

BIOLOGY 460/560

PLANT

PHYSIOLOGY

LABORATORY

#12



**ANGIOSPERM
FLOWER
MORPHOLOGY
&
ANATOMY**



ATTENTION STUDENTS 



REQUIRED MATERIAL

LAB EXAM #4

&

FINAL EXAM

PLANT FLOWER HABIT



SOLITARY FLOWER

**SOLITARY
FLOWER**



**SOLITARY
FLOWER**



?

**SOLITARY
FLOWER**



TRILLIUM

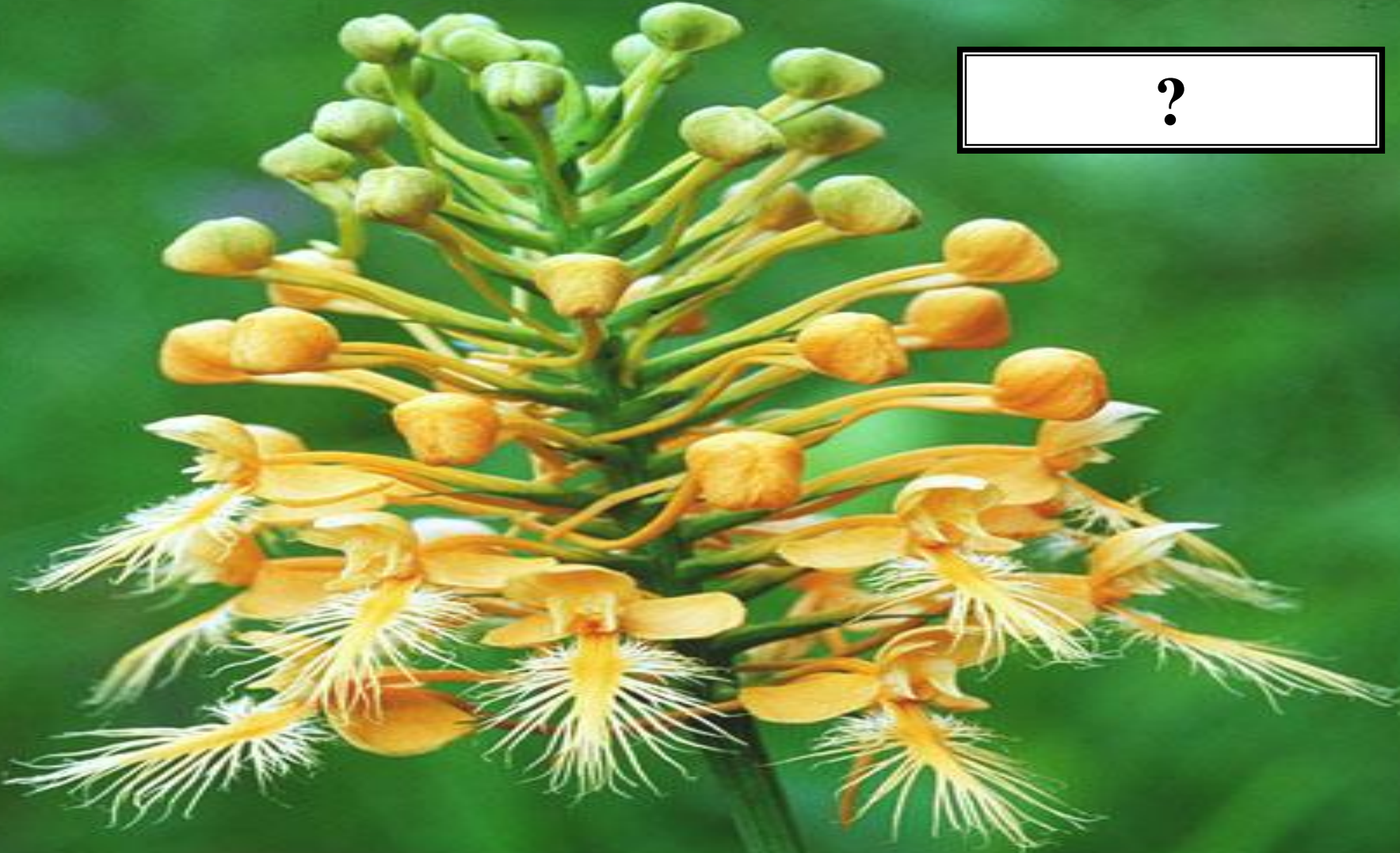


INFLORESCENCE



INFLORESCENCE

?



