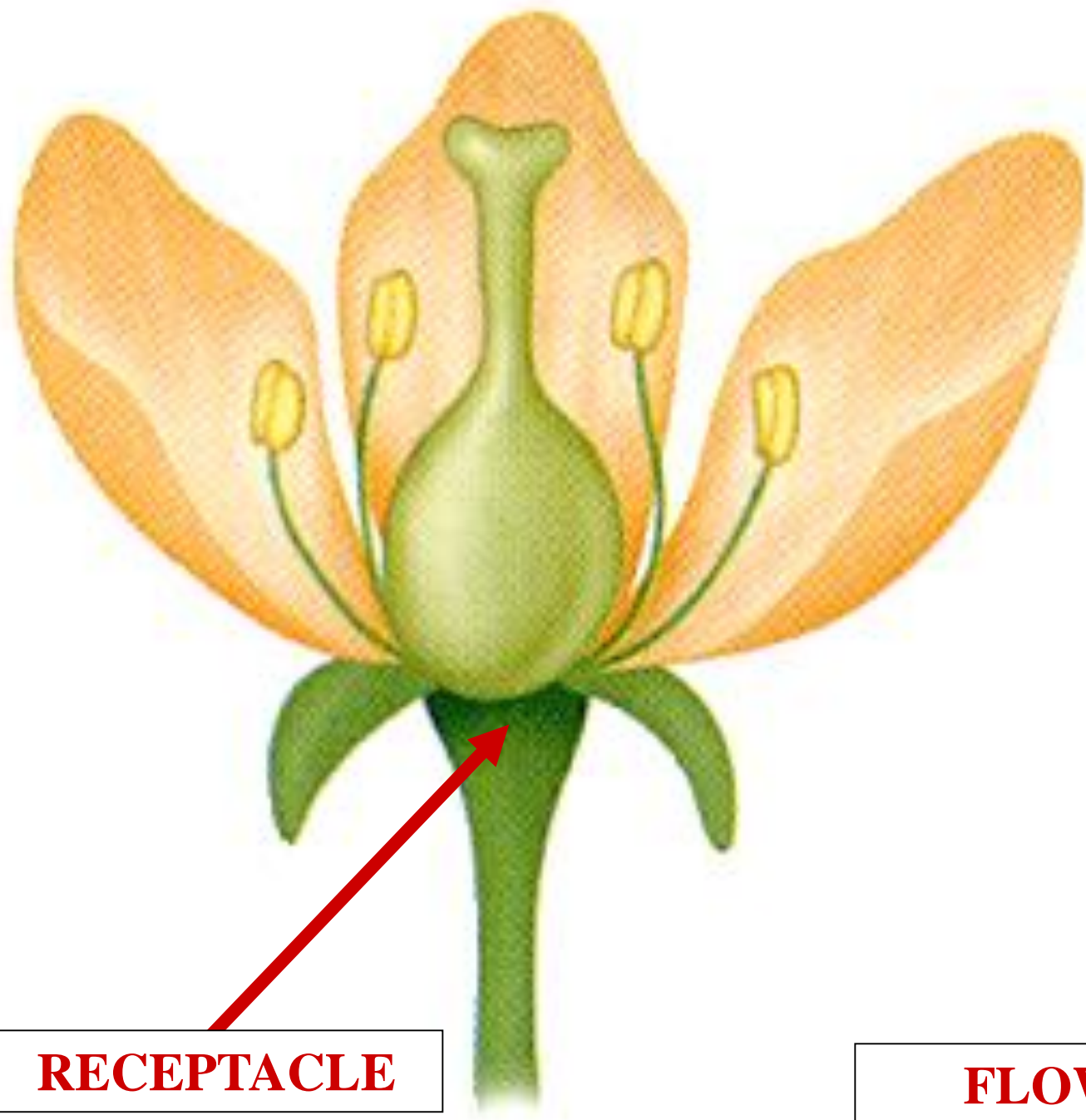


FLOWER



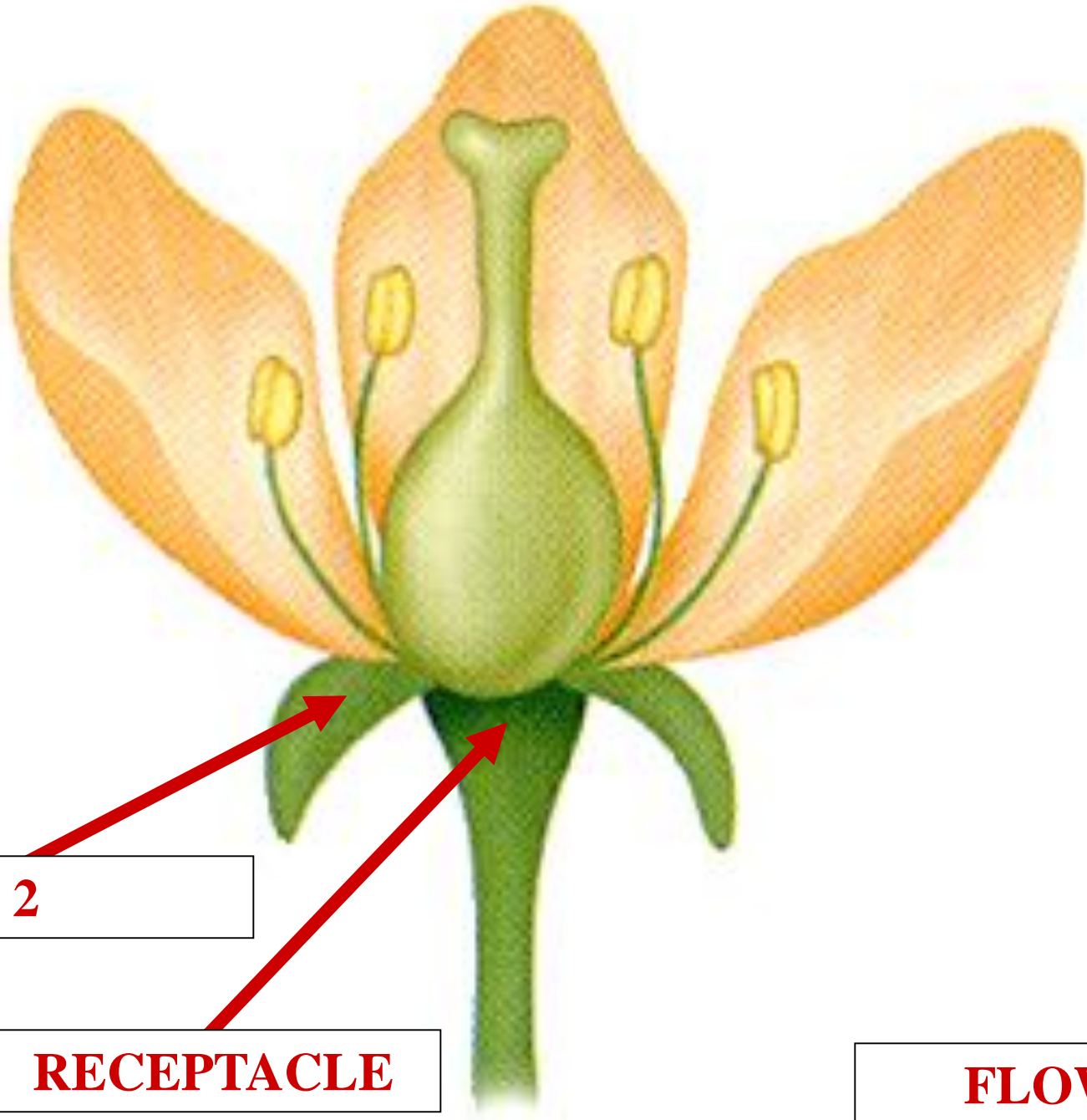
1

FLOWER



RECEPTACLE

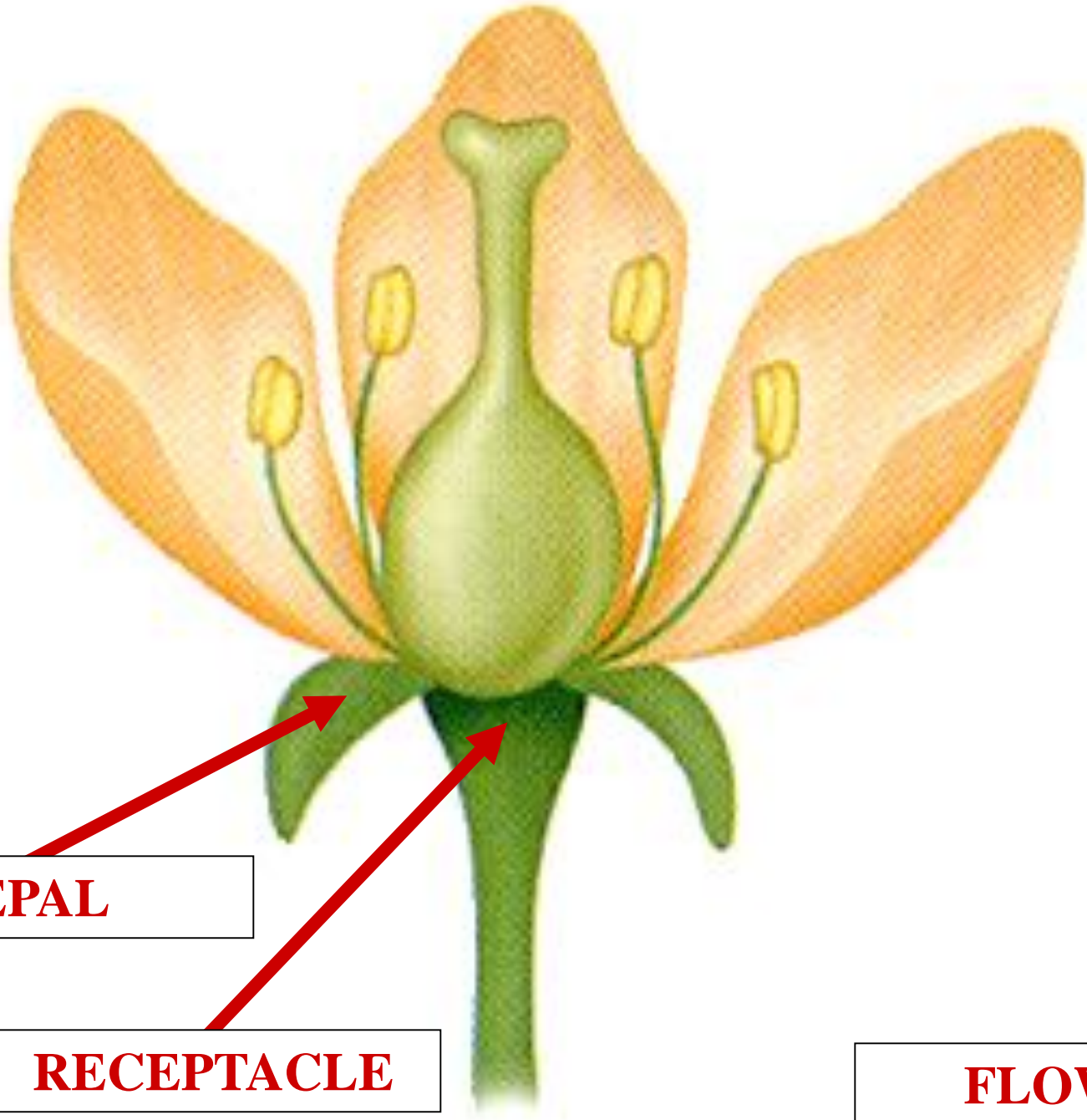
FLOWER



2

RECEPTACLE

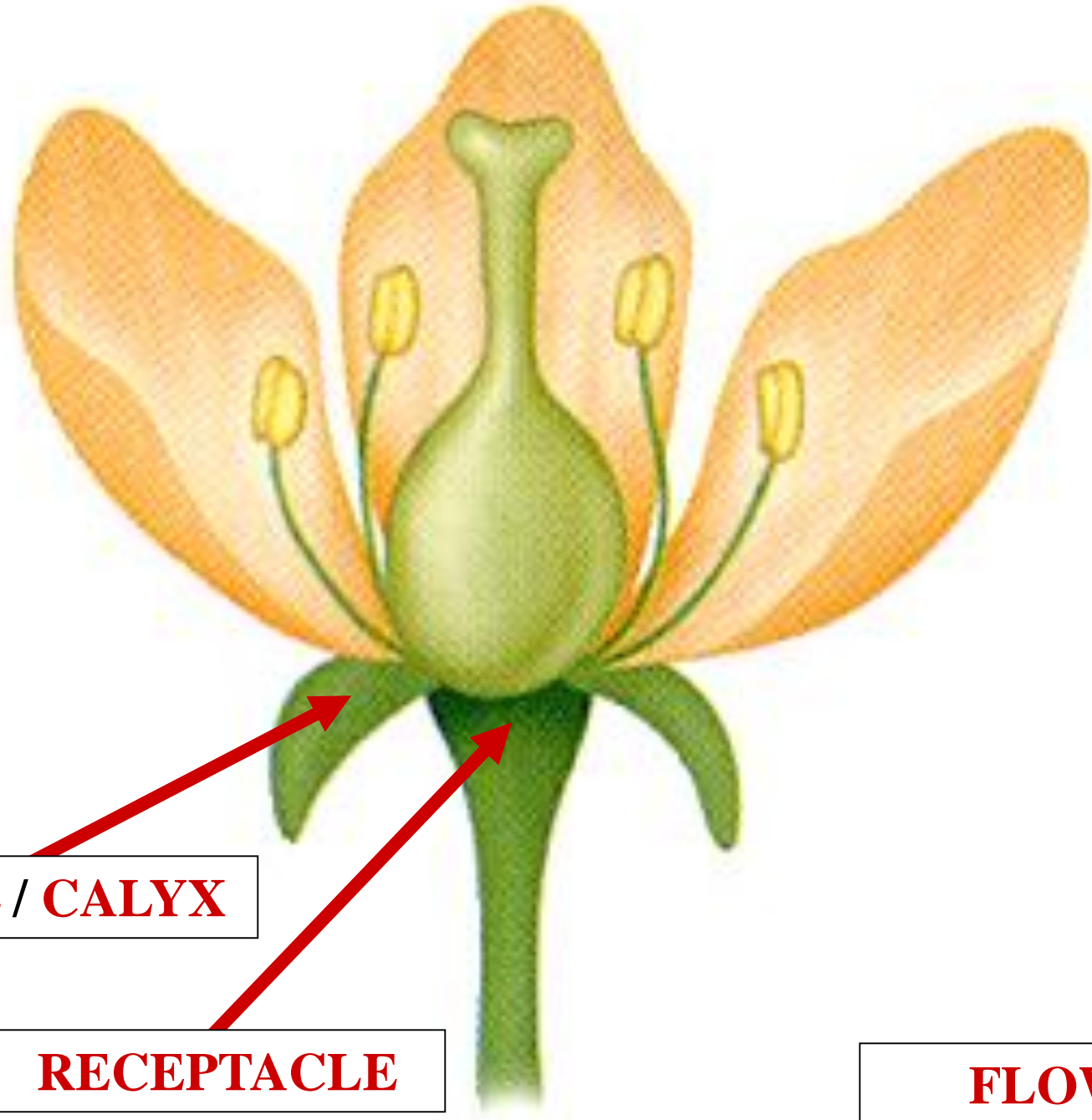
FLOWER



SEPAL

RECEPTACLE

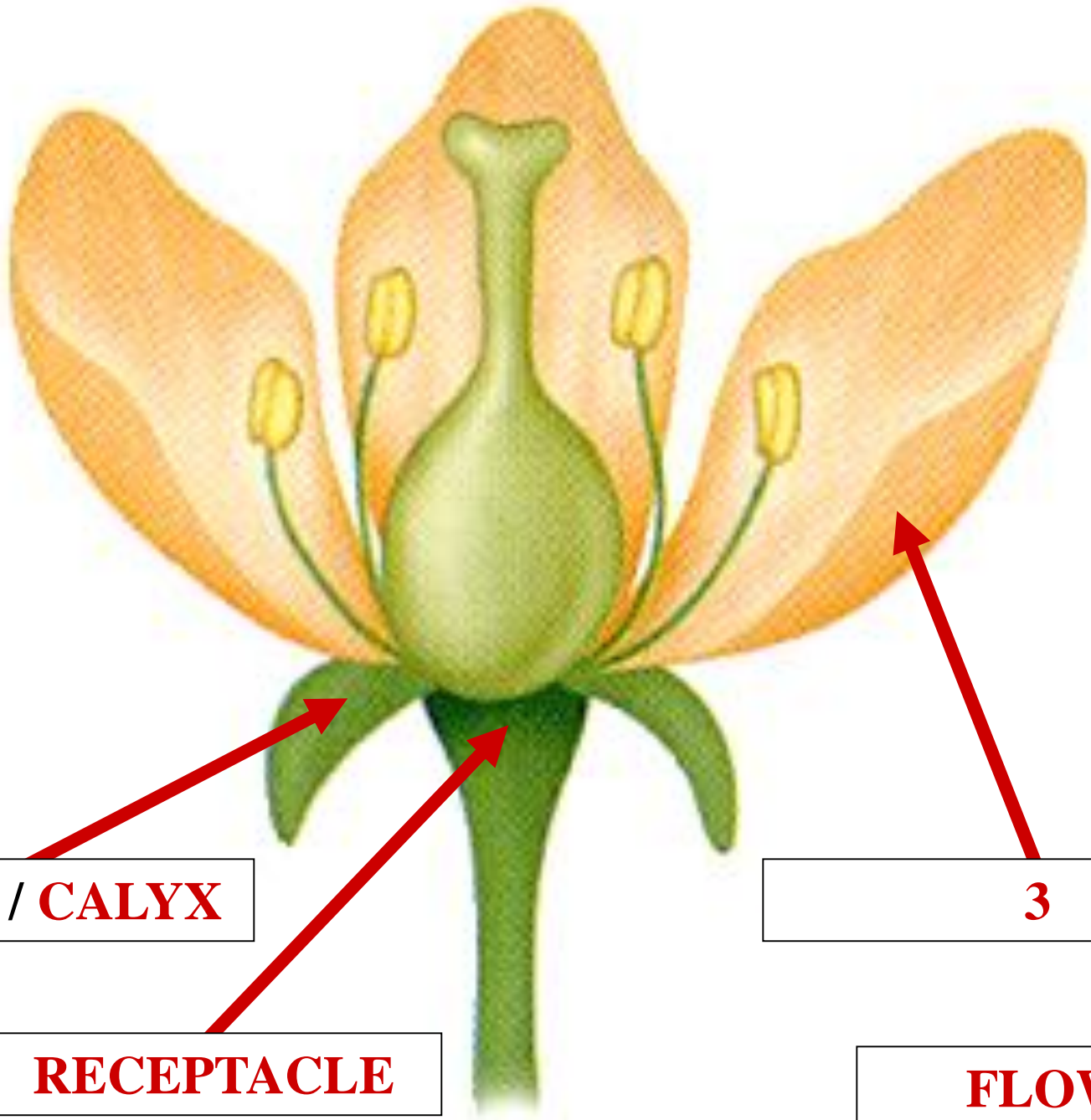
FLOWER



SEPAL / CALYX

RECEPTACLE

FLOWER

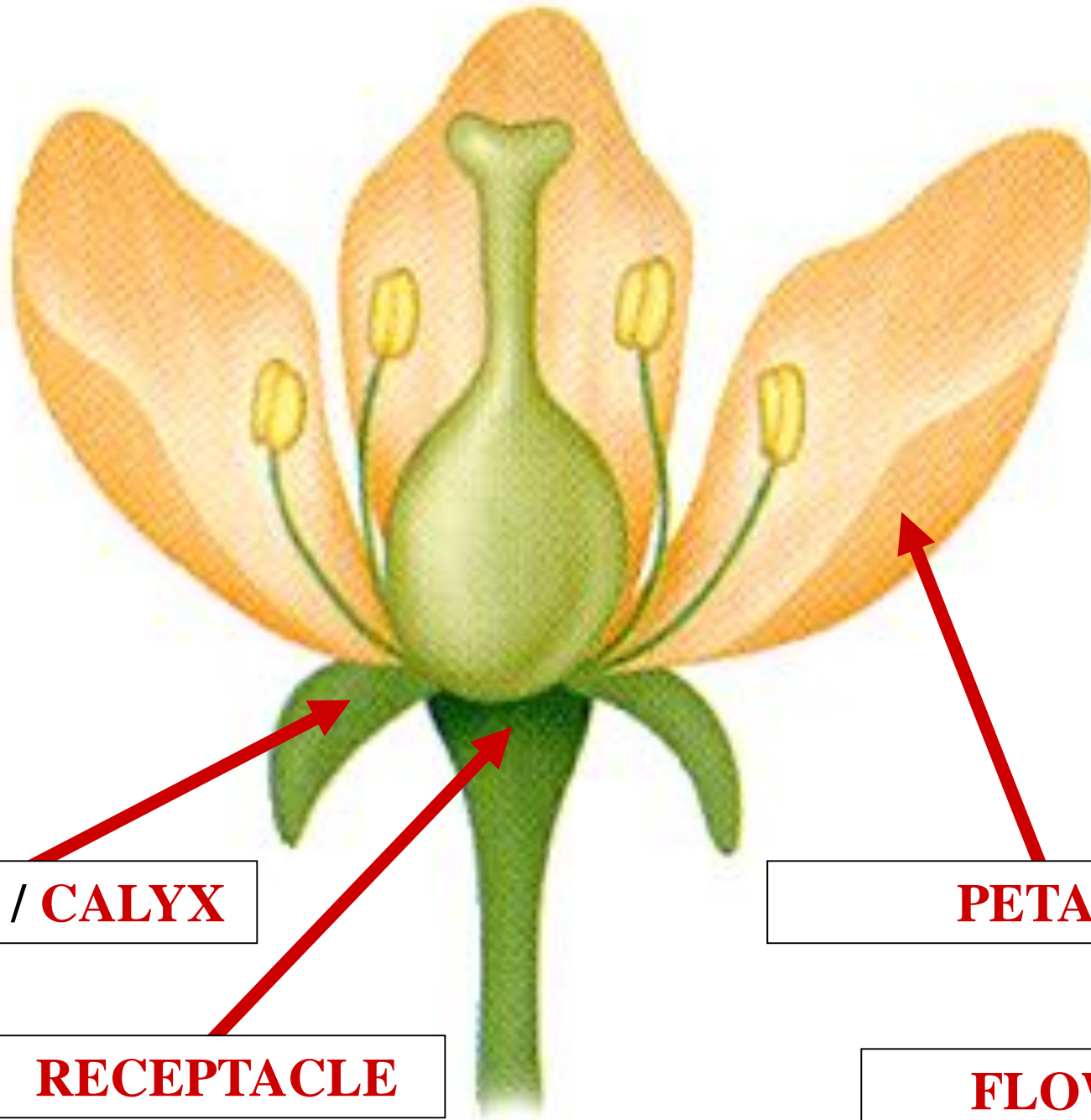


SEPAL / CALYX

RECEPTACLE

3

FLOWER

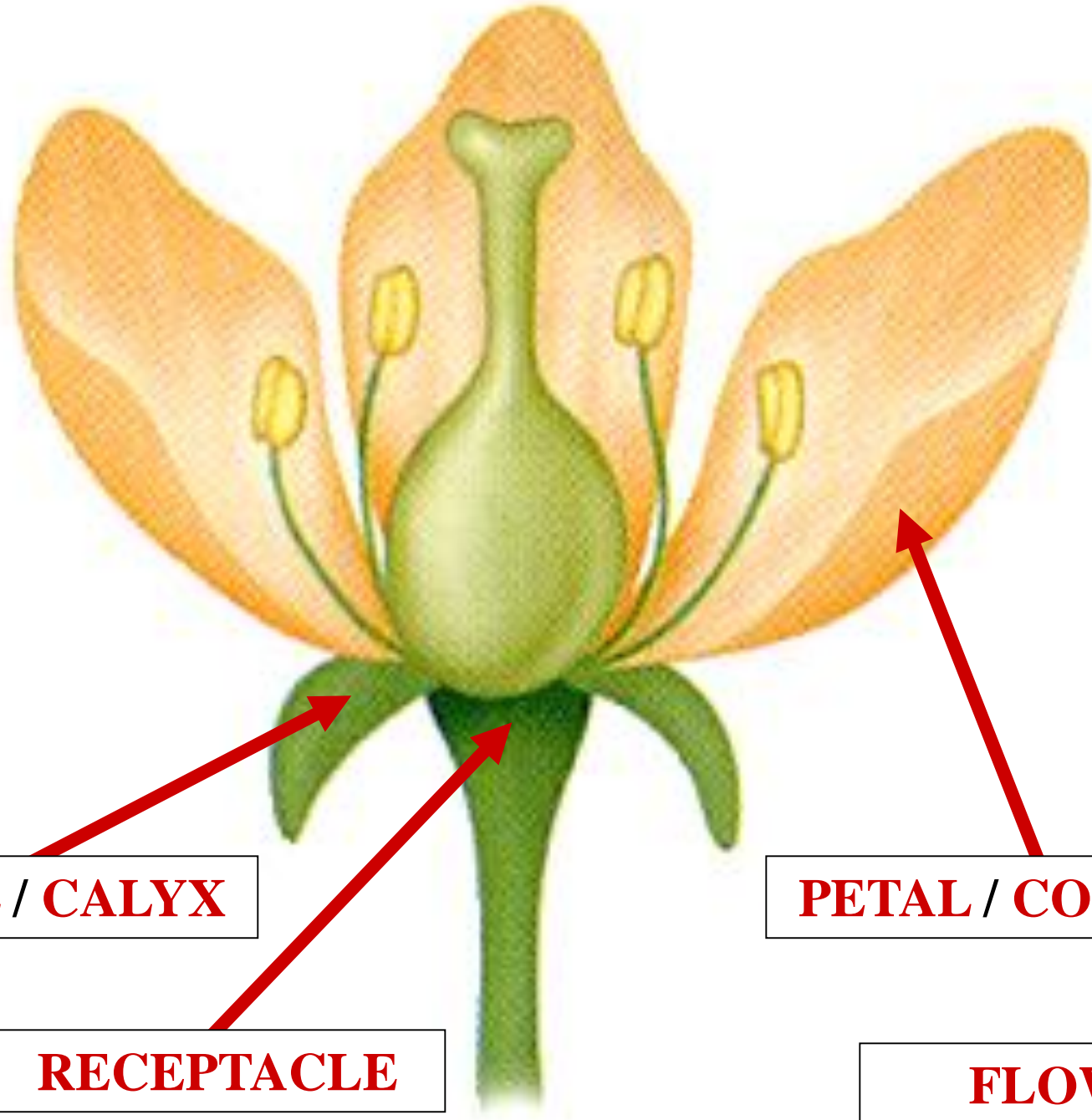


SEPAL / CALYX

RECEPTACLE

PETAL

FLOWER

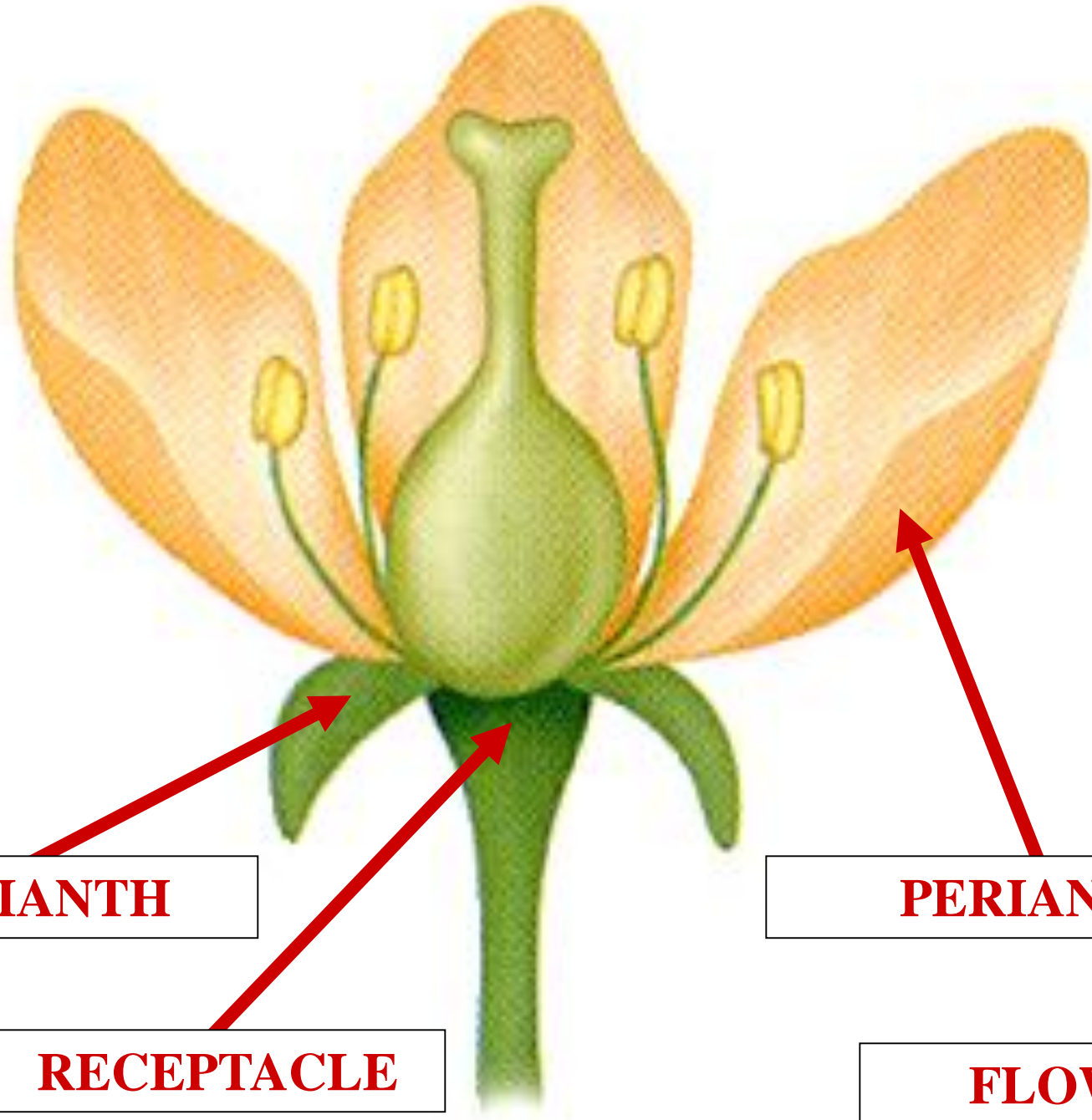


SEPAL / CALYX

RECEPTACLE

PETAL / COROLLA

FLOWER



PERIANTH

RECEPTACLE

PERIANTH

FLOWER

PERIANTH TERMS



TEPALS



SEPAL



PETAL



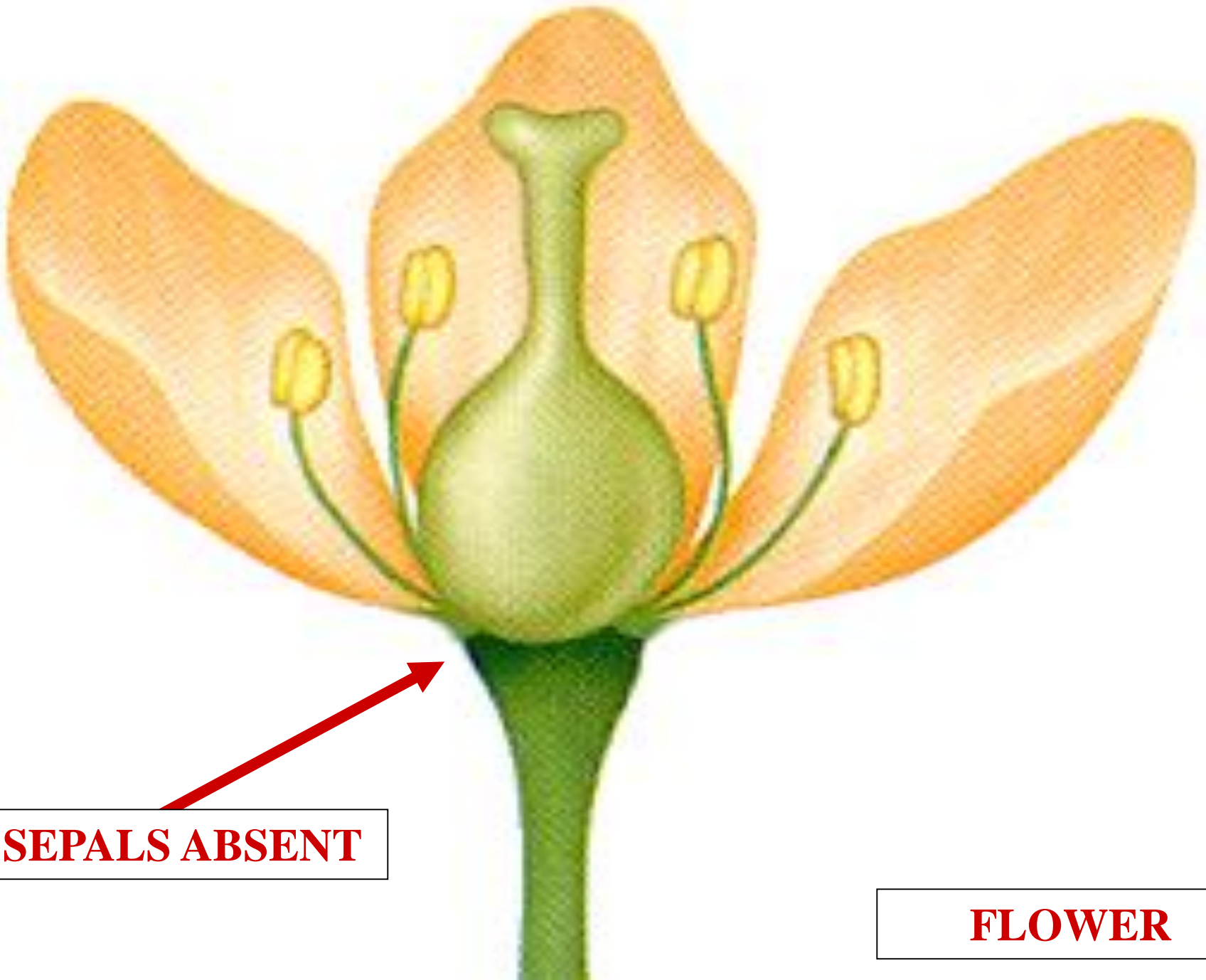
TEPALS



**ASEPALOUS
FLOWER
VS
APETALOUS
FLOWER**

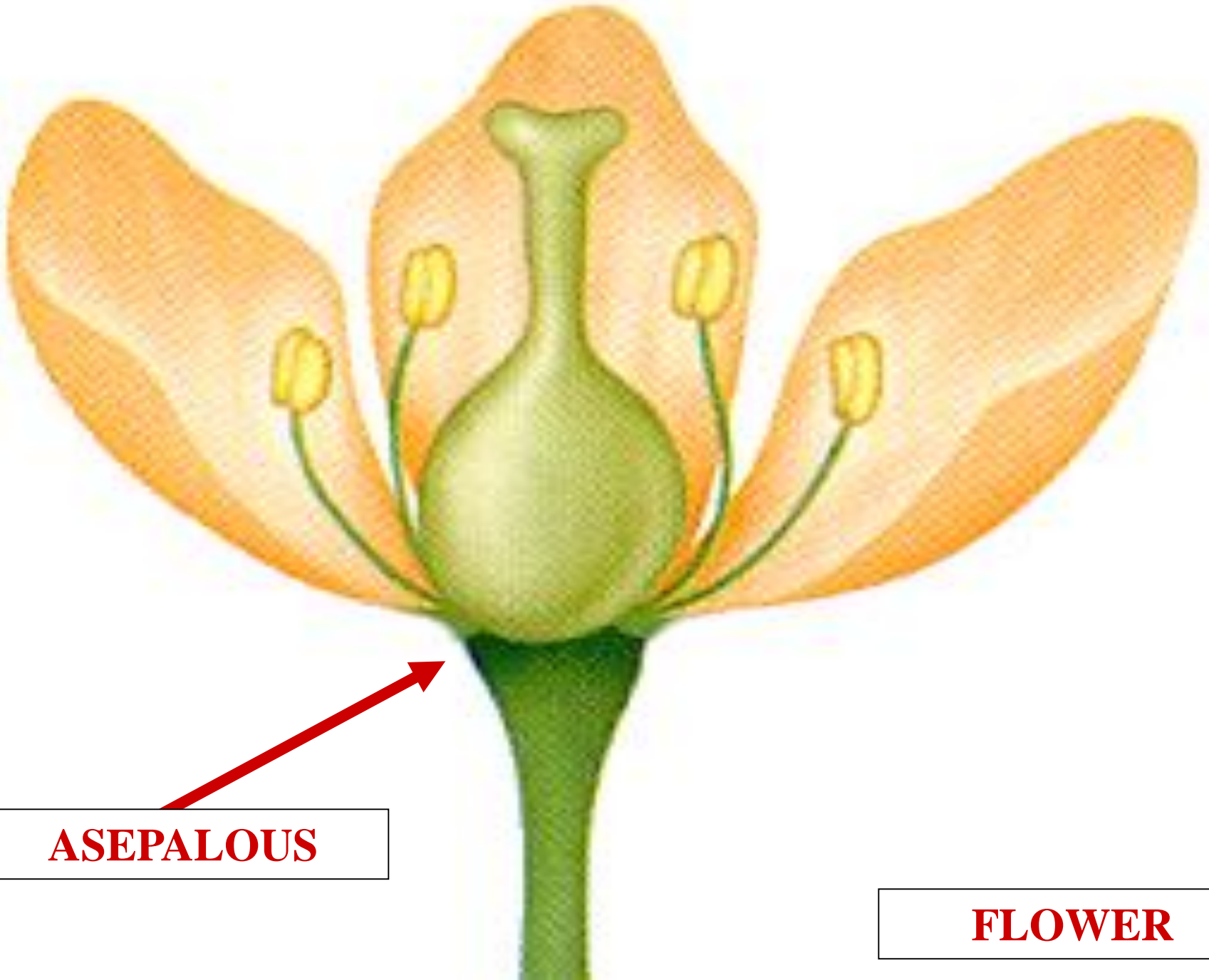


ASEPALOUS FLOWER



SEPALS ABSENT

FLOWER



ASEPALOUS

FLOWER

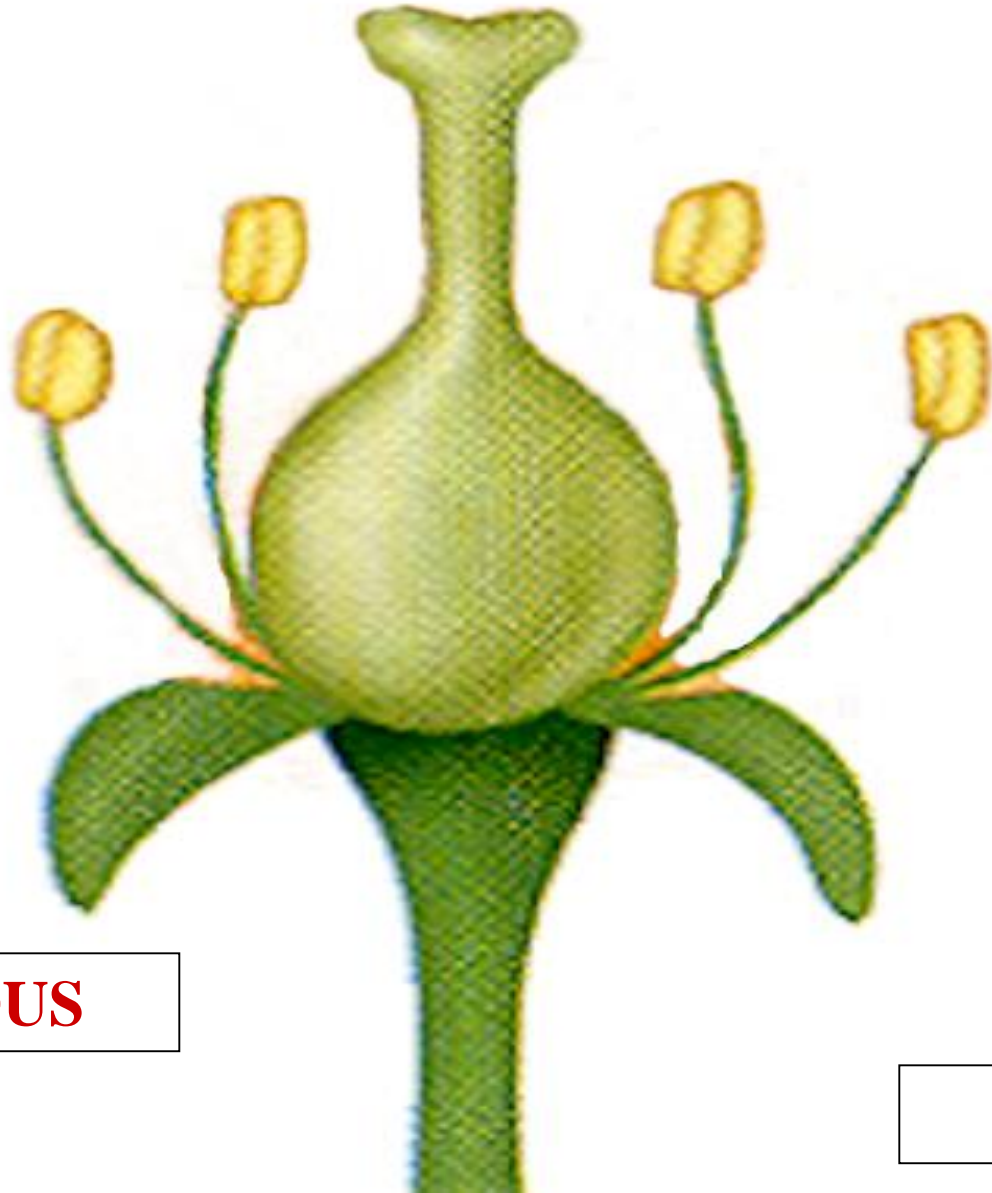


APETALOUS FLOWER



PETALS ABSENT

FLOWER

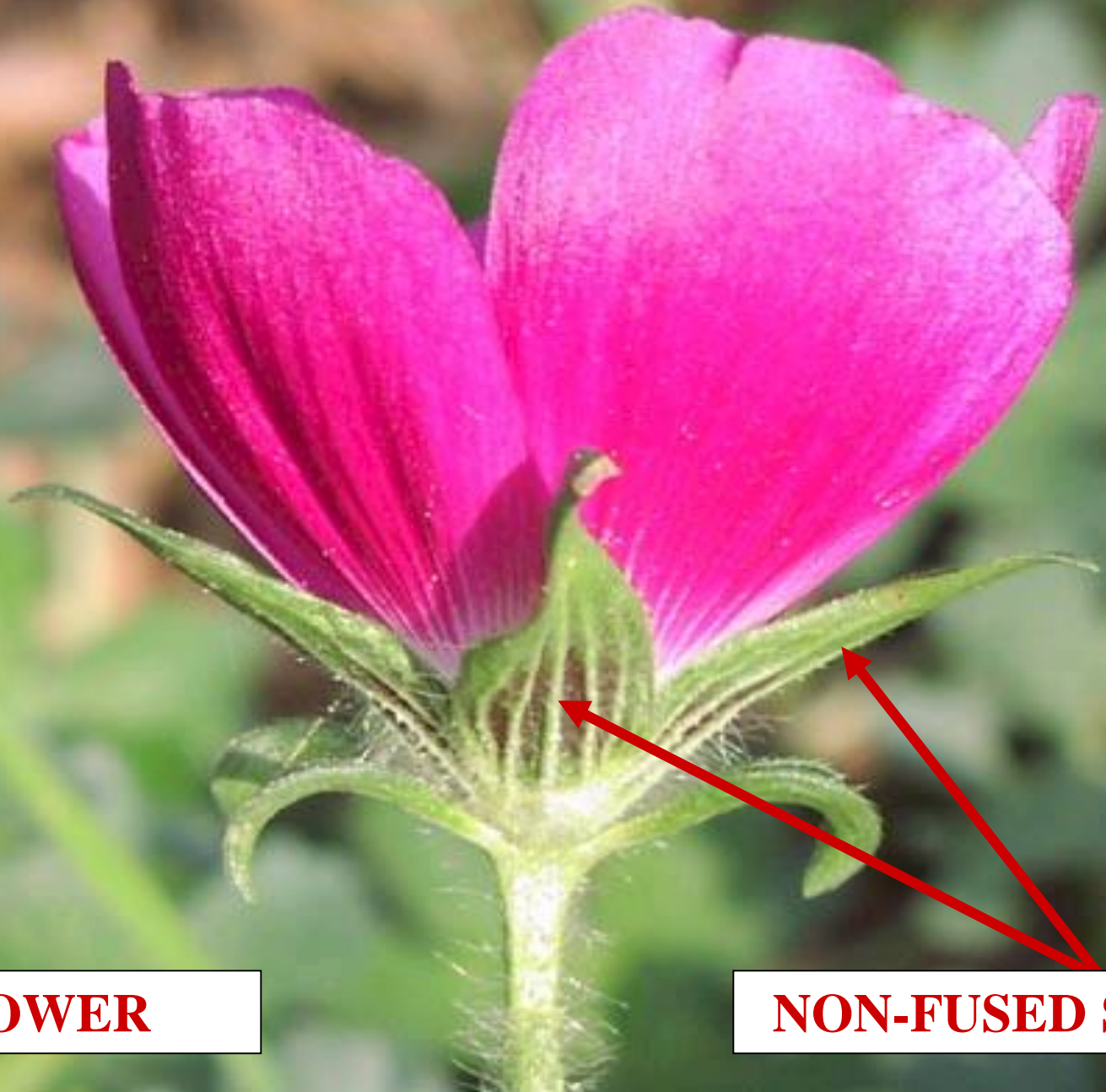


APETALOUS

FLOWER

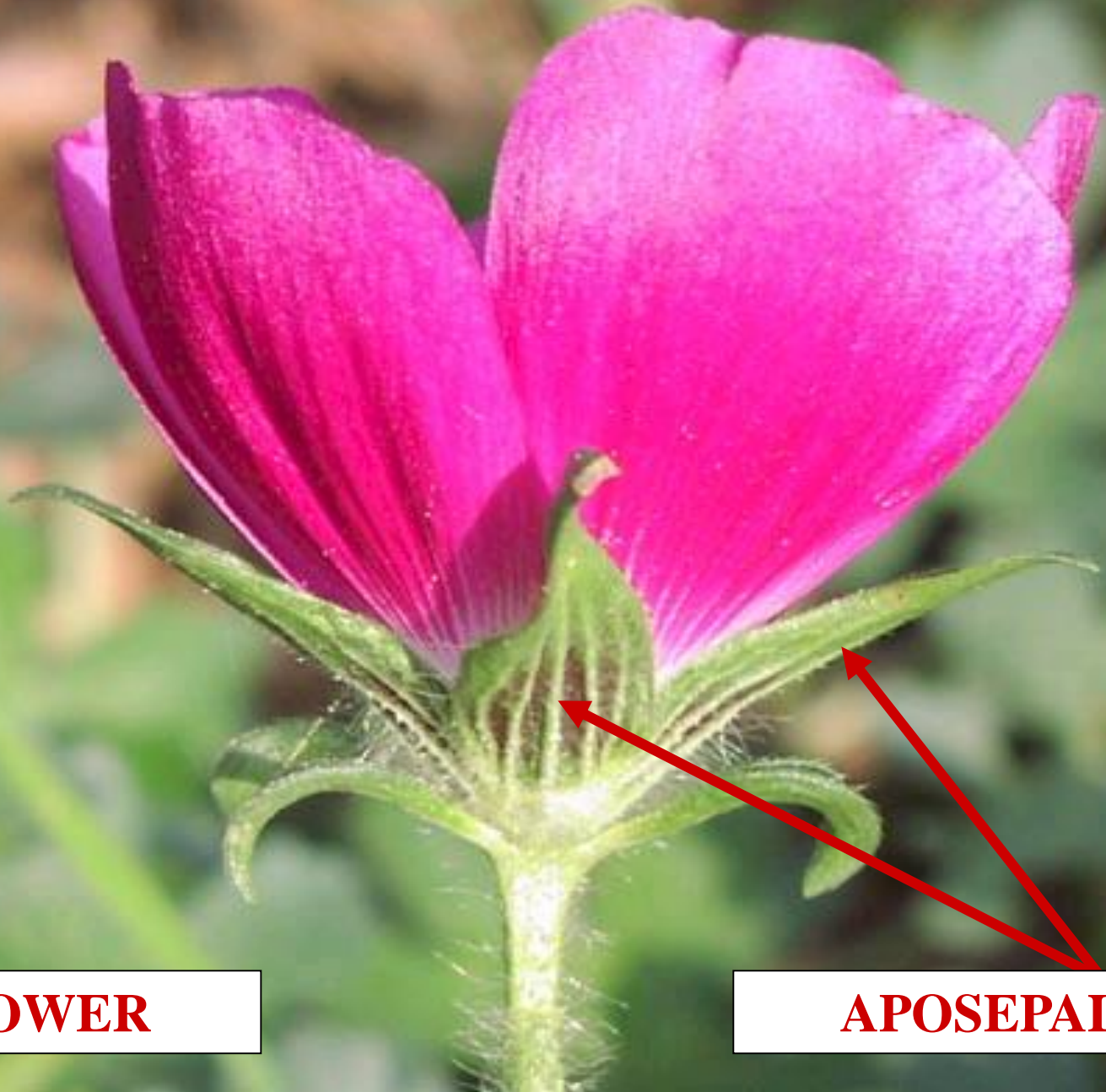
**APOSEPALOUS
FLOWER
VS
APOPETALOUS
FLOWER**

APOSEPALOUS FLOWER



FLOWER

NON-FUSED SEPALS



FLOWER

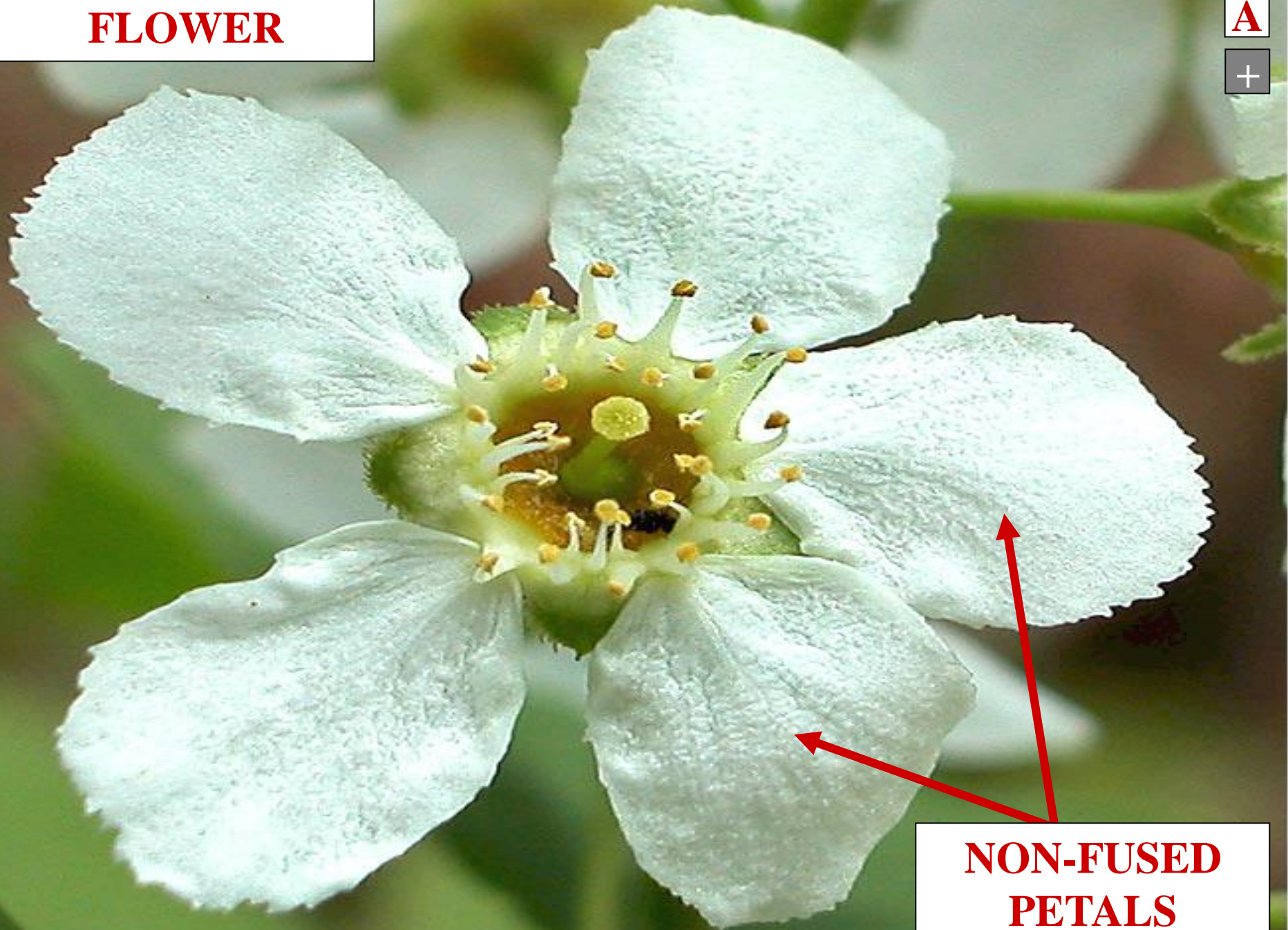
APOSEPALOUS

APOPETALOUS FLOWER

FLOWER

A

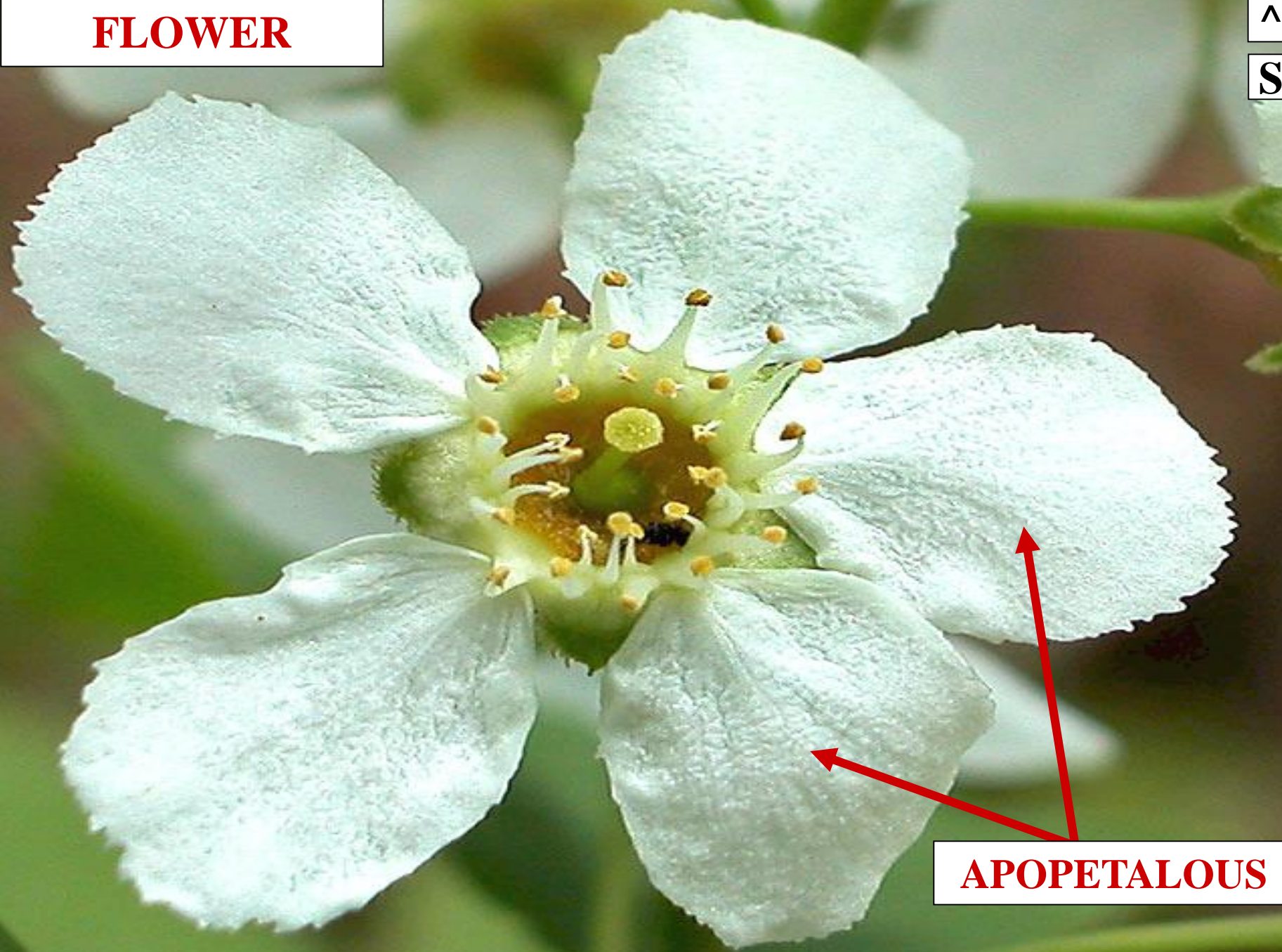
+



**NON-FUSED
PETALS**

FLOWER

^
S

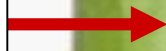


APOPETALOUS

**SYNSEPALOUS
FLOWER
VS
SYMPETALOUS
FLOWER**

SYNSEPALOUS FLOWER

FUSED SEPALS



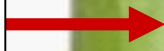
FLOWER

S

+



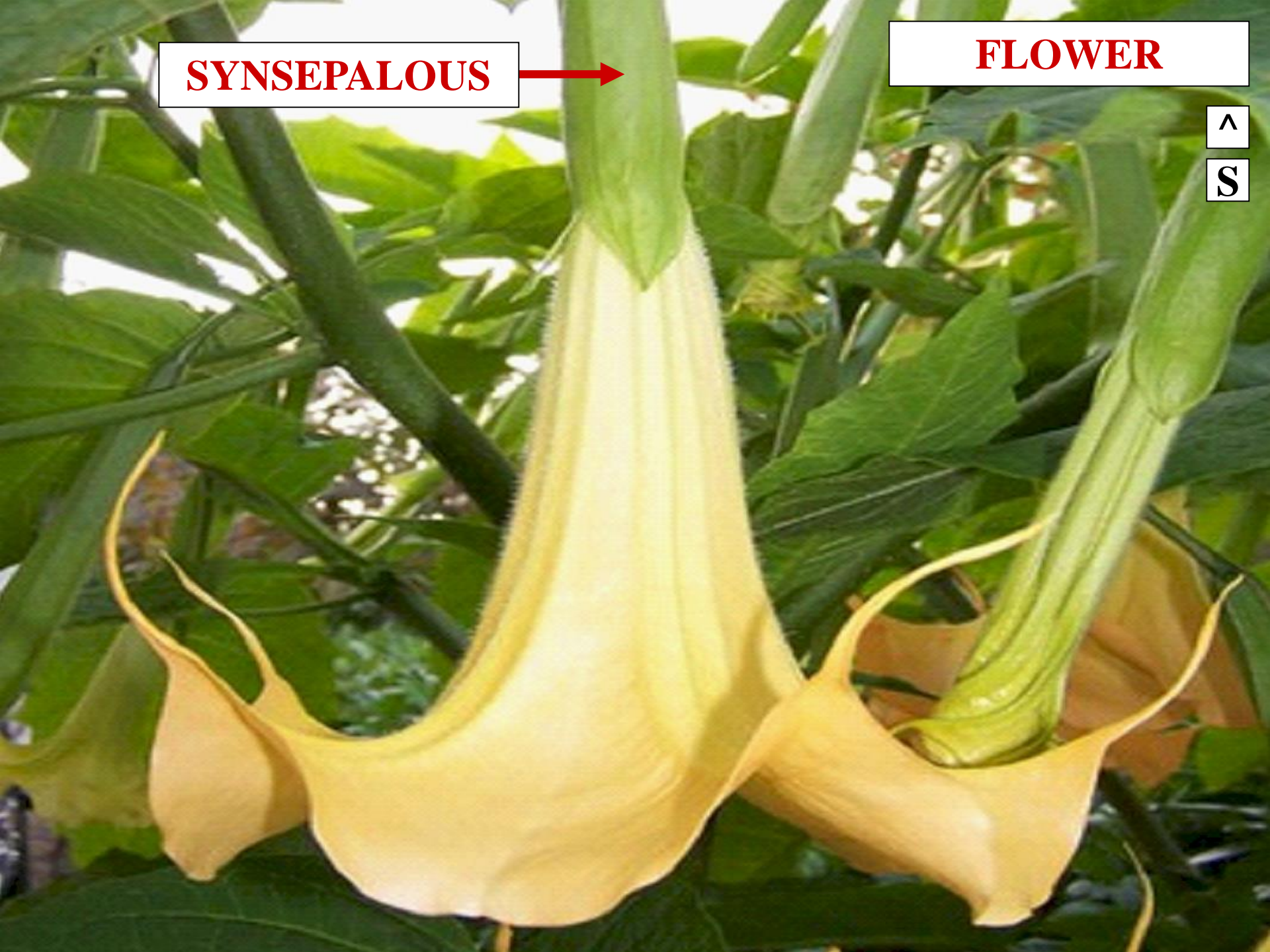
SYNSEPALOUS



FLOWER

^

S

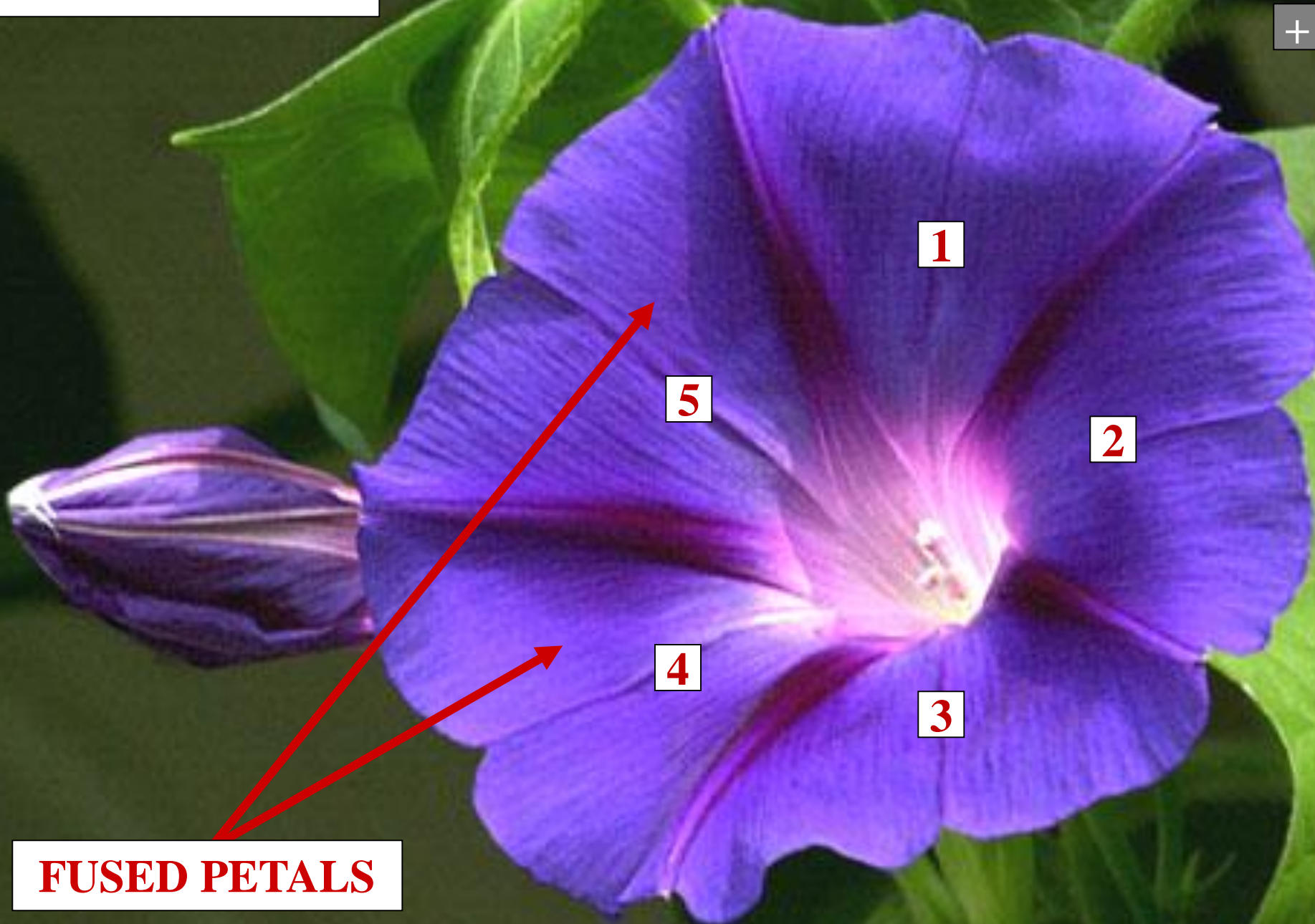


SYMPETALOUS FLOWER

FLOWER

S

+



1

5

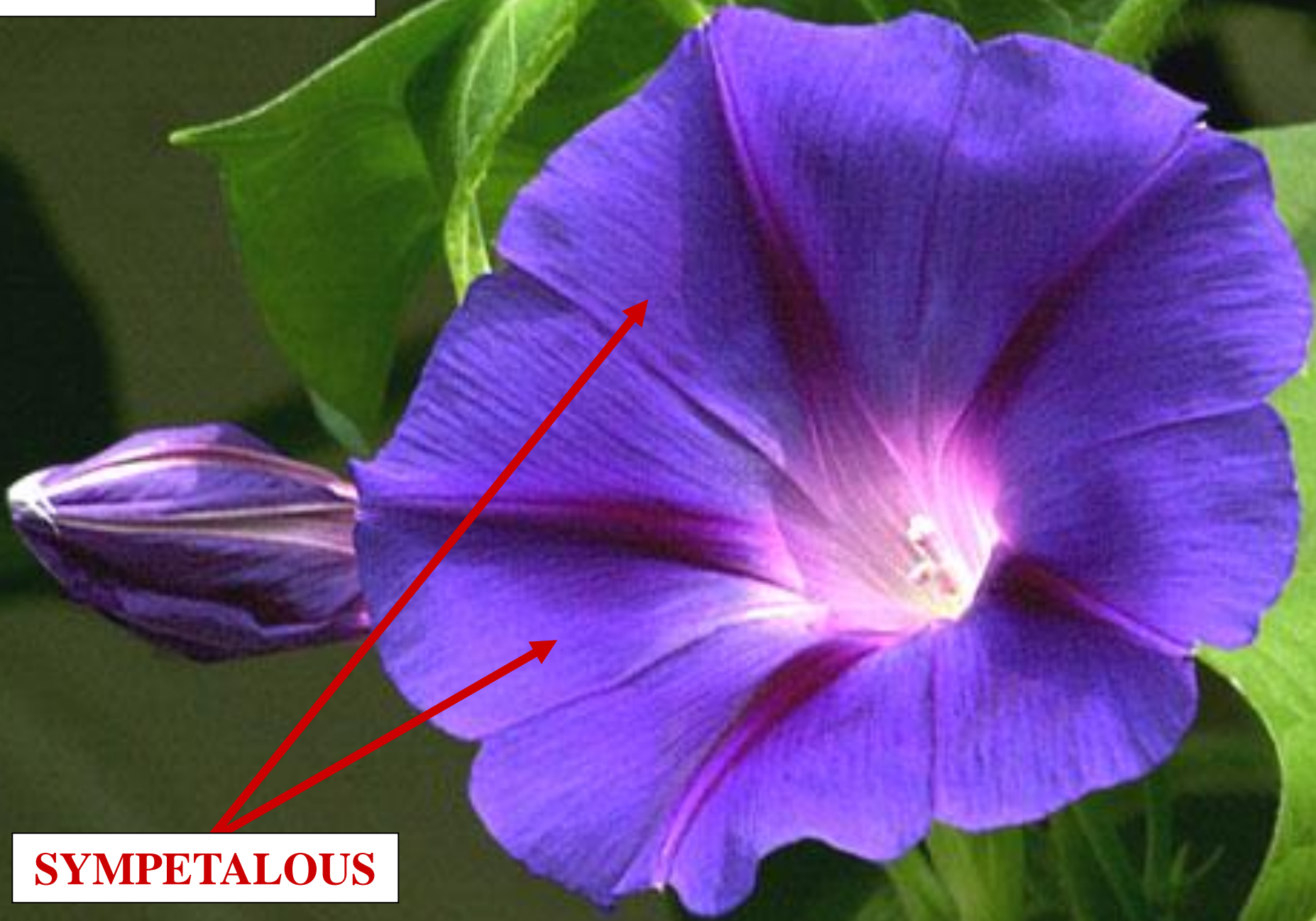
2

4

3

FUSED PETALS

FLOWER



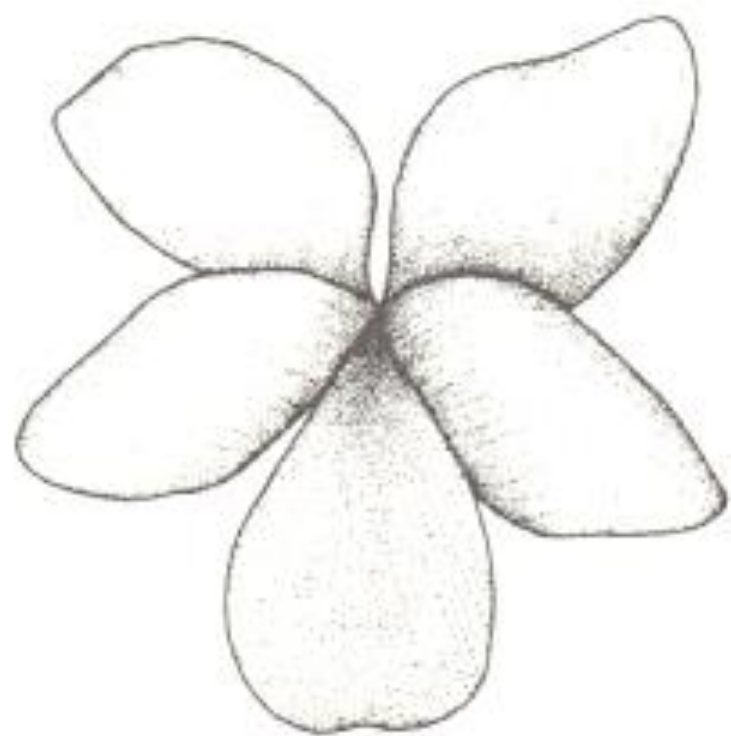
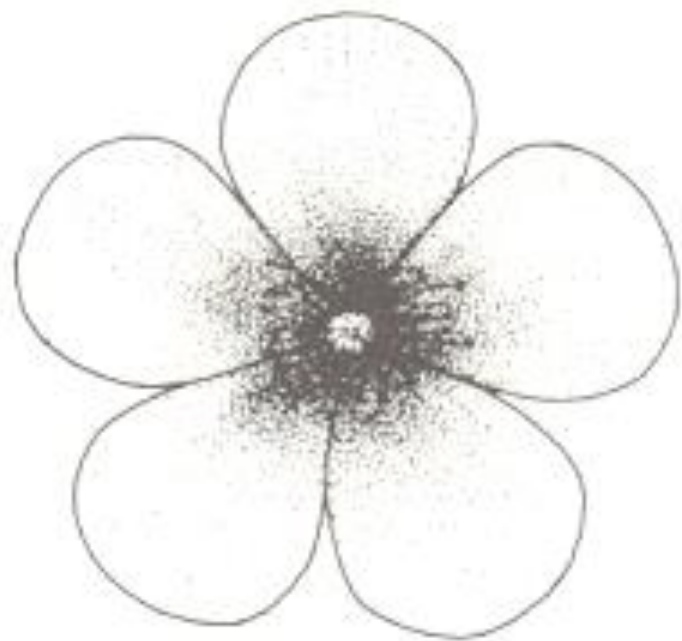
SYMPETALOUS

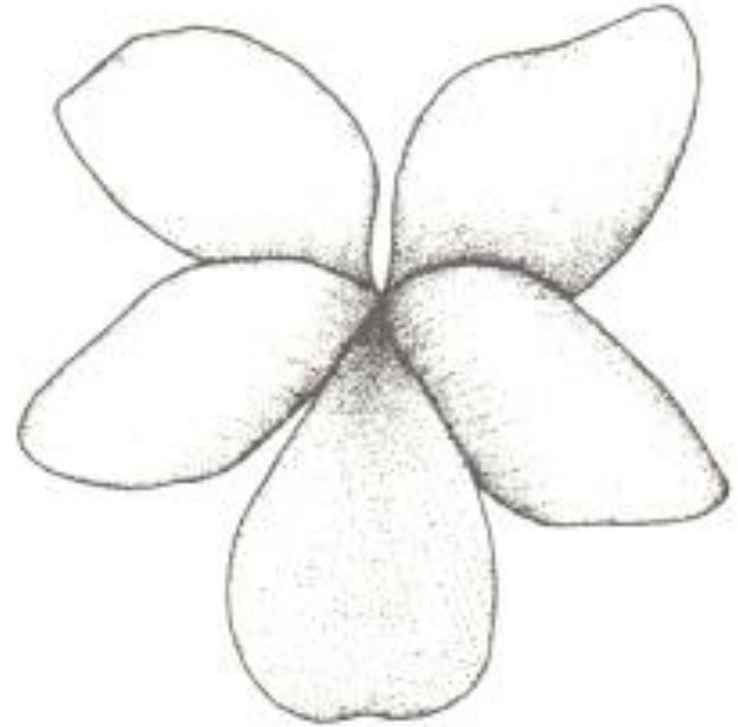
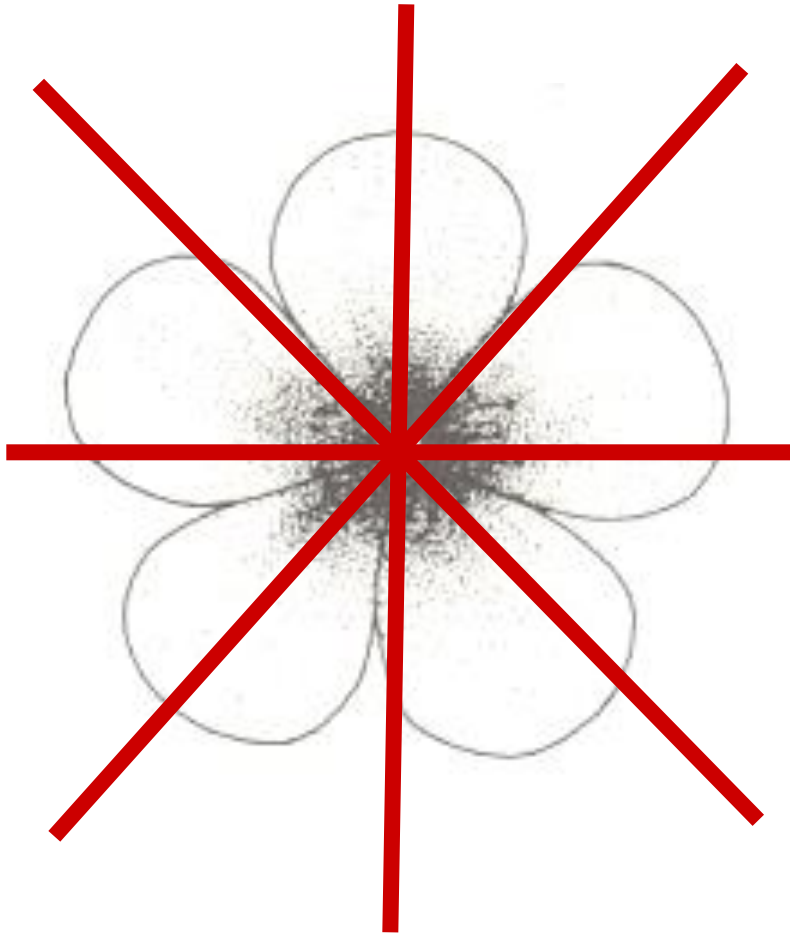
PERIANTH SYMMETRY

**ACTINOMORPHIC
FLOWER
VS
ZYGOMORPHIC
FLOWER**



ACTINOMORPHIC FLOWER

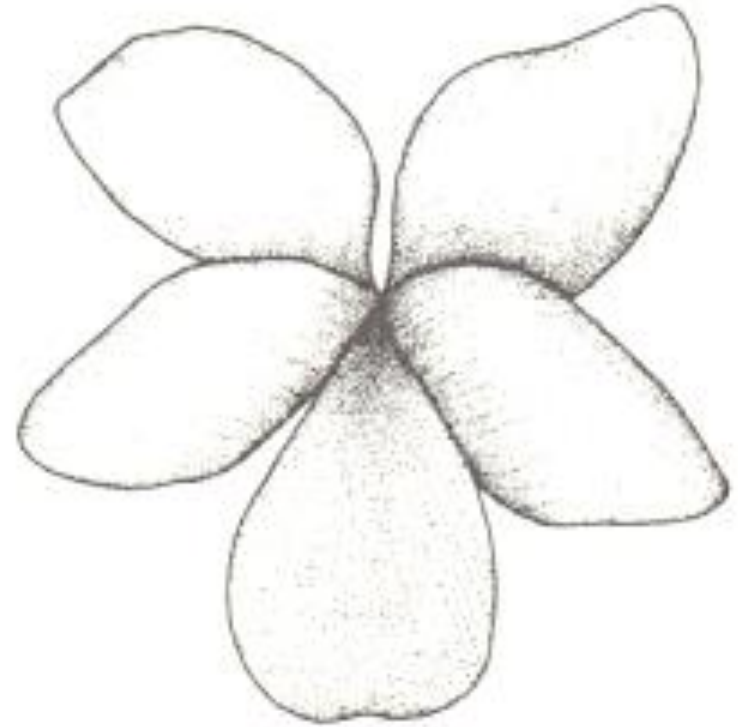
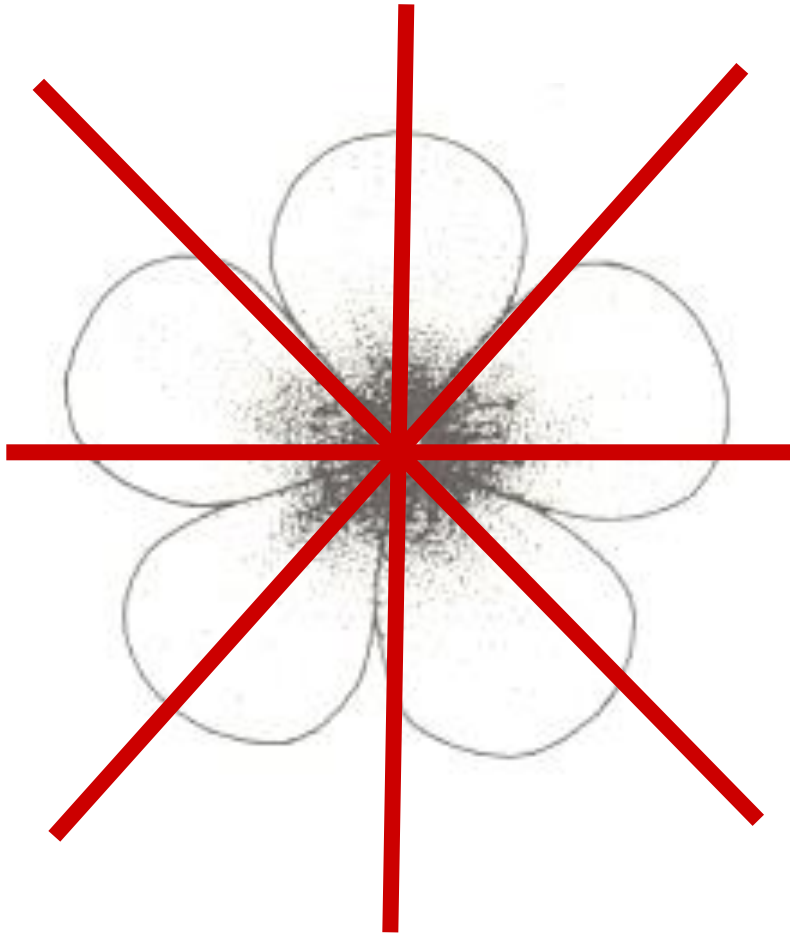




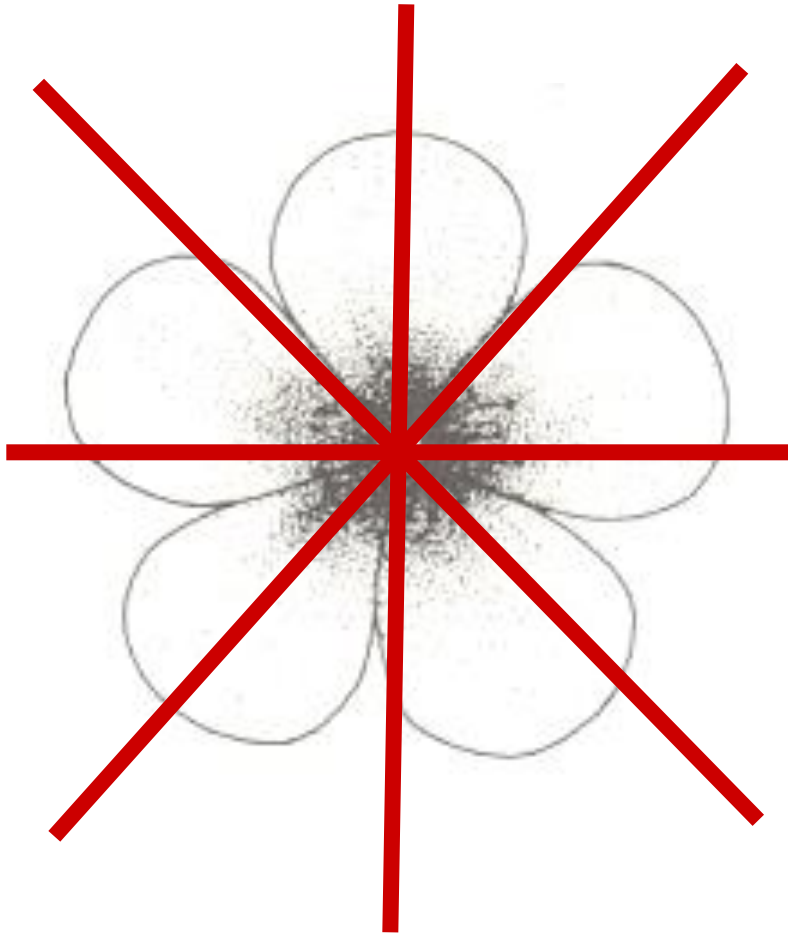
**ACTINOMORPHIC
FLOWER**



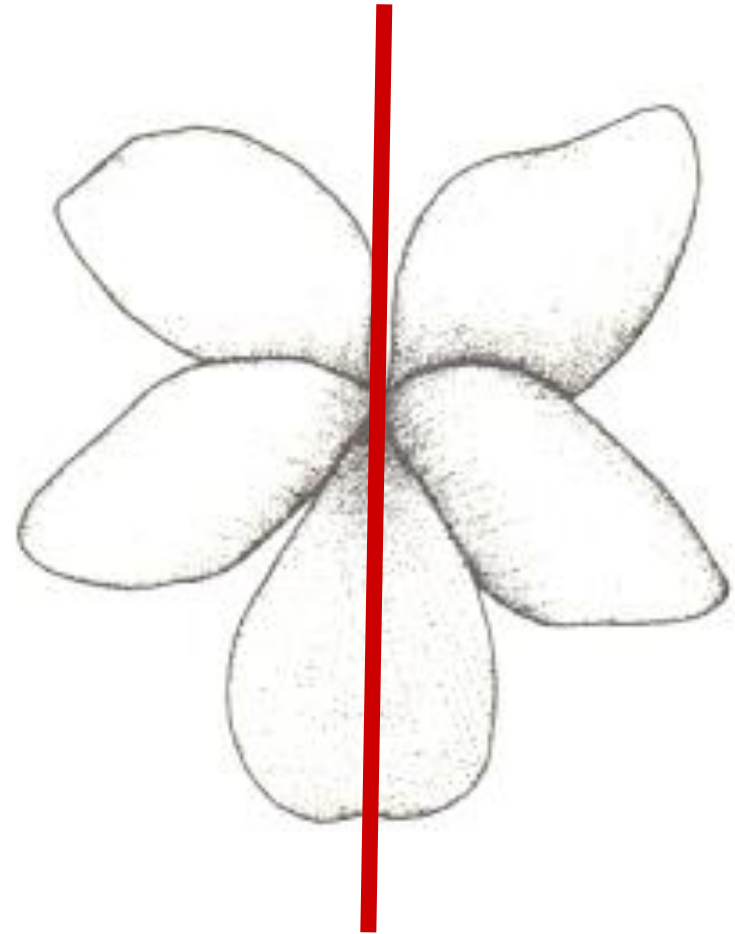
ZYGOMORPHIC FLOWER



**ACTINOMORPHIC
FLOWER**



**ACTINOMORPHIC
FLOWER**



**ZYGOMORPHIC
FLOWER**



PERIANTH SYMMETRY APPLIED



**ZYGOMORPHIC
FLOWER**



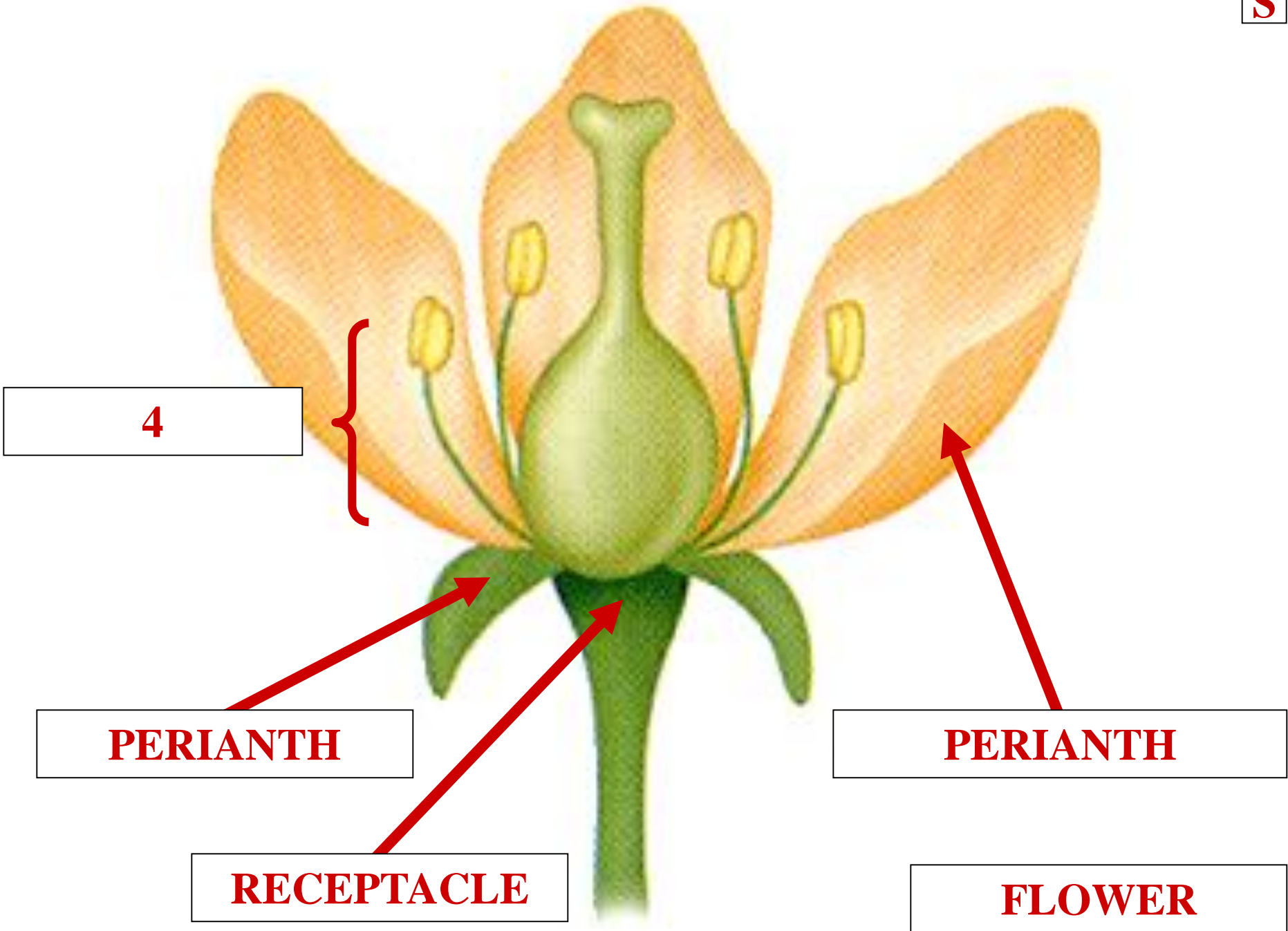


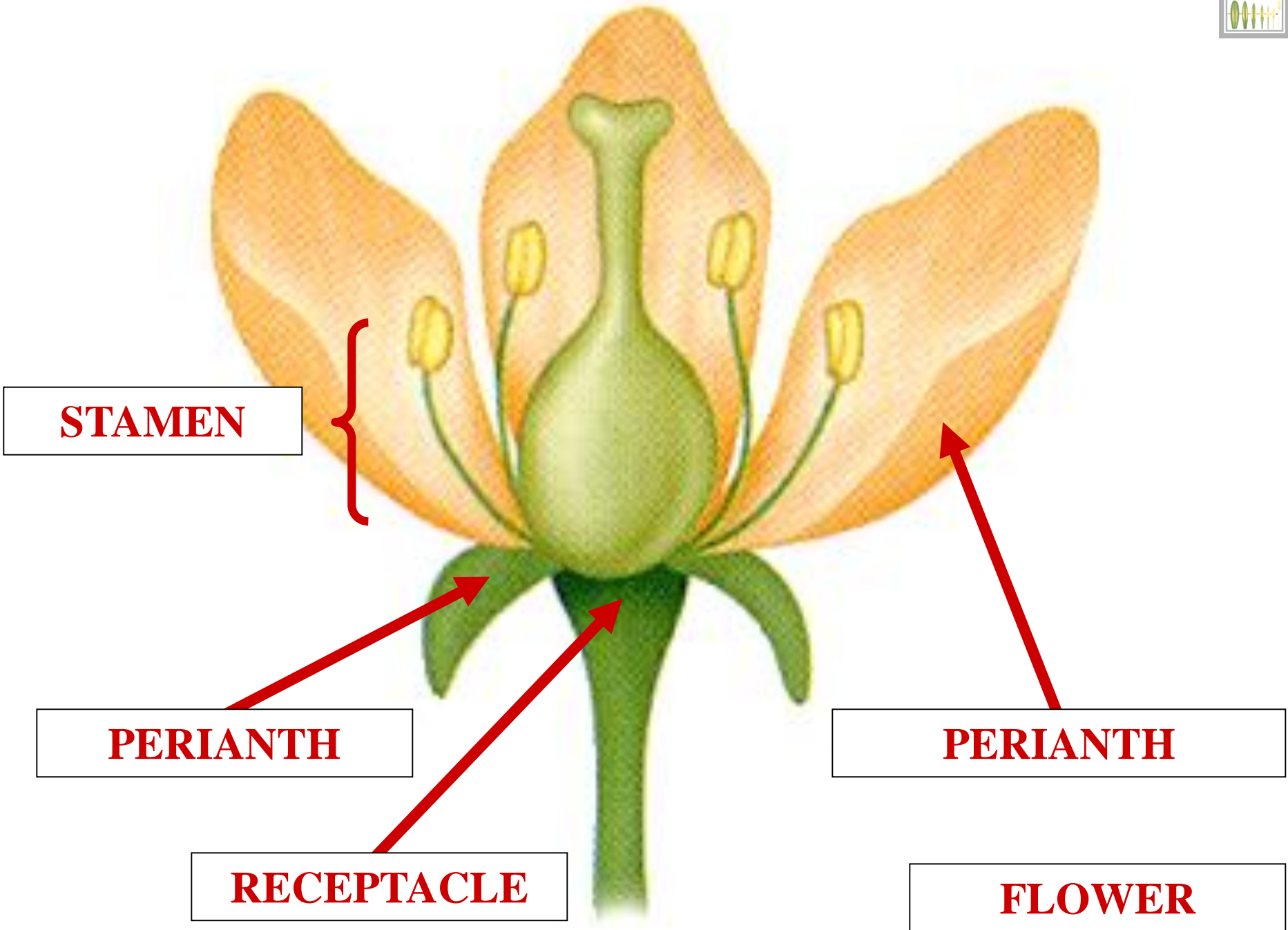
**ACTINOMORPHIC
FLOWER**





“MALE” FLOWER TERMS

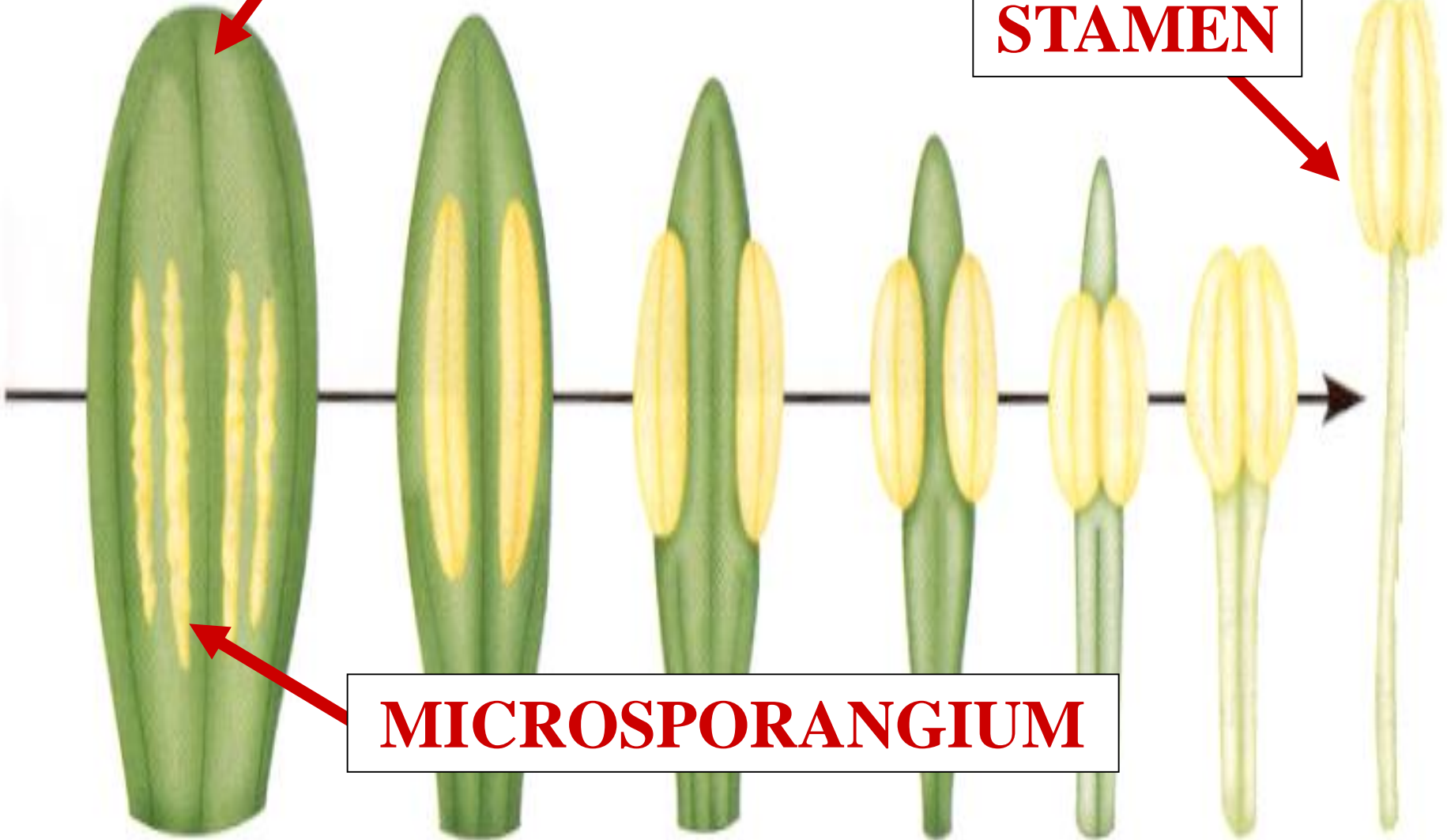




LEAF

STAMEN

MICROSPORANGIUM

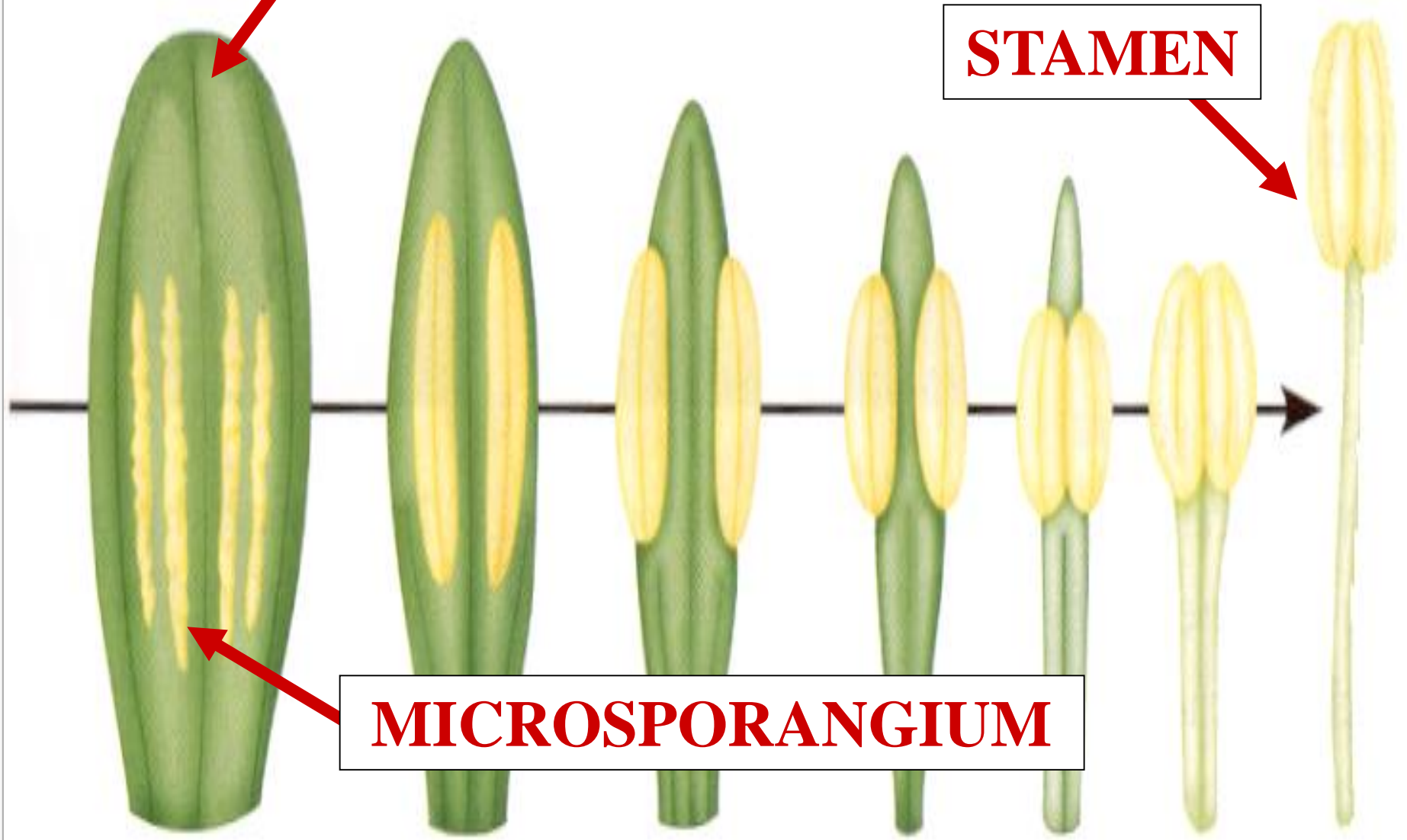


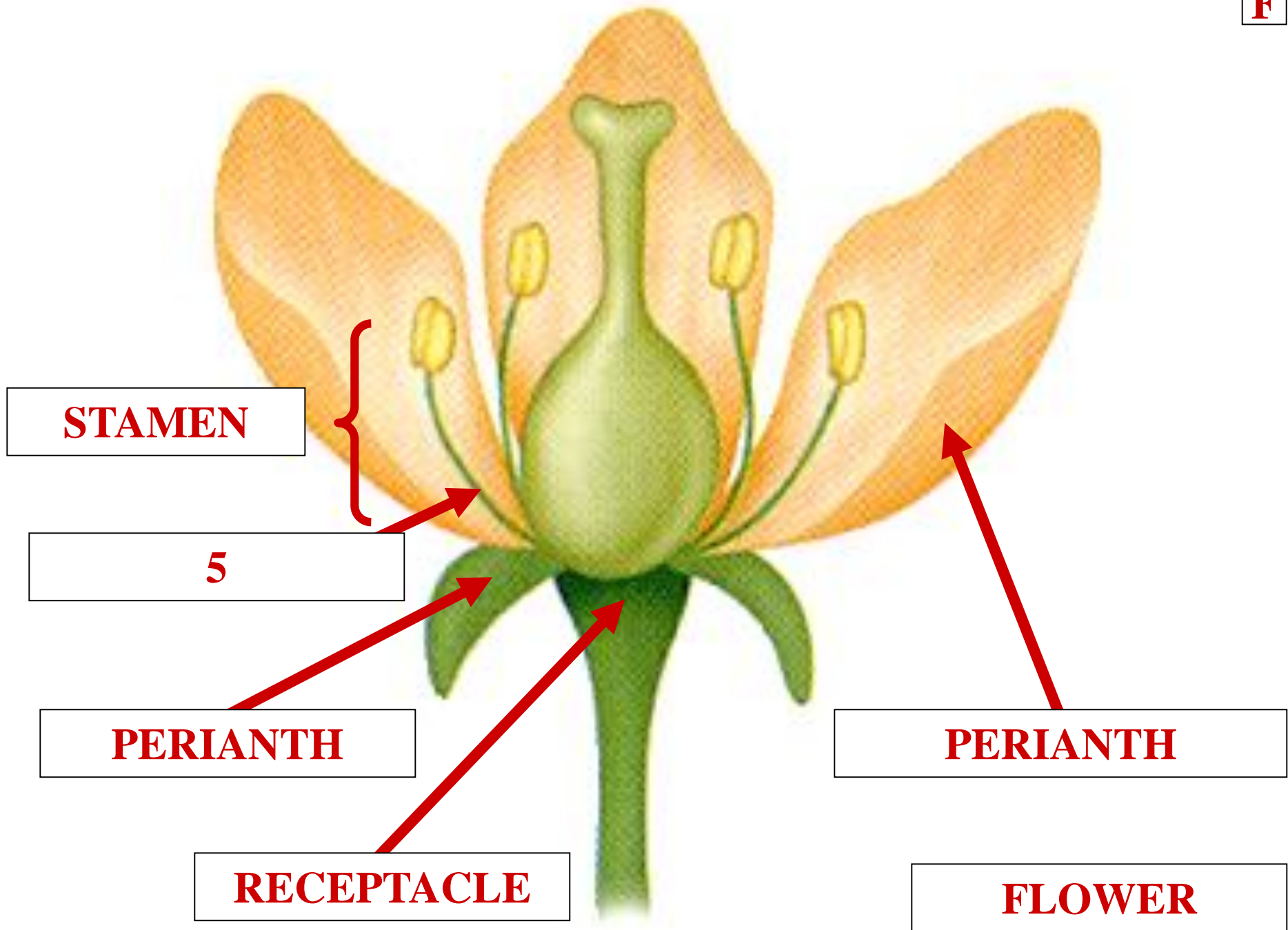


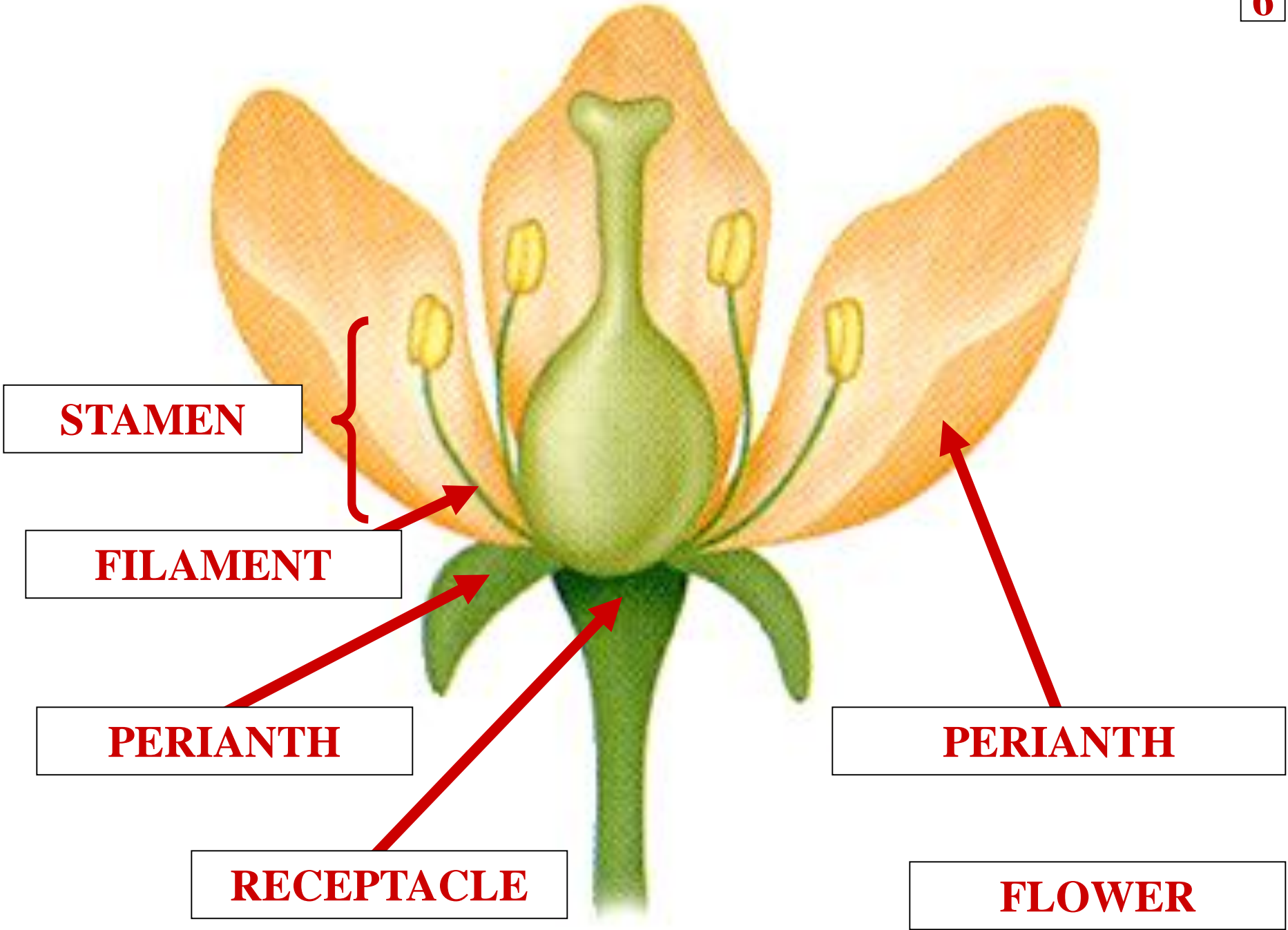
MICROSPOROPHYLL

STAMEN

MICROSPORANGIUM







STAMEN

FILAMENT

PERIANTH

RECEPTACLE

PERIANTH

FLOWER

6

STAMEN

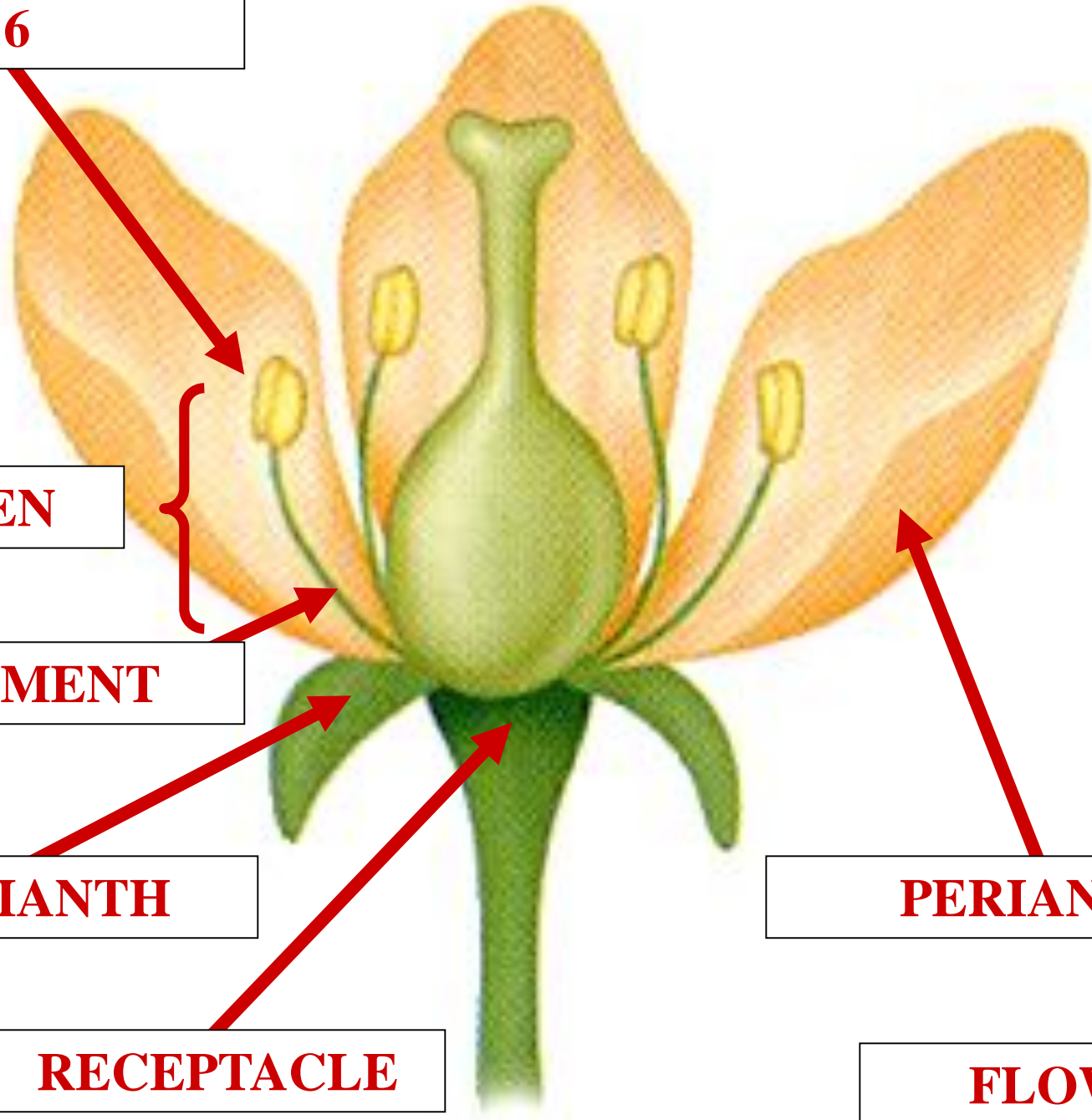
FILAMENT

PERIANTH

RECEPTACLE

PERIANTH

FLOWER



ANTHER

STAMEN

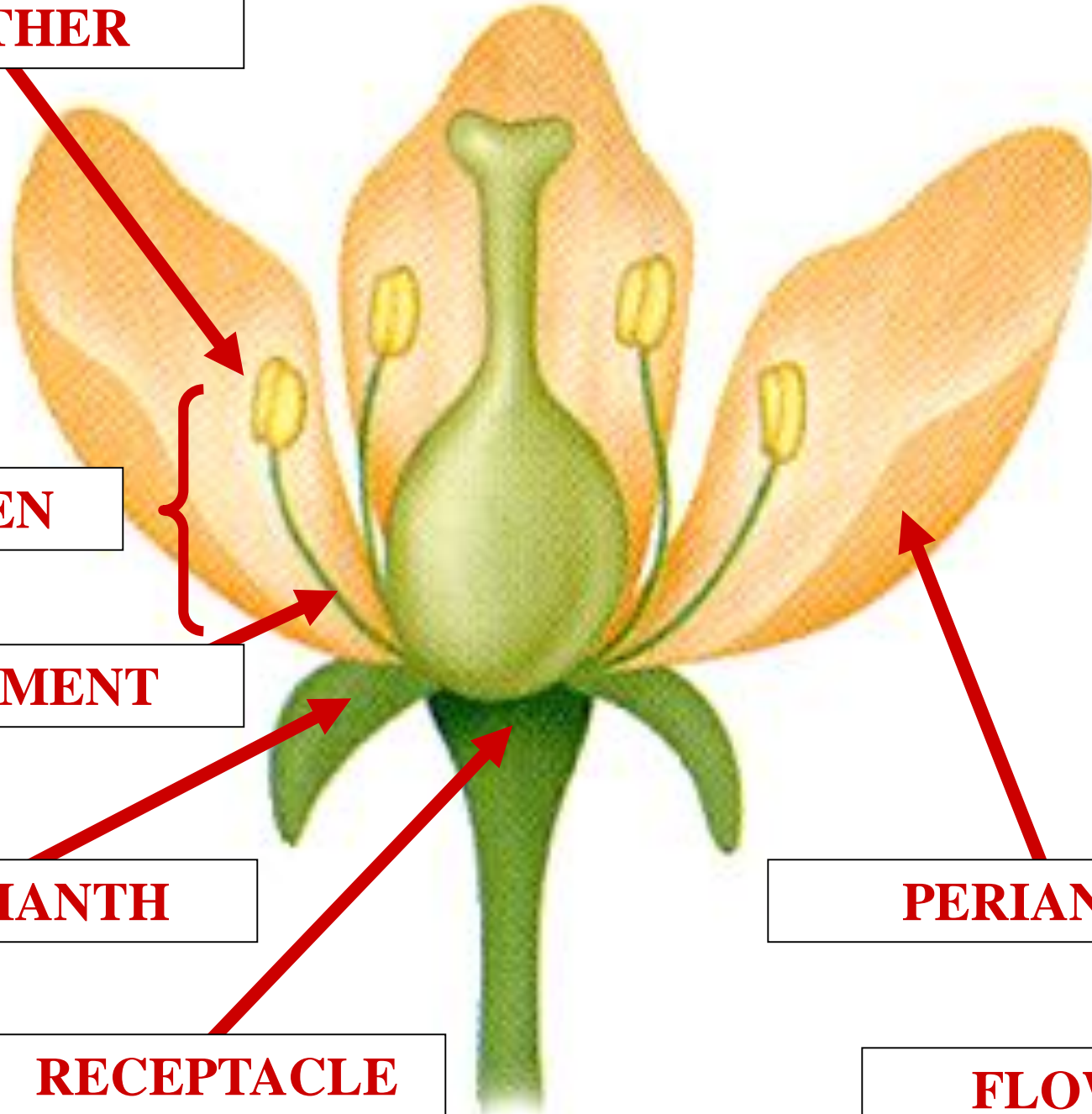
FILAMENT

PERIANTH

RECEPTACLE

PERIANTH

FLOWER





ANTHER

ANDROECIUM

STAMEN

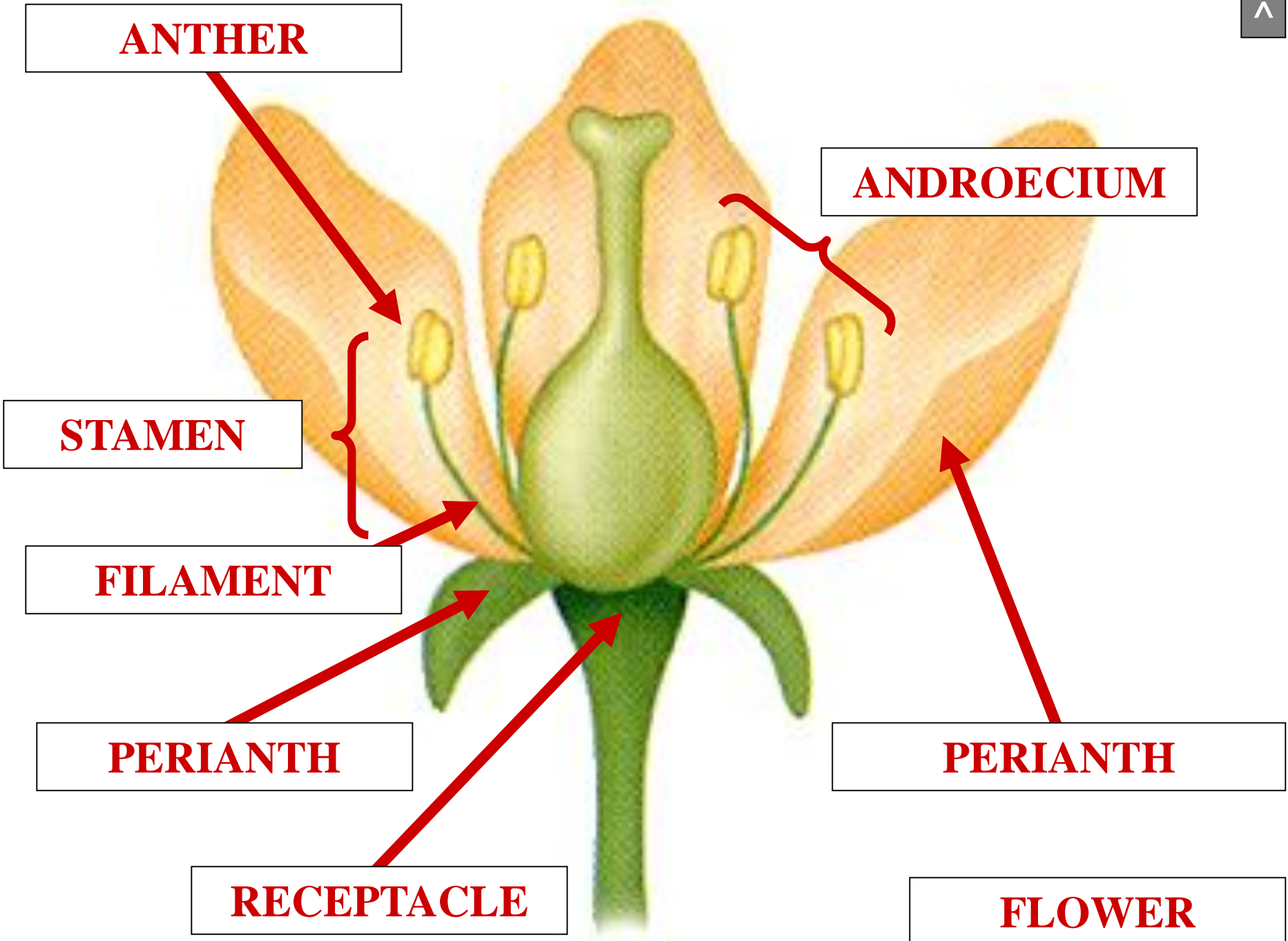
FILAMENT

PERIANTH

RECEPTACLE

PERIANTH

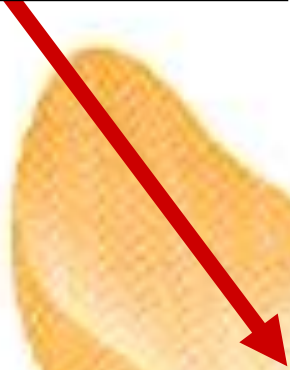
FLOWER





“FEMALE” FLOWER TERMS

ANTHER



STAMEN



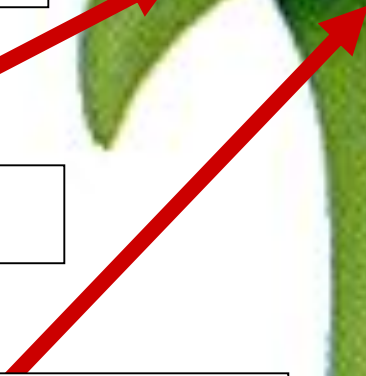
FILAMENT



PERIANTH



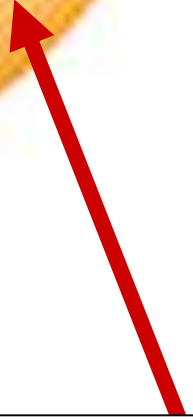
RECEPTACLE



7



PERIANTH

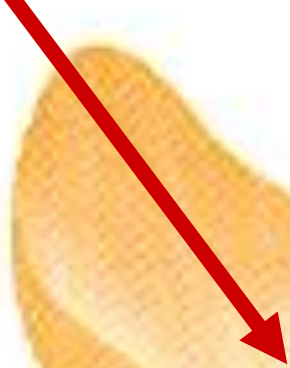


FLOWER





ANTHER



STAMEN



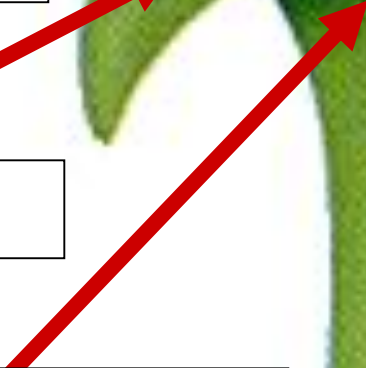
FILAMENT



PERIANTH



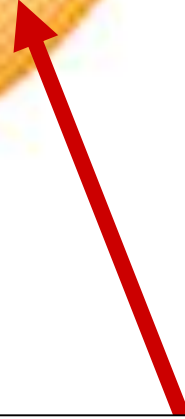
RECEPTACLE



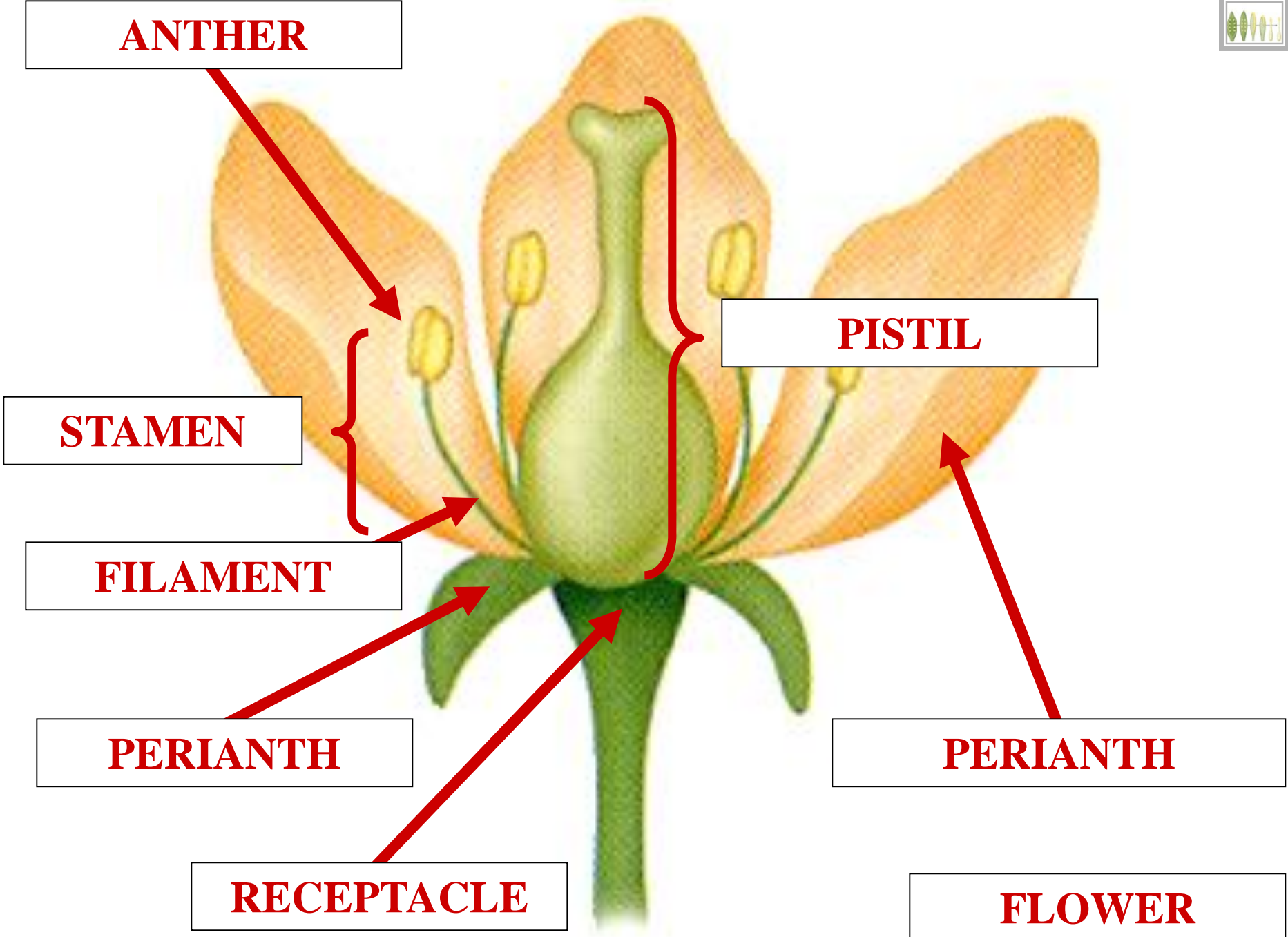
PISTIL



PERIANTH



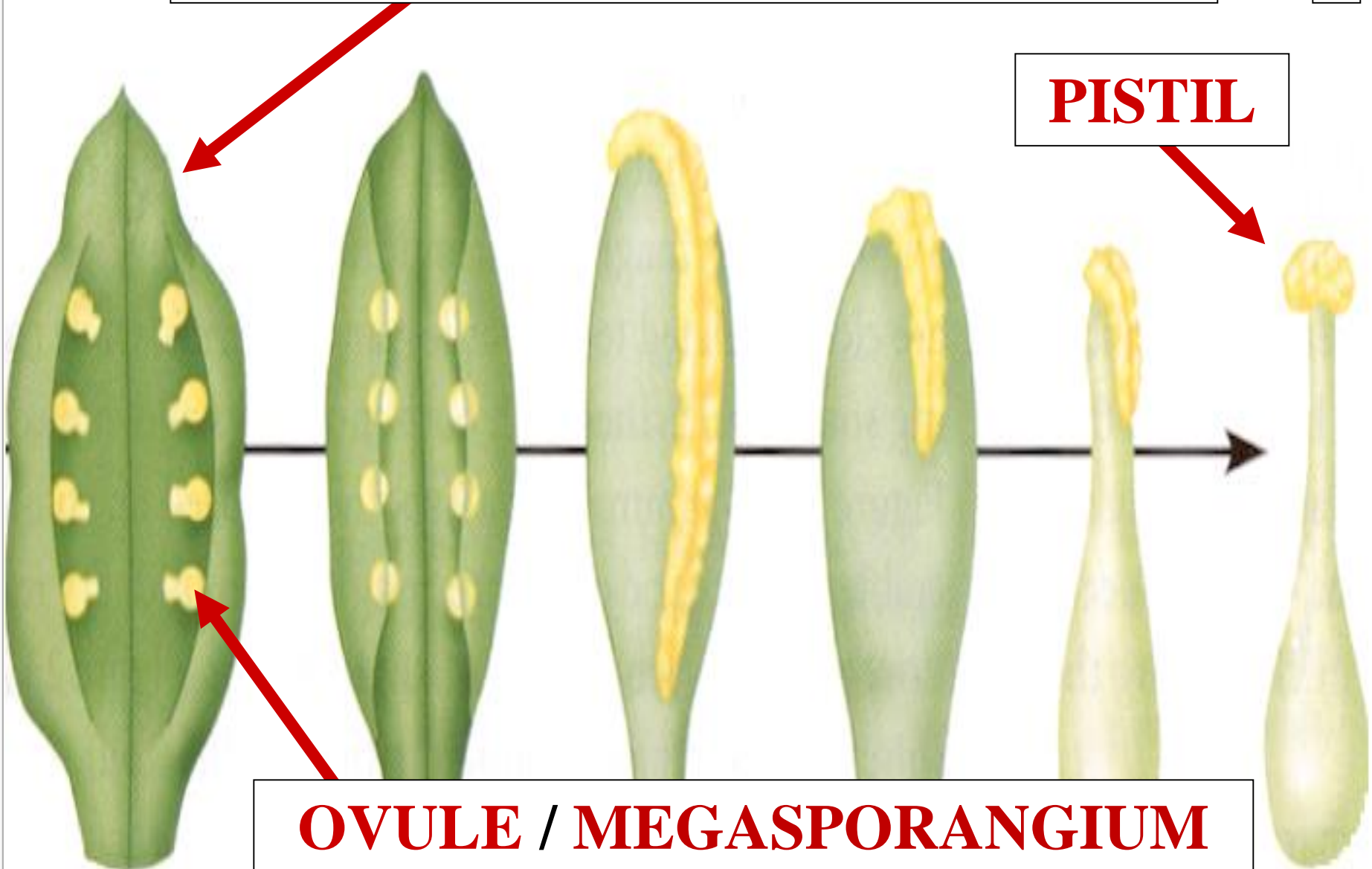
FLOWER



LEAF

PISTIL

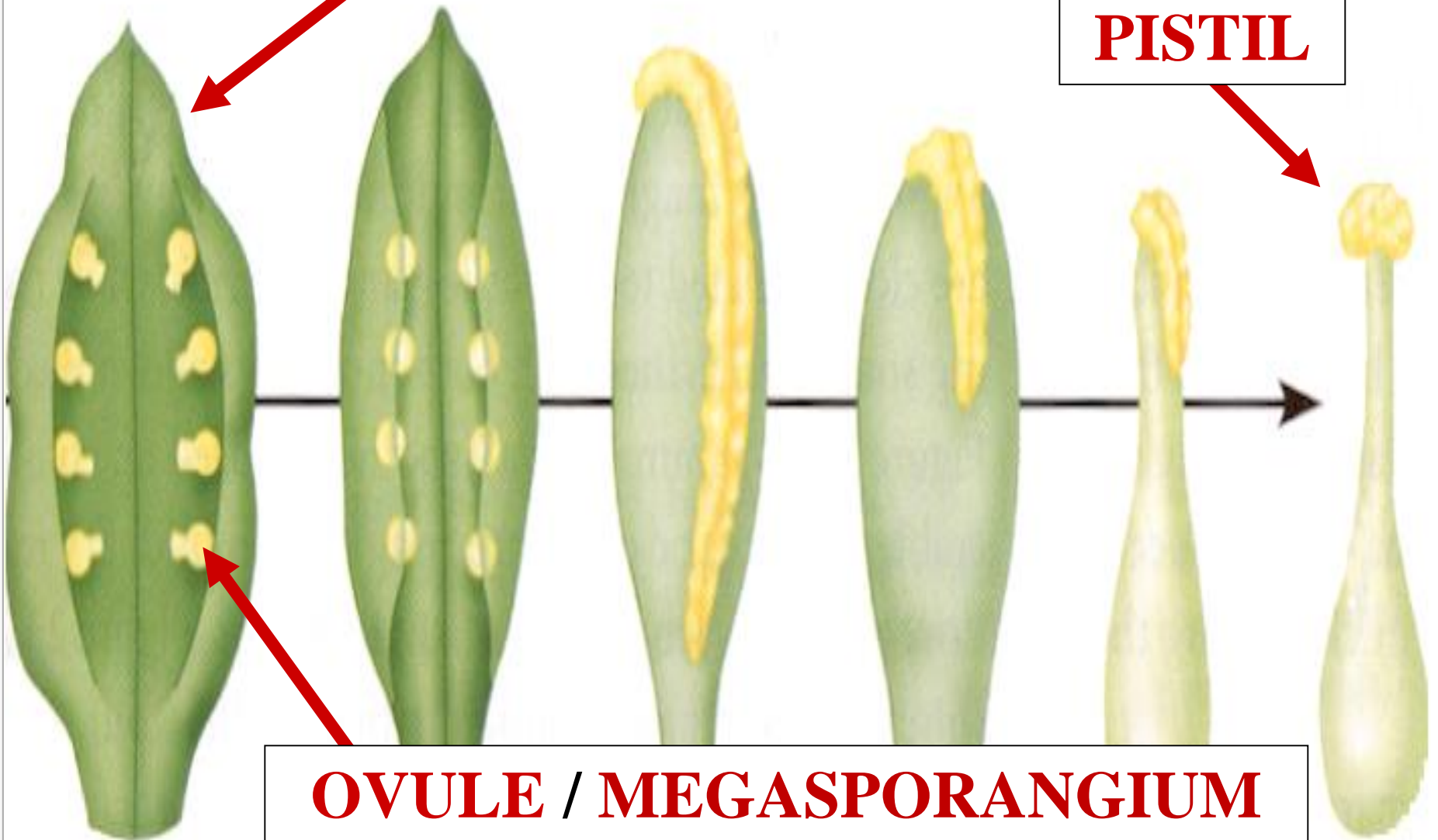
OVULE / MEGASPORANGIUM



MEGASPOROPHYLL

PISTIL

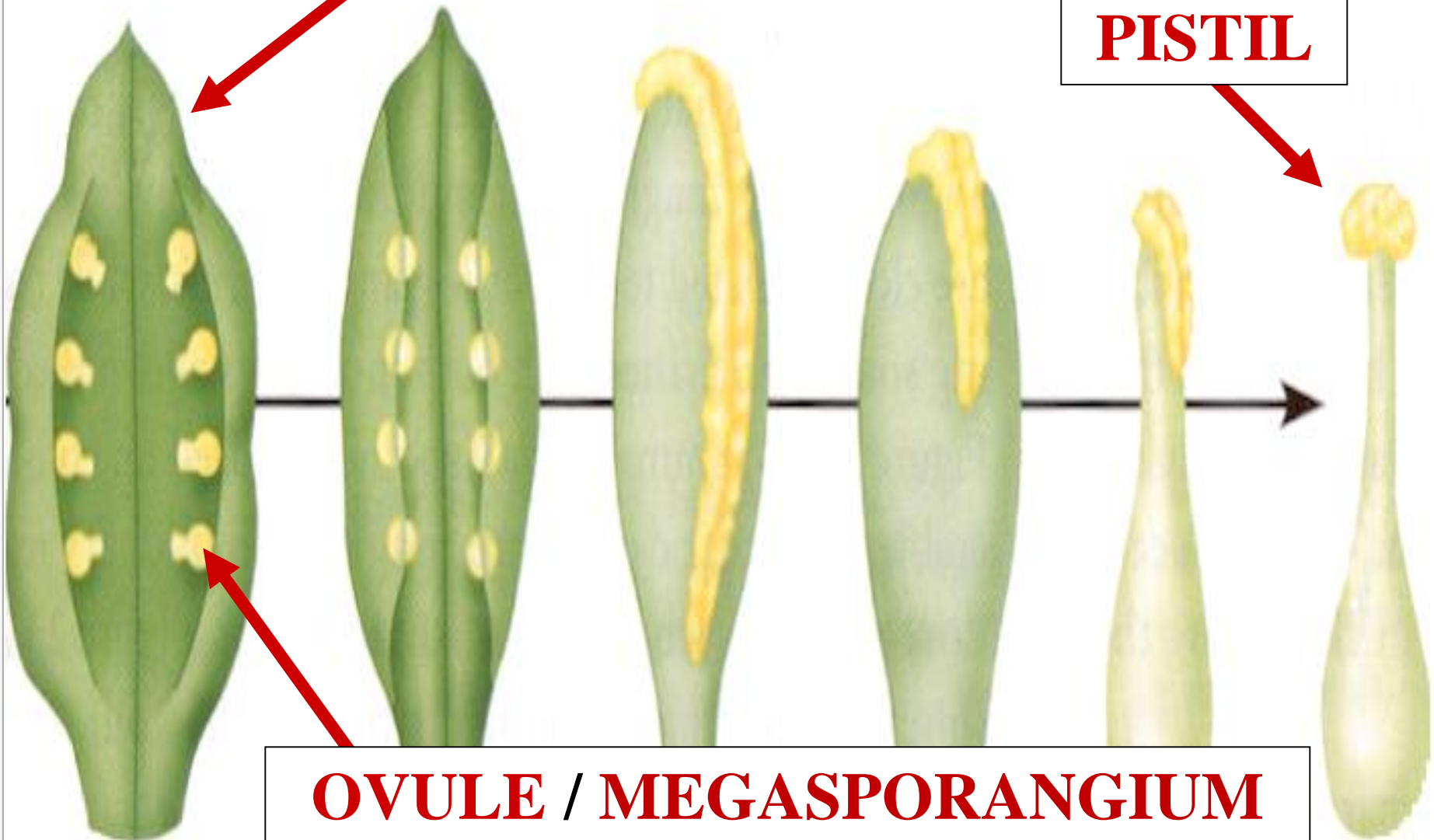
OVULE / MEGASPORANGIUM



CARPEL

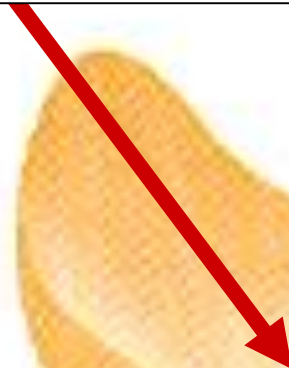


PISTIL



OVULE / MEGASPORANGIUM

ANTHER



STAMEN



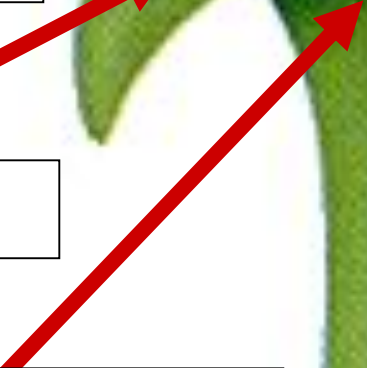
FILAMENT



PERIANTH



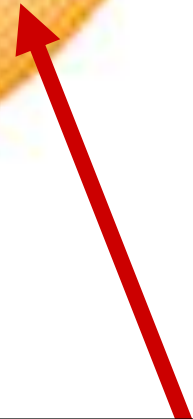
RECEPTACLE



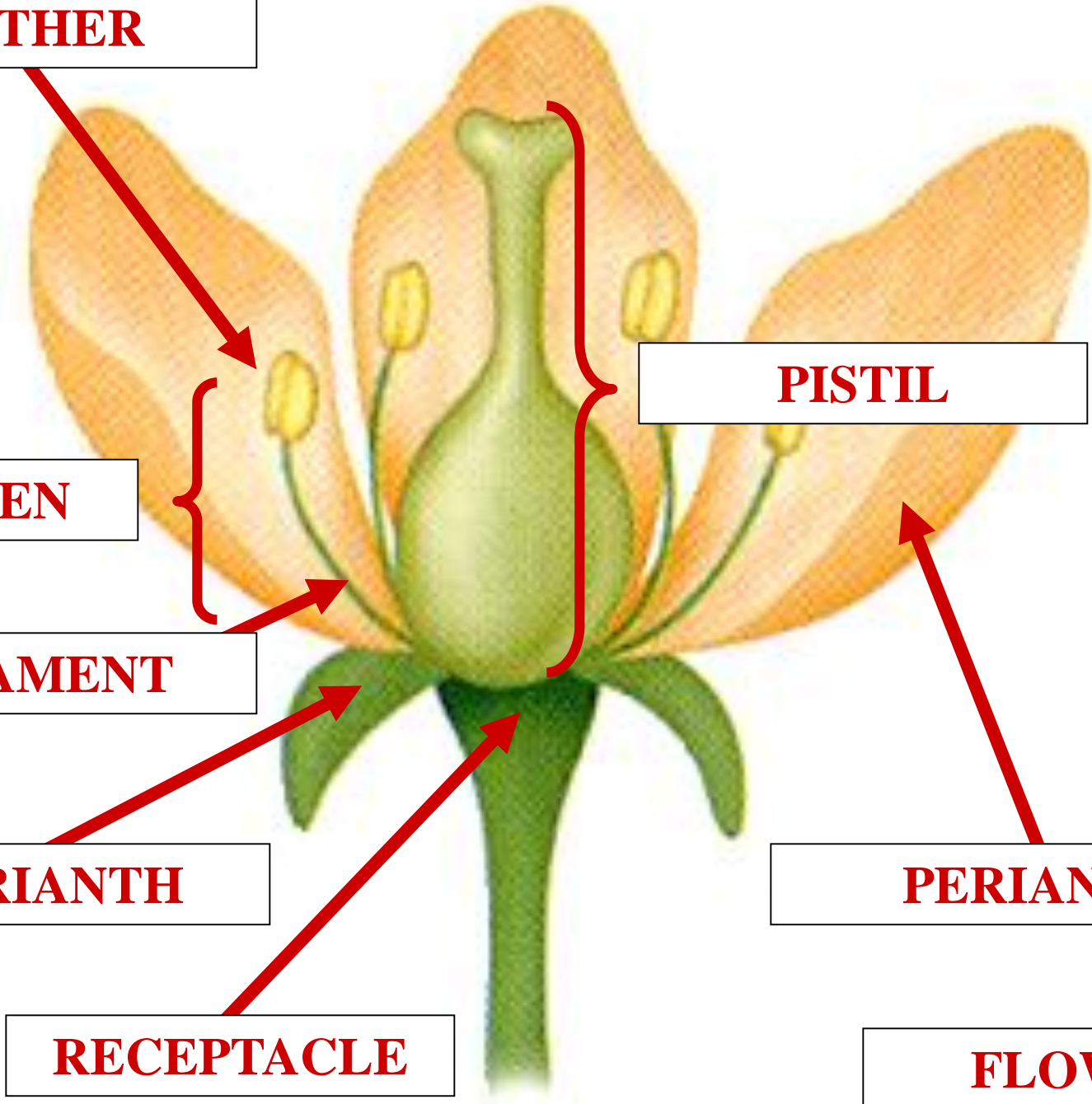
PISTIL



PERIANTH