INFLORESCENCE



ORCHID



INFLORESCENCE

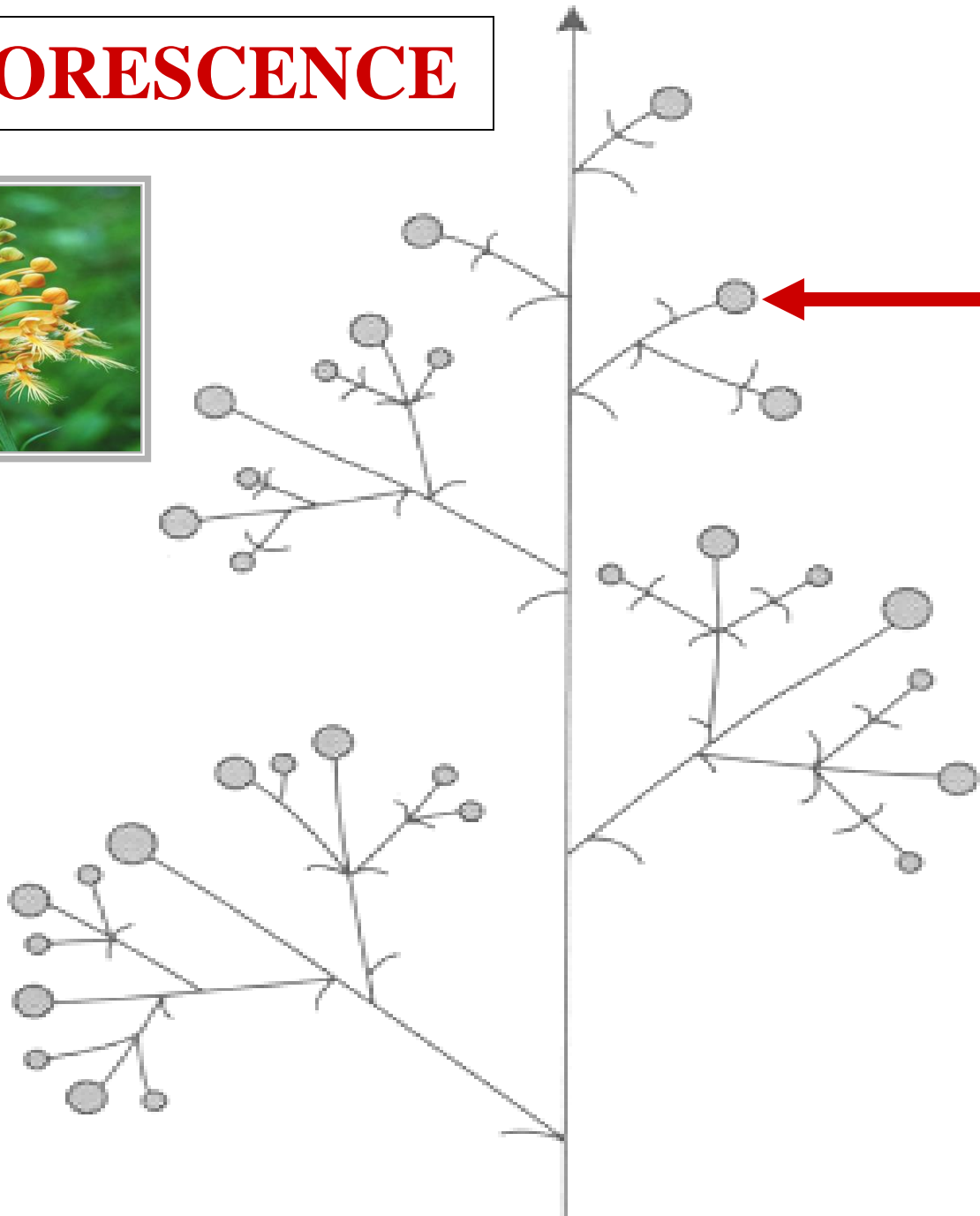