FLOWER



ANTHER

8

STAMEN

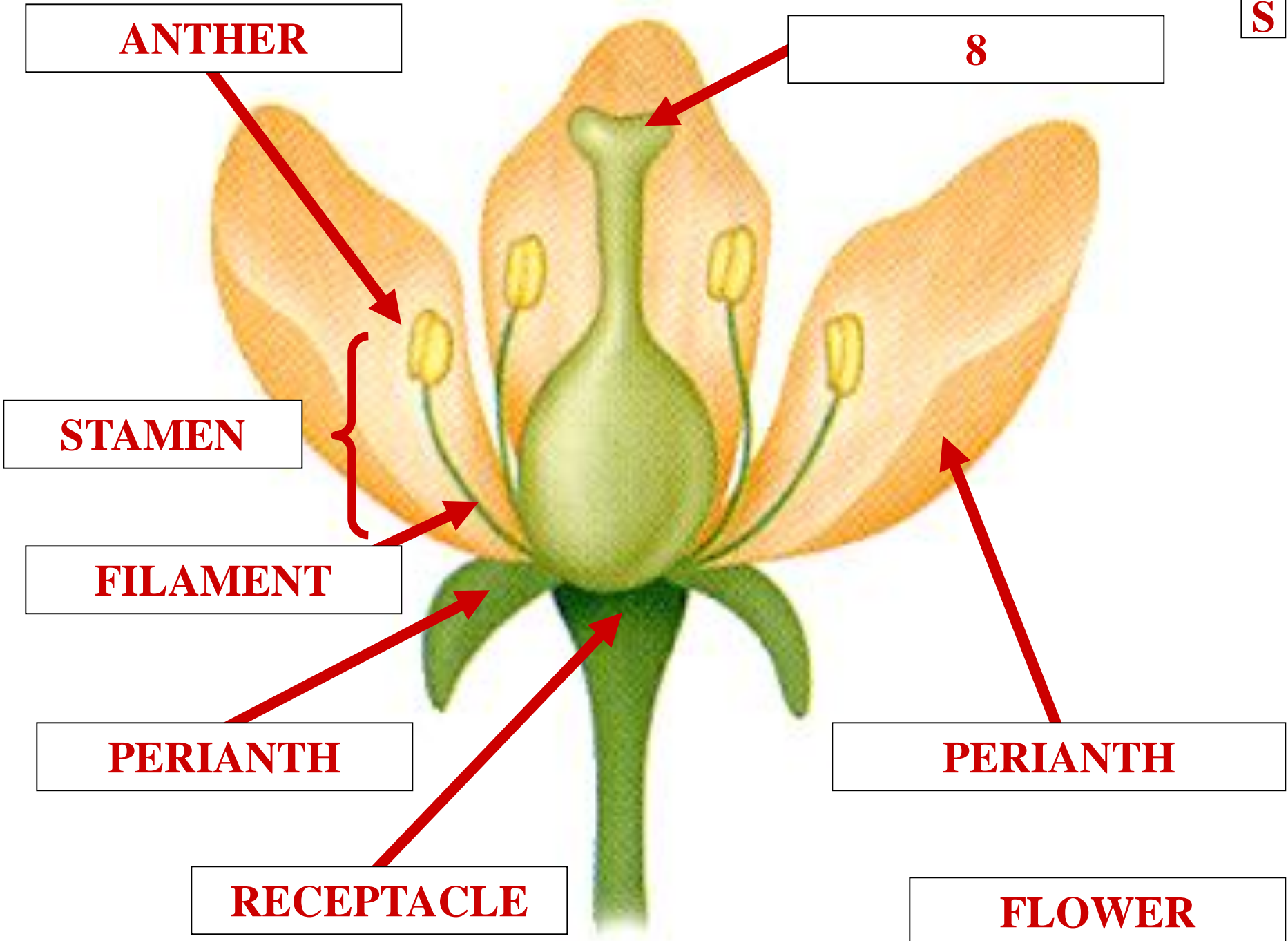
FILAMENT

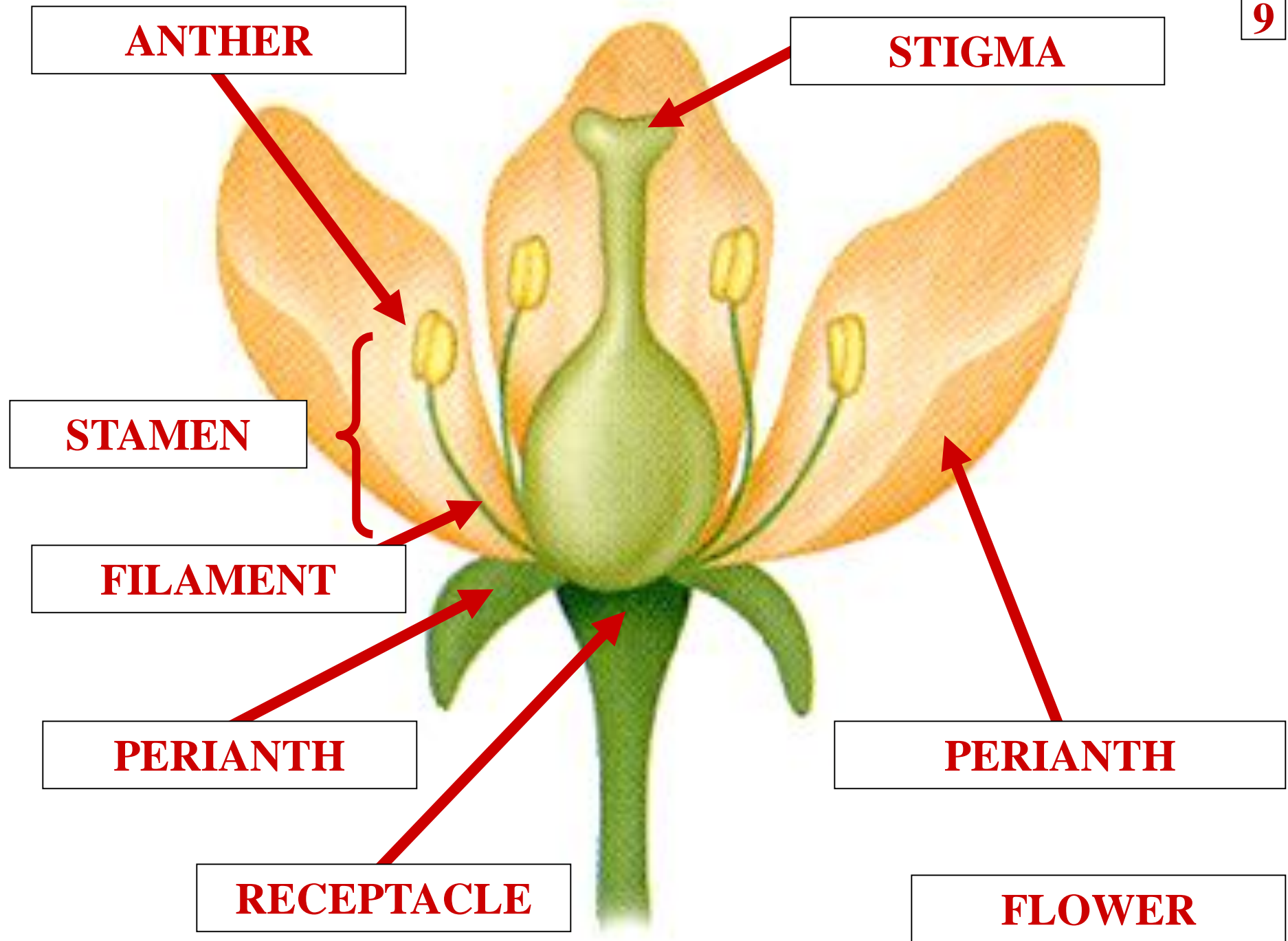
PERIANTH

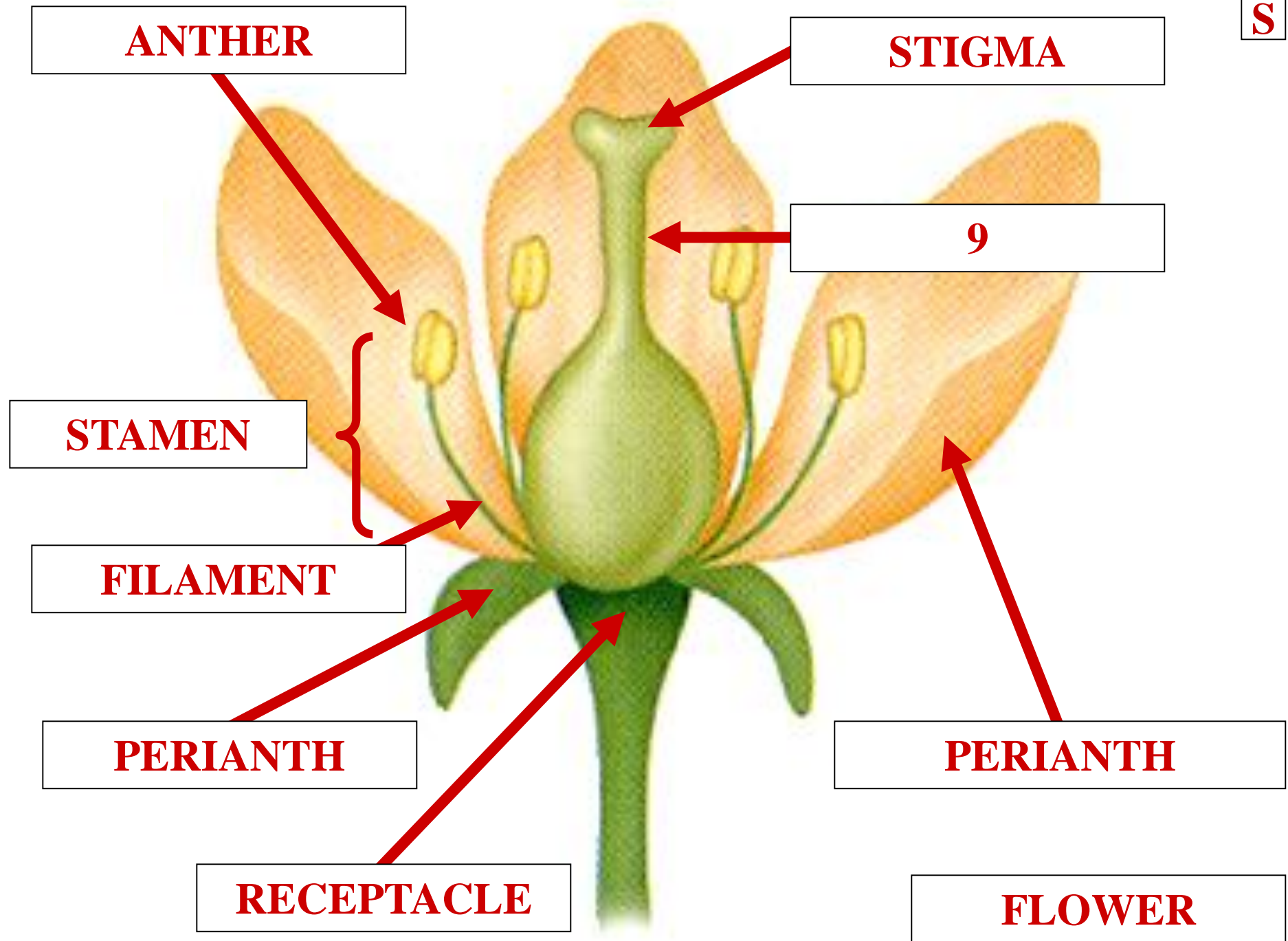
RECEPTACLE

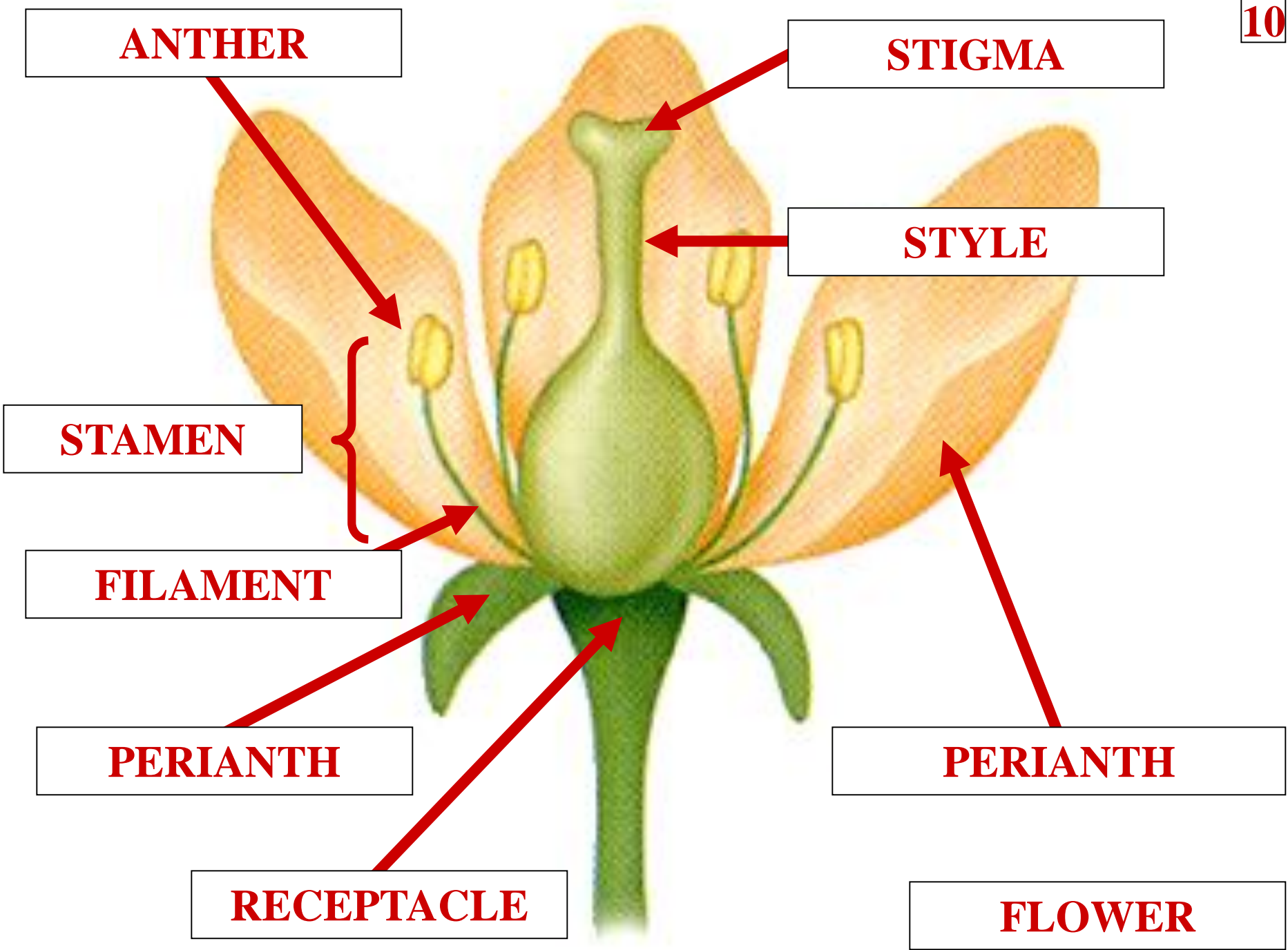
PERIANTH

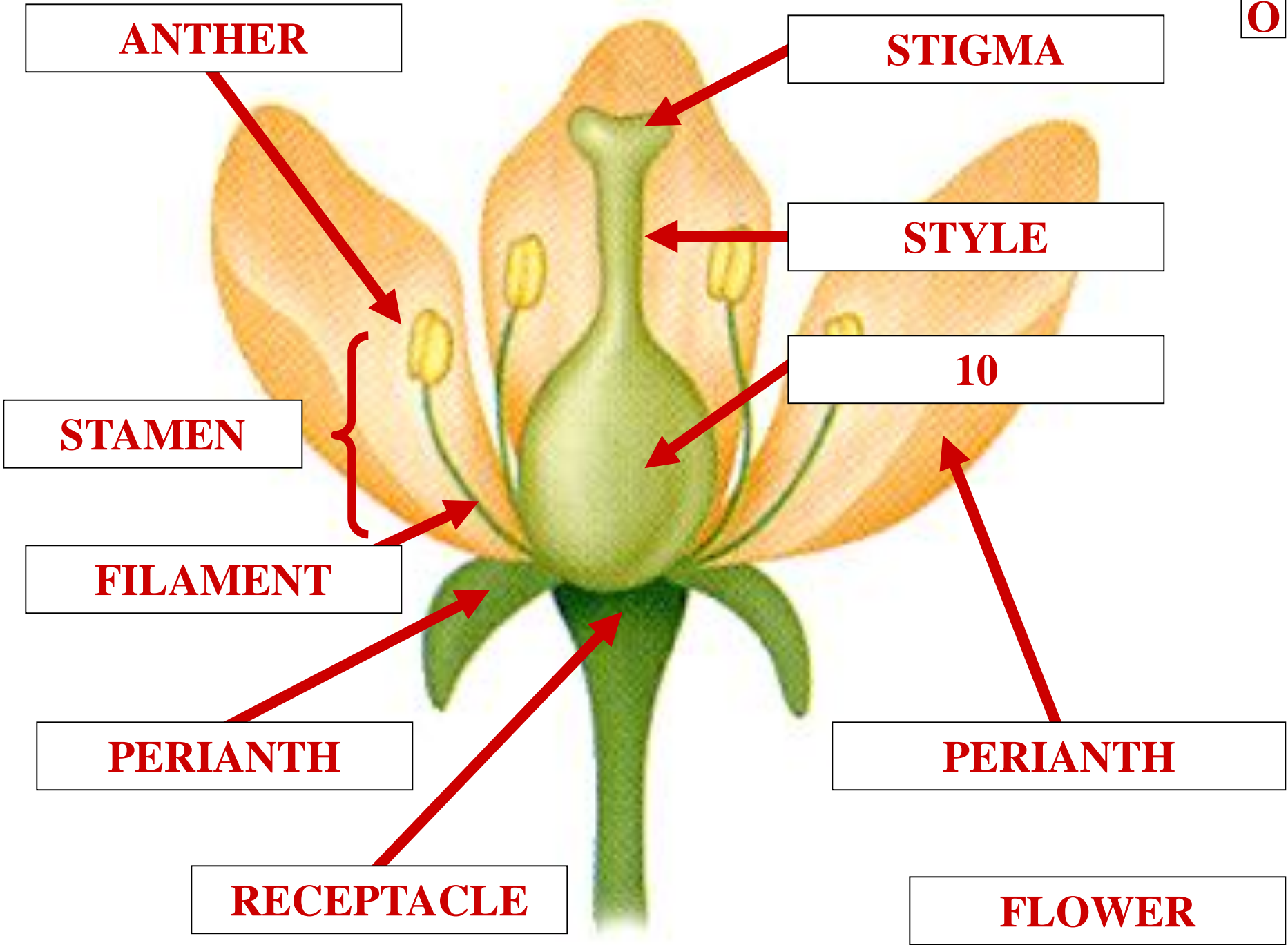
FLOWER

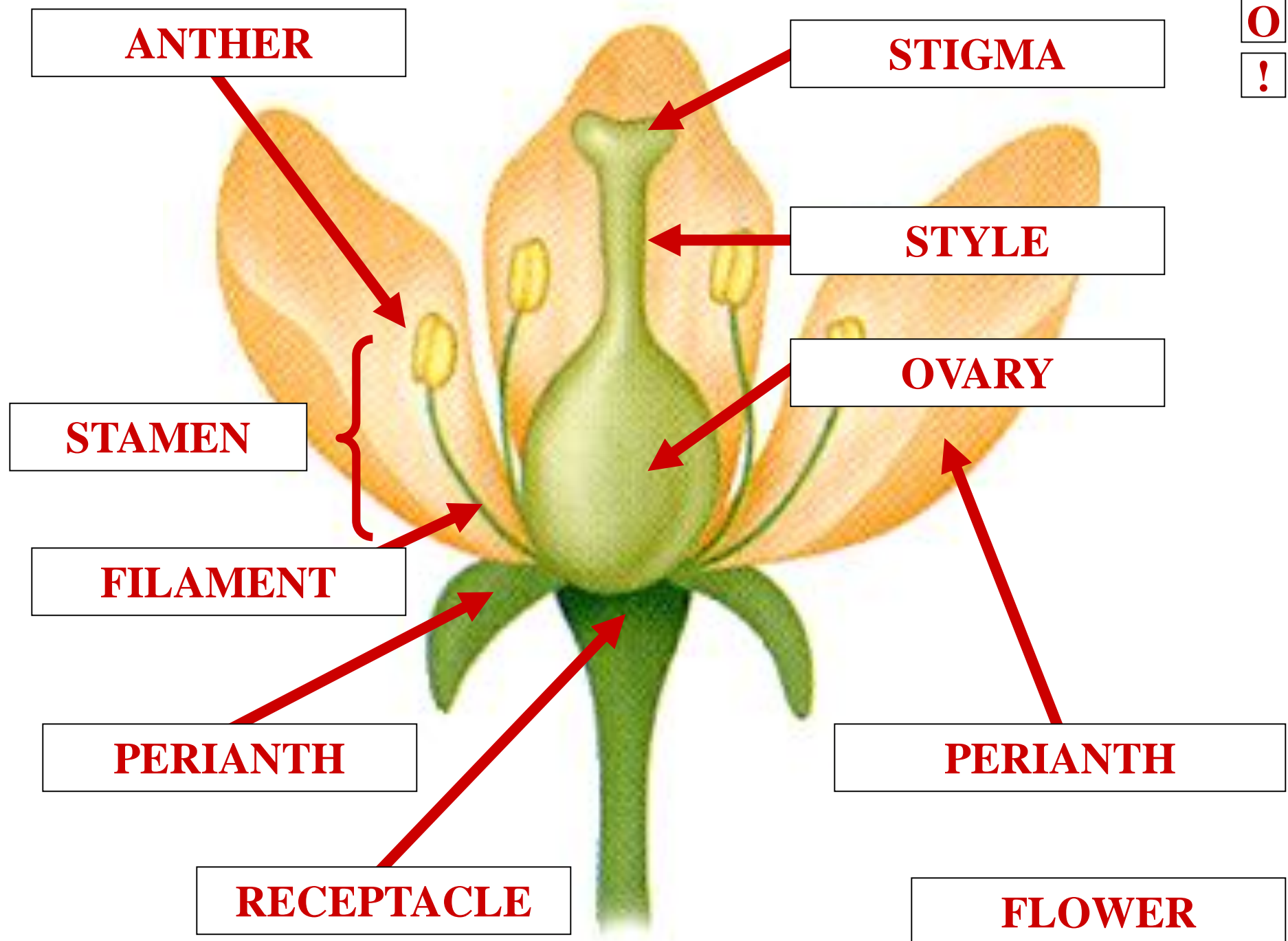


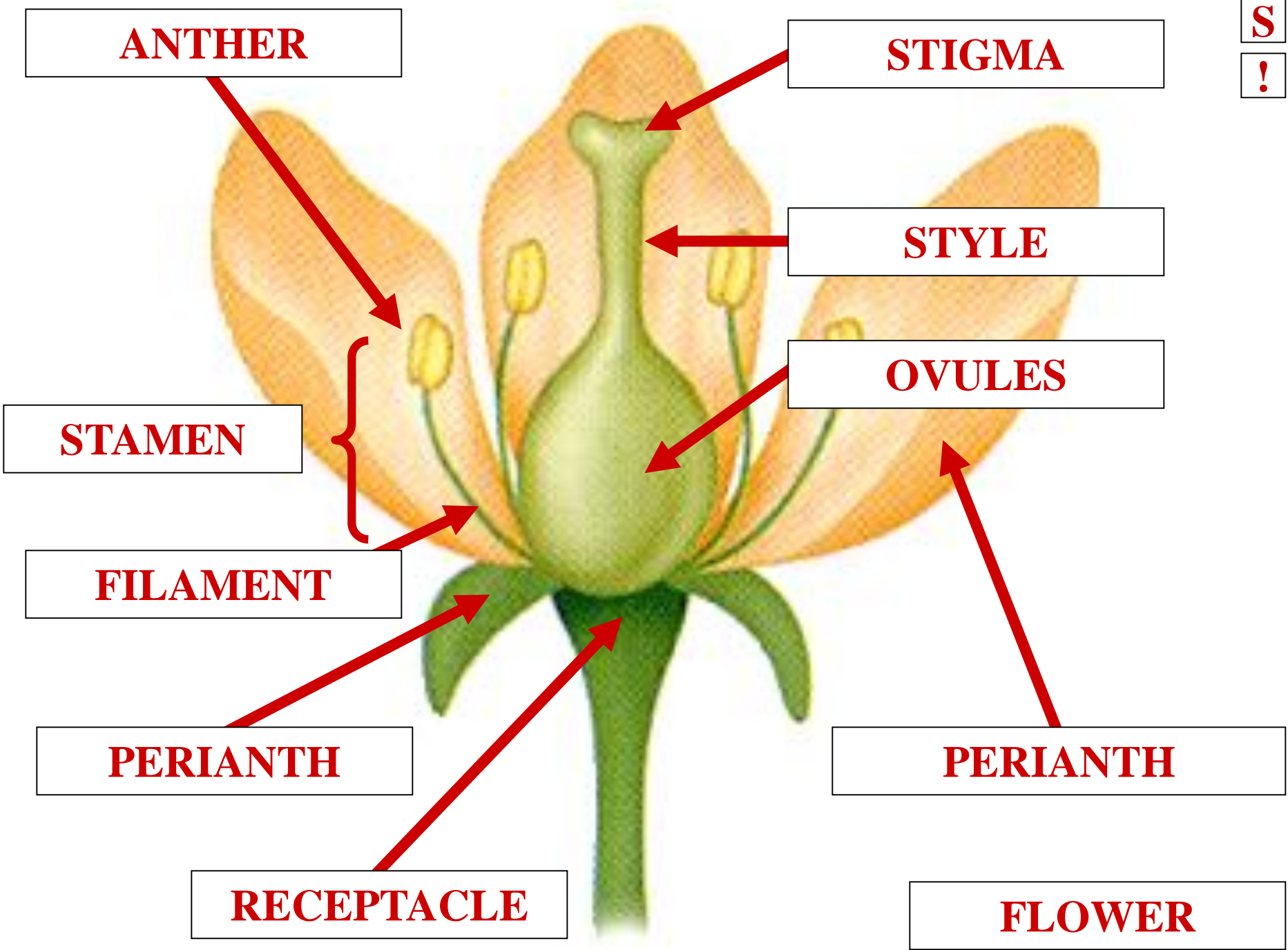


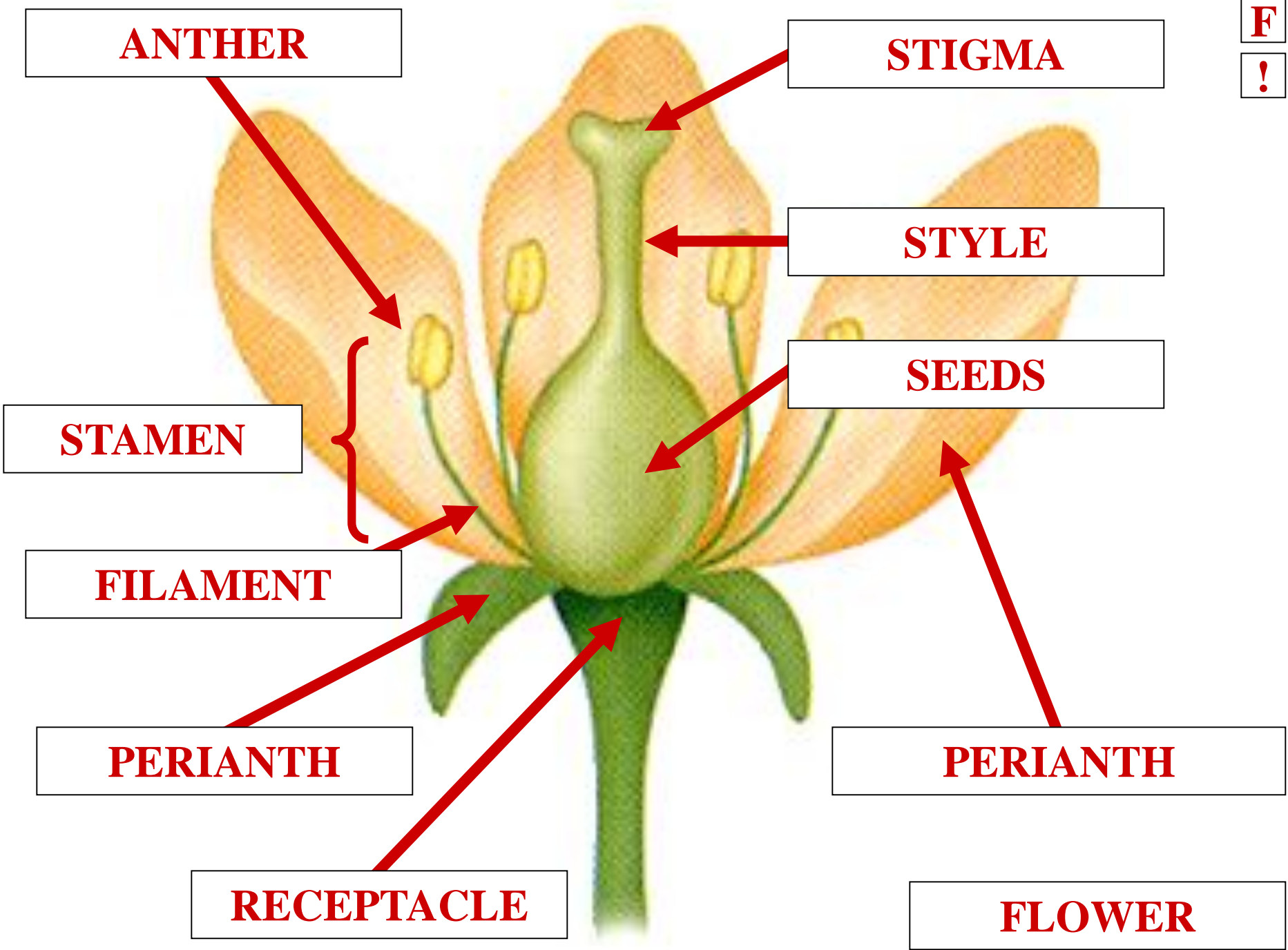


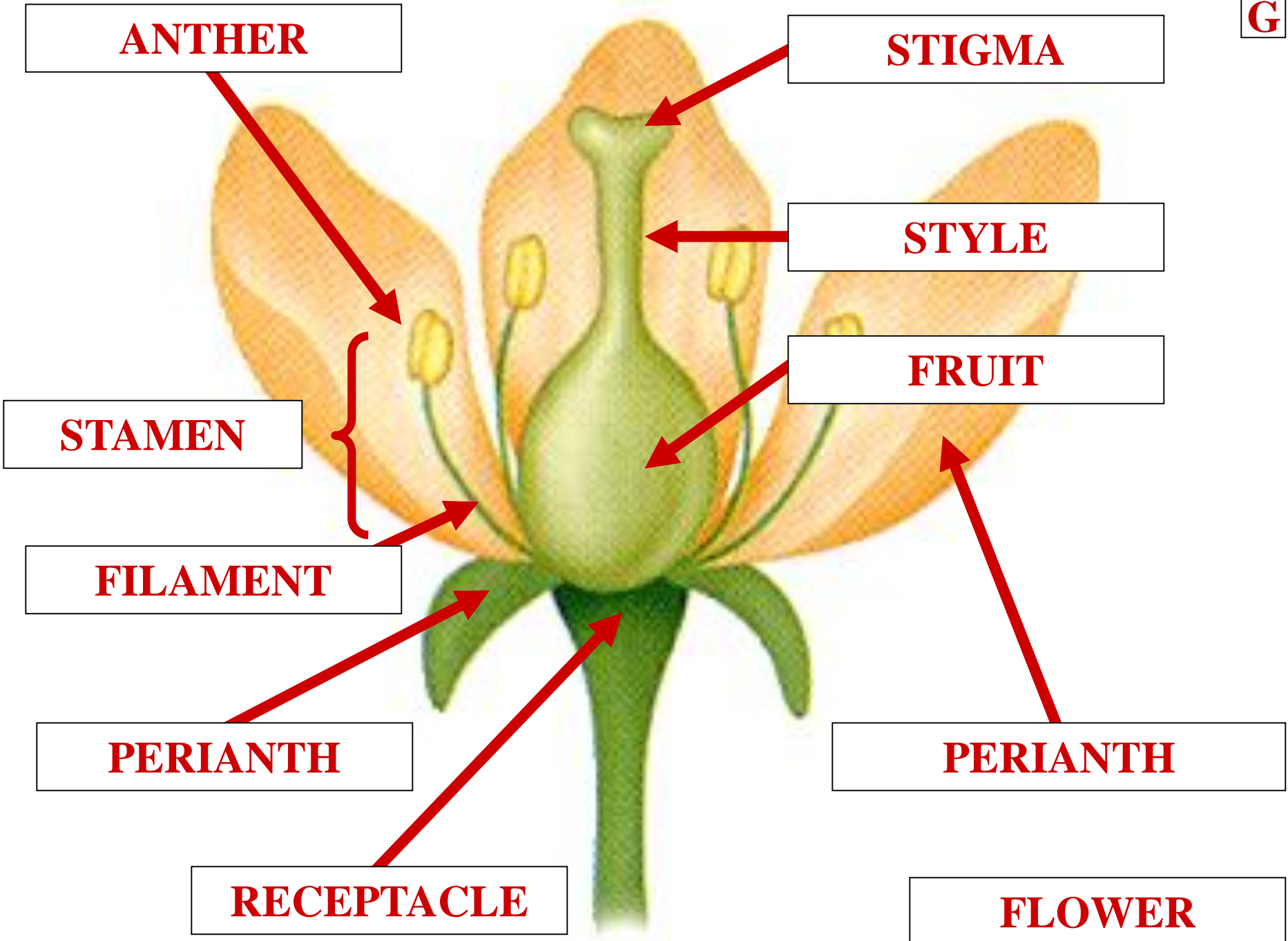






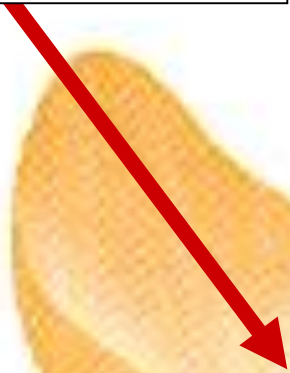








ANTHER



GYNOECIUM



STAMEN



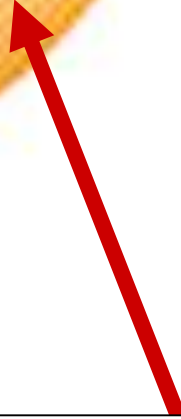
FILAMENT



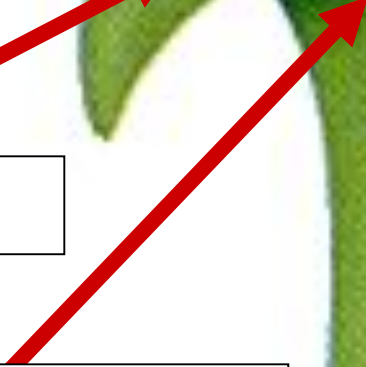
PERIANTH



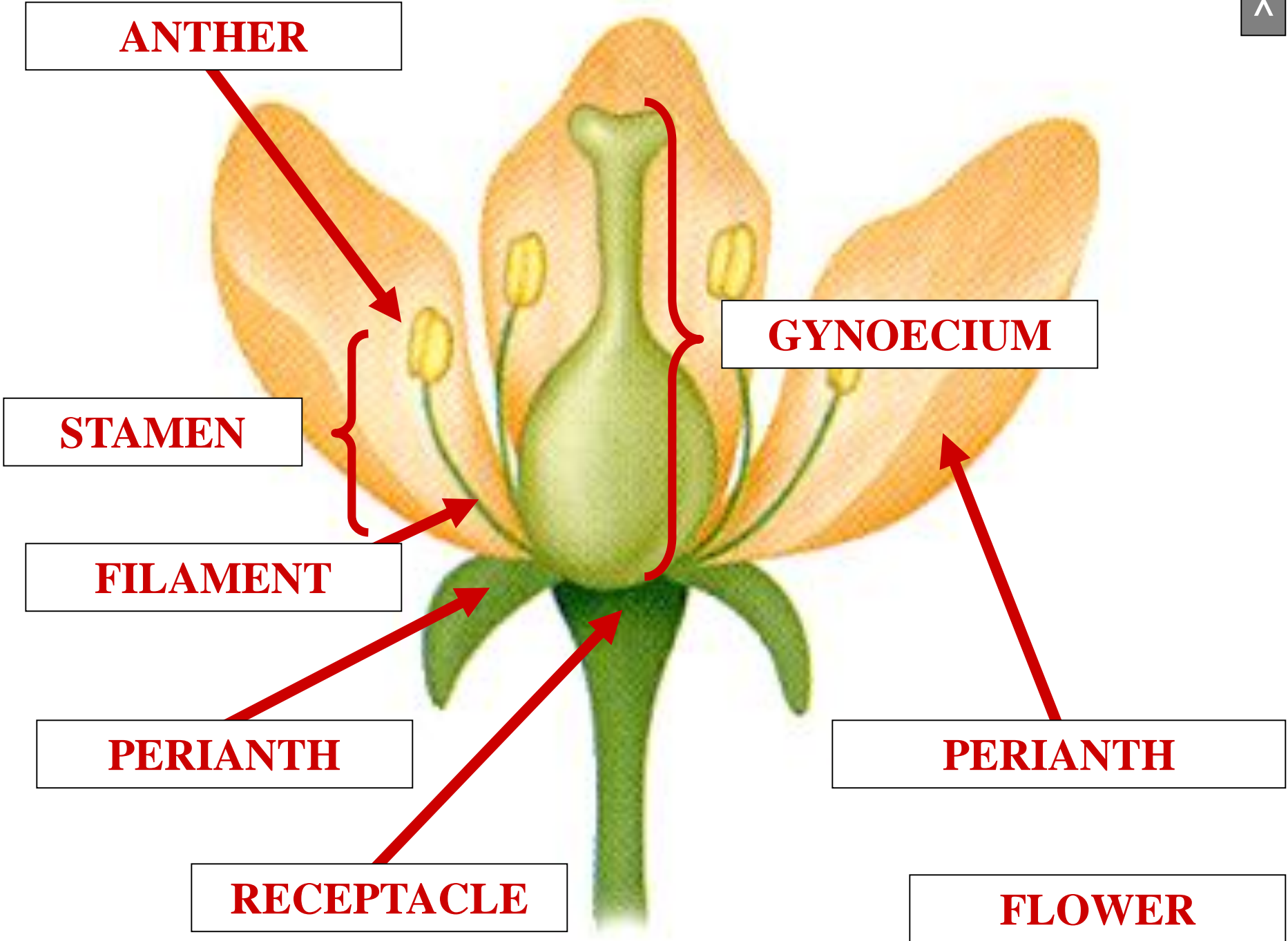
PERIANTH



RECEPTACLE

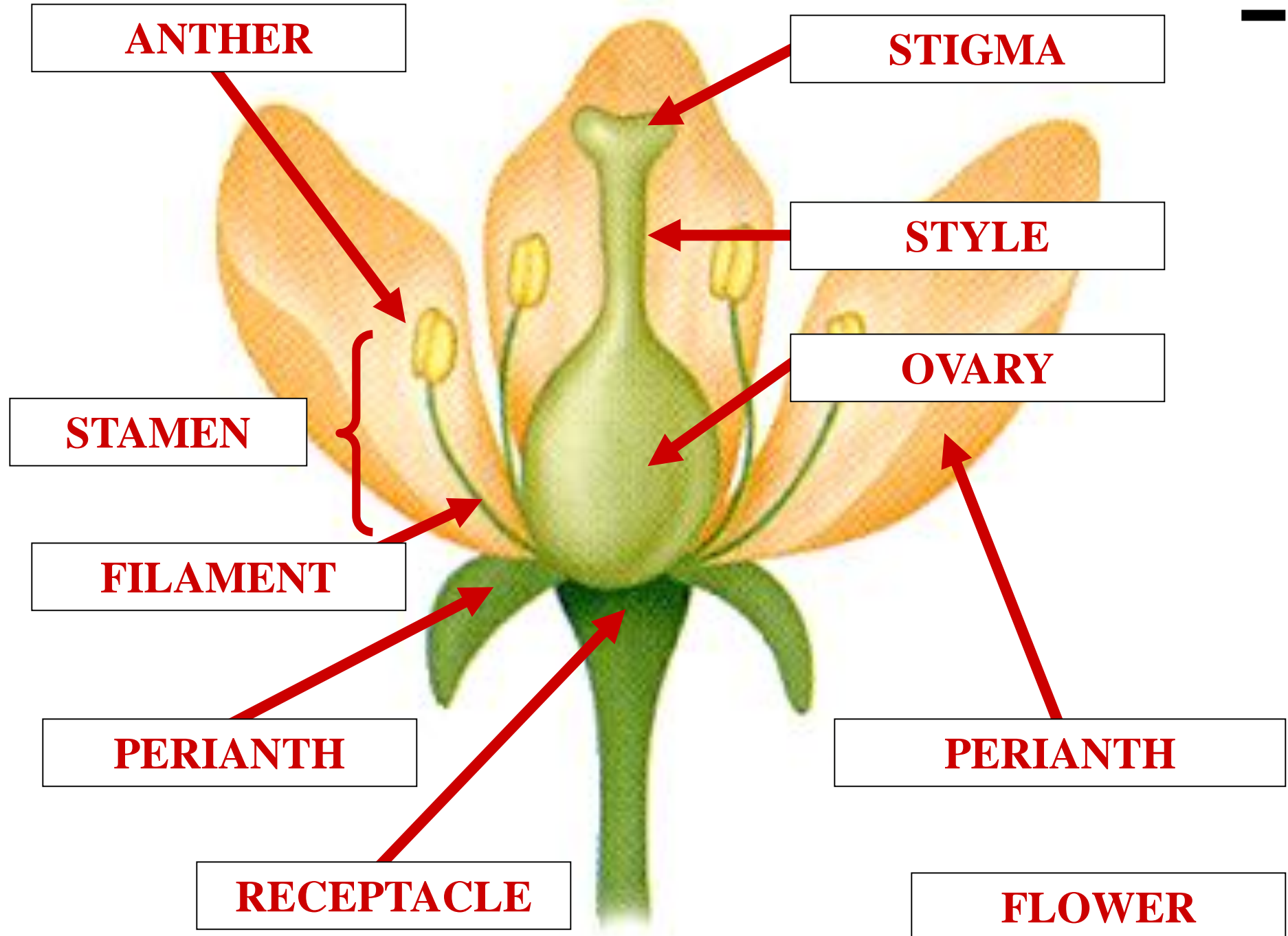


FLOWER





OVARY ANATOMY





ANTHER

STIGMA

STYLE

OVARY

STAMEN

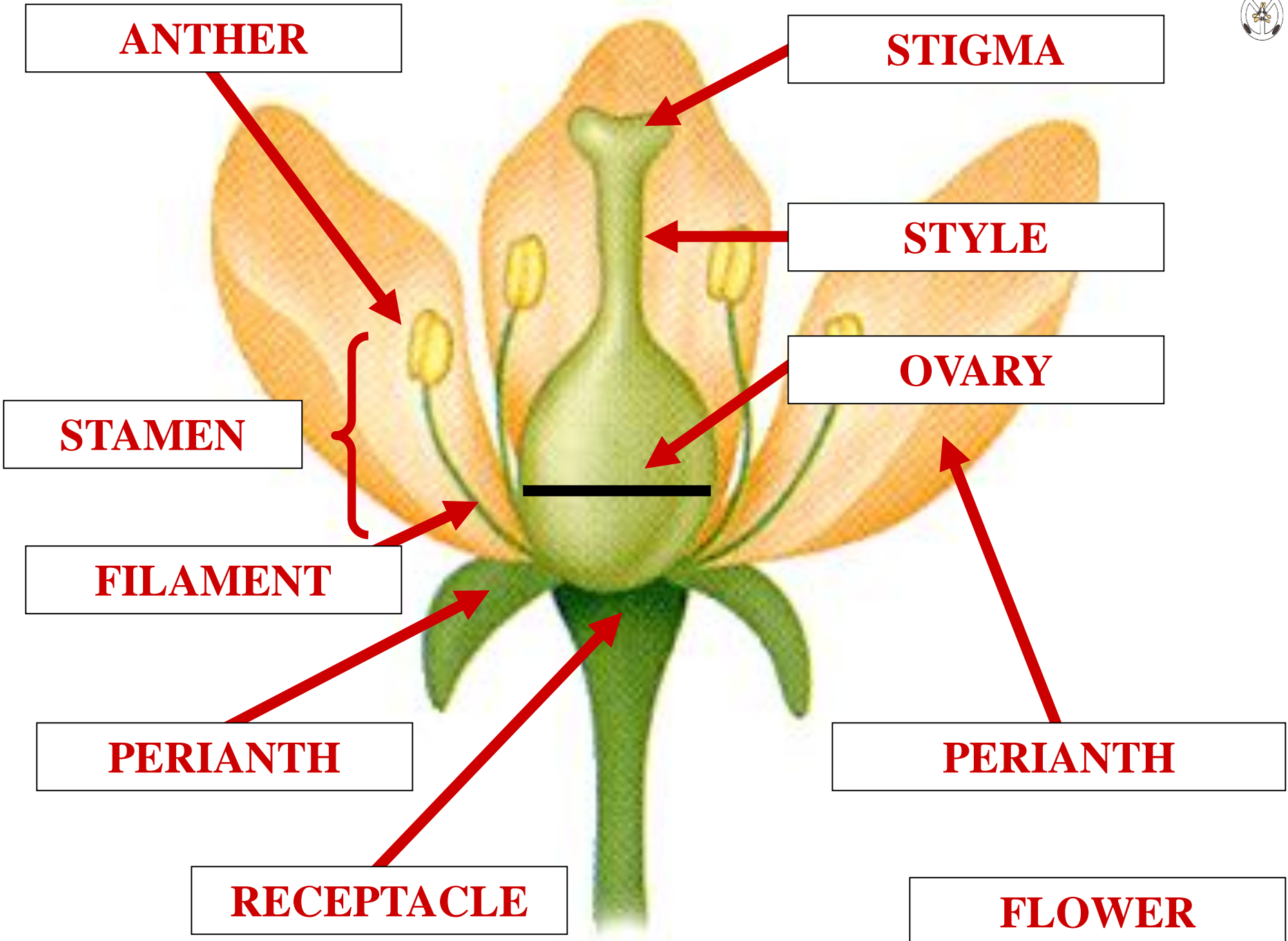
FILAMENT

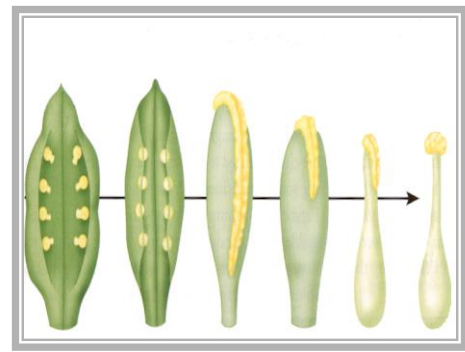
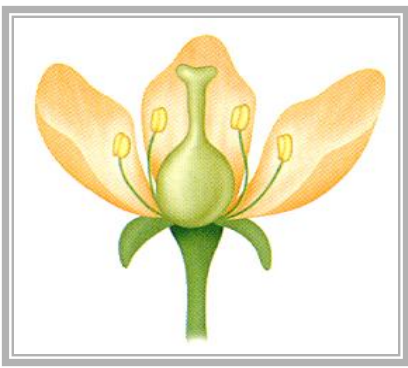
PERIANTH

RECEPTACLE

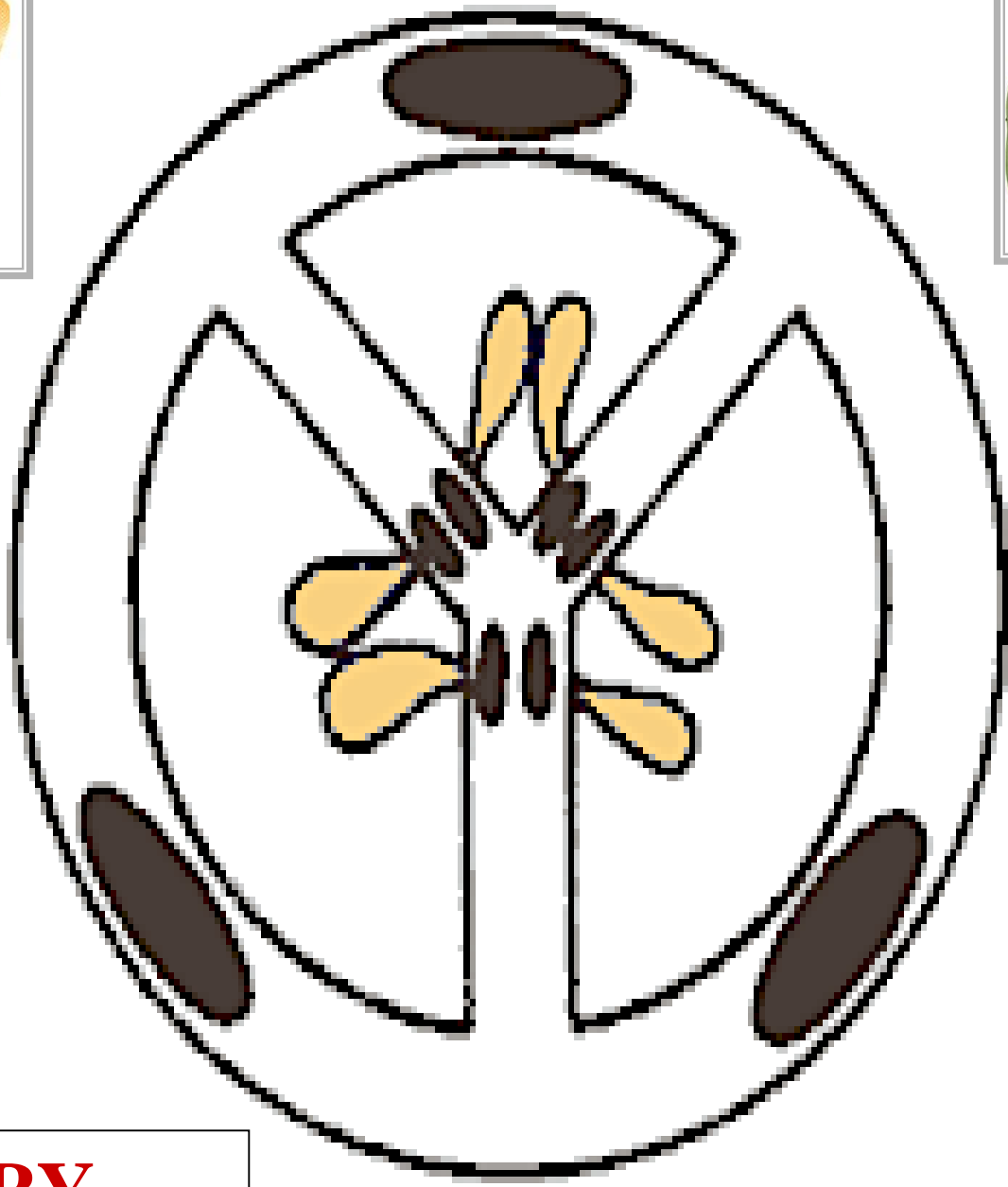
PERIANTH

FLOWER



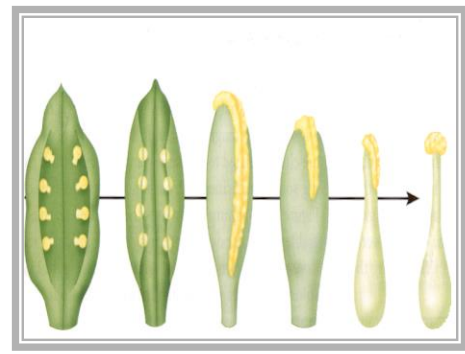
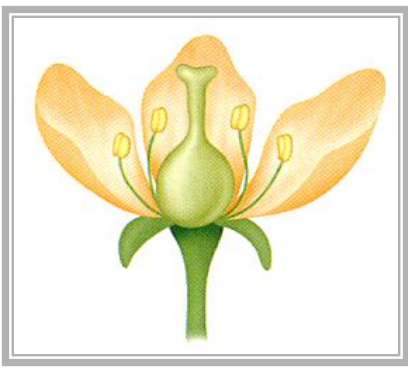


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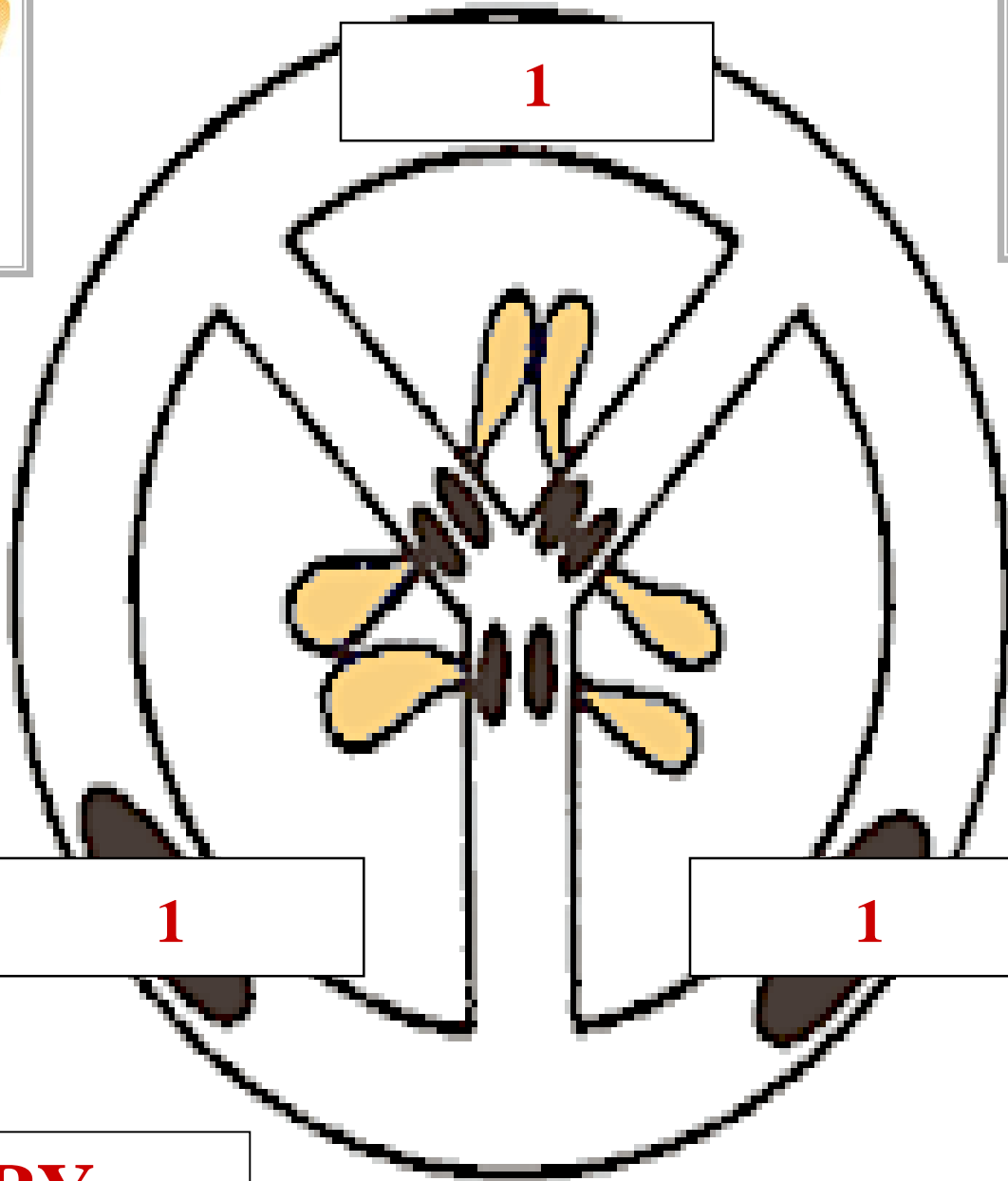


OVARY

C.S.

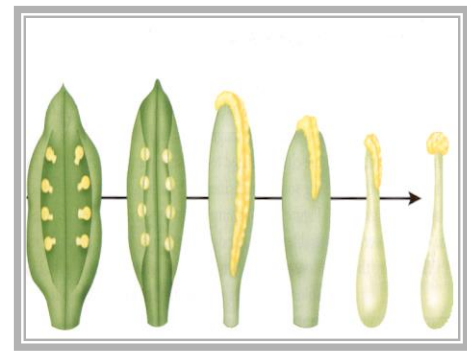
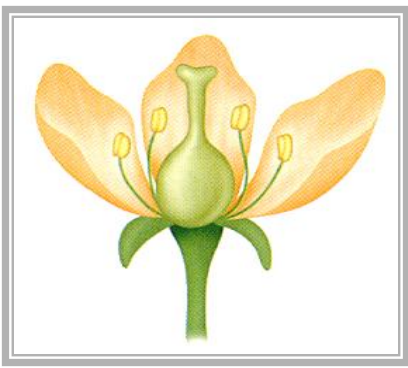


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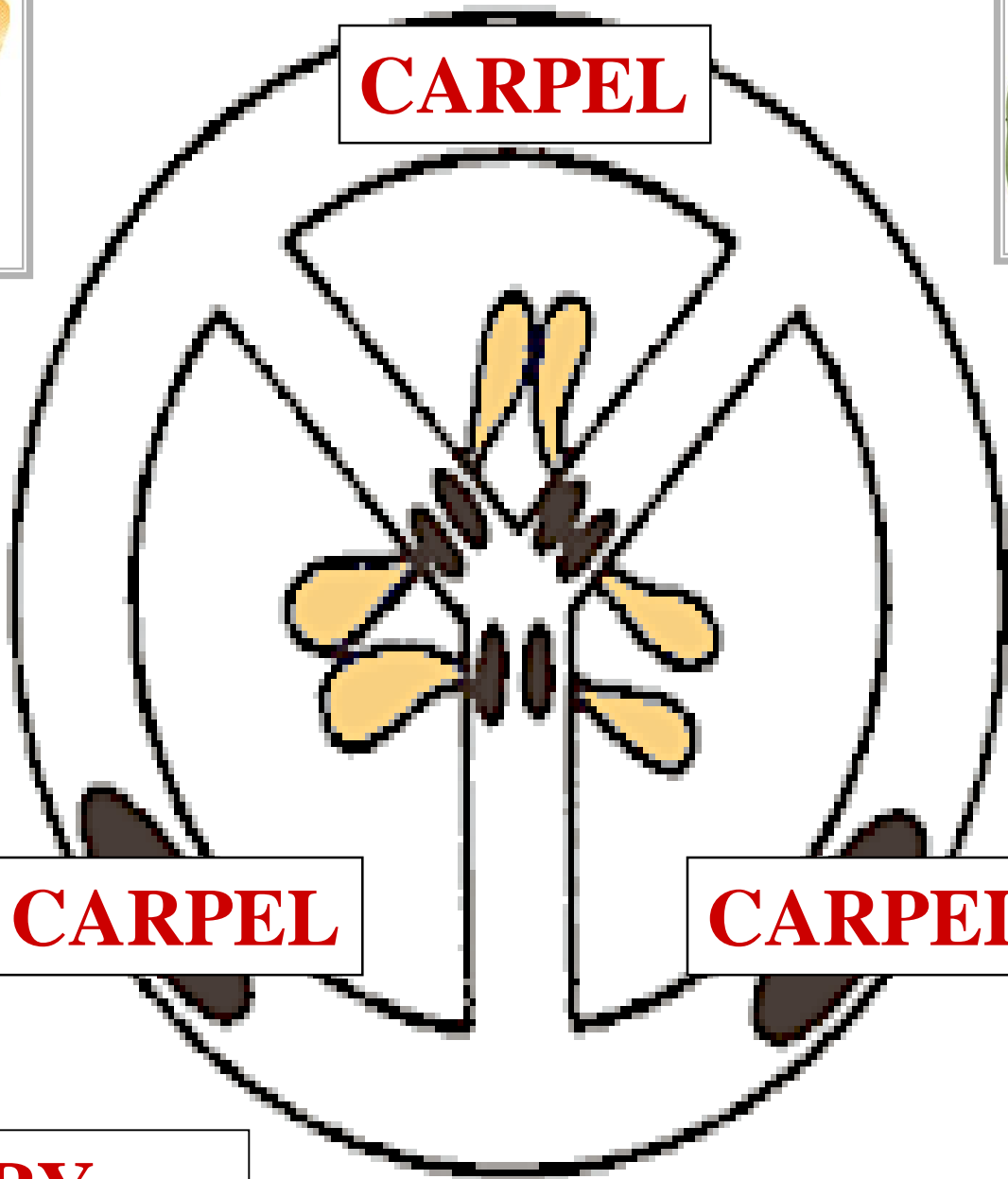


OVARY

C.S.



2



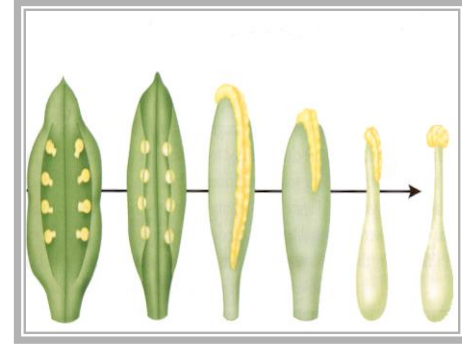
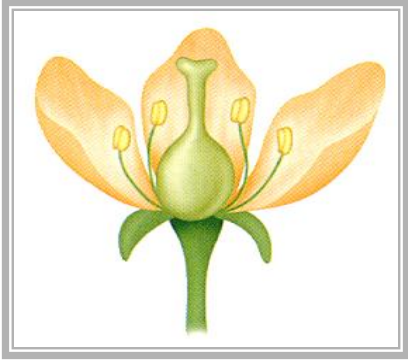
CARPEL

CARPEL

CARPEL

OVARY

C.S.



L

CARPEL

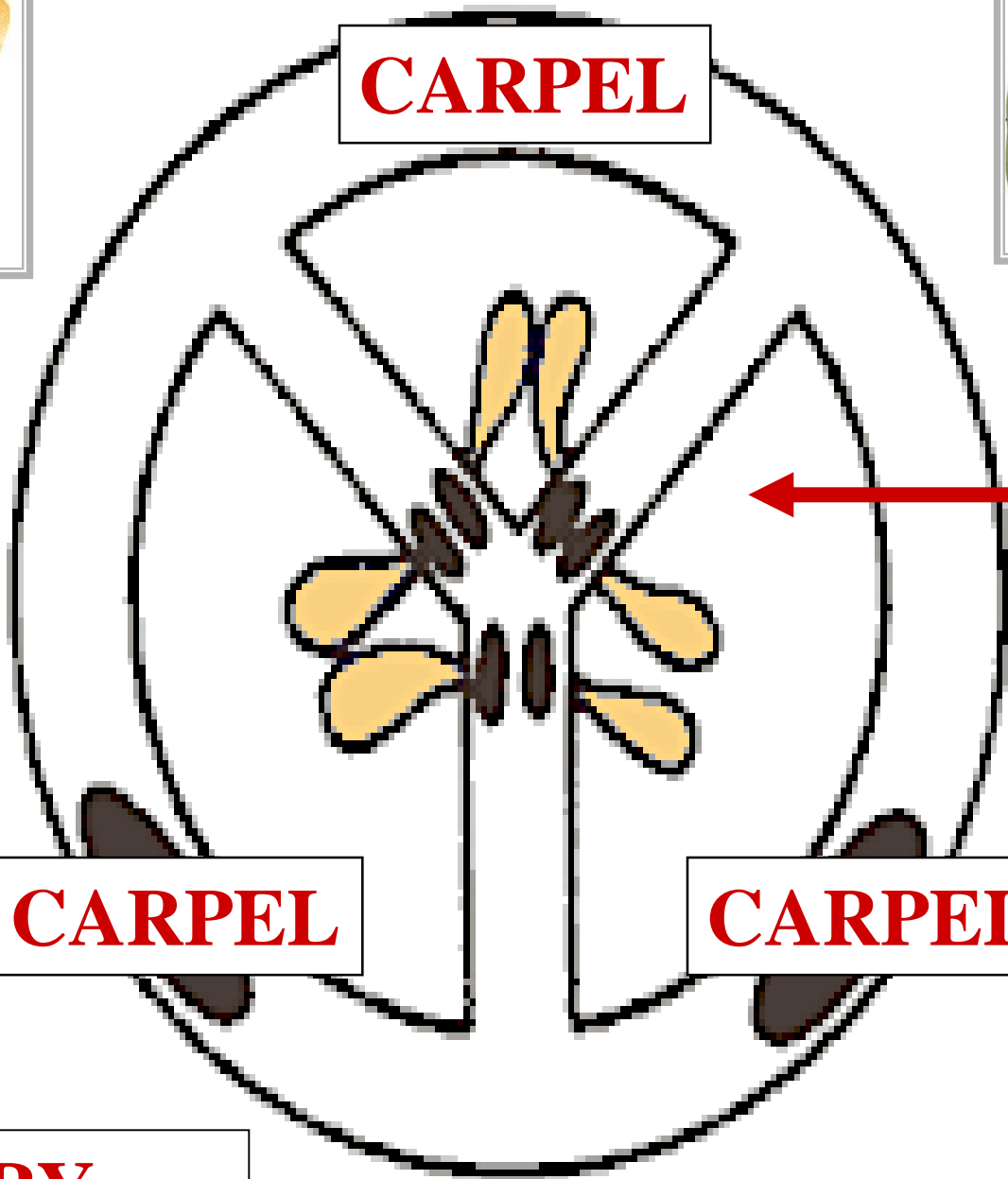
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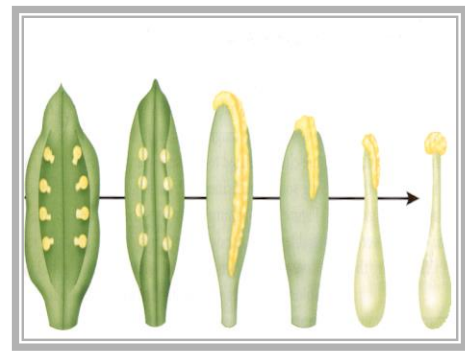
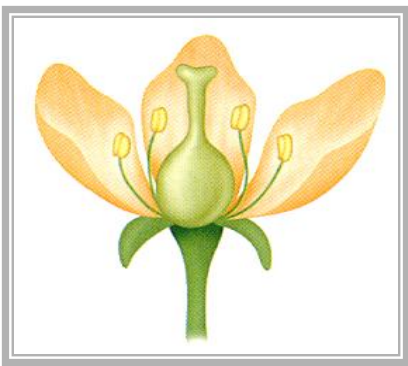
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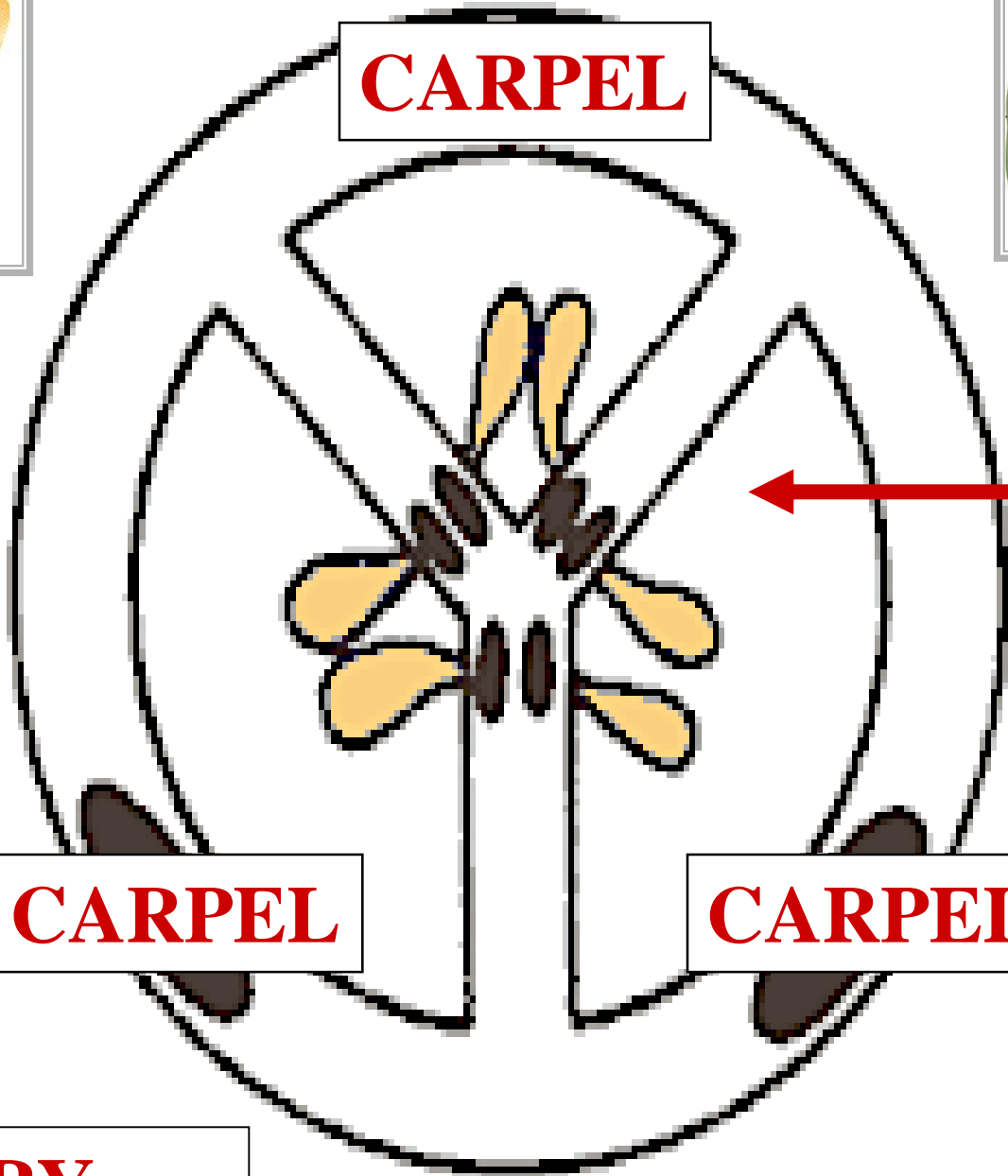
OVARY

C.S.





3



CARPEL

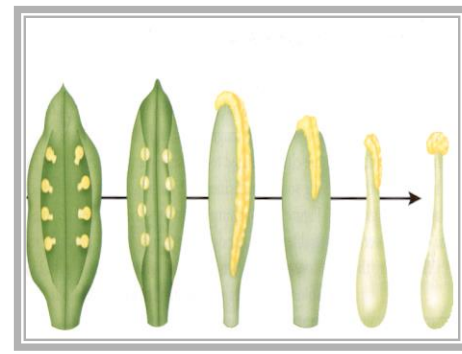
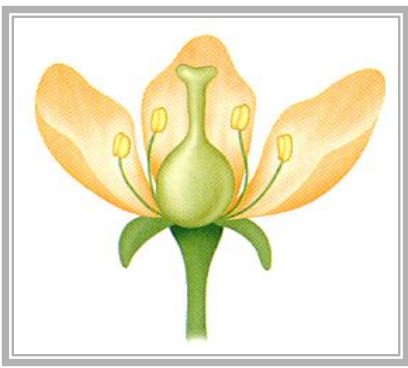
LOCULE

CARPEL

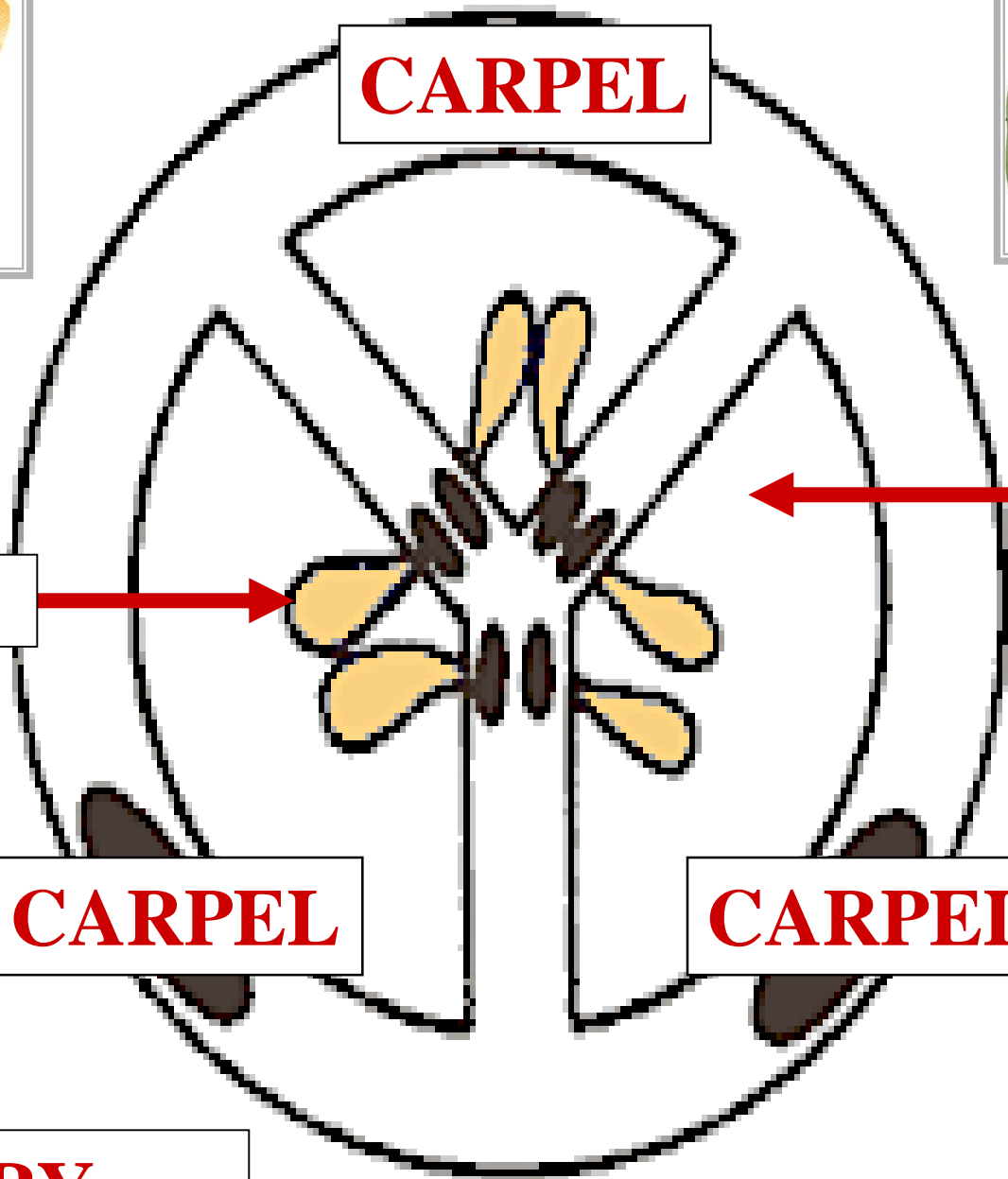
CARPEL

OVARY

C.S.



O



CARPEL

LOCULE

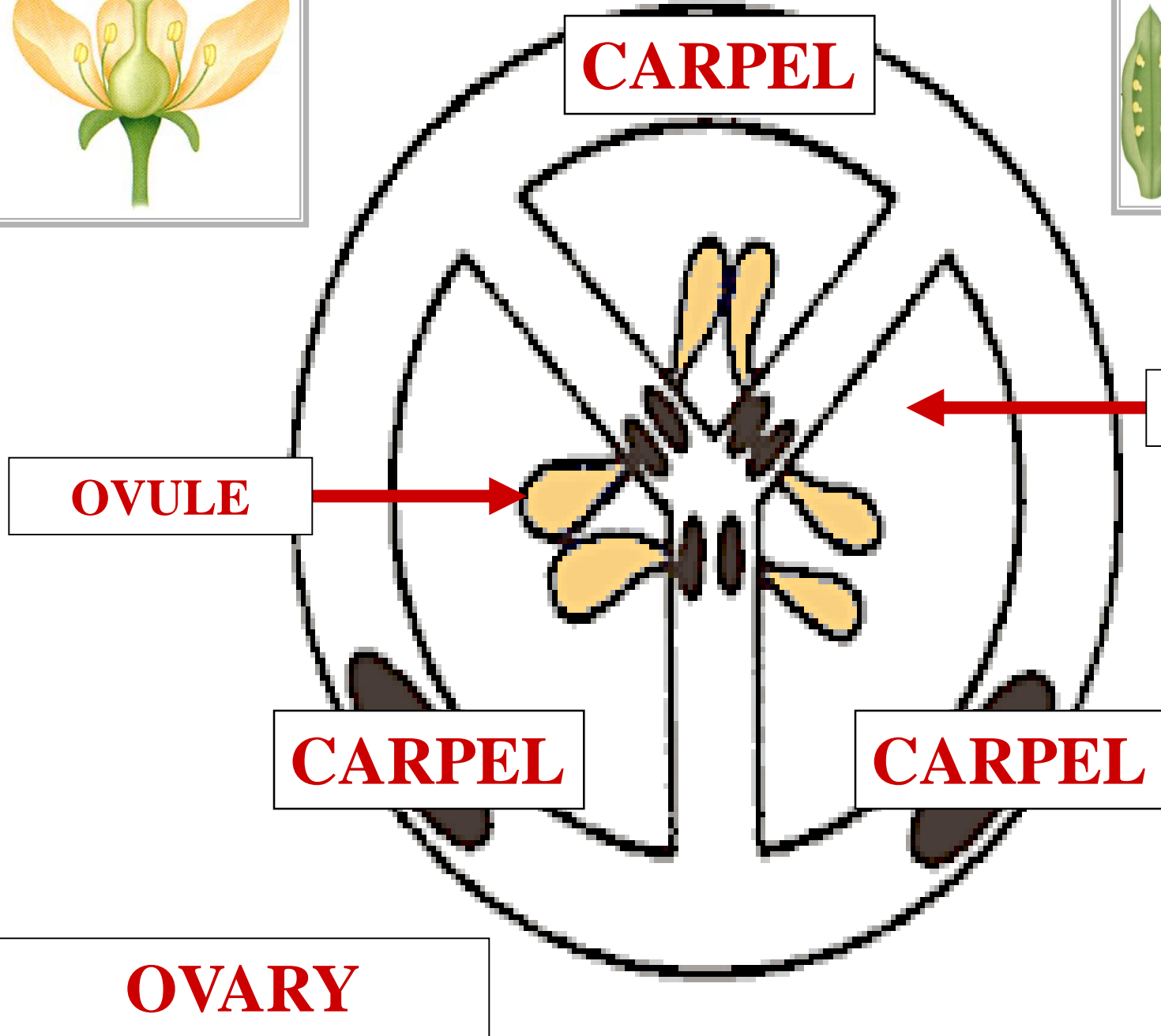
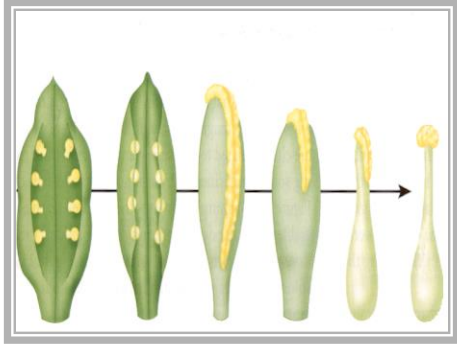
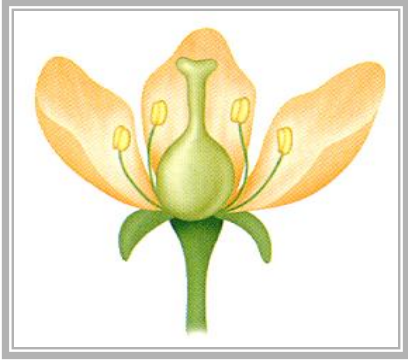
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CARPEL

CARPEL

OVARY

C.S.



CARPEL

OVULE

LOCULE

CARPEL

CARPEL

OVARY

C.S.

OVARY POSITION



HYPOGYNOUS FLOWER



1



2



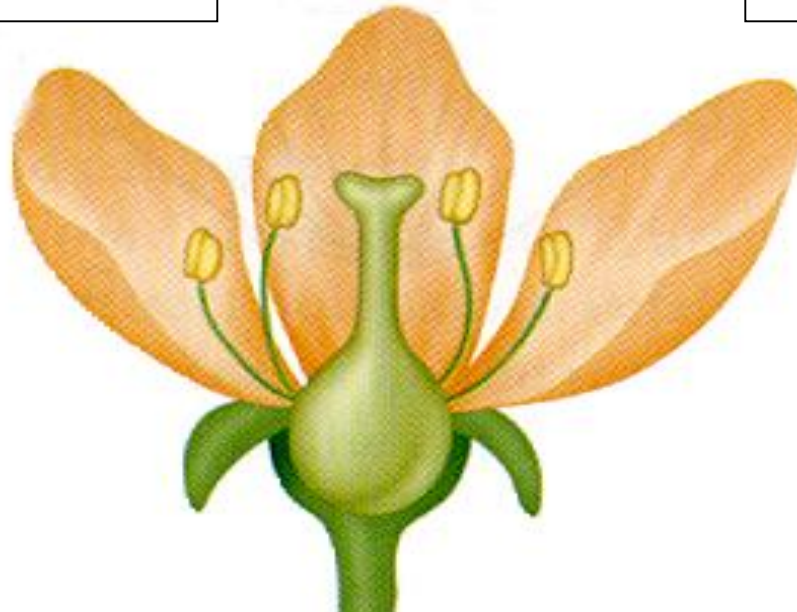
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HYPOGYNOUS



2



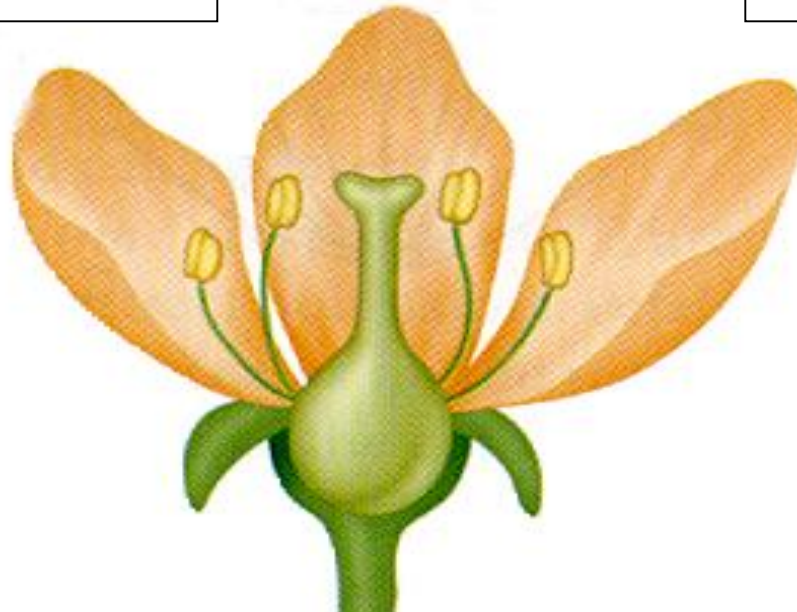
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SUPERIOR



2



3



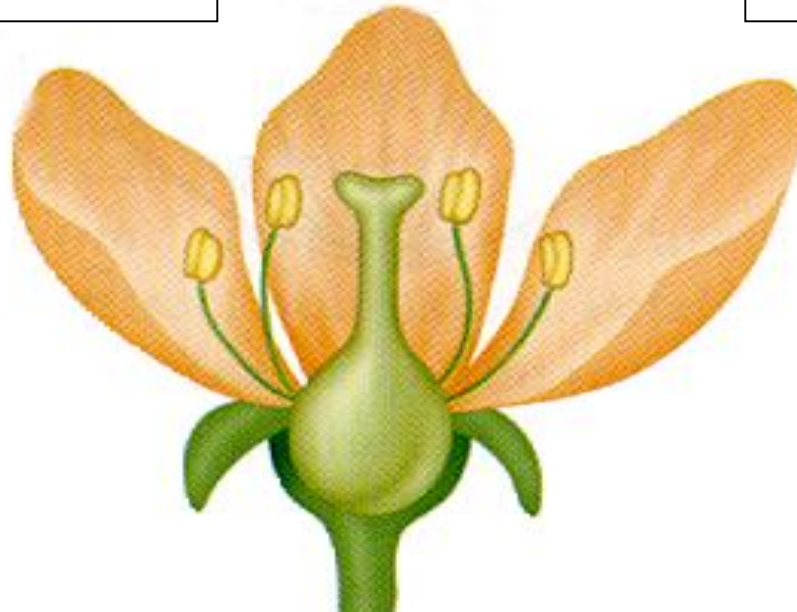
EPIGYNOUS FLOWER



HYPOGYNOUS



2



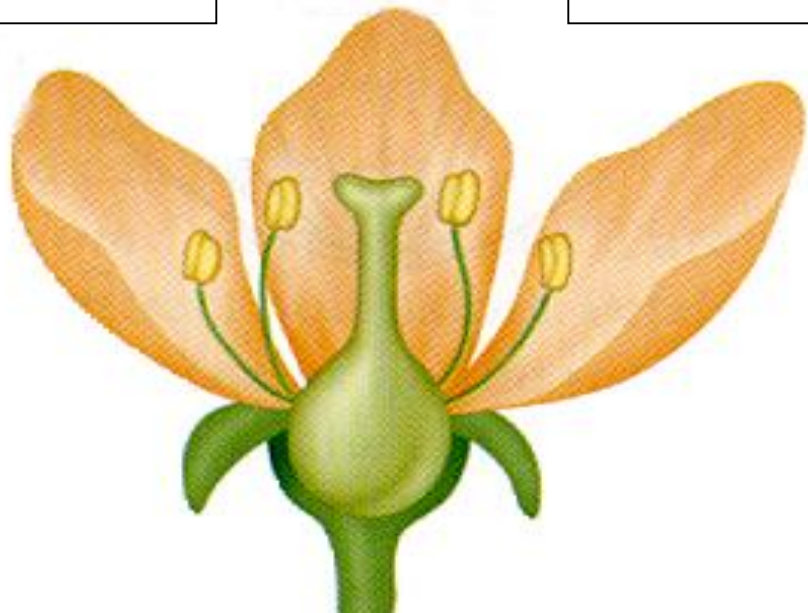
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HYPOGYNOUS



EPIGYNOUS



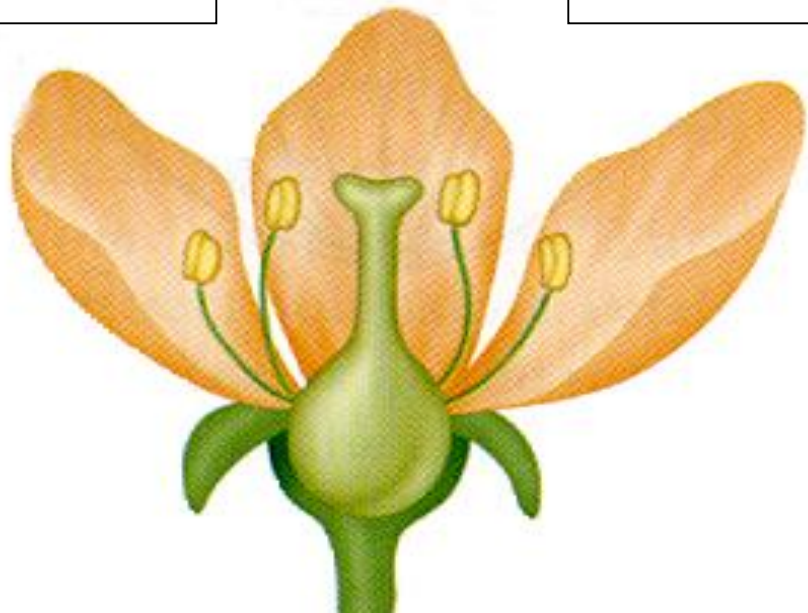
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HYPOGYNOUS



INFERIOR



3



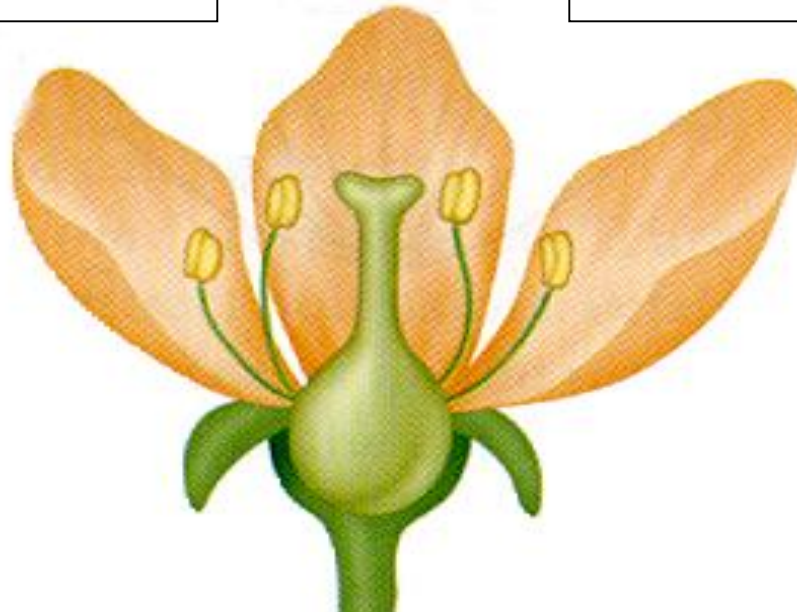
PERIGYNOUS FLOWER



HYPOGYNOUS



EPIGYNOUS



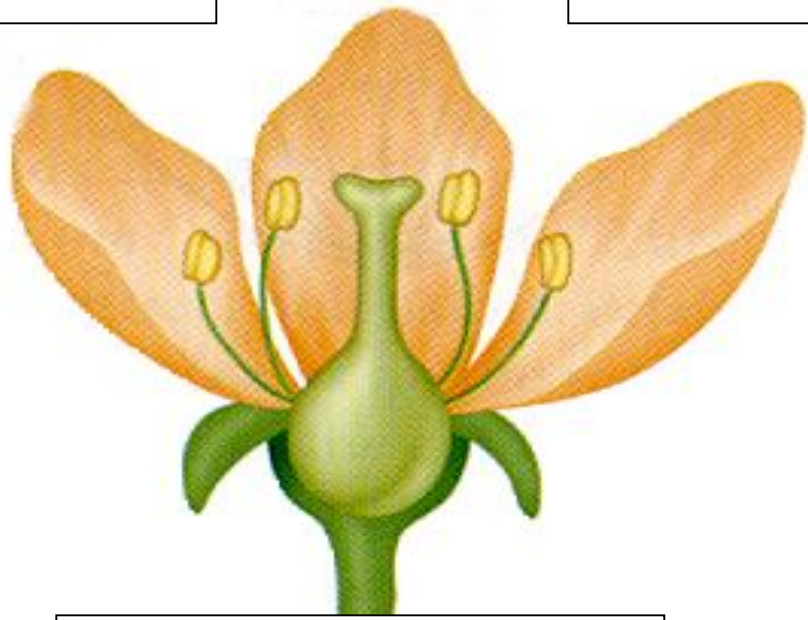
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HYPOGYNOUS



EPIGYNOUS



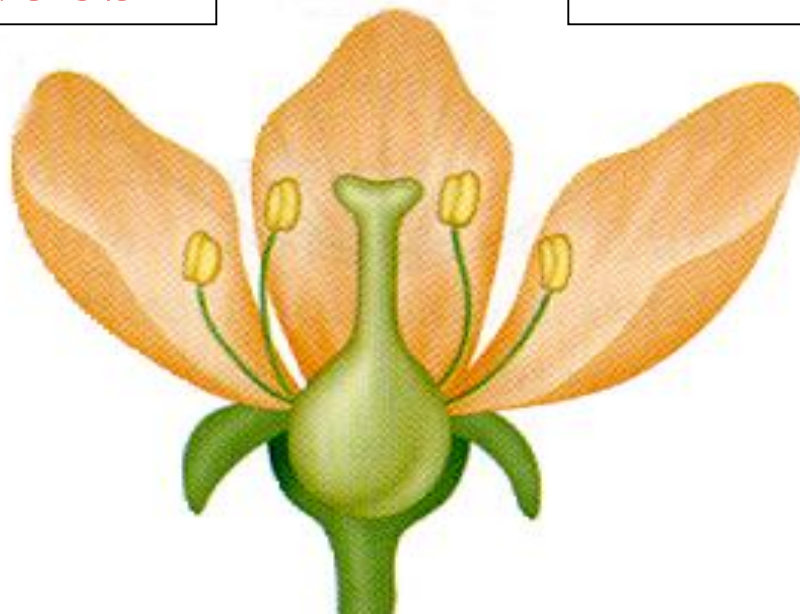
PERIGYNOUS



HYPOGYNOUS



EPIGYNOUS



SUPERIOR

GENERAL FLOWER TERMS

**COMPLETE
FLOWER
VS
INCOMPLETE
FLOWER**



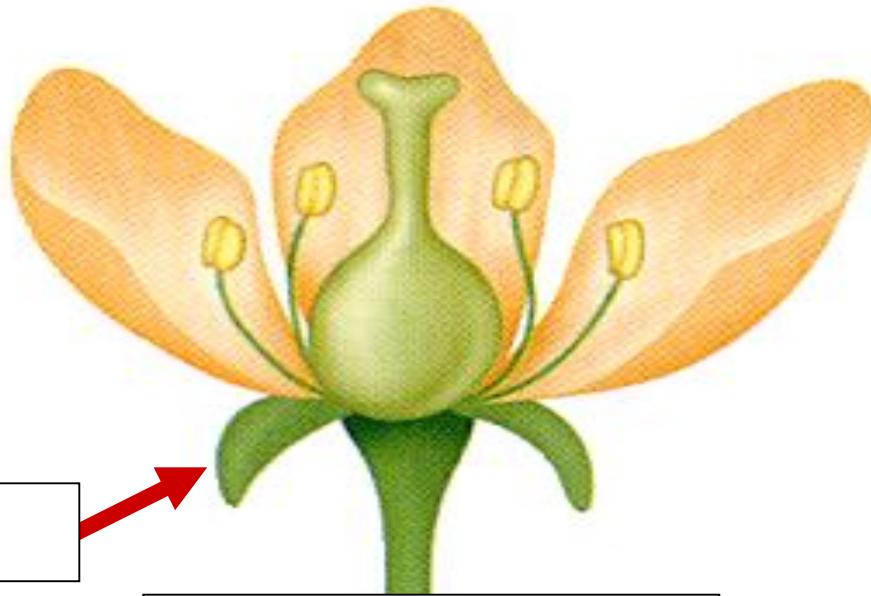
COMPLETE FLOWER



COMPLETE



INCOMPLETE



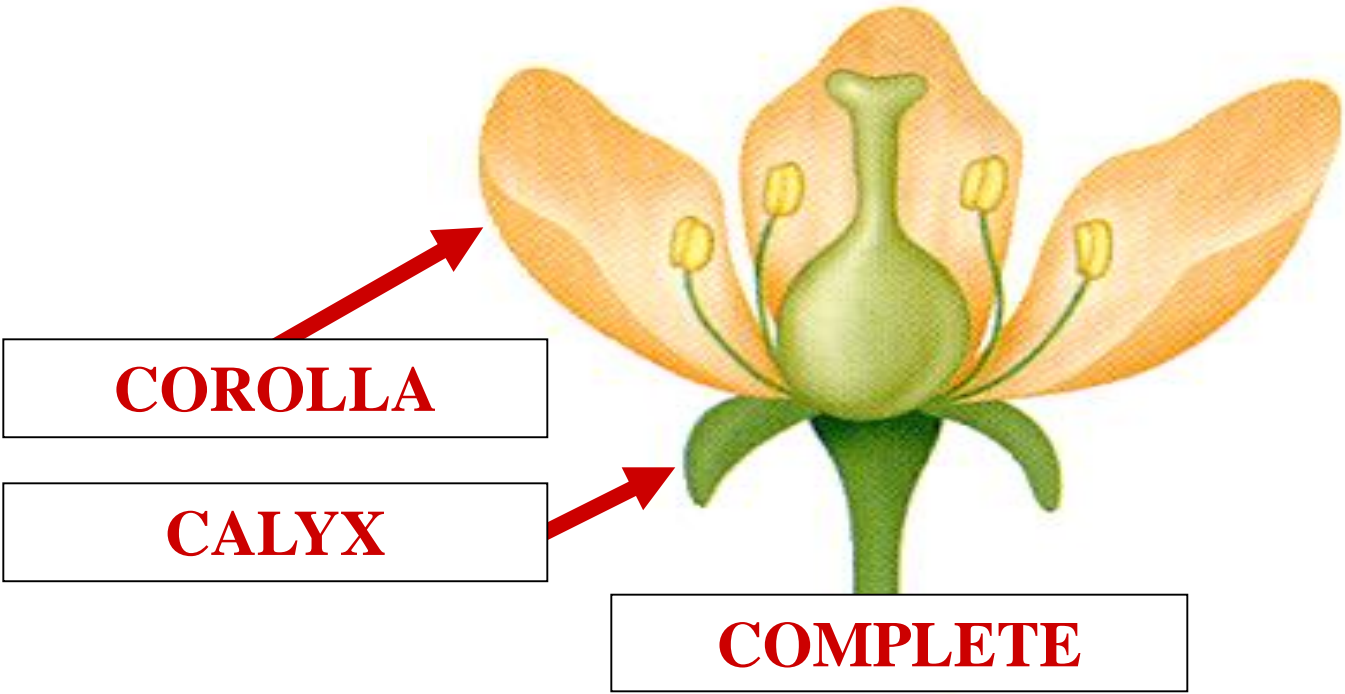
CALYX

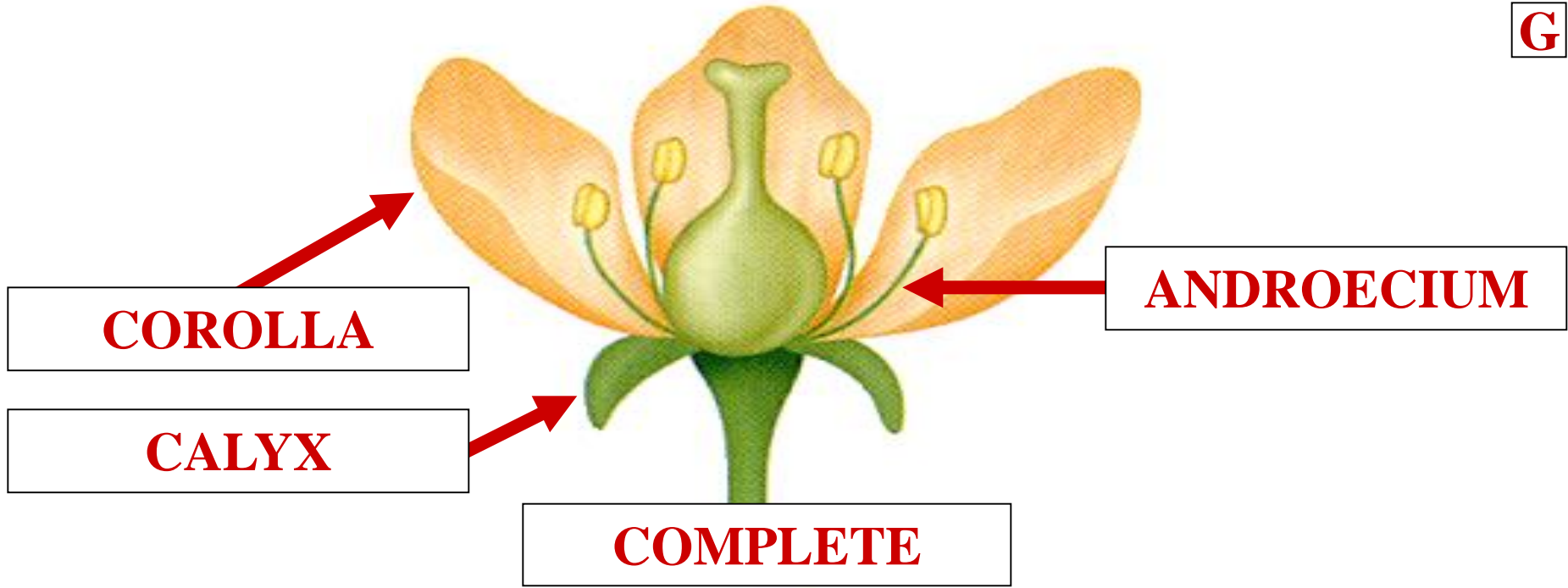


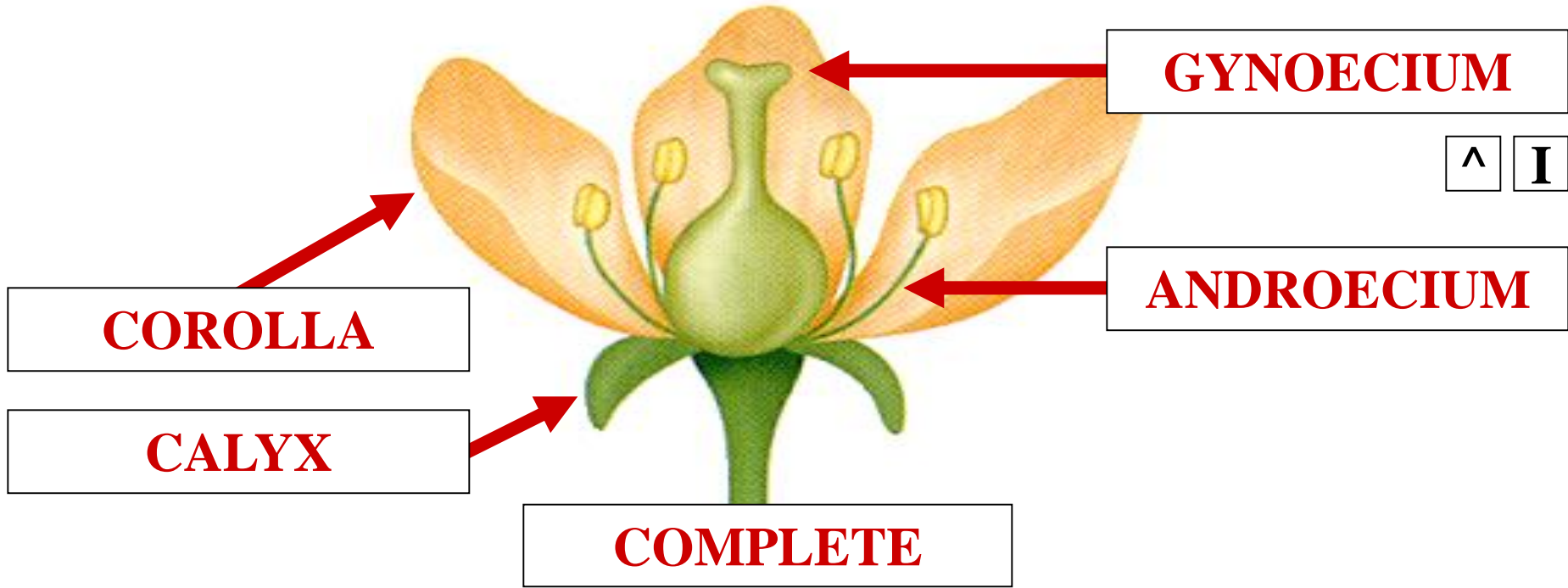
COMPLETE



INCOMPLETE





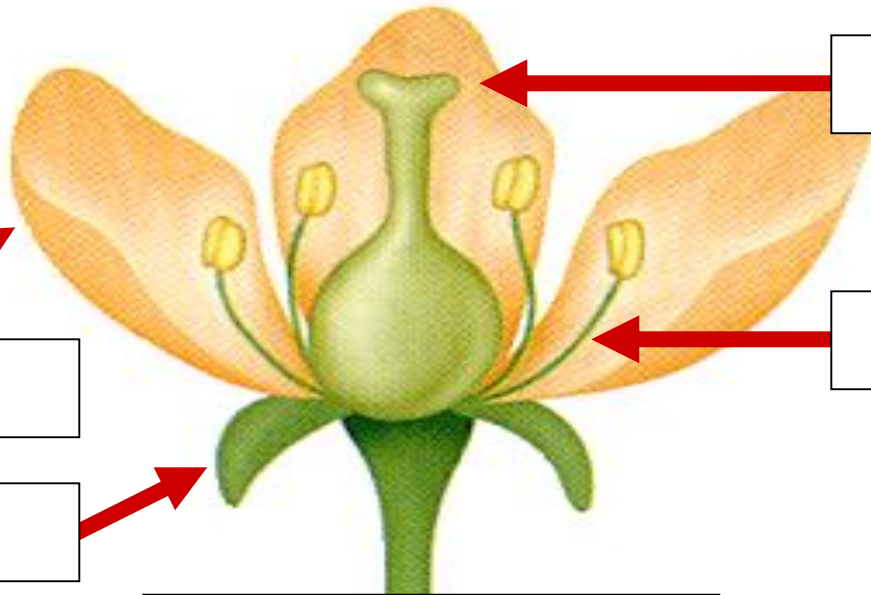




INCOMPLETE FLOWER



A



GYNOECIUM

ANDROECIUM

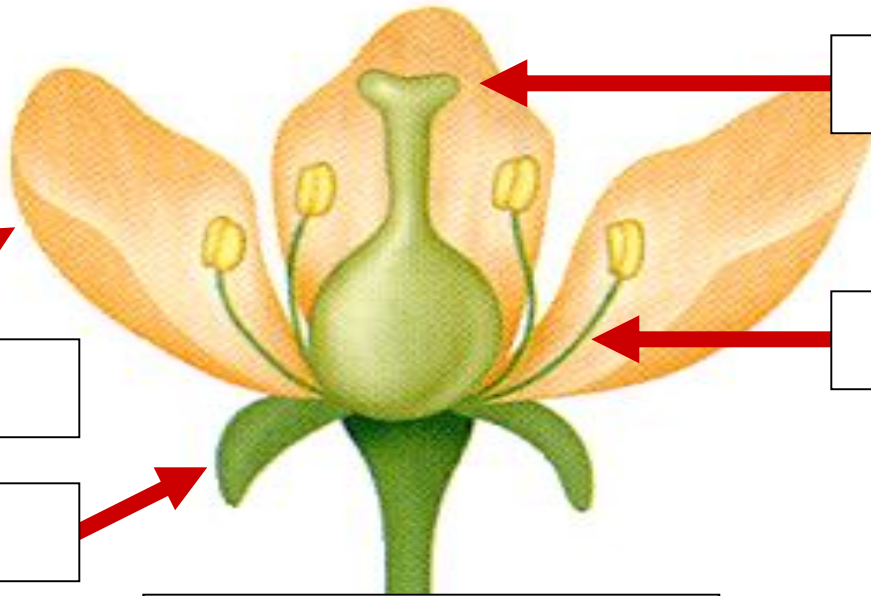
COROLLA

CALYX

COMPLETE



INCOMPLETE



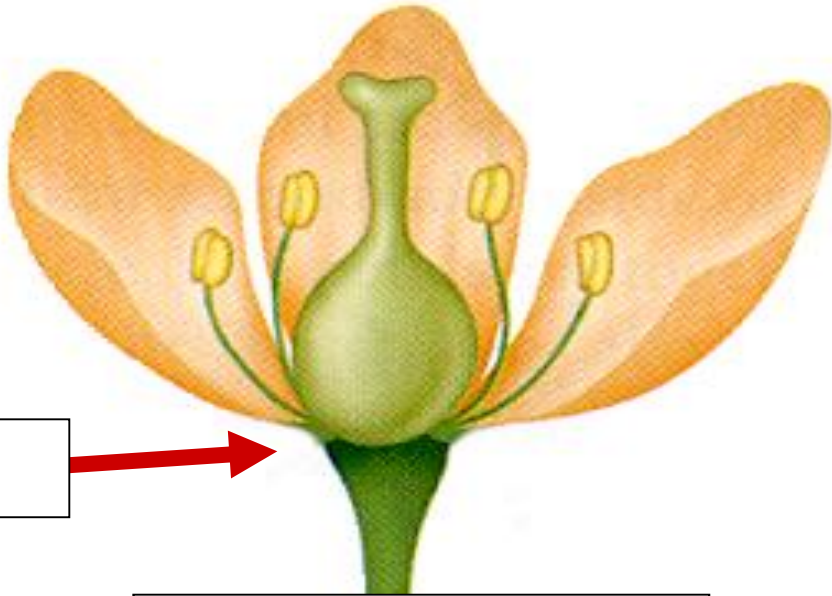
COROLLA

CALYX

GYNOECIUM

ANDROECIUM

COMPLETE

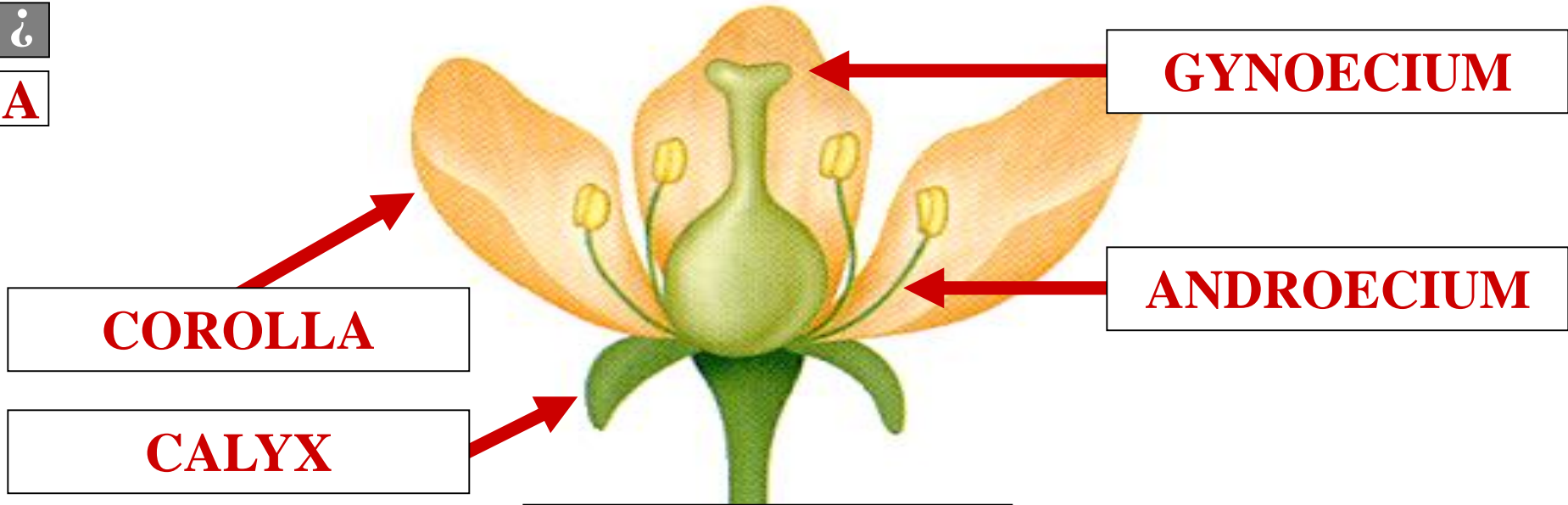


ASEPALOUS

INCOMPLETE



A



GYNOECIUM

ANDROECIUM

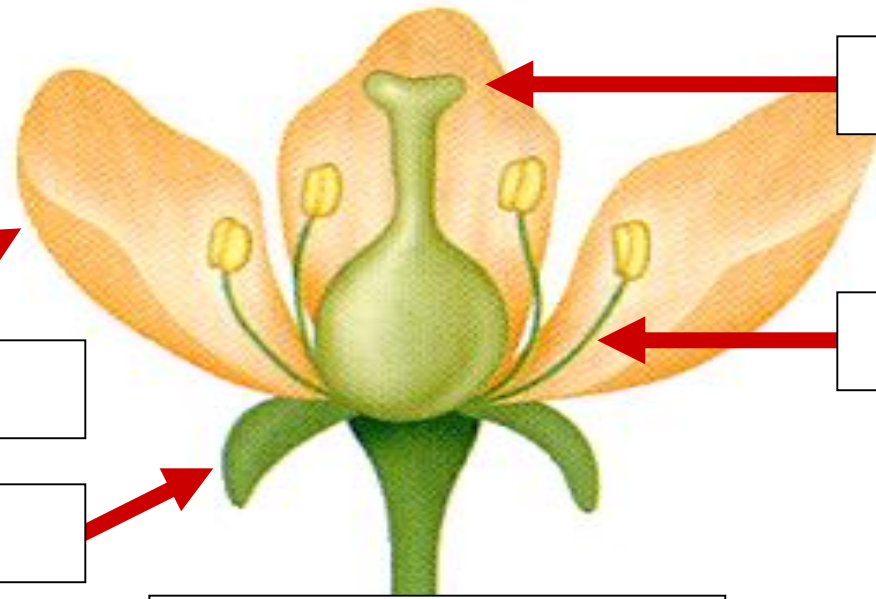
COROLLA

CALYX

COMPLETE



INCOMPLETE



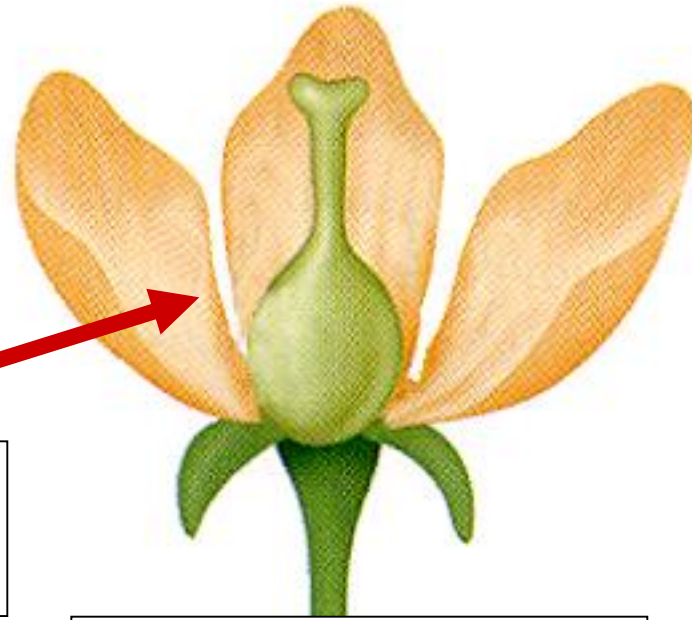
GYNOECIUM

ANDROECIUM

COROLLA

CALYX

COMPLETE



**ANDROECIUM
ABSENT**

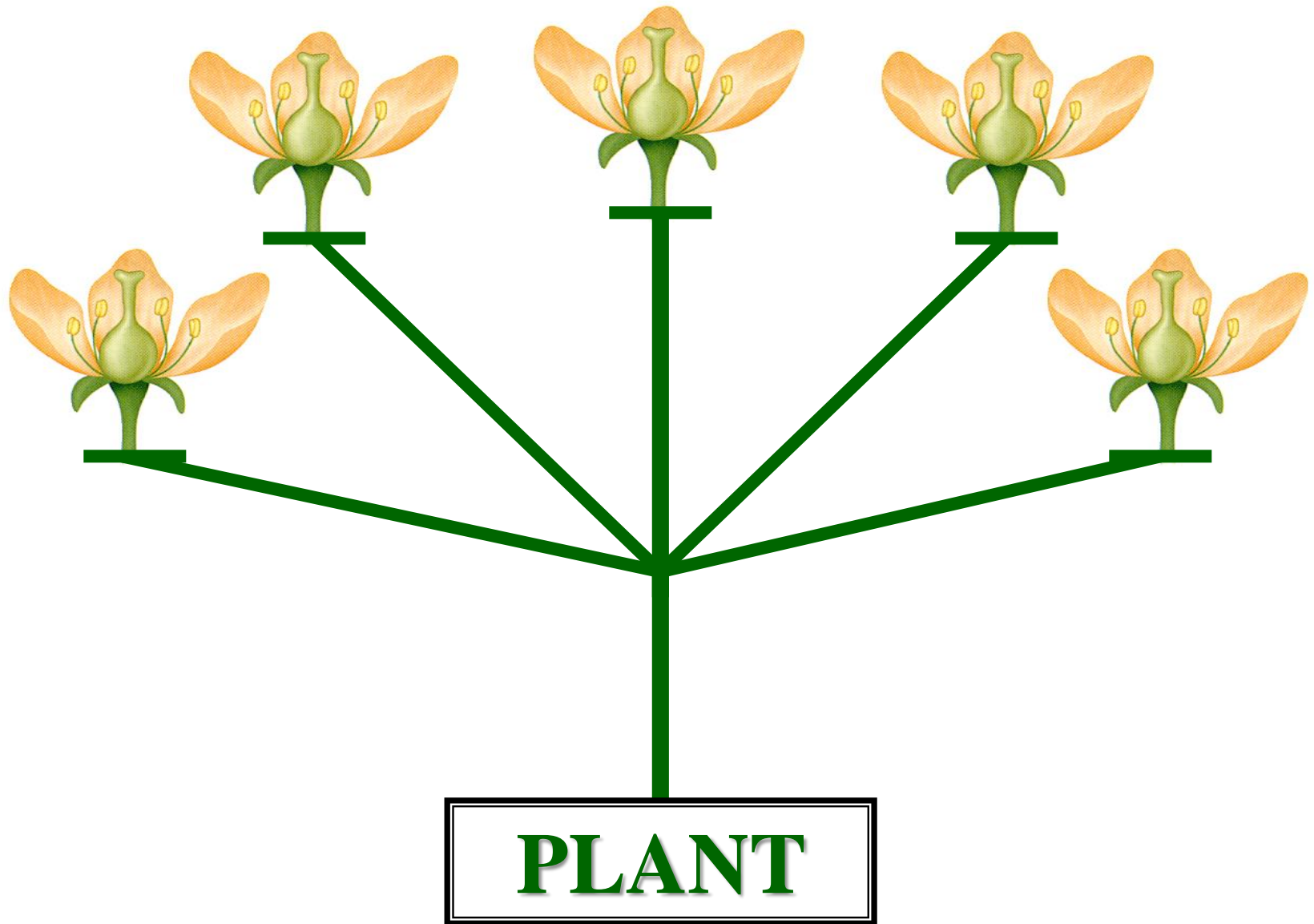
INCOMPLETE

SEX CONDITION

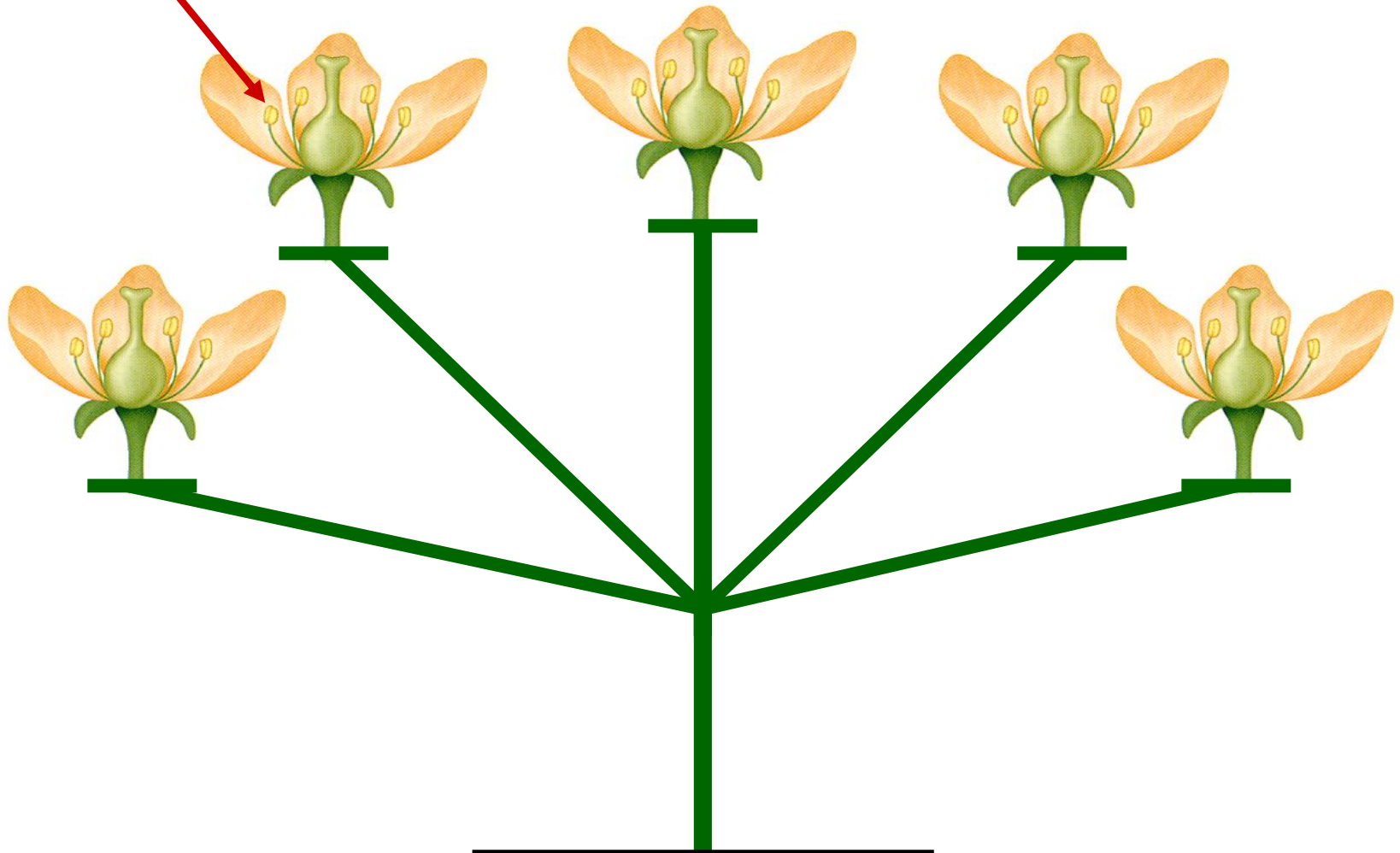
**PERFECT
FLOWER
VS
IMPERFECT
FLOWER**



PERFECT FLOWER



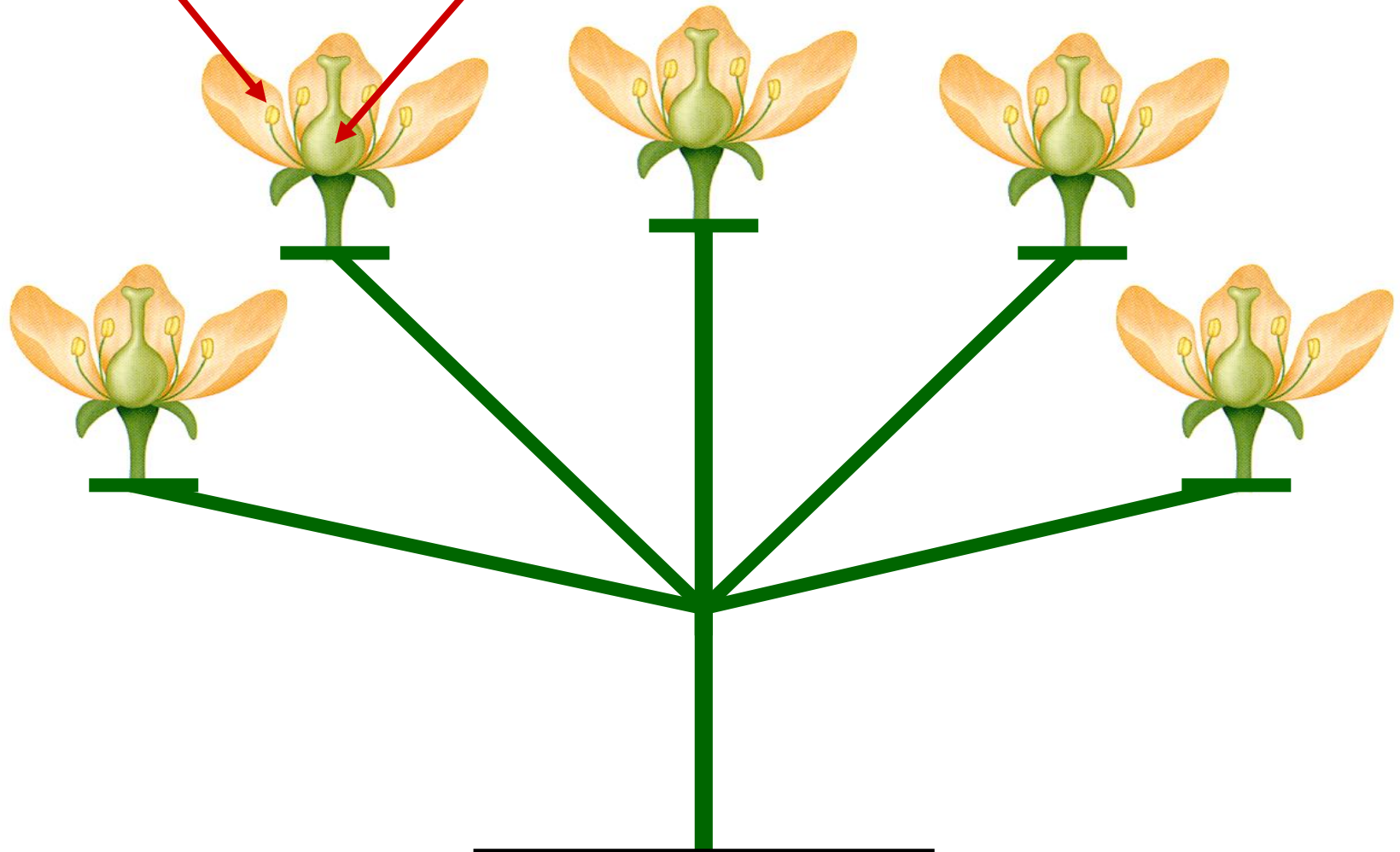
ANDROECIUM



PLANT

ANDROECIUM

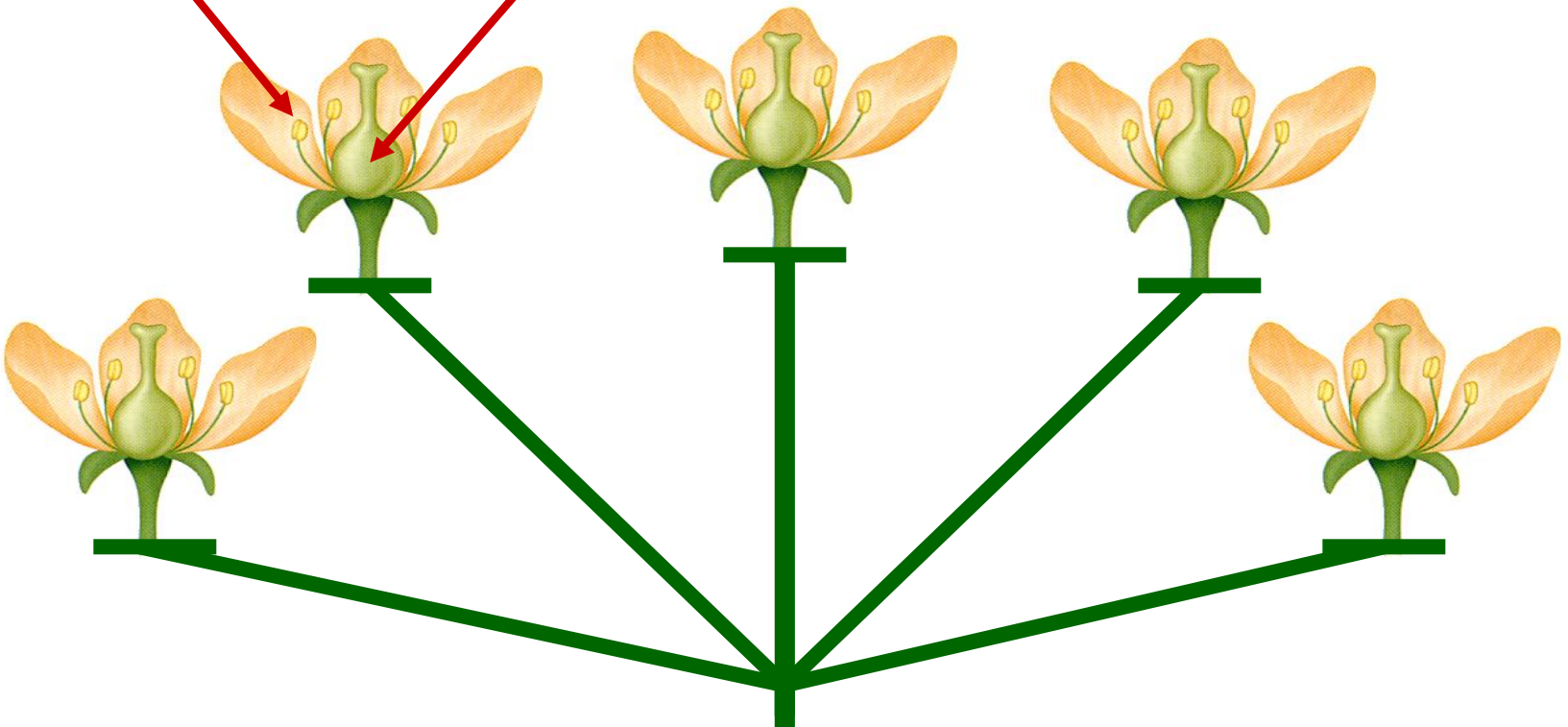
GYNOECIUM



PLANT

ANDROECIUM

GYNOECIUM

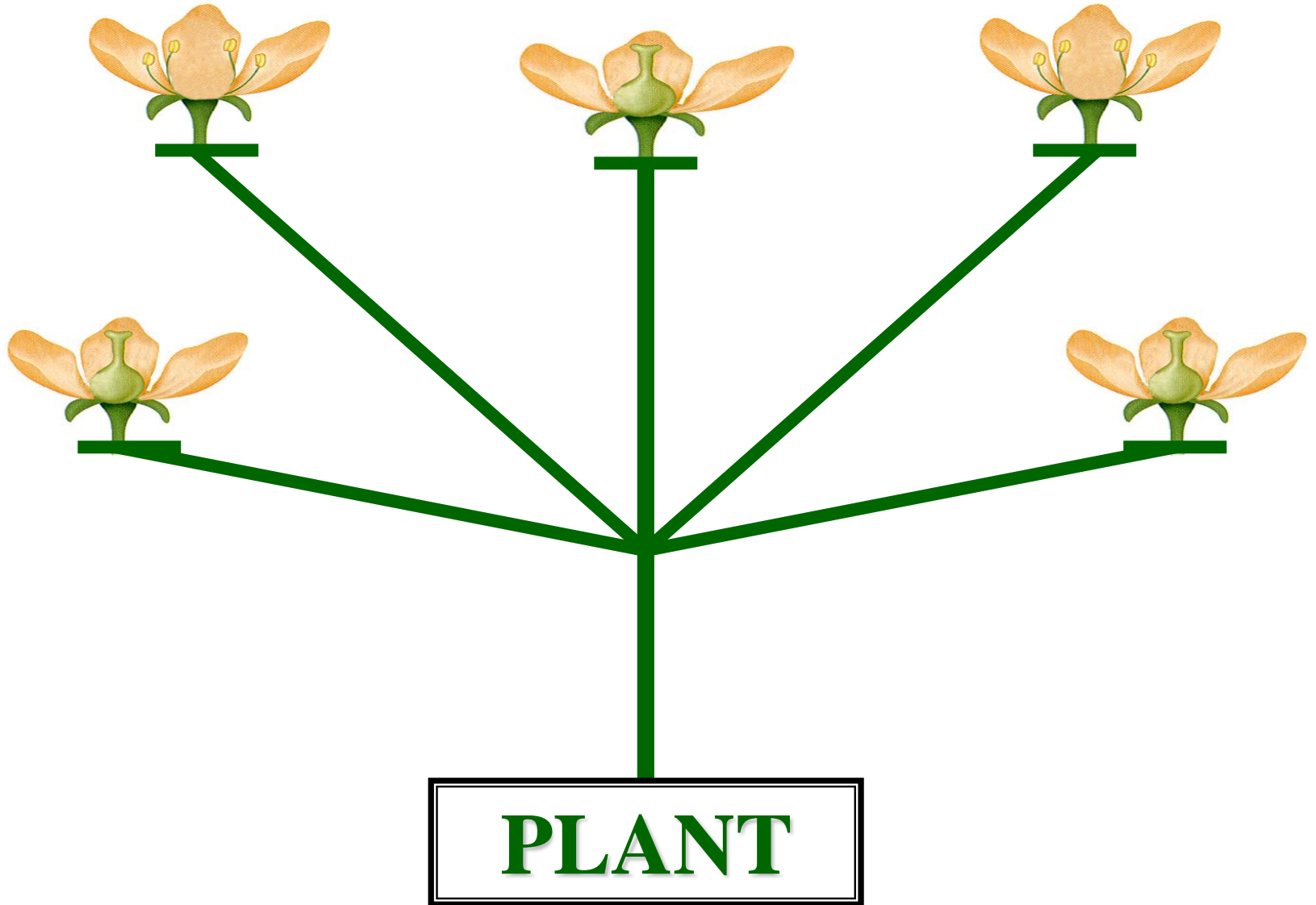


**PERFECT
FLOWERS**

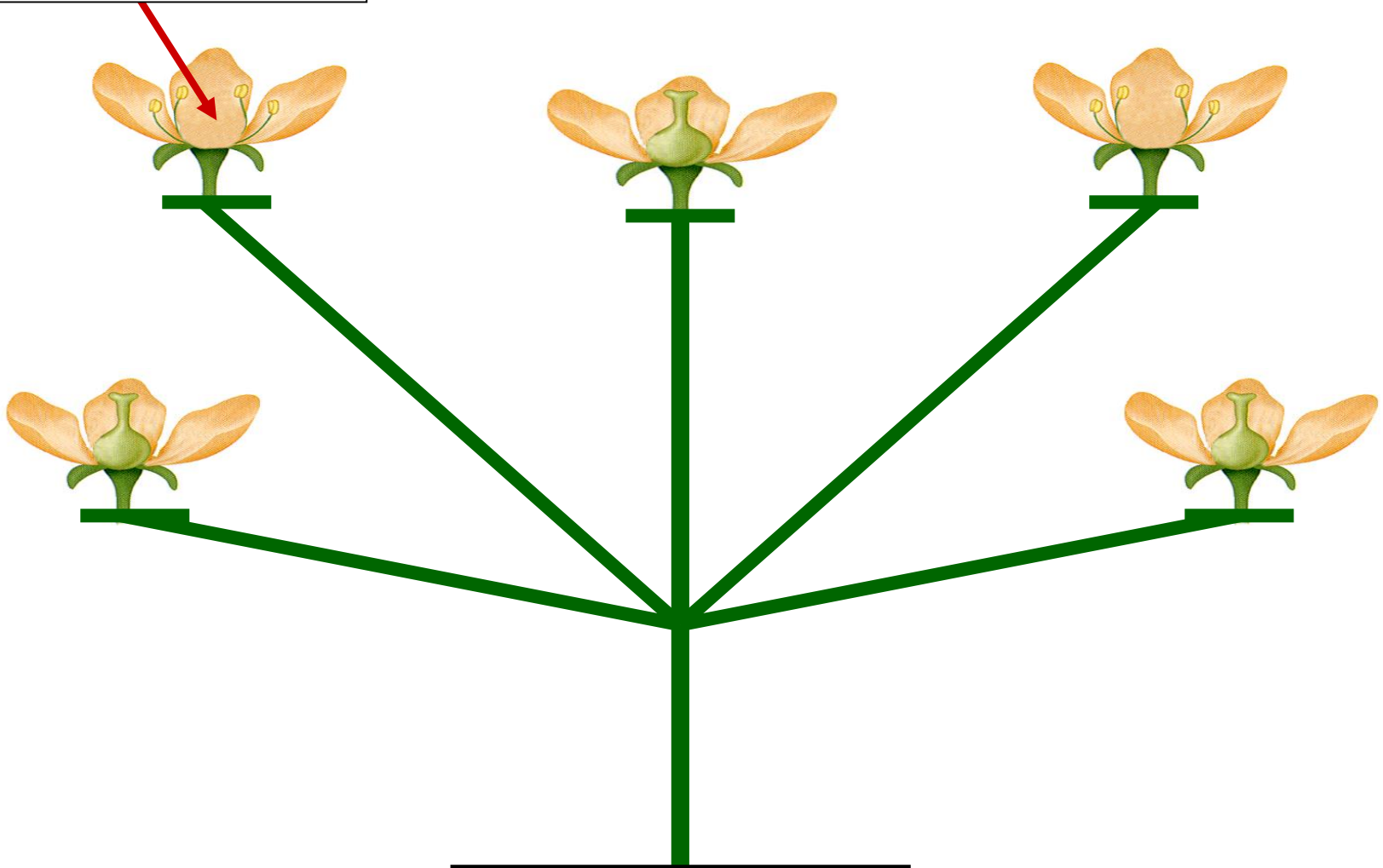
PLANT



IMPERFECT FLOWER



**GYNOECIUM
ABSENT**



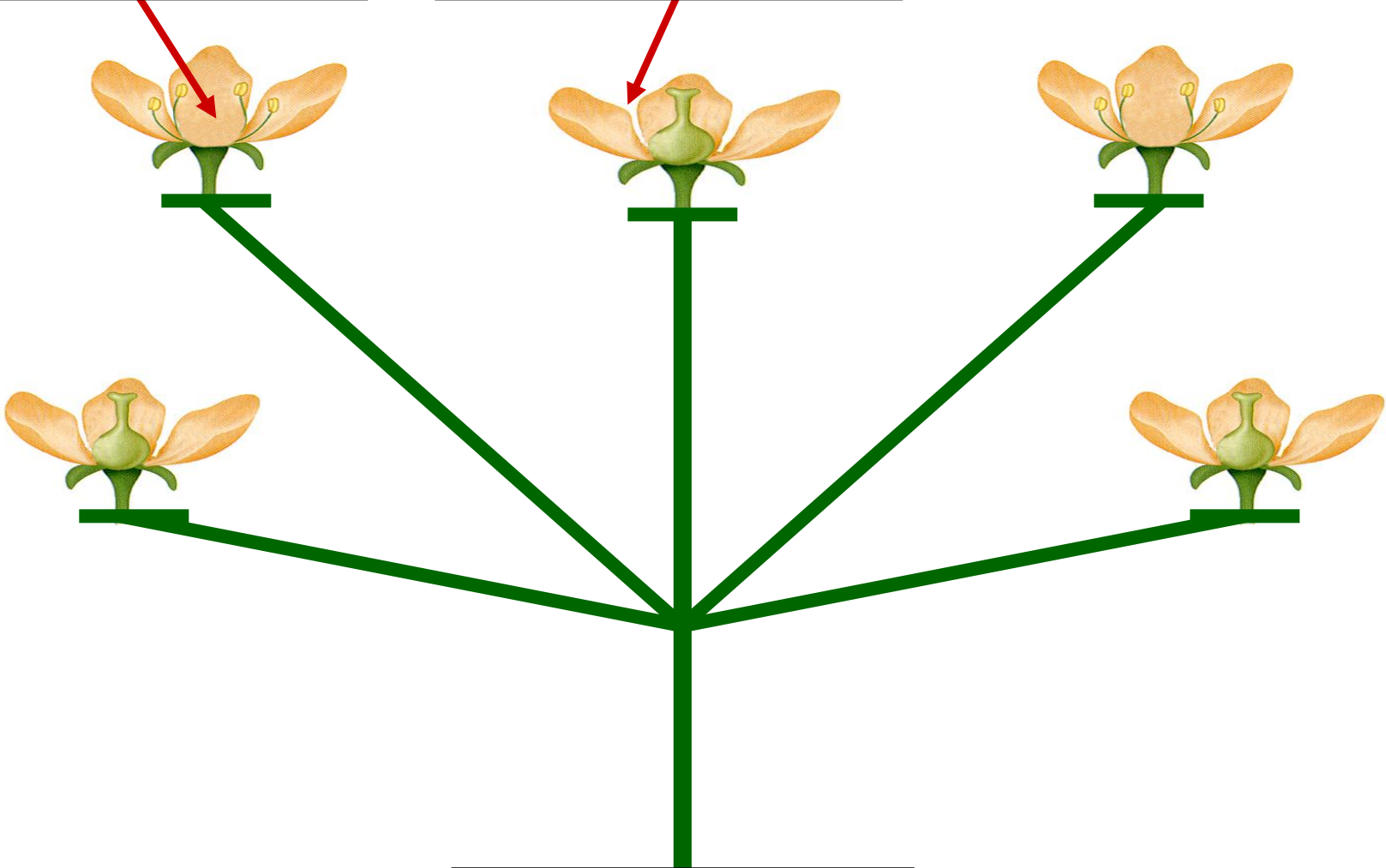
PLANT

IF

+

**GYNOECIUM
ABSENT**

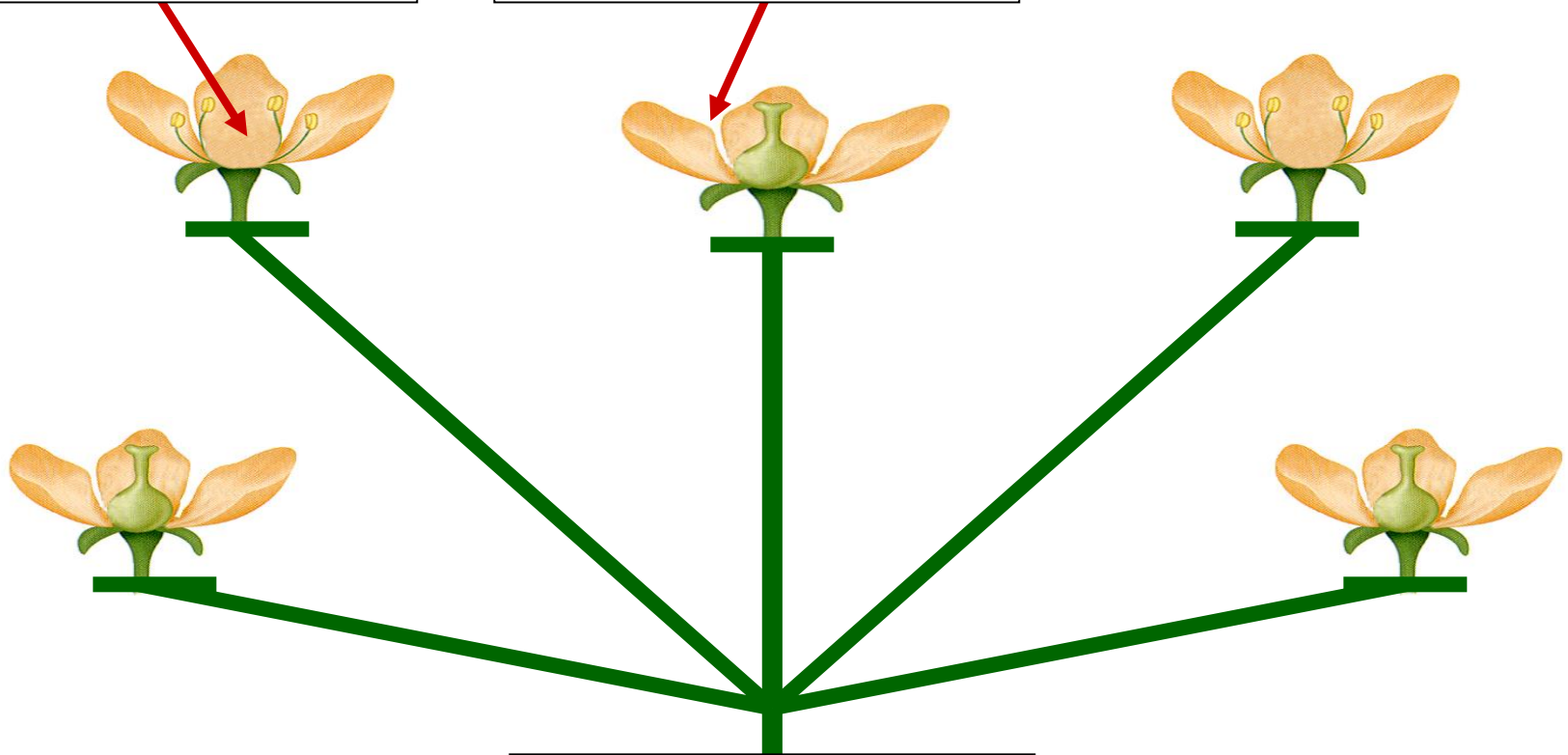
**ANDROECIUM
ABSENT**



PLANT

**GYNOECIUM
ABSENT**

**ANDROECIUM
ABSENT**



**IMPERFECT
FLOWERS**

PLANT

MONOECIOUS

VS

DIOECIOUS

VS

POLYGAMOUS

MONOECECIOUS PLANT

DIOECIOUS PLANT

POLYGAMOUS PLANT

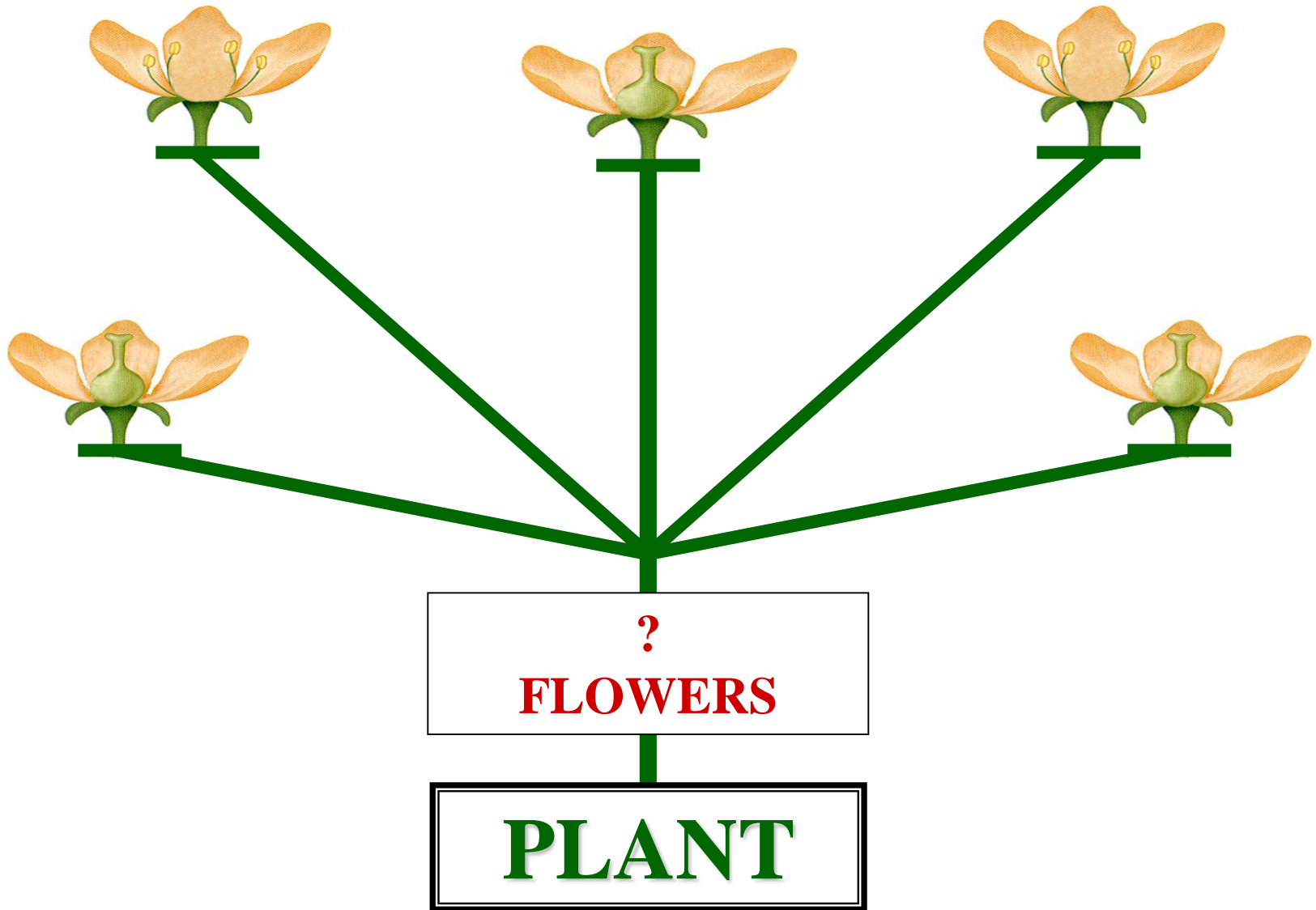


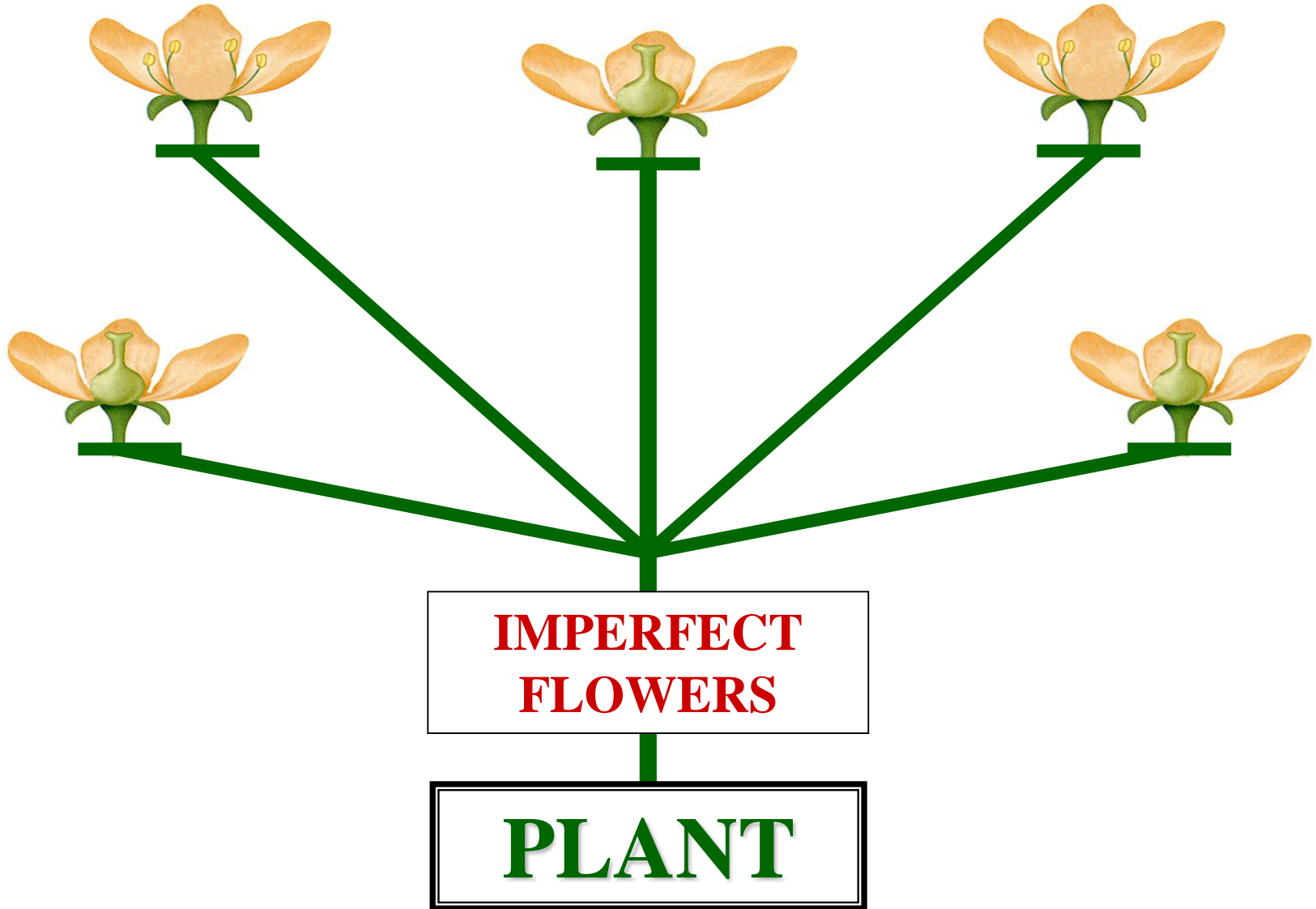
MONOECIOUS

DIOECIOUS

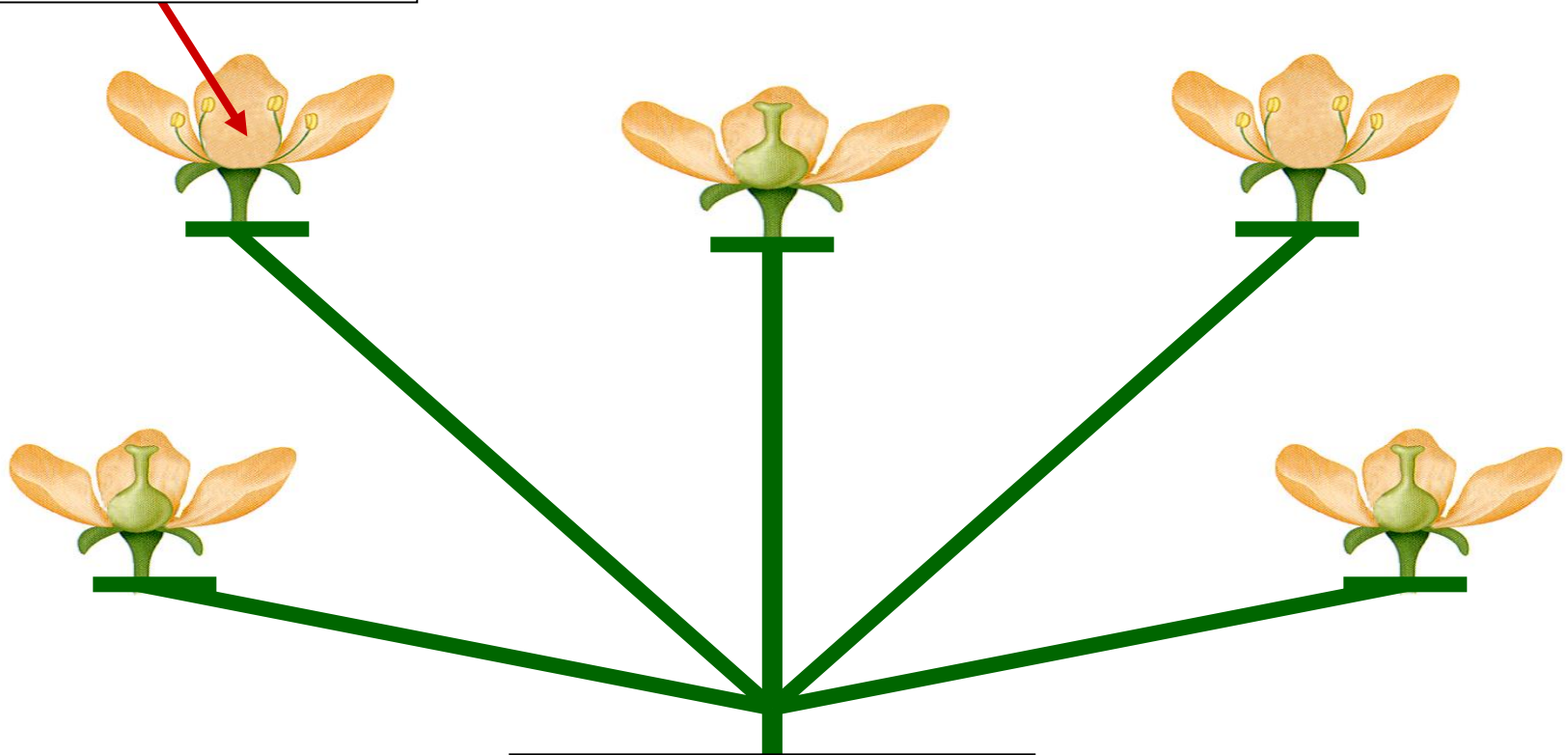
POLYGAMOUS

APPLIED





**STAMINATE
FLOWER**

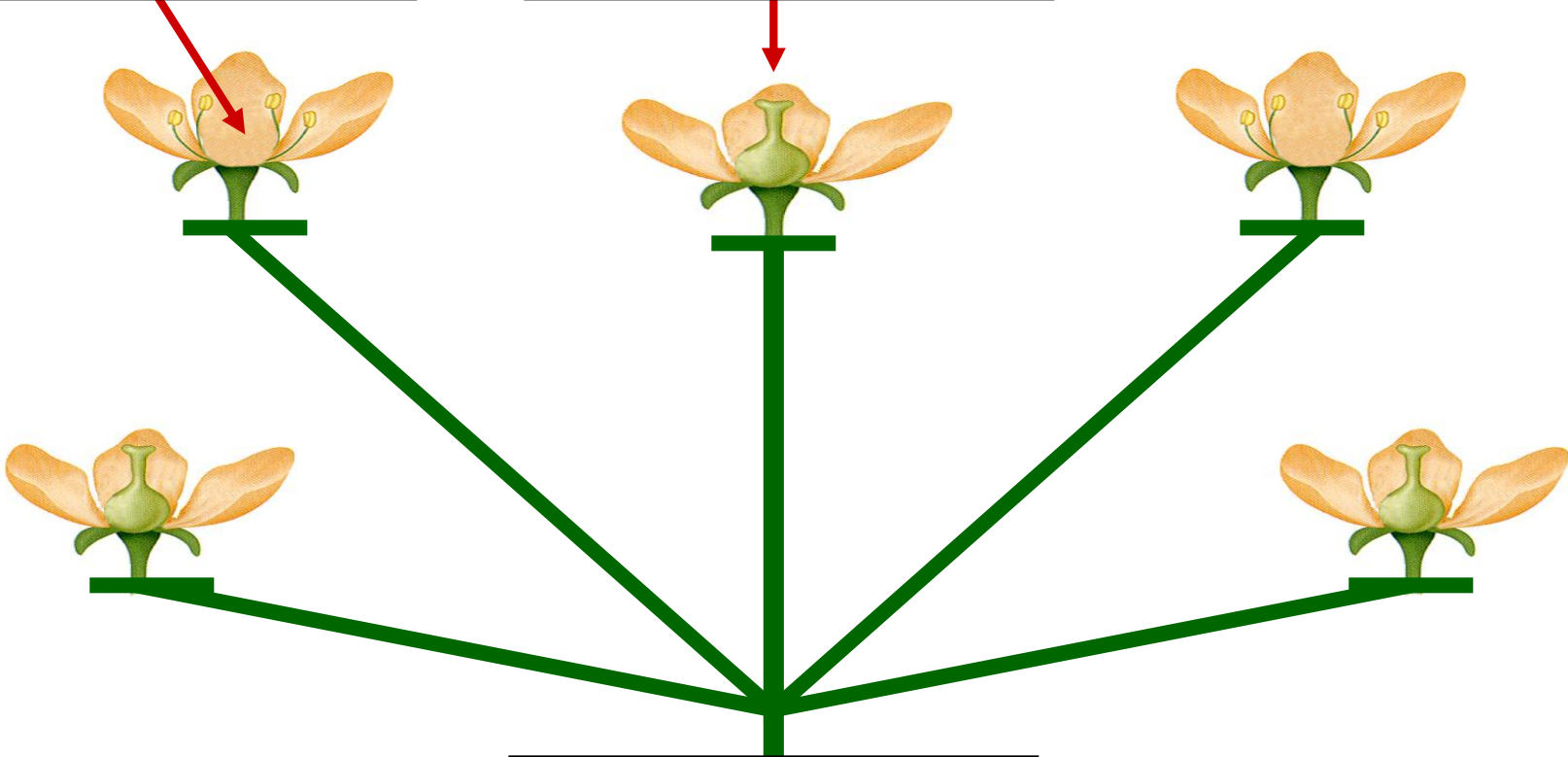


**IMPERFECT
FLOWERS**

PLANT

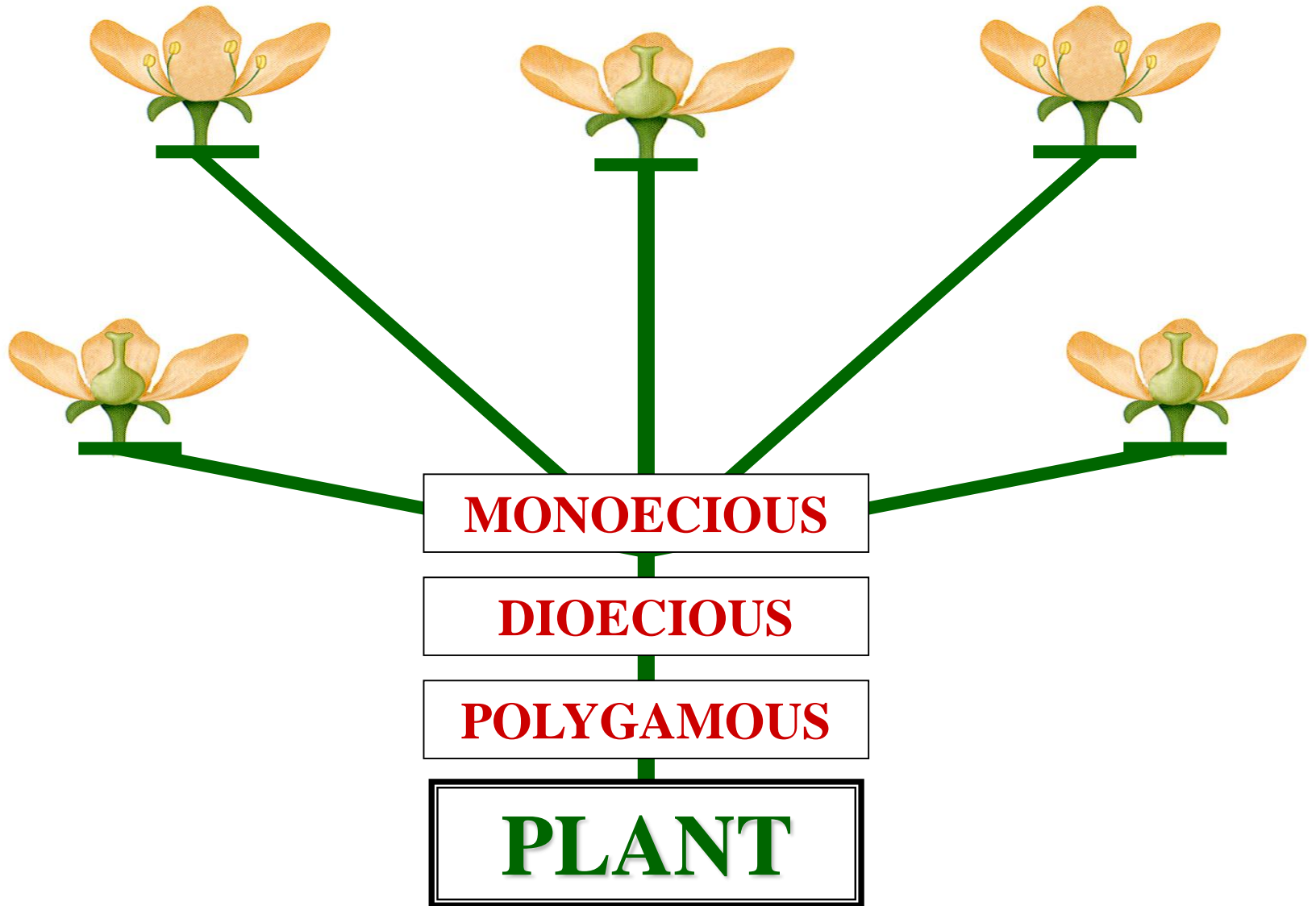
**STAMINATE
FLOWER**

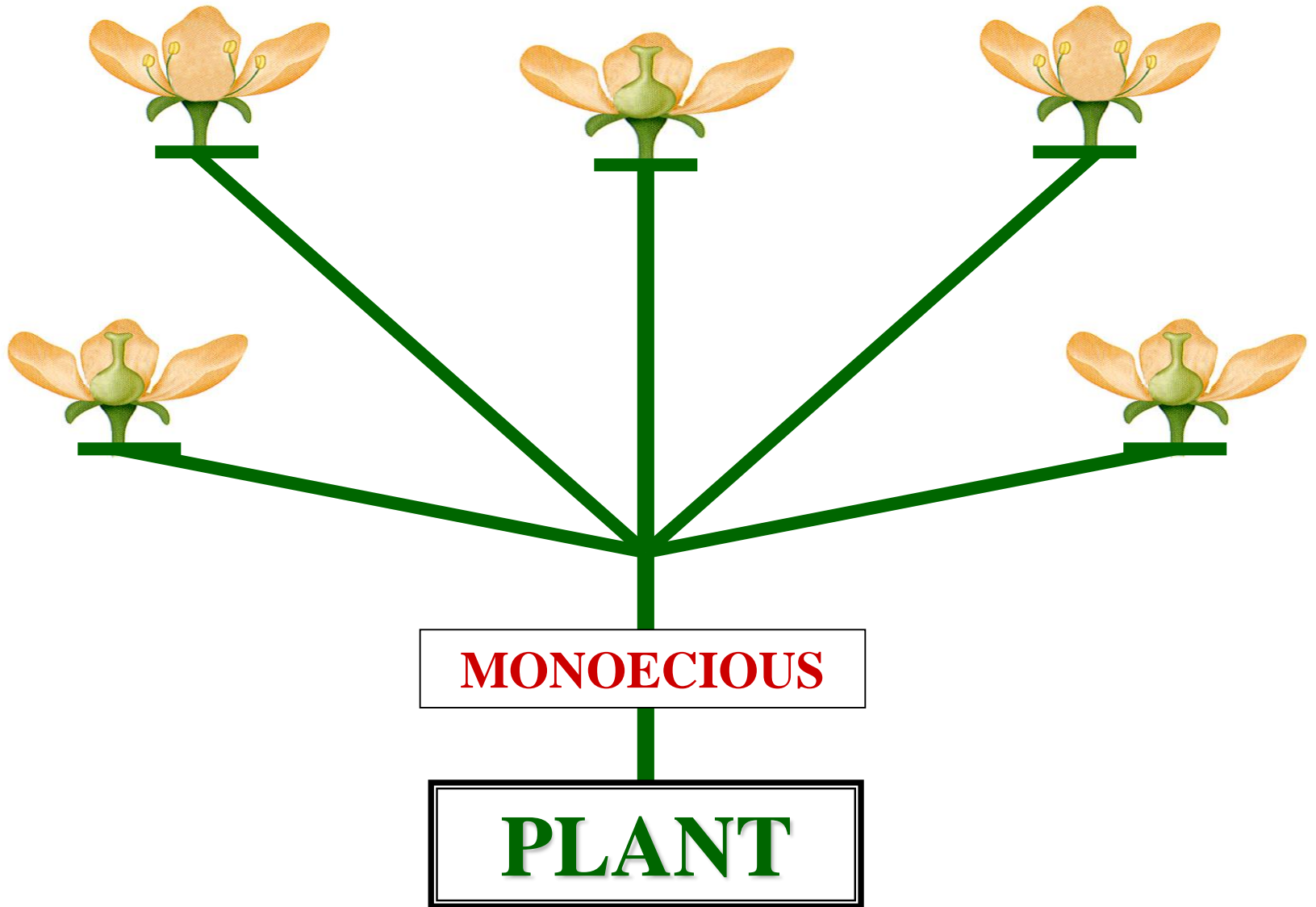
**PISTILATE
FLOWER**



**IMPERFECT
FLOWERS**

PLANT





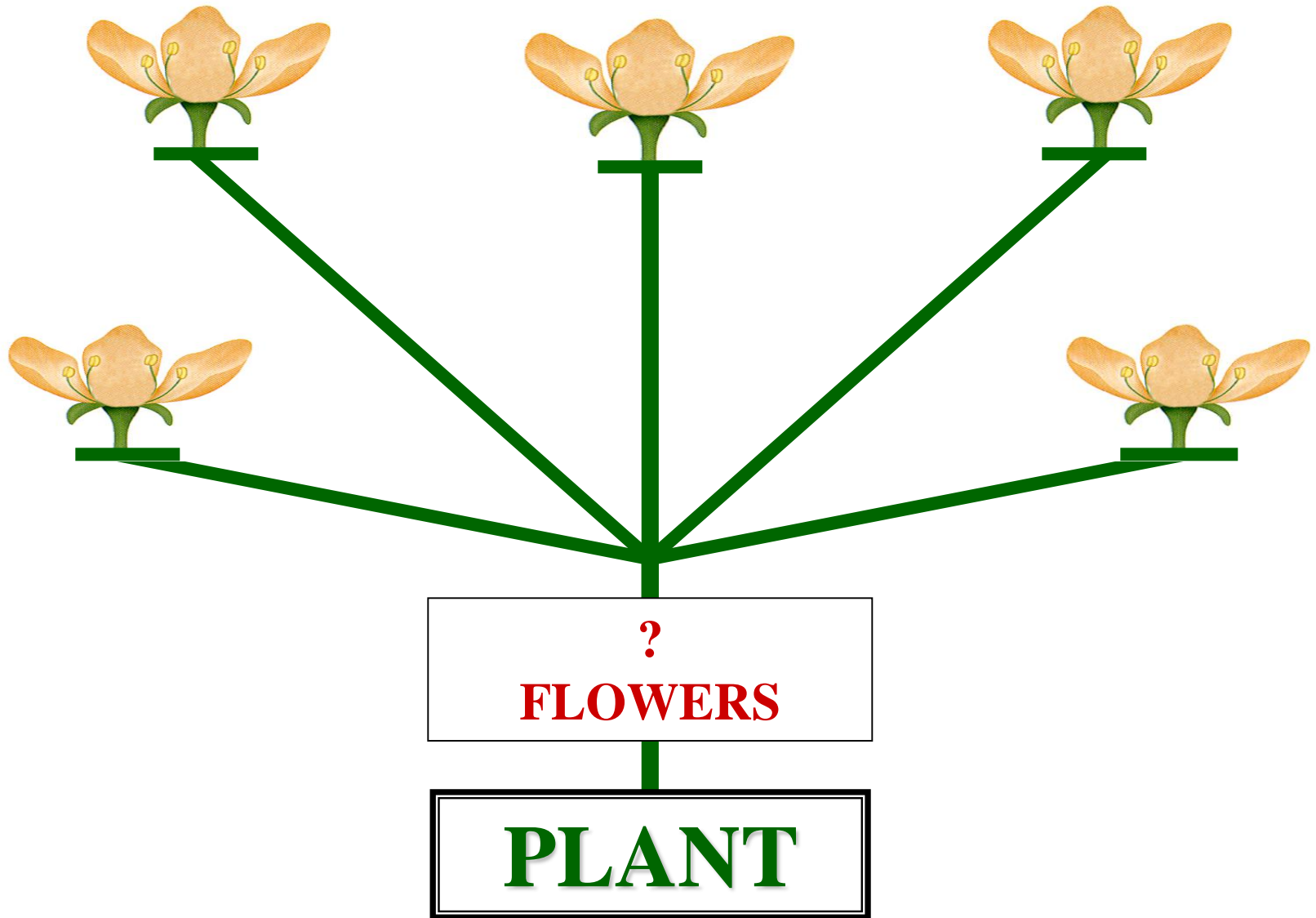


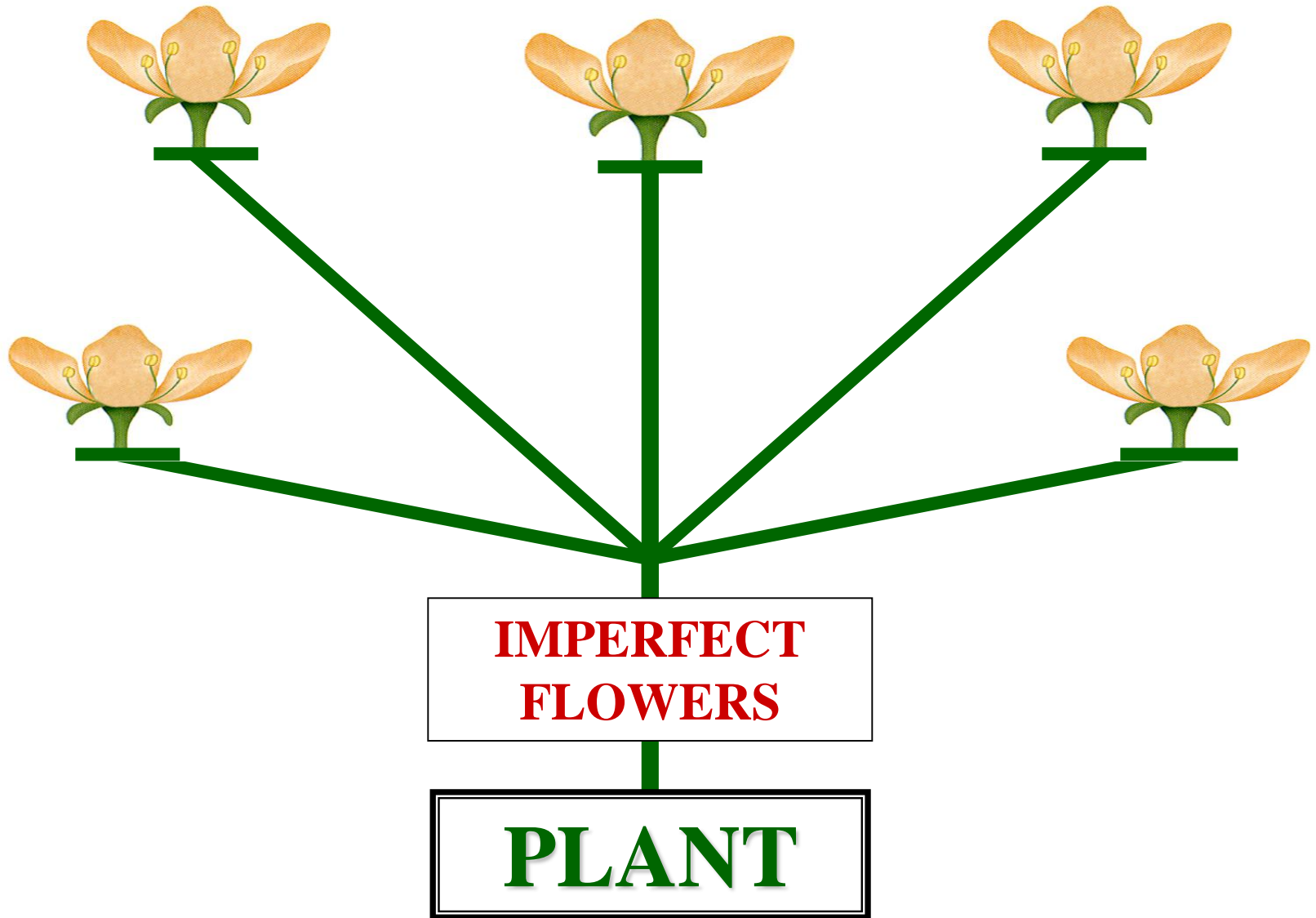
MONOECIOUS

DIOECIOUS

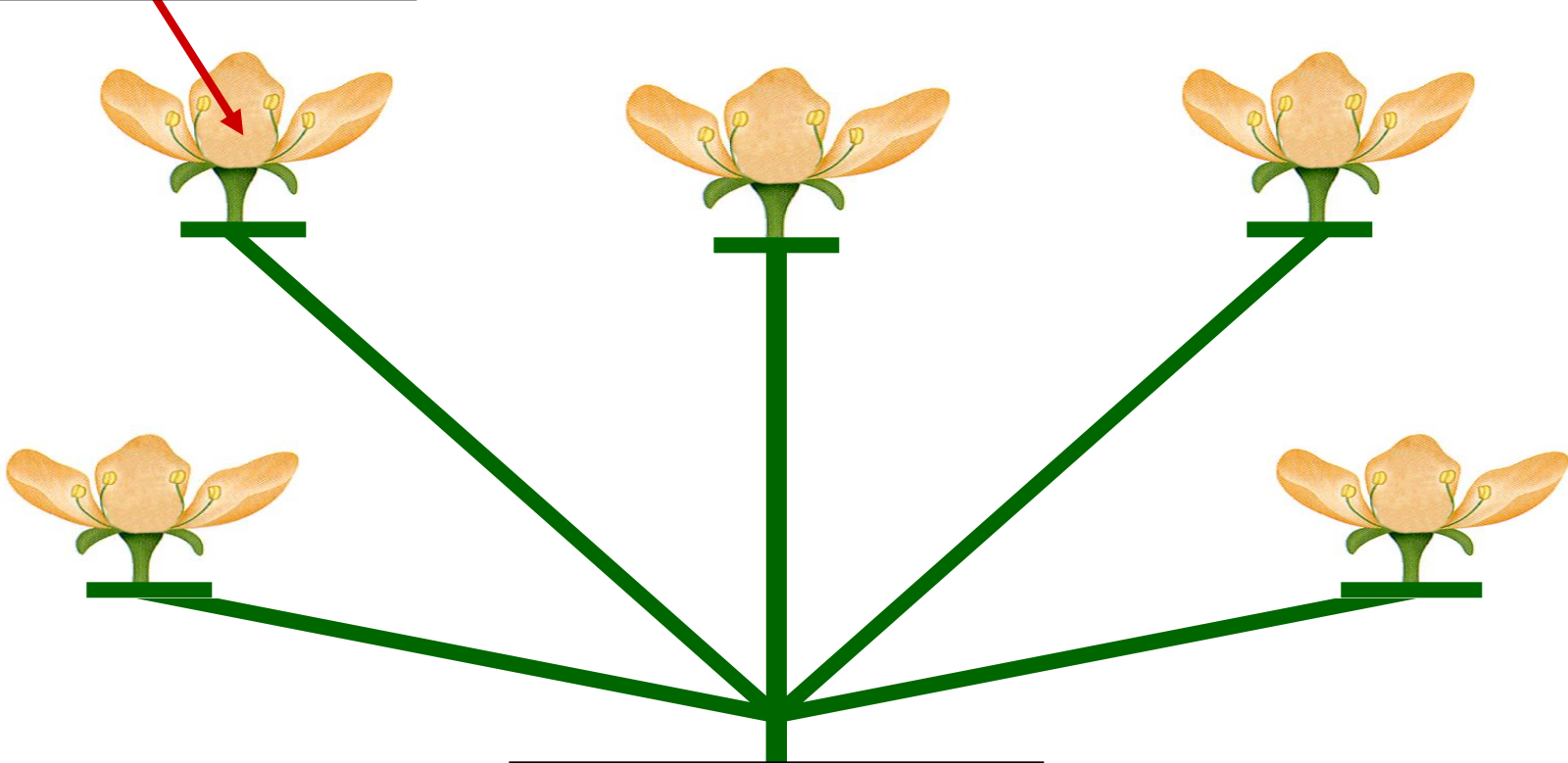
POLYGAMOUS

APPLIED





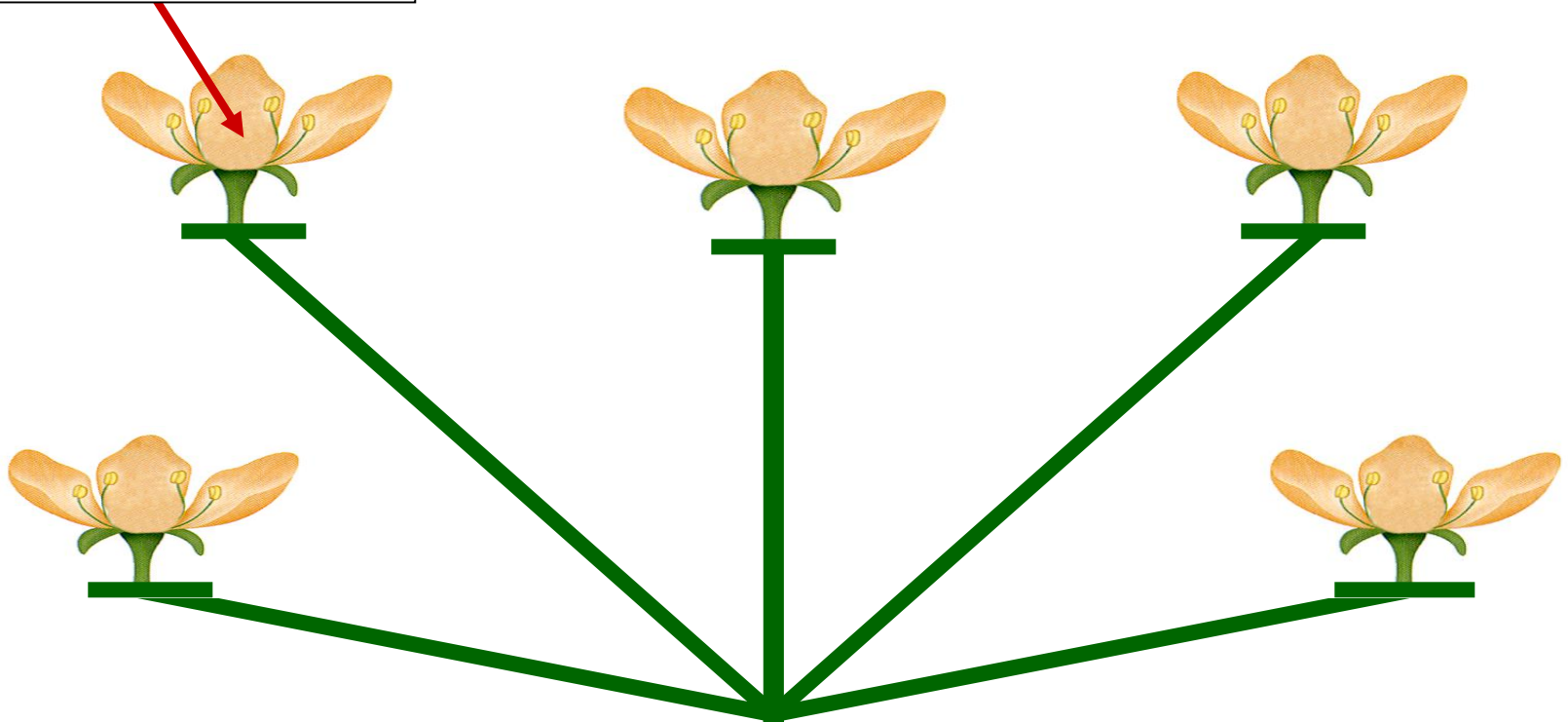
**STAMINATE
FLOWER**



**IMPERFECT
FLOWERS**

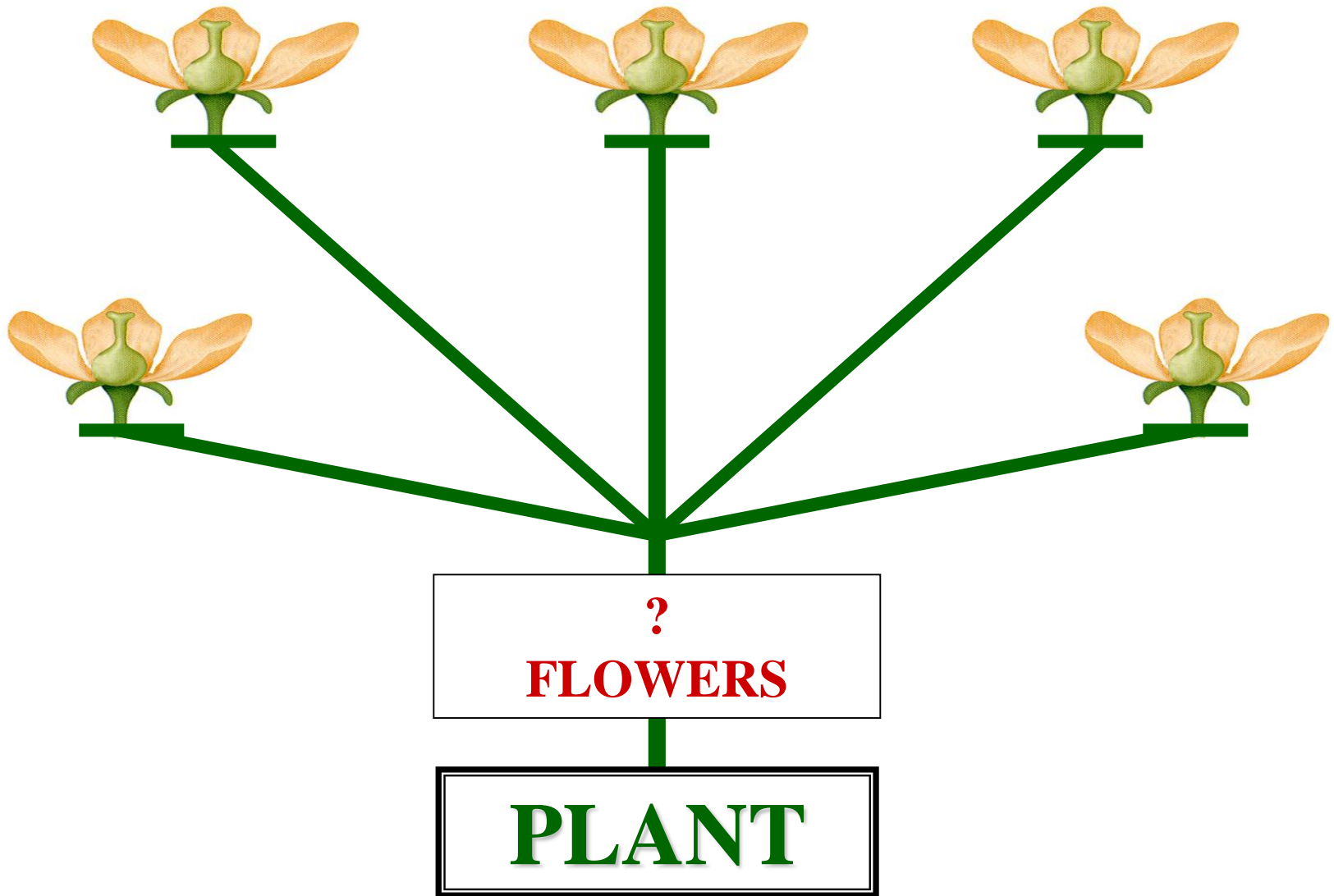
PLANT

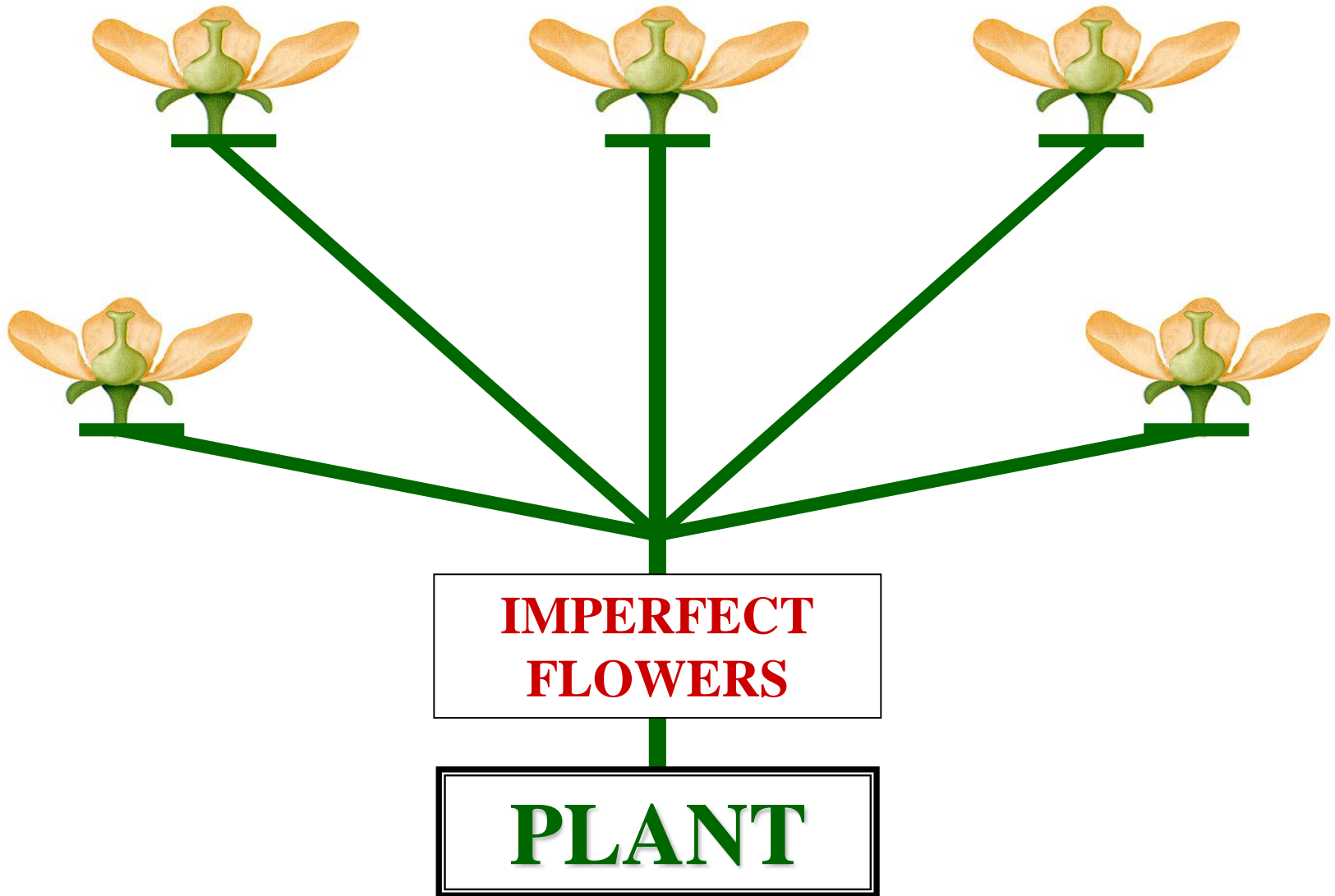
**STAMINATE
FLOWER**



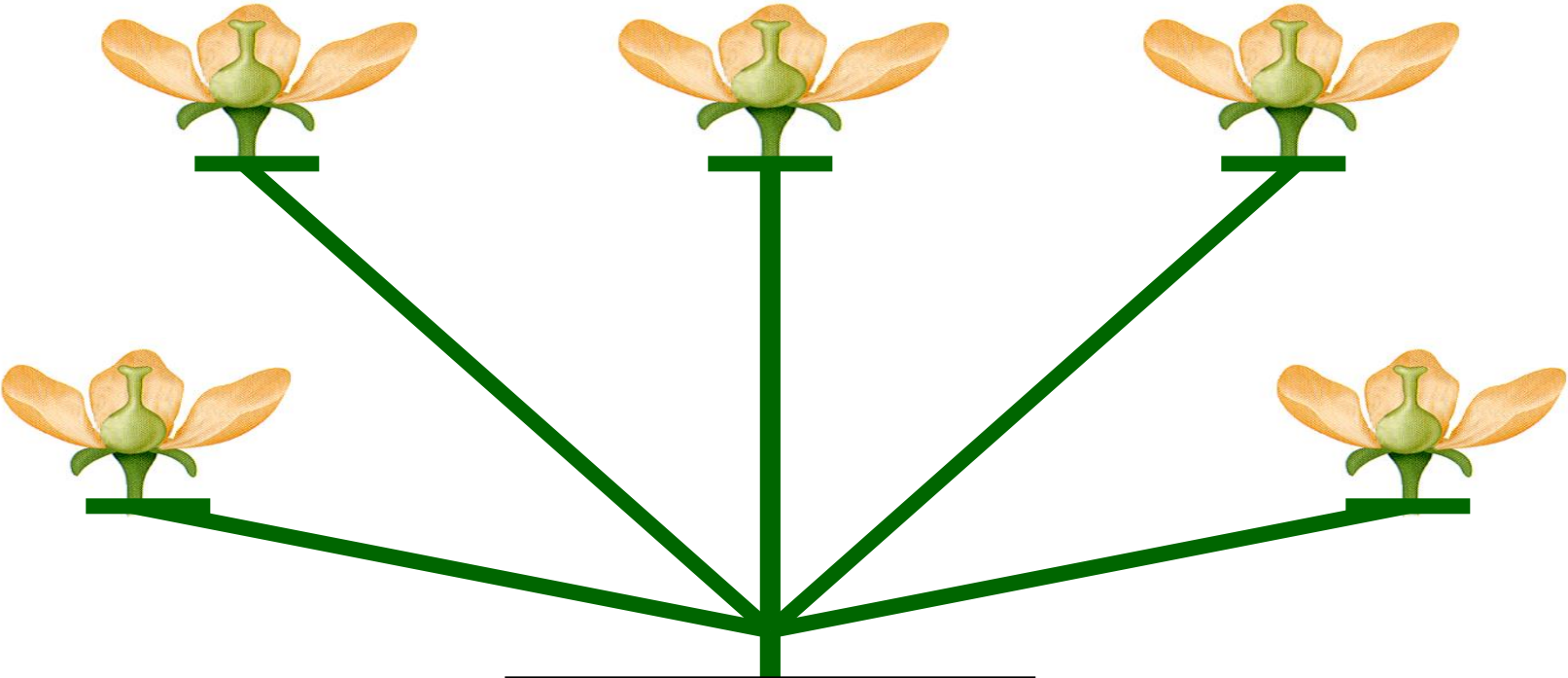
STAMINATE PLANT

PLANT





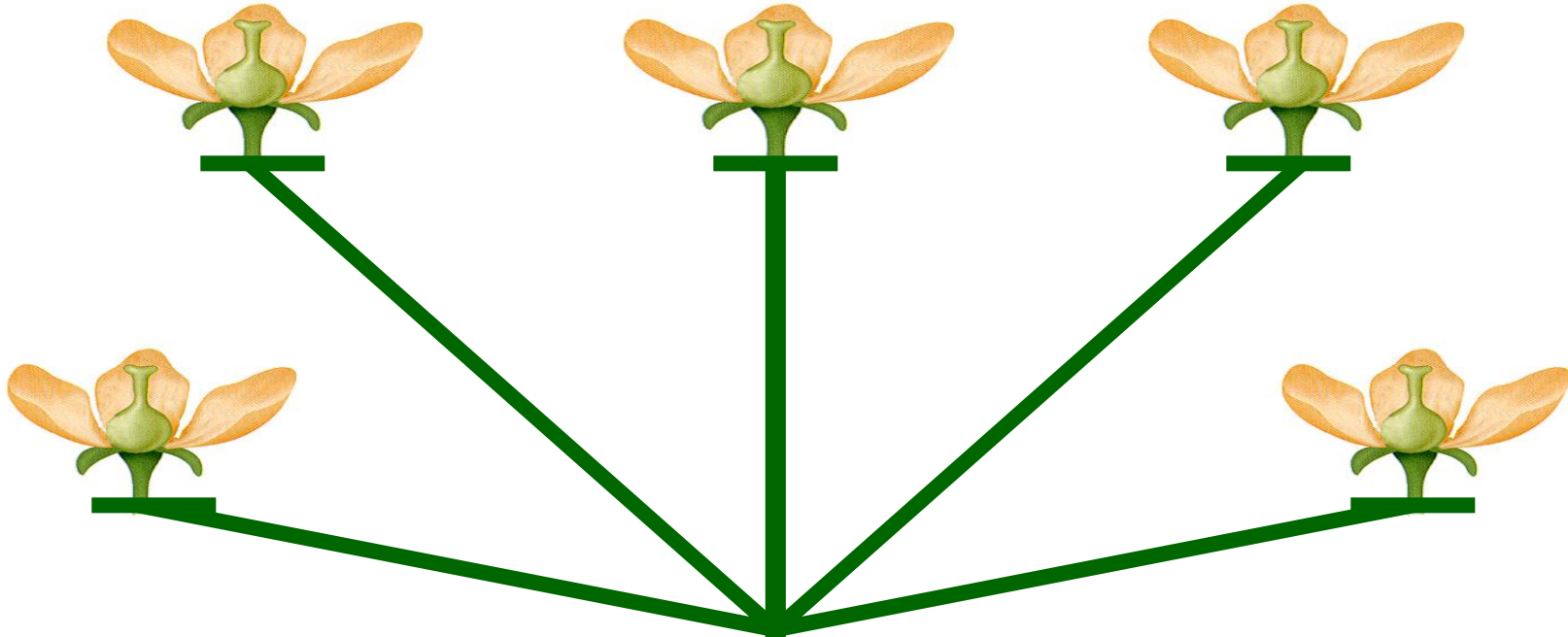
**PISTILATE
FLOWER**



**IMPERFECT
FLOWERS**

PLANT

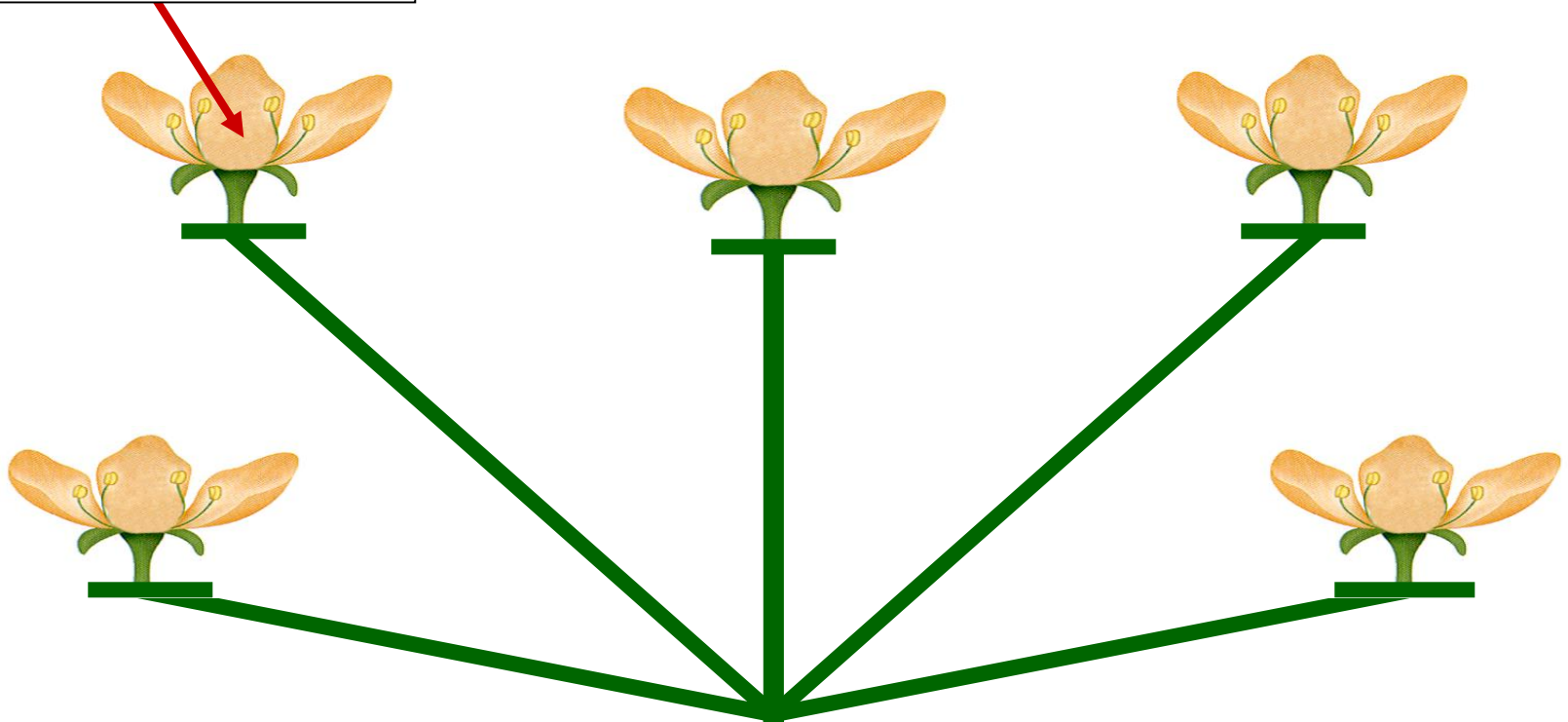
**PISTILATE
FLOWER**



PISTILATE PLANT

PLANT

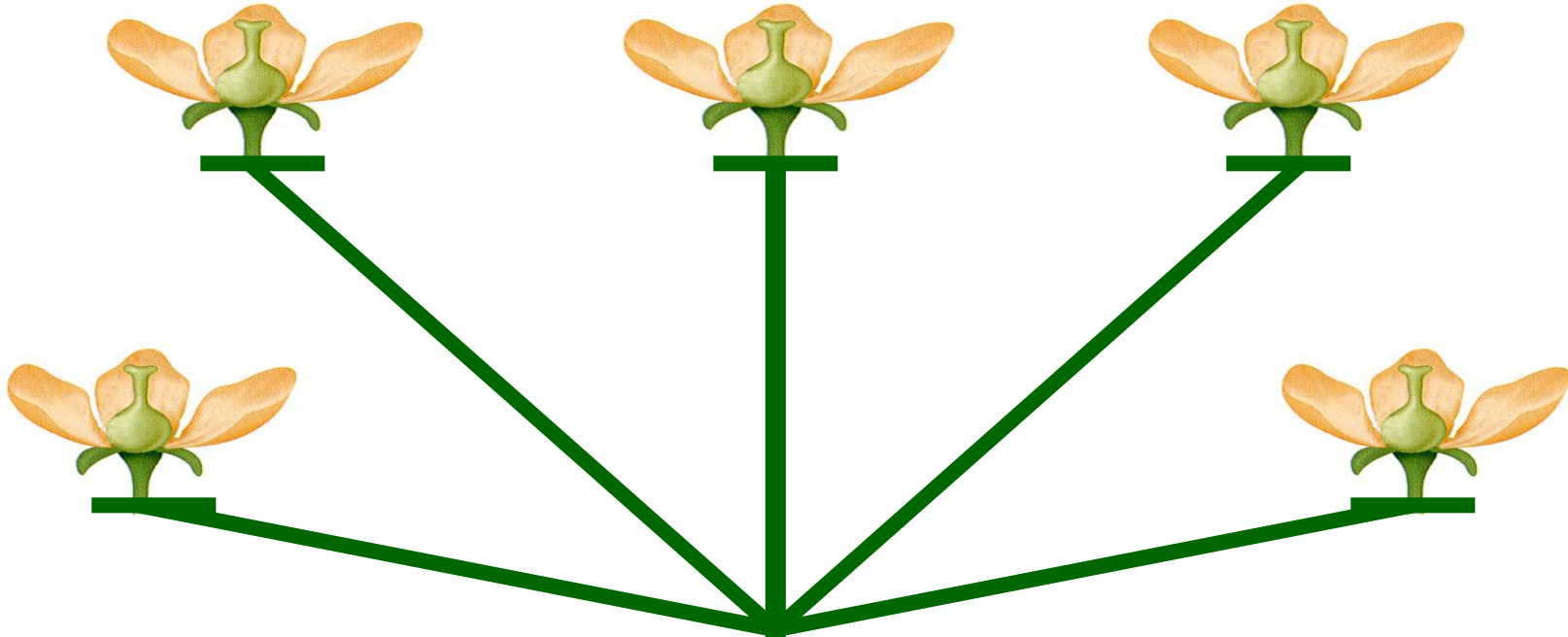
**STAMINATE
FLOWER**



STAMINATE PLANT

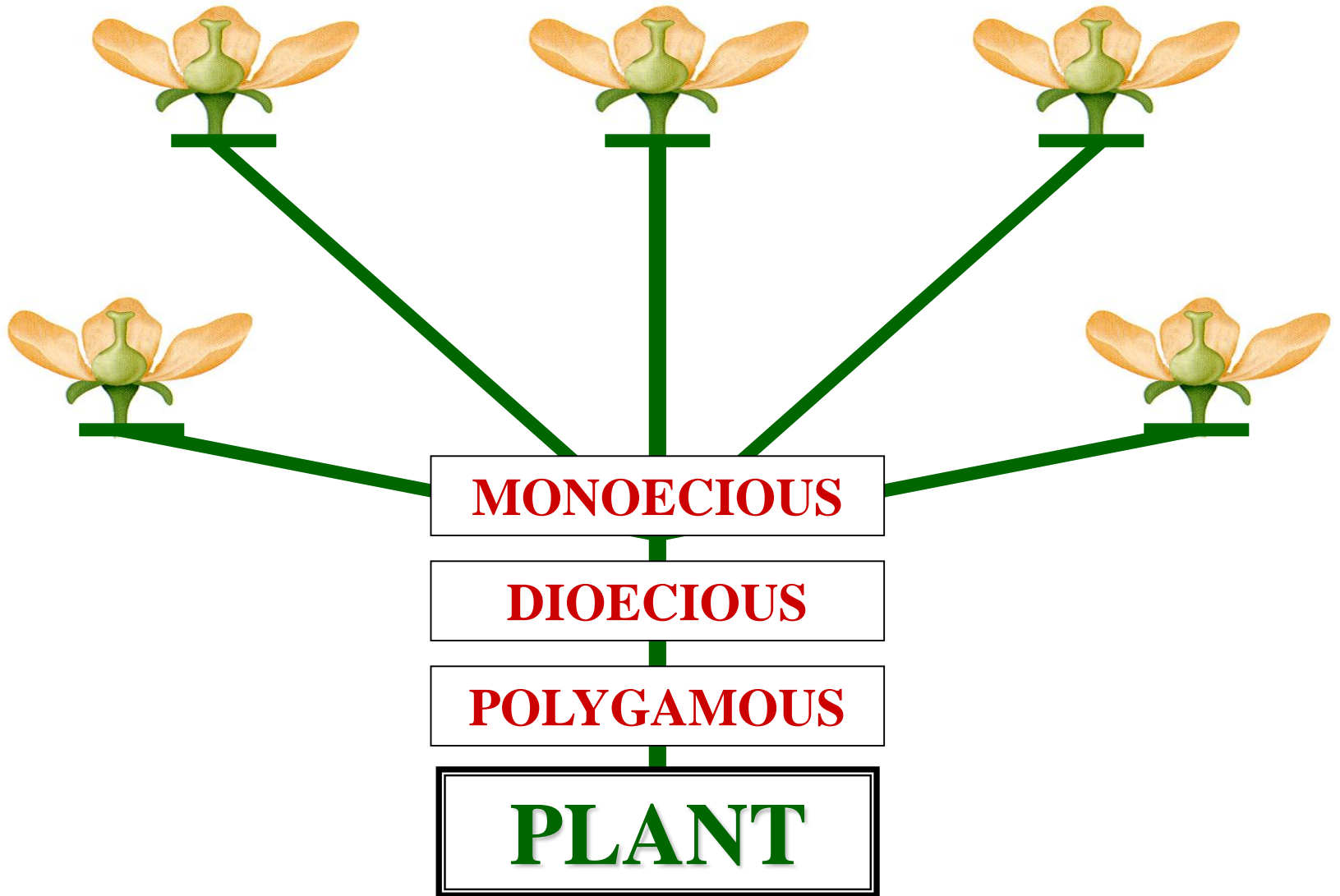
PLANT

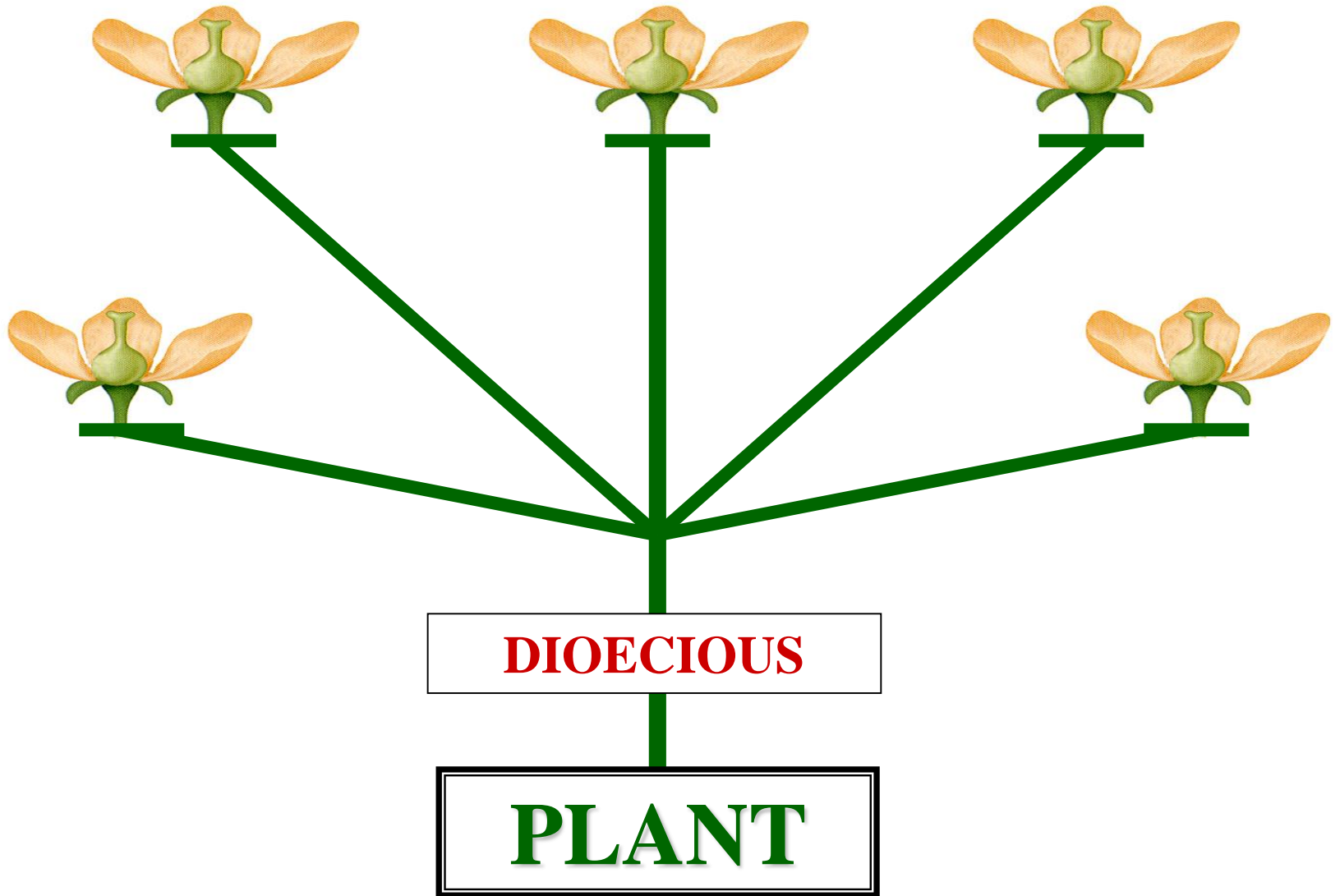
**PISTILATE
FLOWER**



PISTILATE PLANT

PLANT





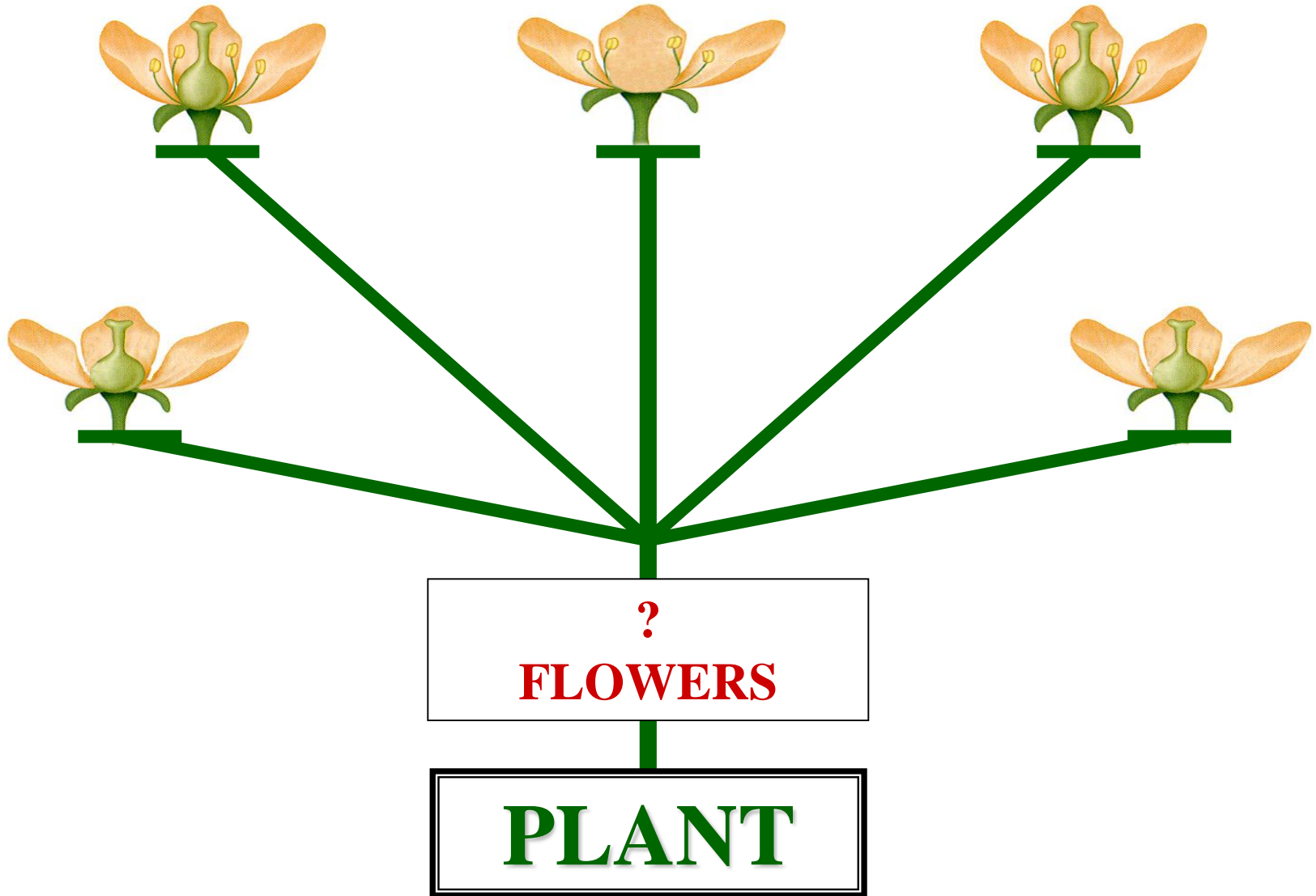


MONOECIOUS

DIOECIOUS

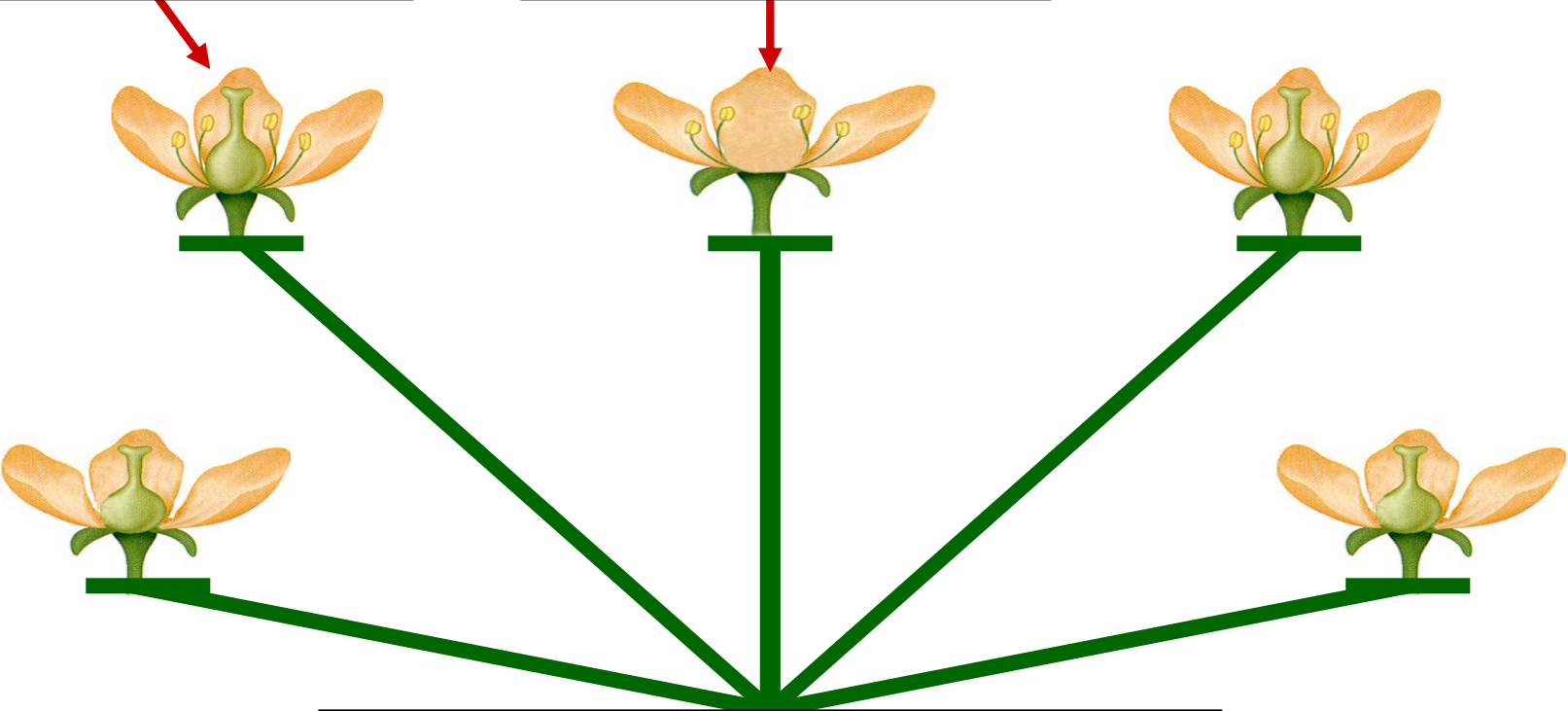
POLYGAMOUS

APPLIED



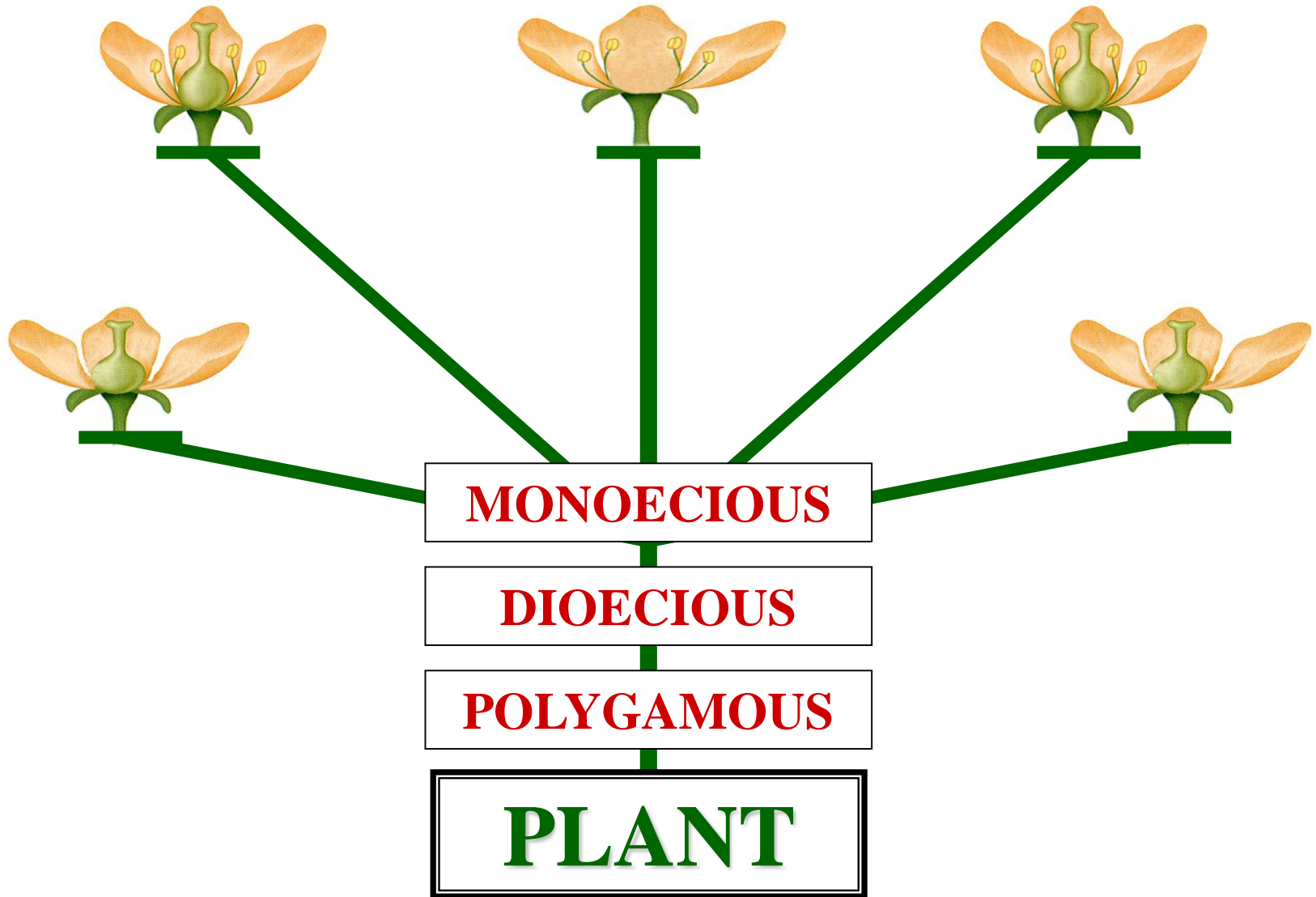
PERFECT FLOWER

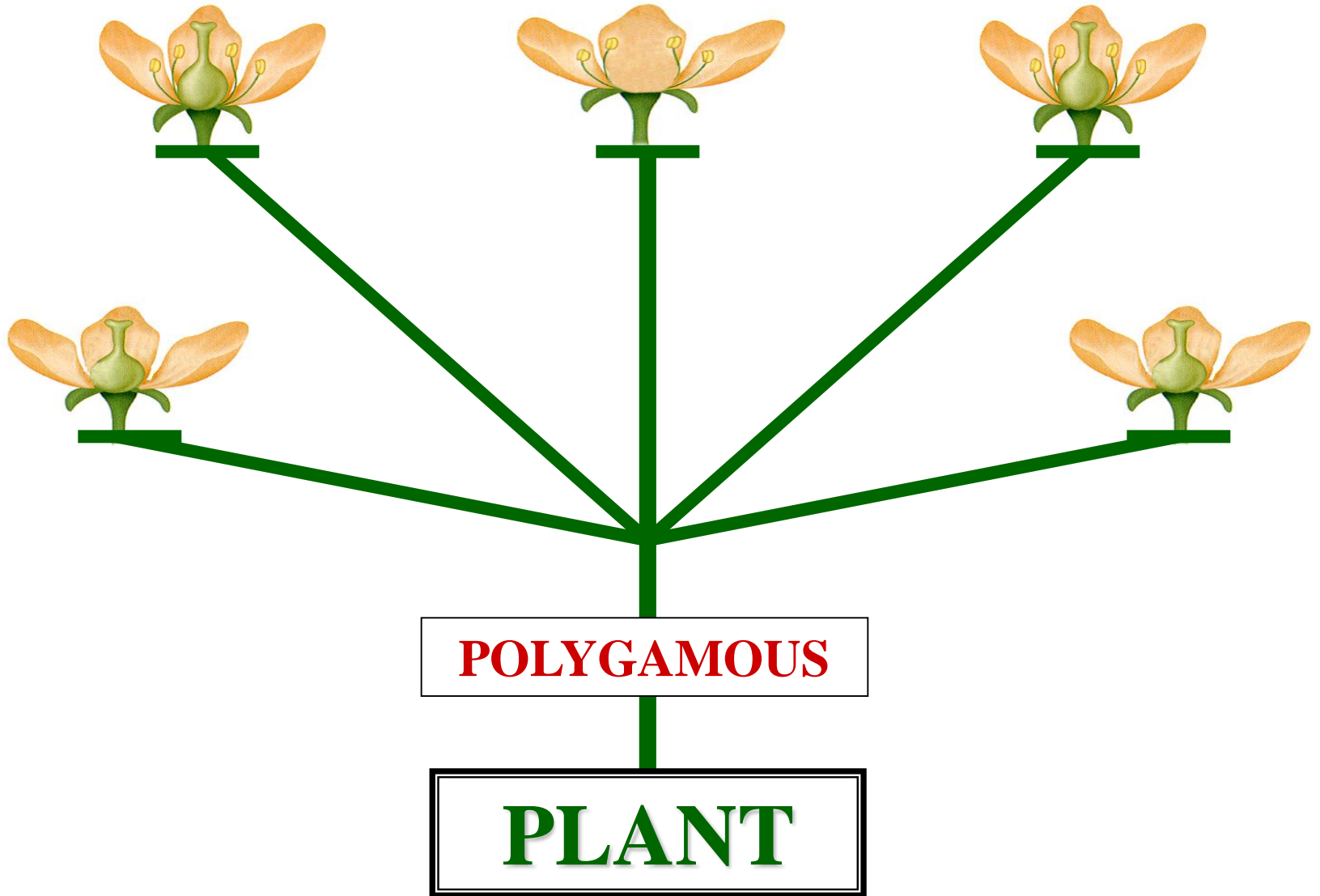
IMPERFECT FLOWER



**PERFECT FLOWERS
&
IMPERFECT FLOWERS**

PLANT





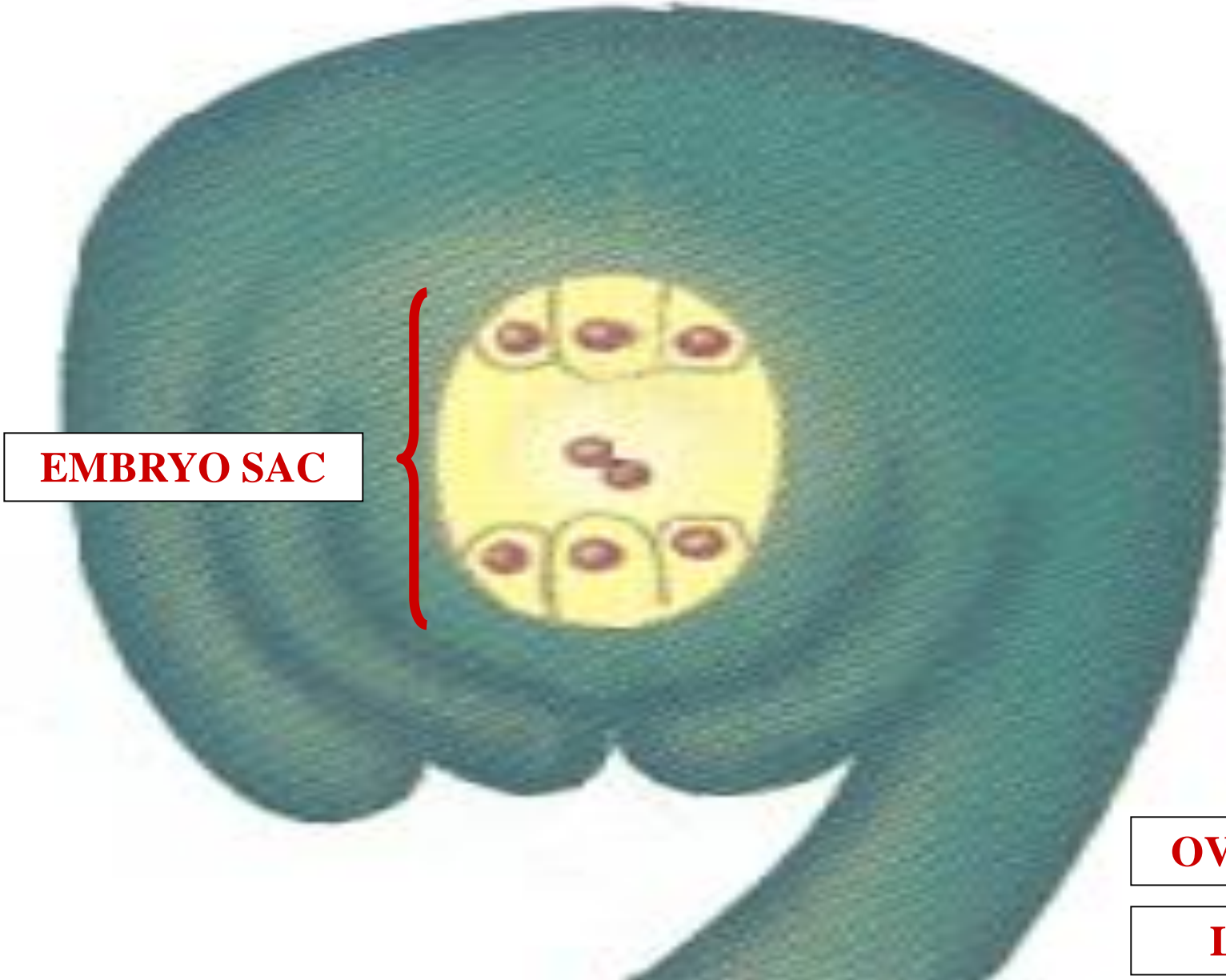
POLYGAMOUS

PLANT



POLYGONUM
EMBRYO SAC

POLYGONUM EMBRYO SAC



EMBRYO SAC

OVULE

L.S.

POLYGONUM EMBRYO SAC



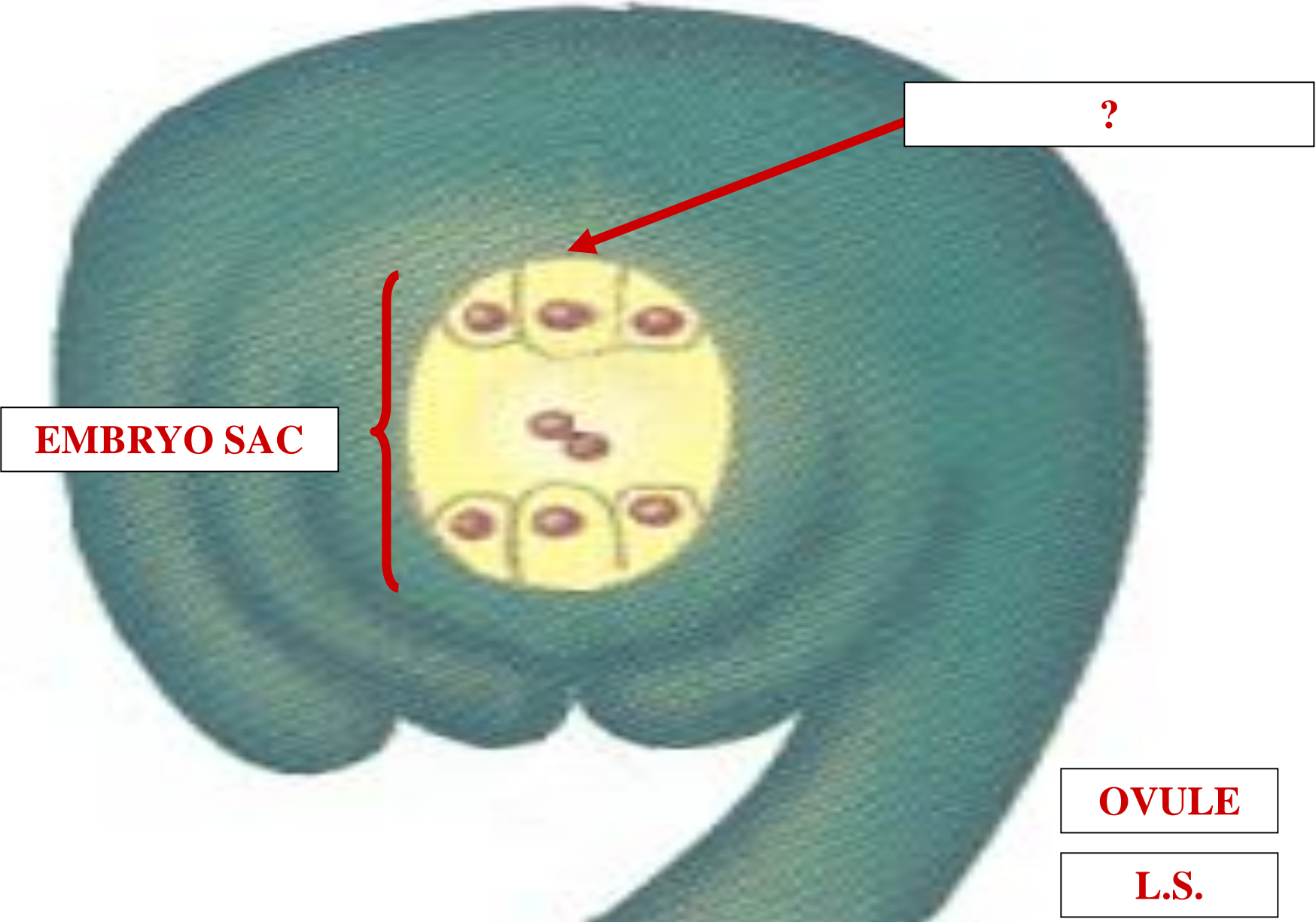
EMBRYO SAC
7 CELLS
8 NUCLEI



OVULE

L.S.

***POLYGONUM* EMBRYO SAC**



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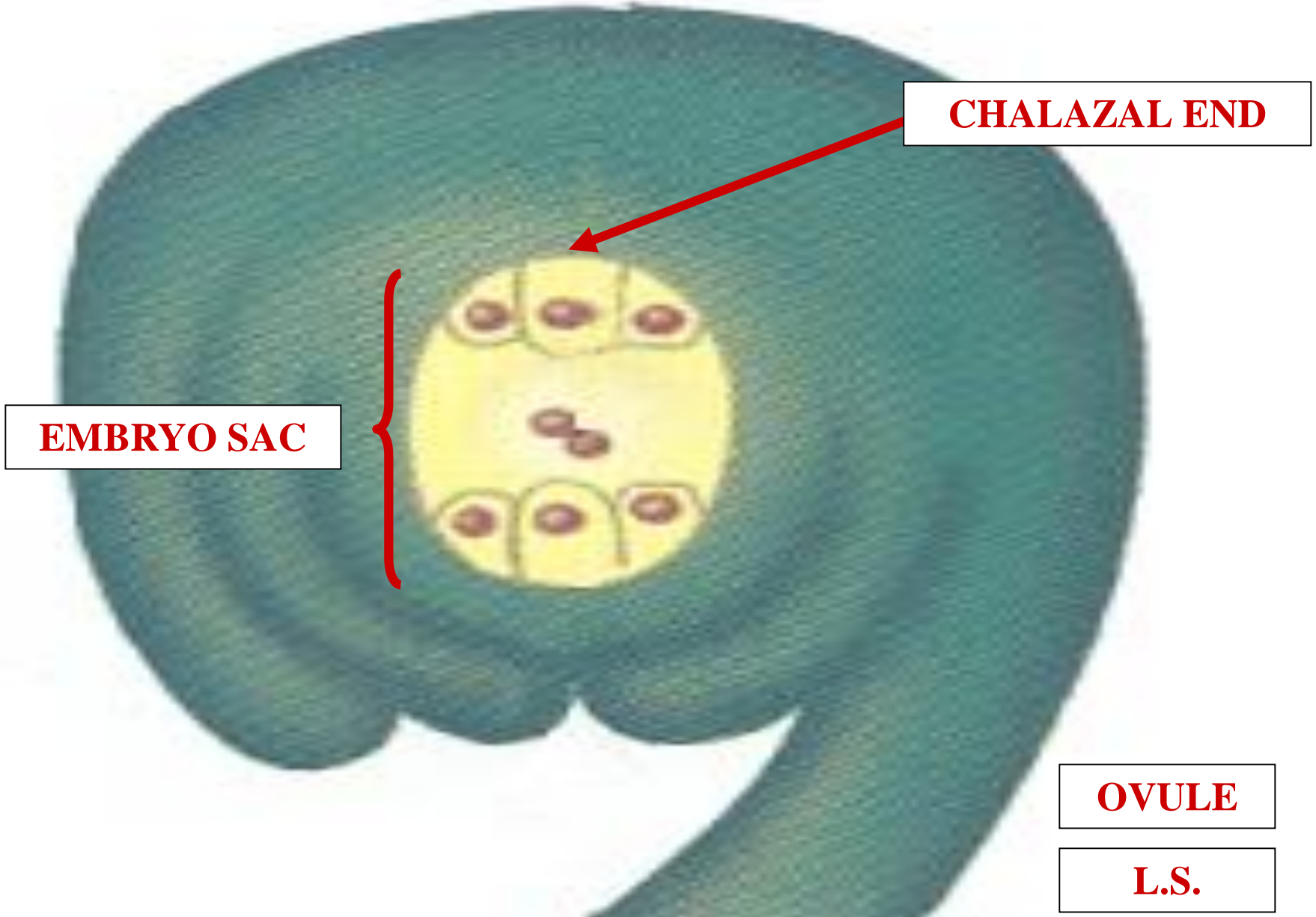
EMBRYO SAC

OVULE

L.S.

POLYGONUM EMBRYO SAC

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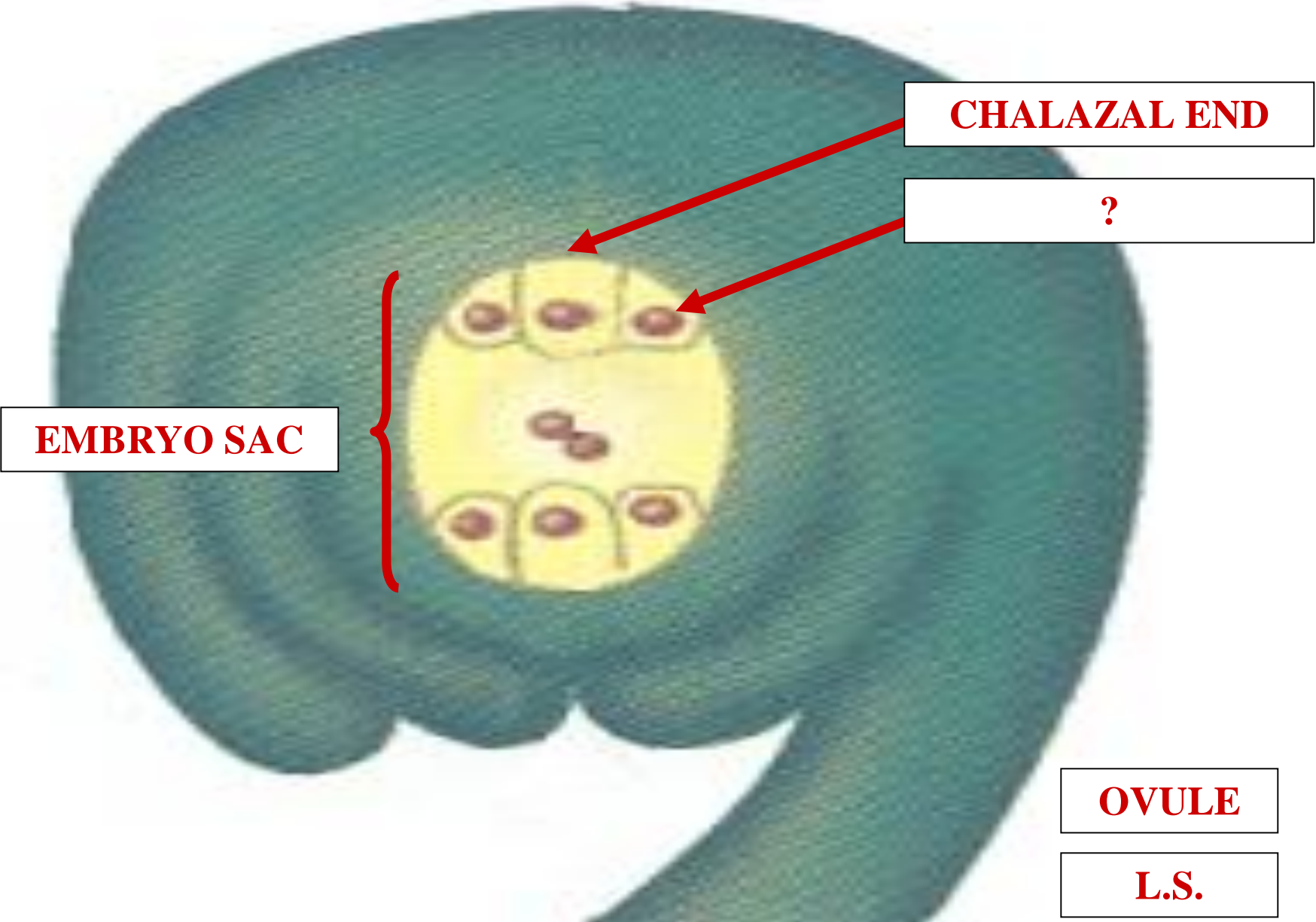
CHALAZAL END

EMBRYO SAC

OVULE

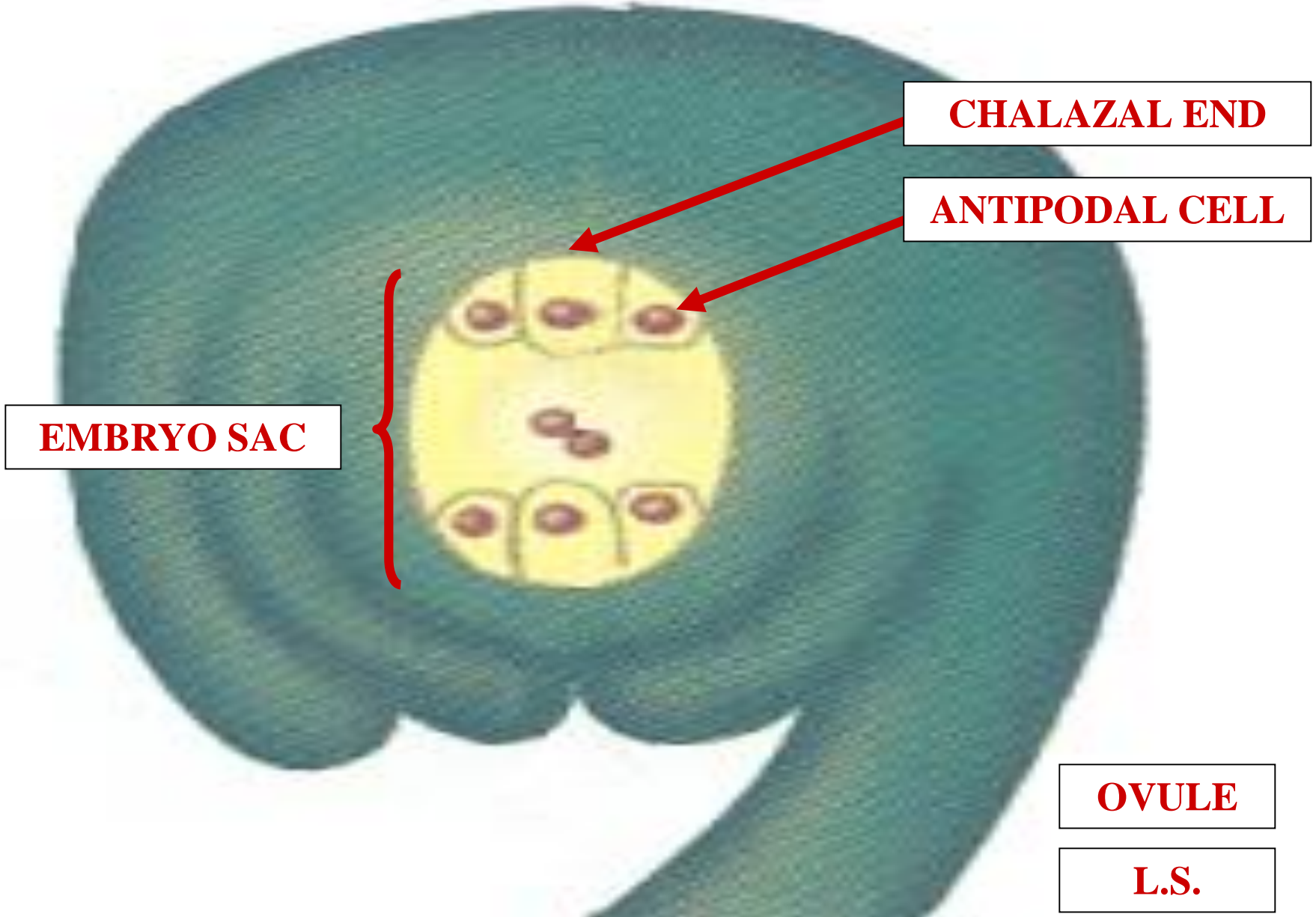
L.S.

POLYGONUM EMBRYO SAC



POLYGONUM EMBRYO SAC

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CHALAZAL END

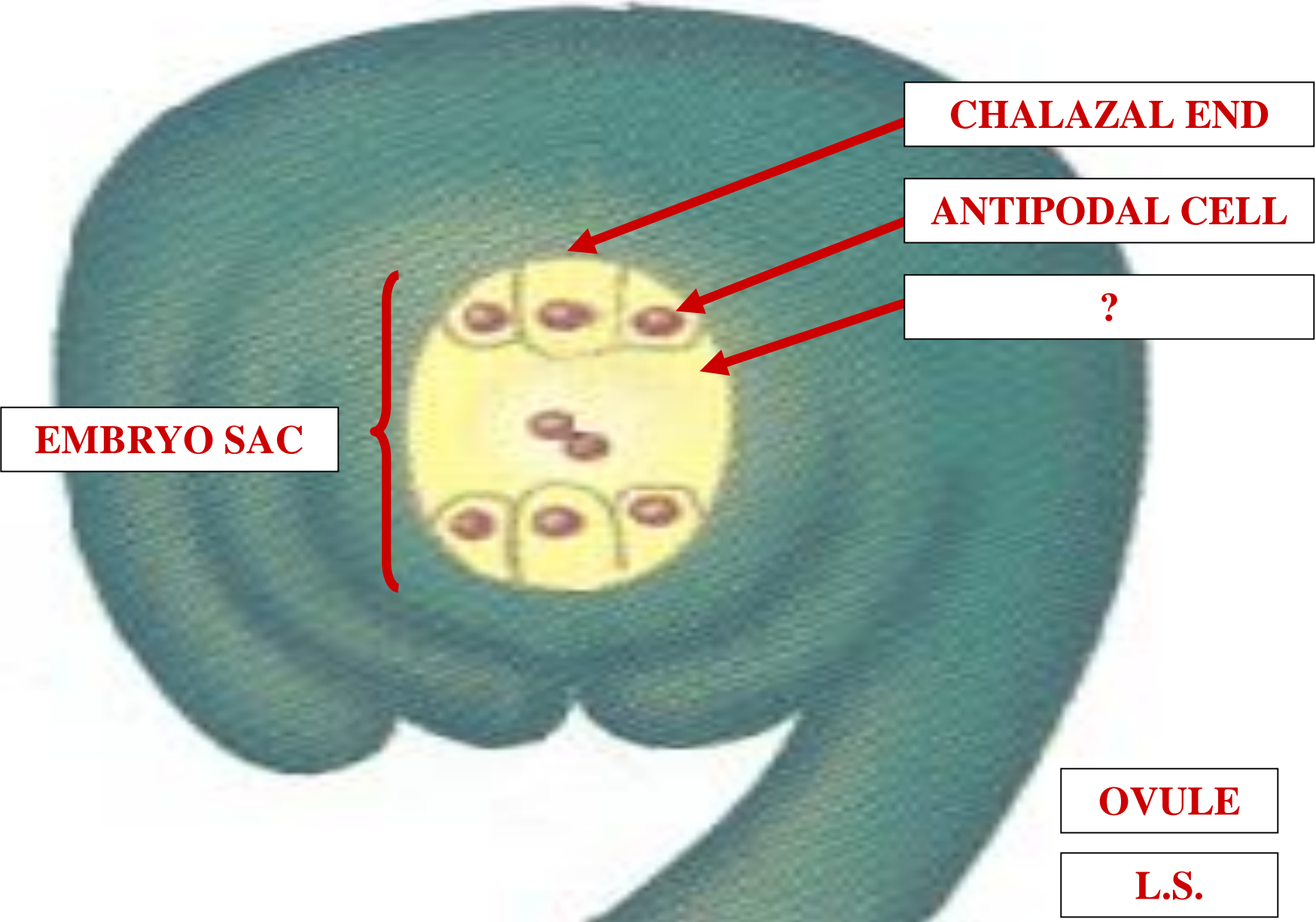
ANTIPODAL CELL

EMBRYO SAC

OVULE

L.S.

POLYGONUM EMBRYO SAC



CHALAZAL END

ANTIPODAL CELL

?

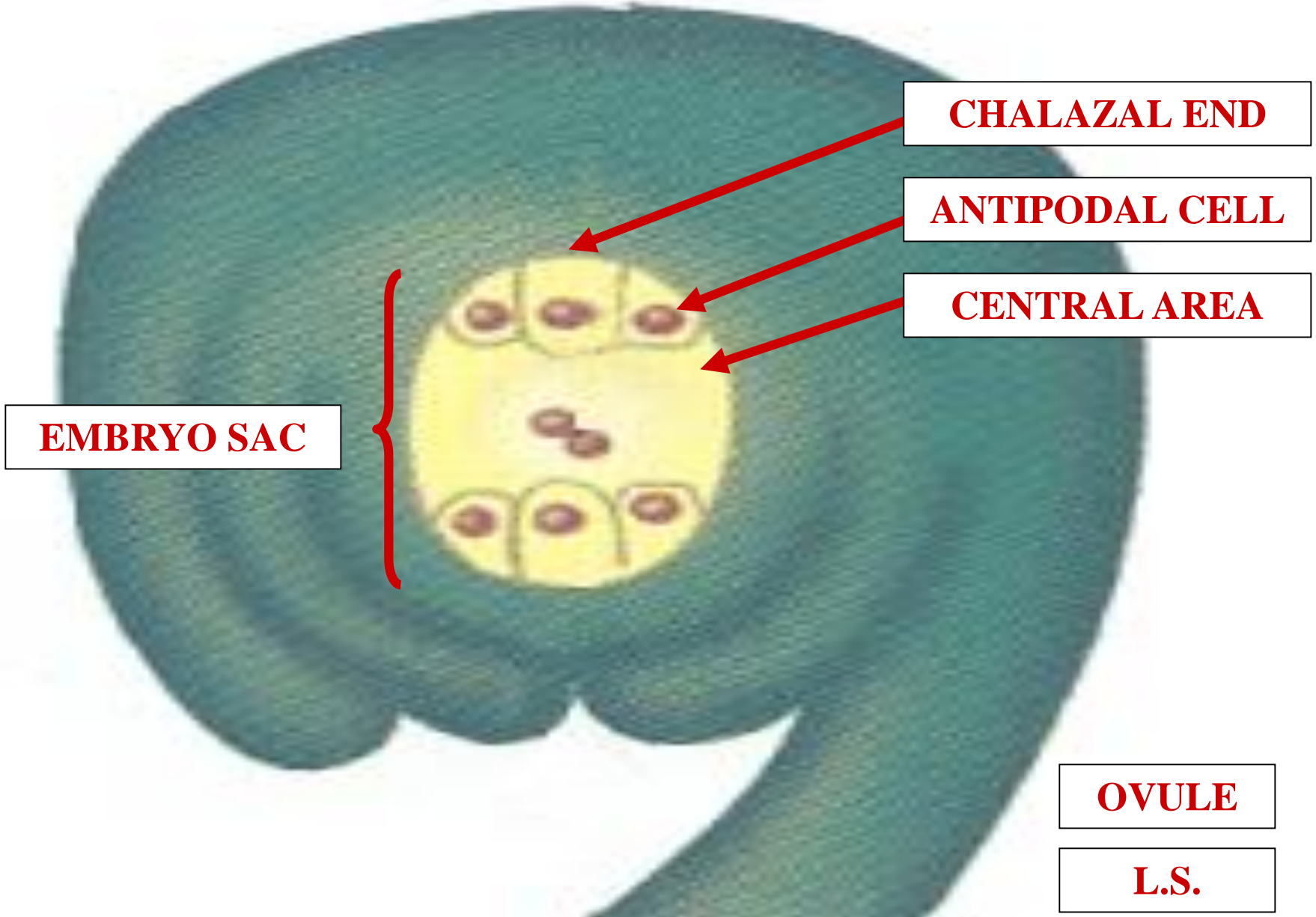
EMBRYO SAC

OVULE

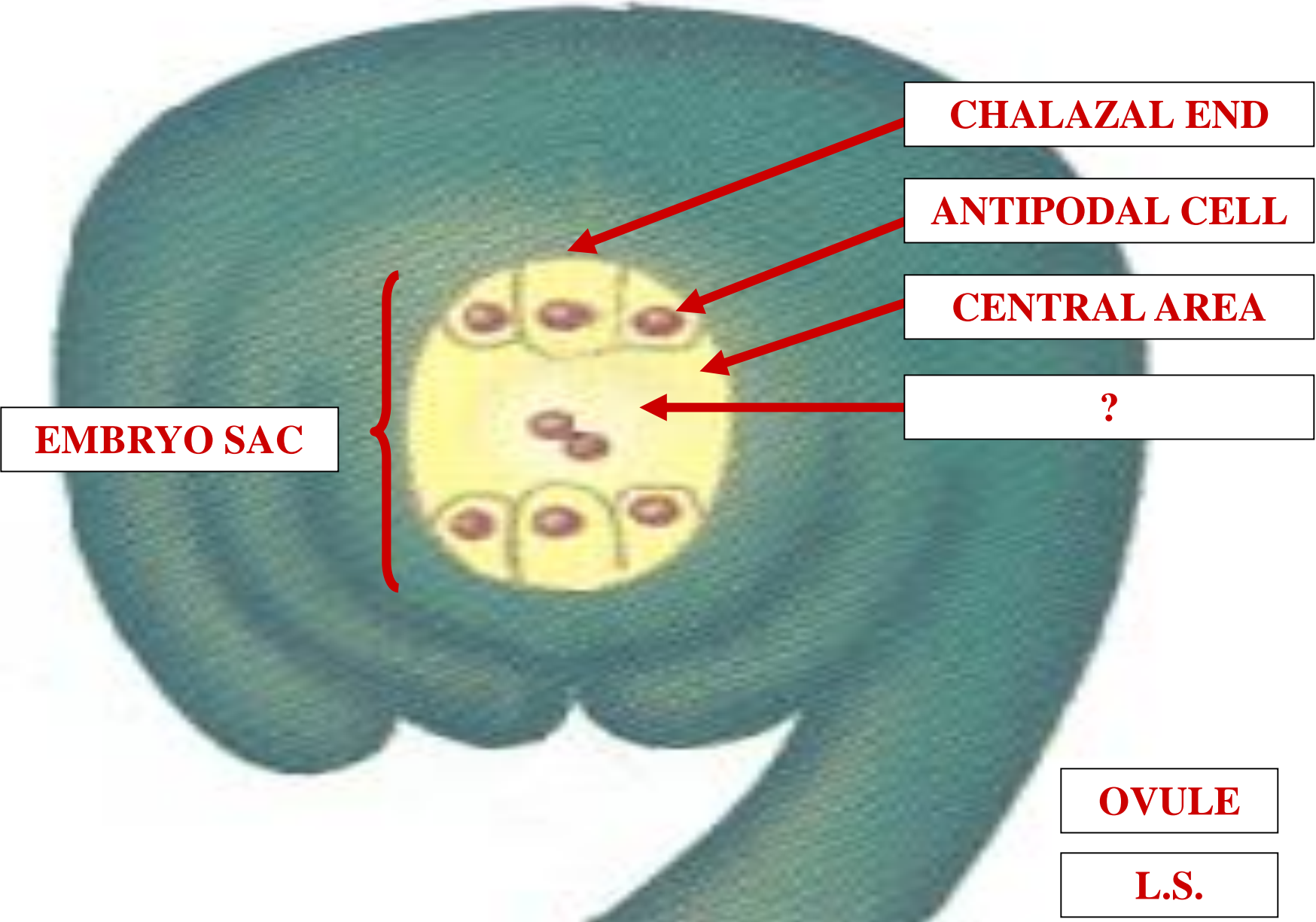
L.S.

POLYGONUM EMBRYO SAC

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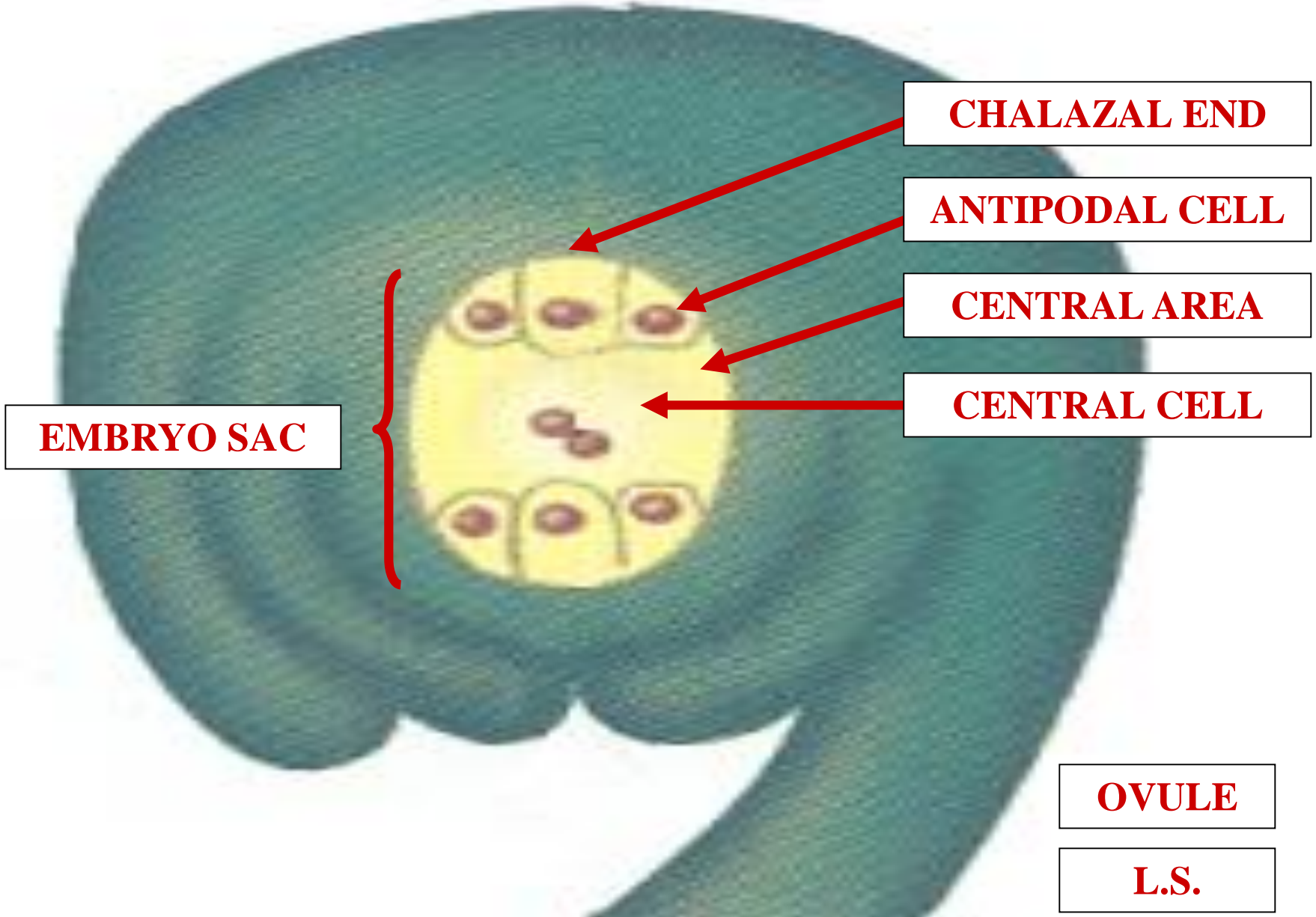


POLYGONUM EMBRYO SAC



POLYGONUM EMBRYO SAC

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CHALAZAL END

ANTIPODAL CELL

CENTRAL AREA

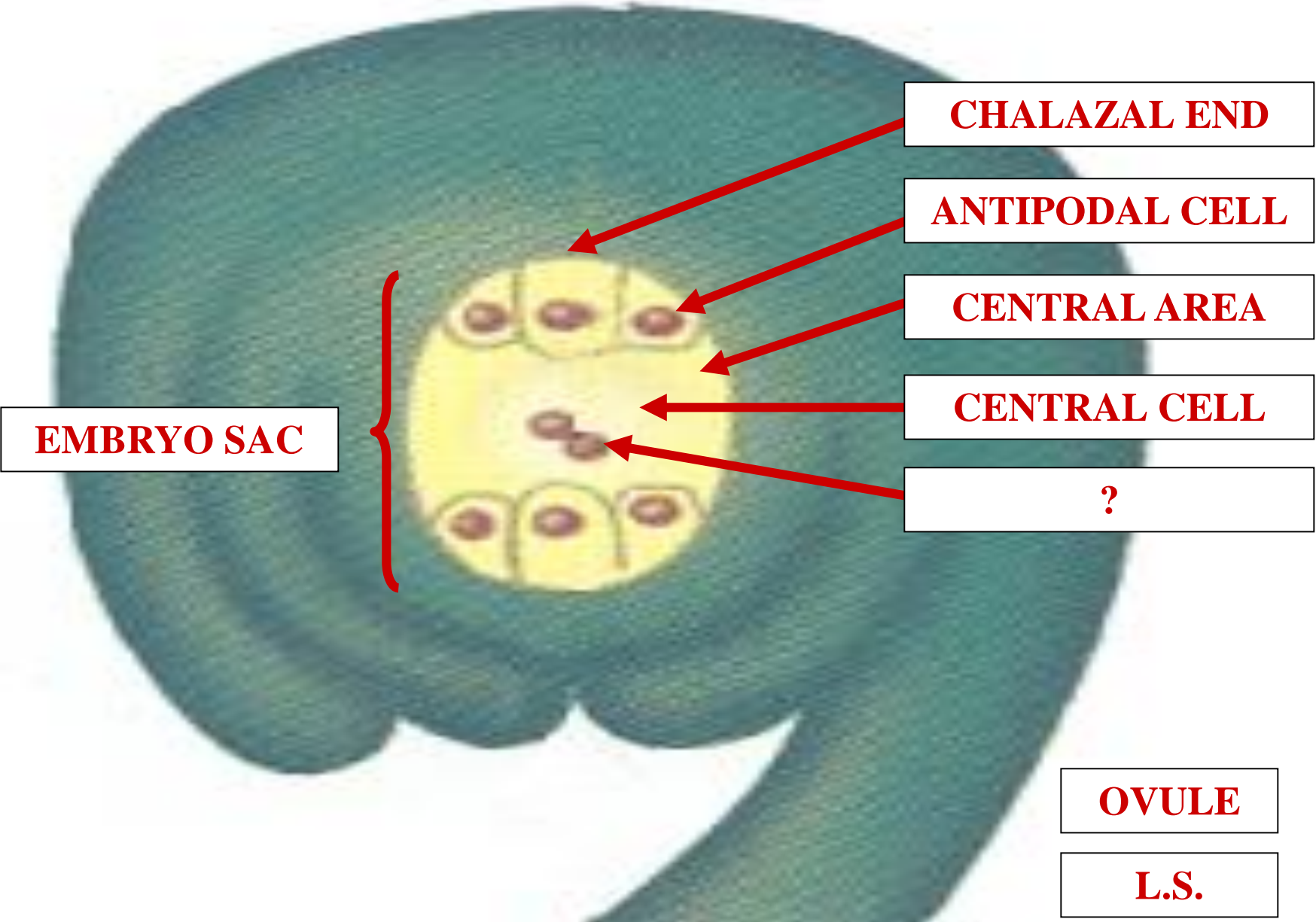
CENTRAL CELL

EMBRYO SAC

OVULE

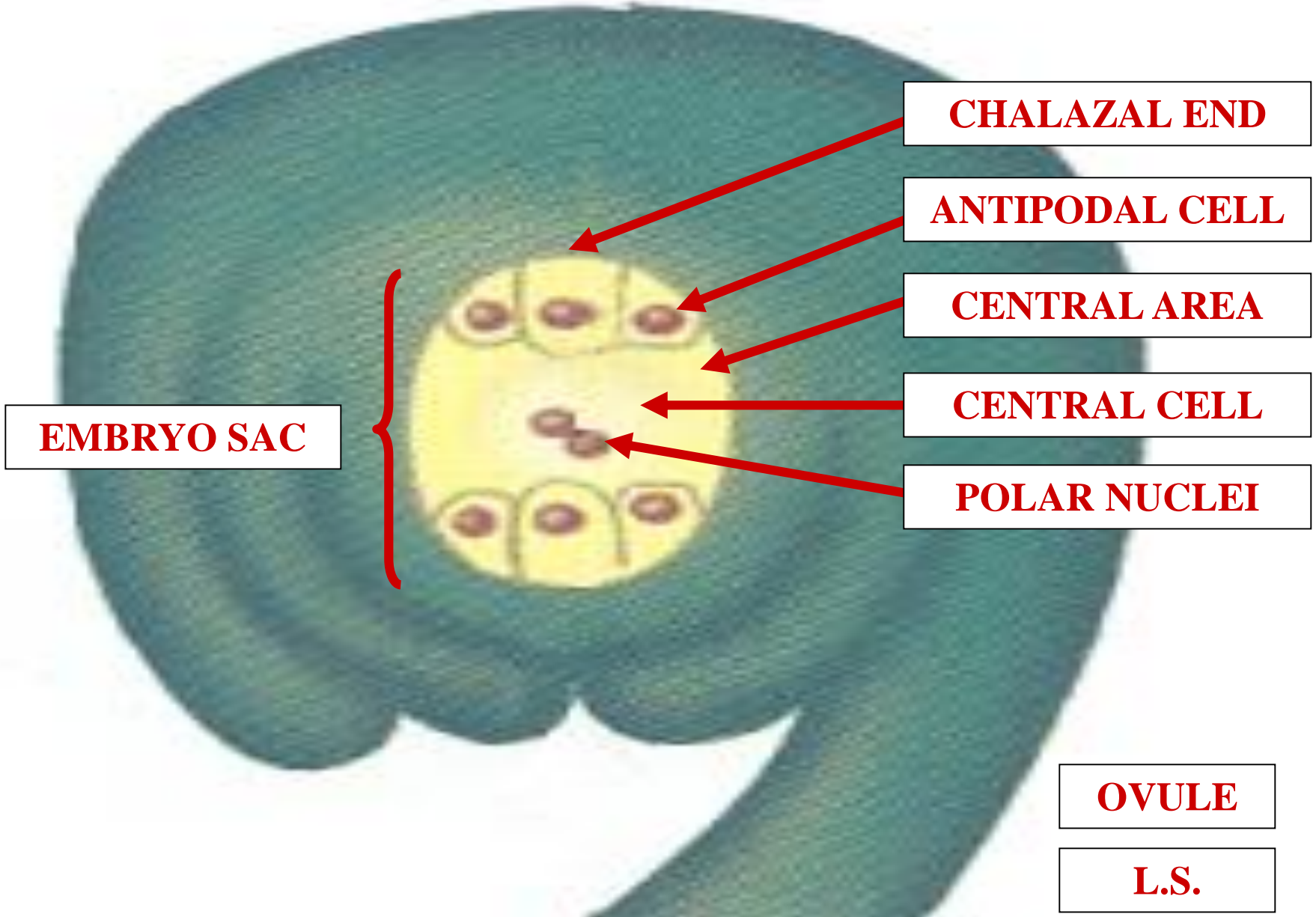
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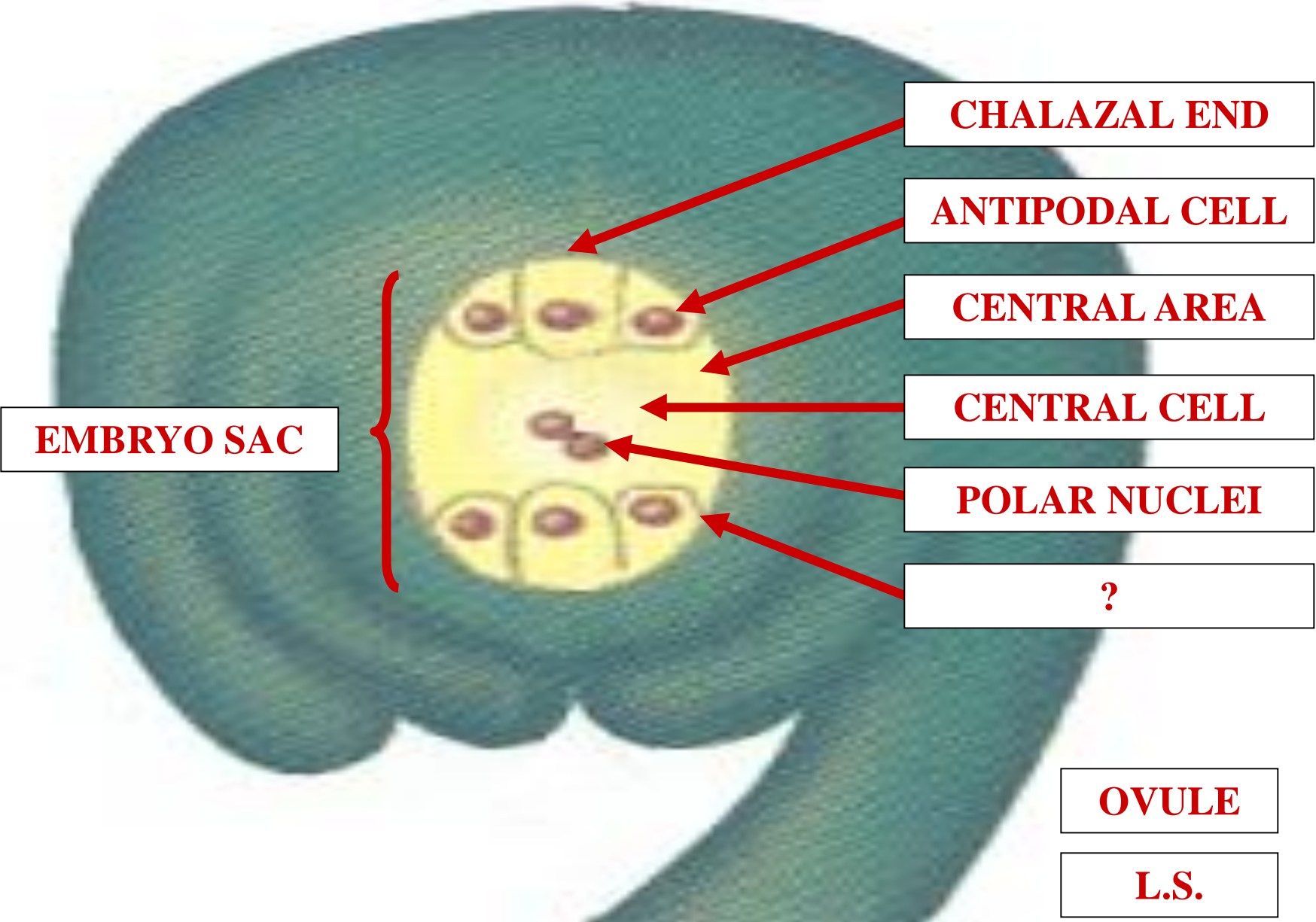


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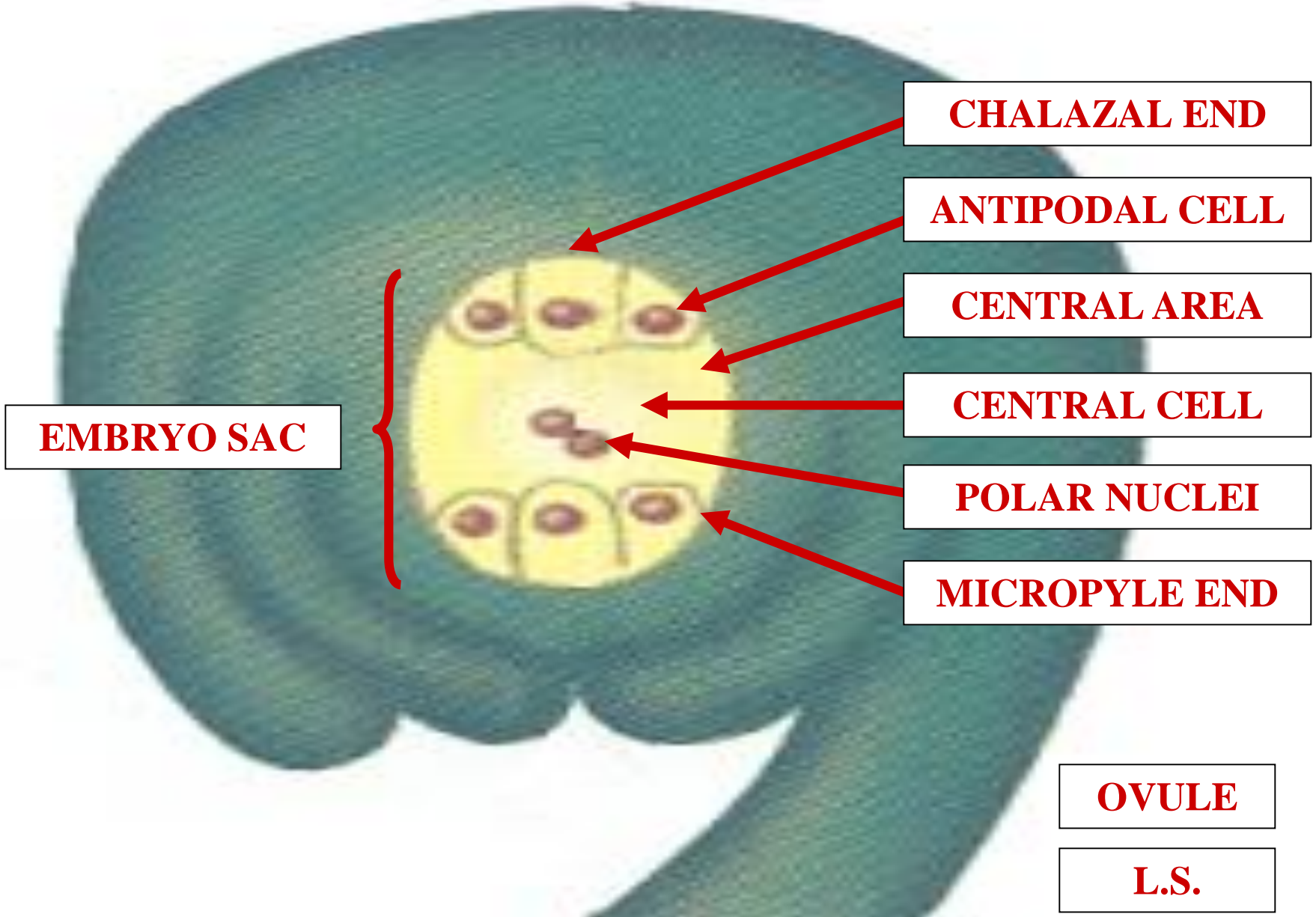


POLYGONUM EMBRYO SAC



POLYGONUM EMBRYO SAC

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CHALAZAL END

ANTIPODAL CELL

CENTRAL AREA

CENTRAL CELL

POLAR NUCLEI

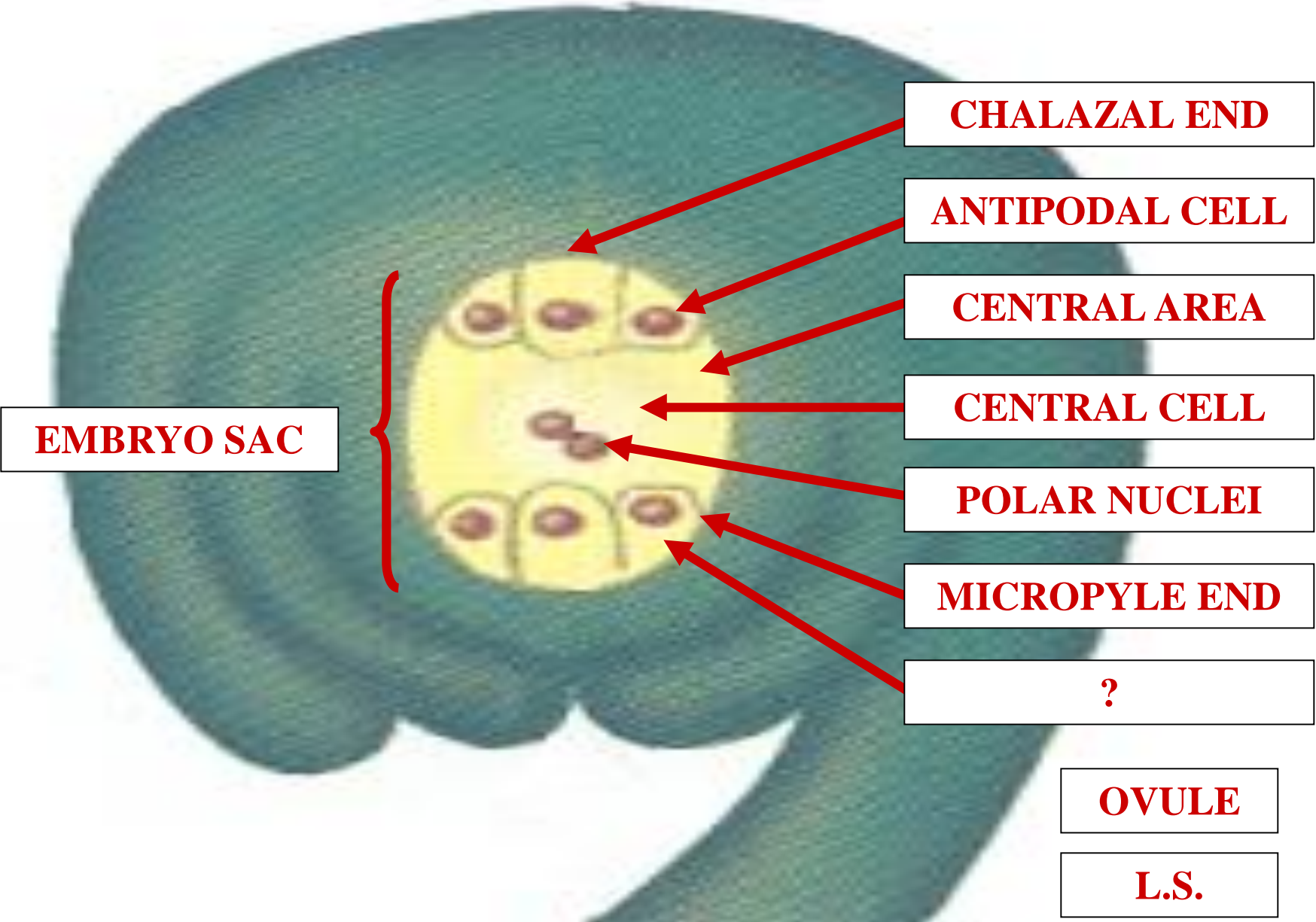
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EMBRYO SAC

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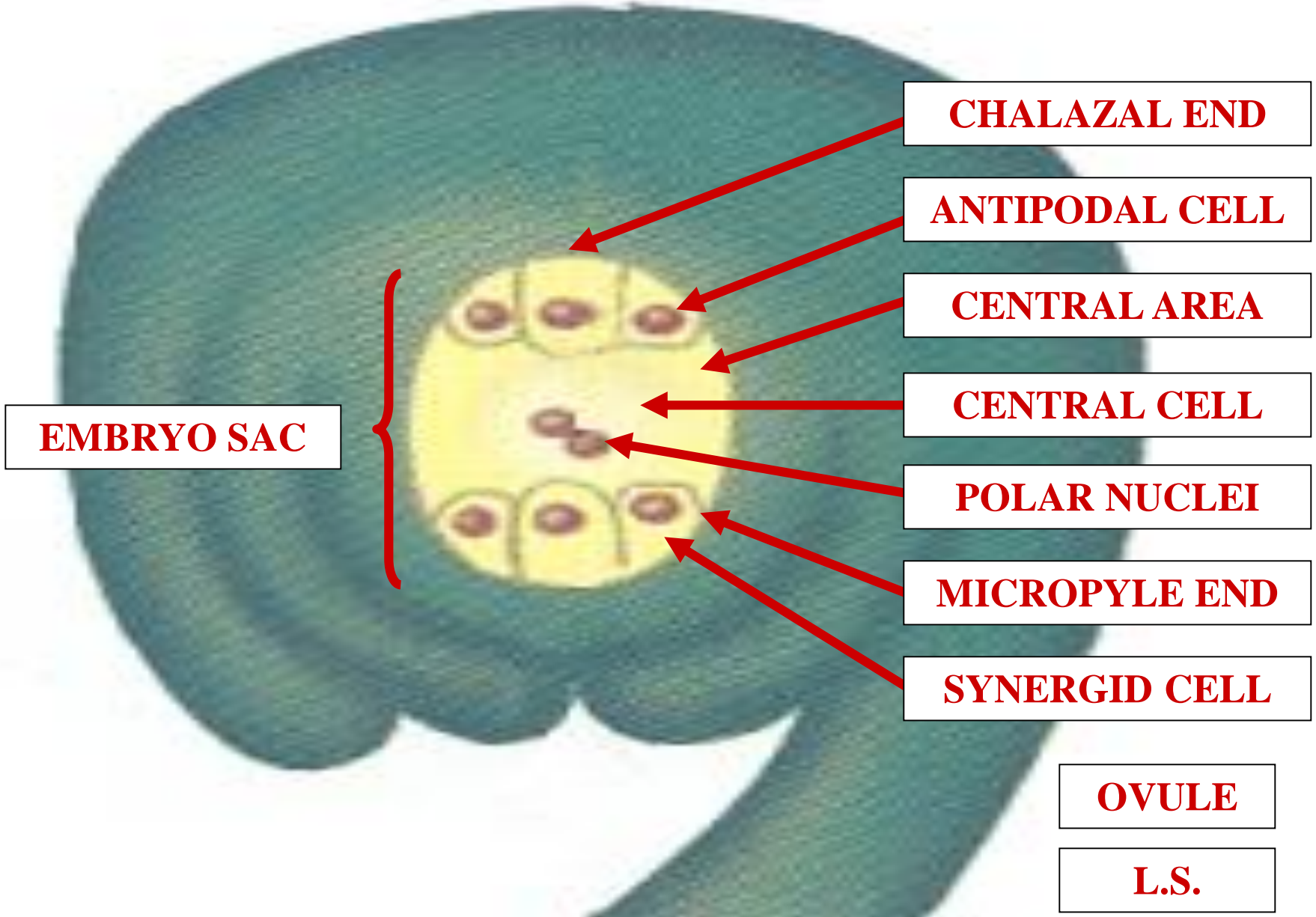
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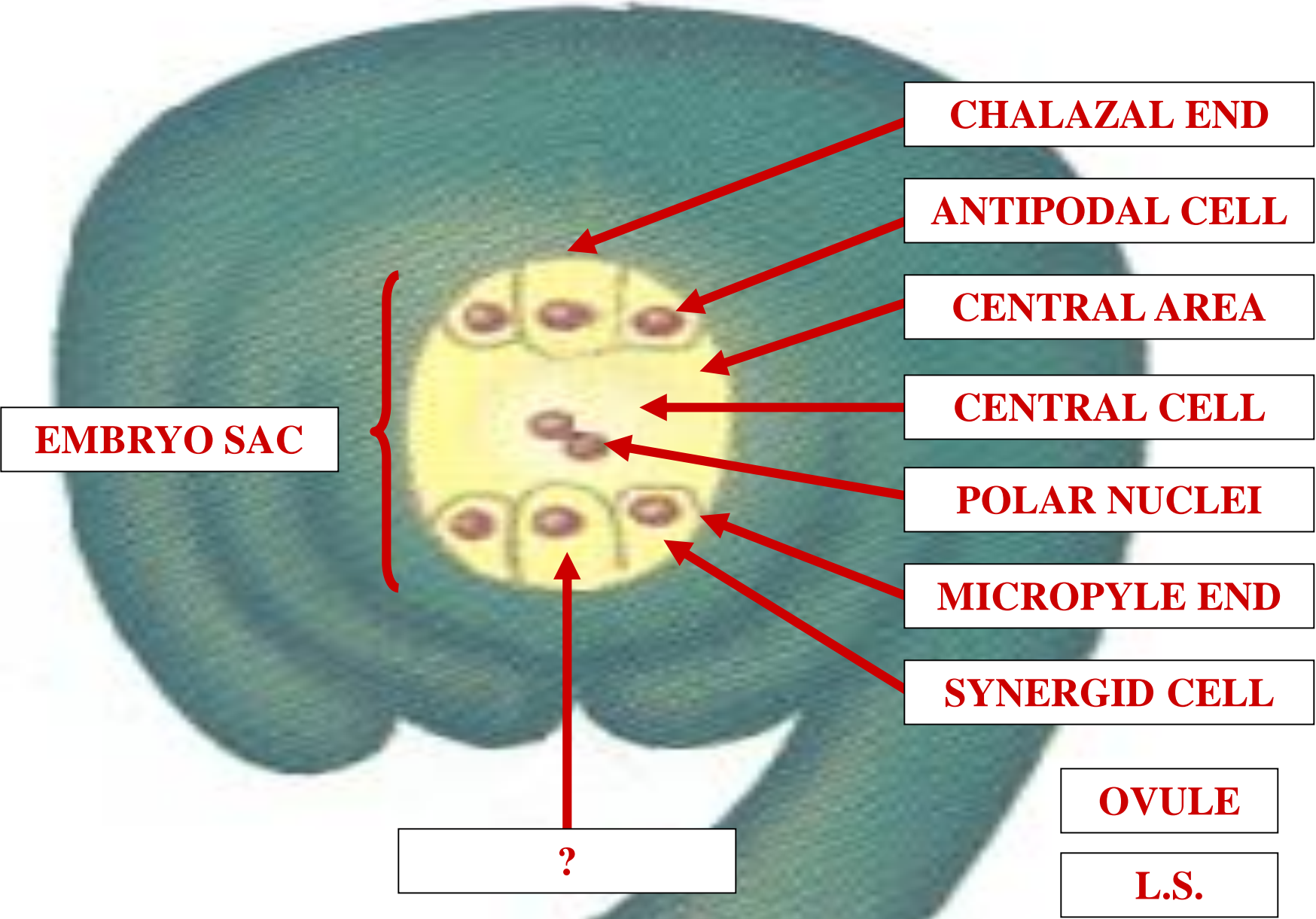


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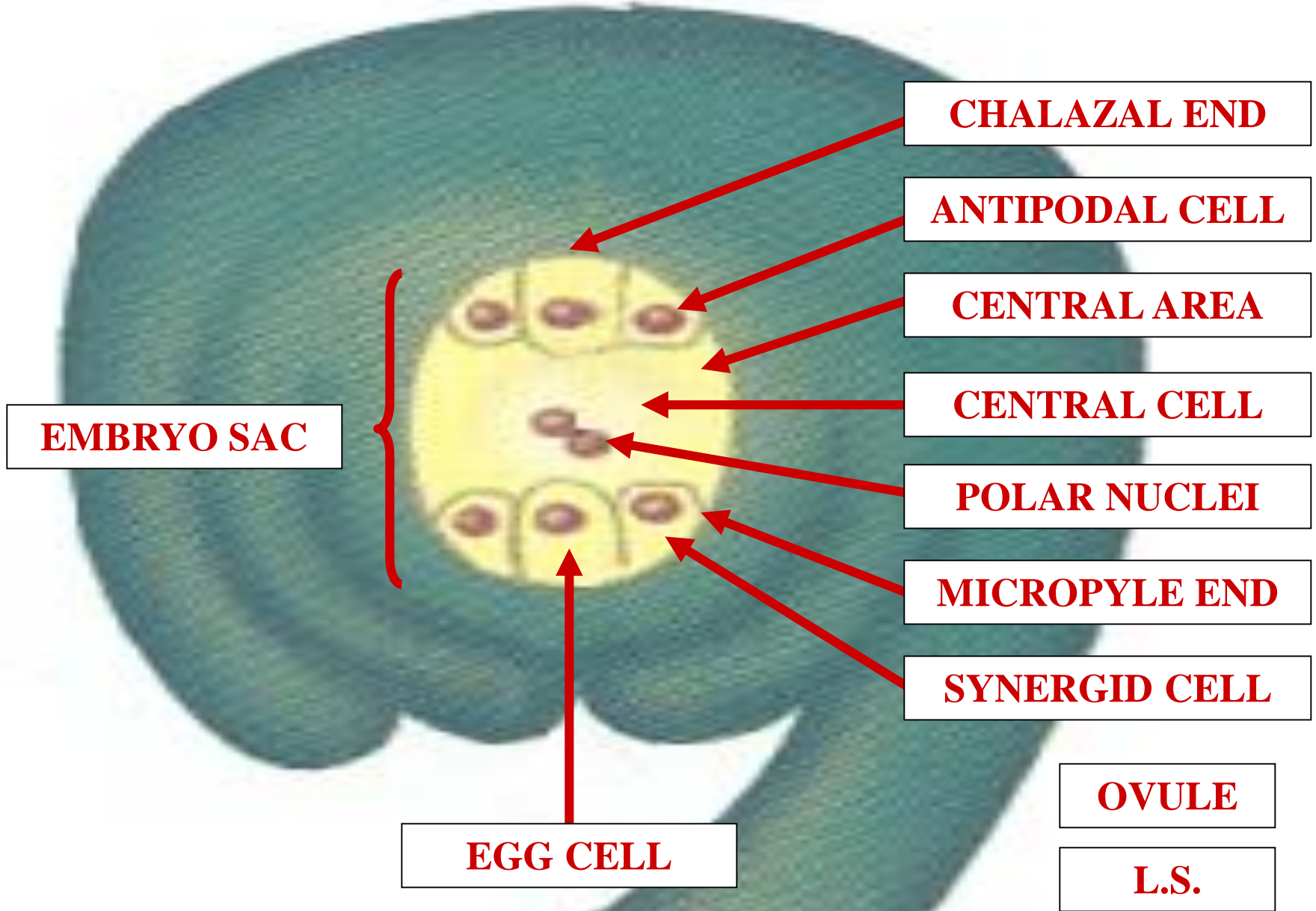
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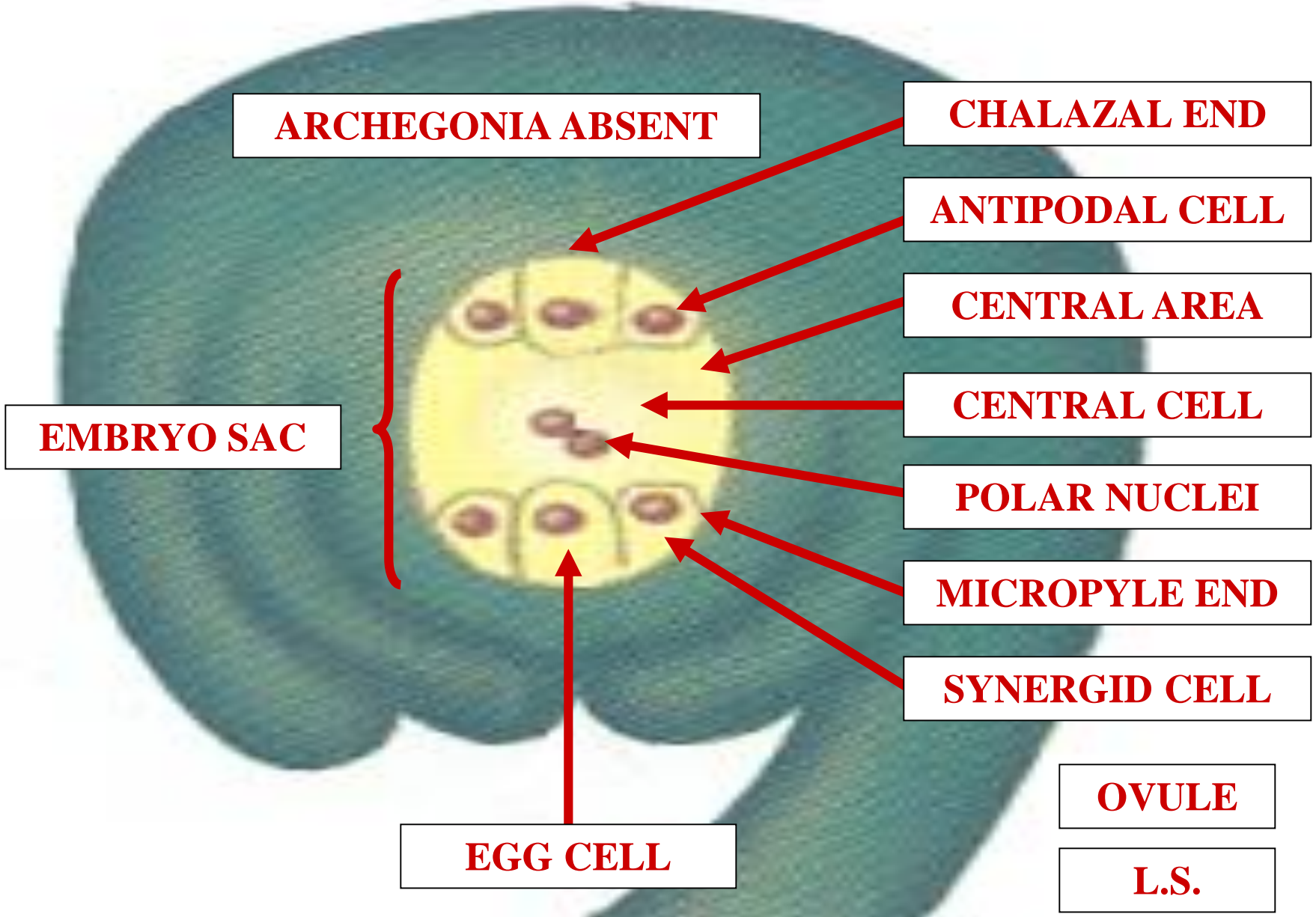
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POLYGONUM EMBRYO SAC





ATTENTION STUDENTS 



REQUIRED MATERIAL

LAB EXAM #5

&

FINAL EXAM



ATTENTION STUDENTS



**POWERPOINT SLIDES
WILL BE POSTED
ASAP**