INFLORESCENCE MORPHOLOGY

INFLORESCENCE



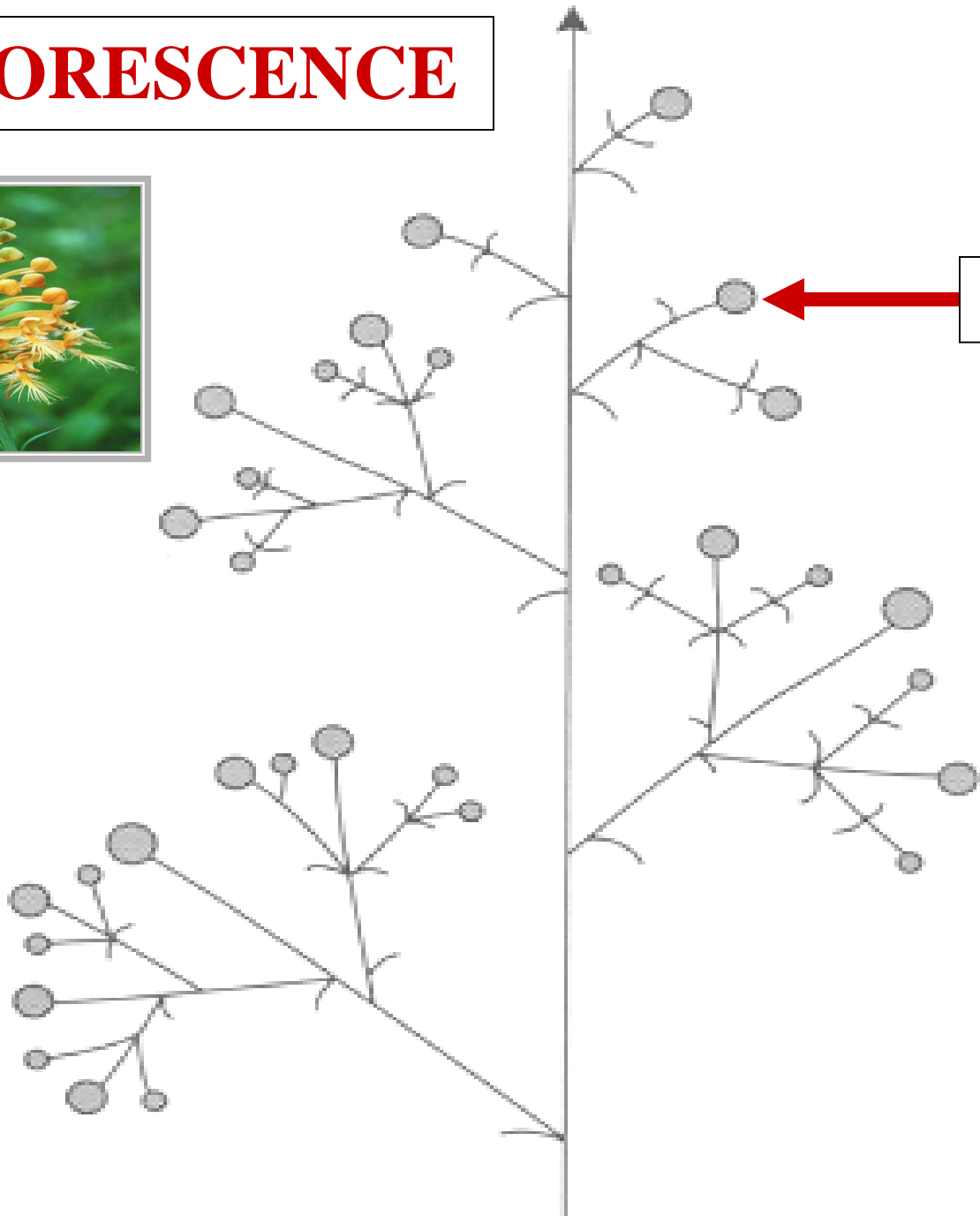
INFLORESCENCE



1



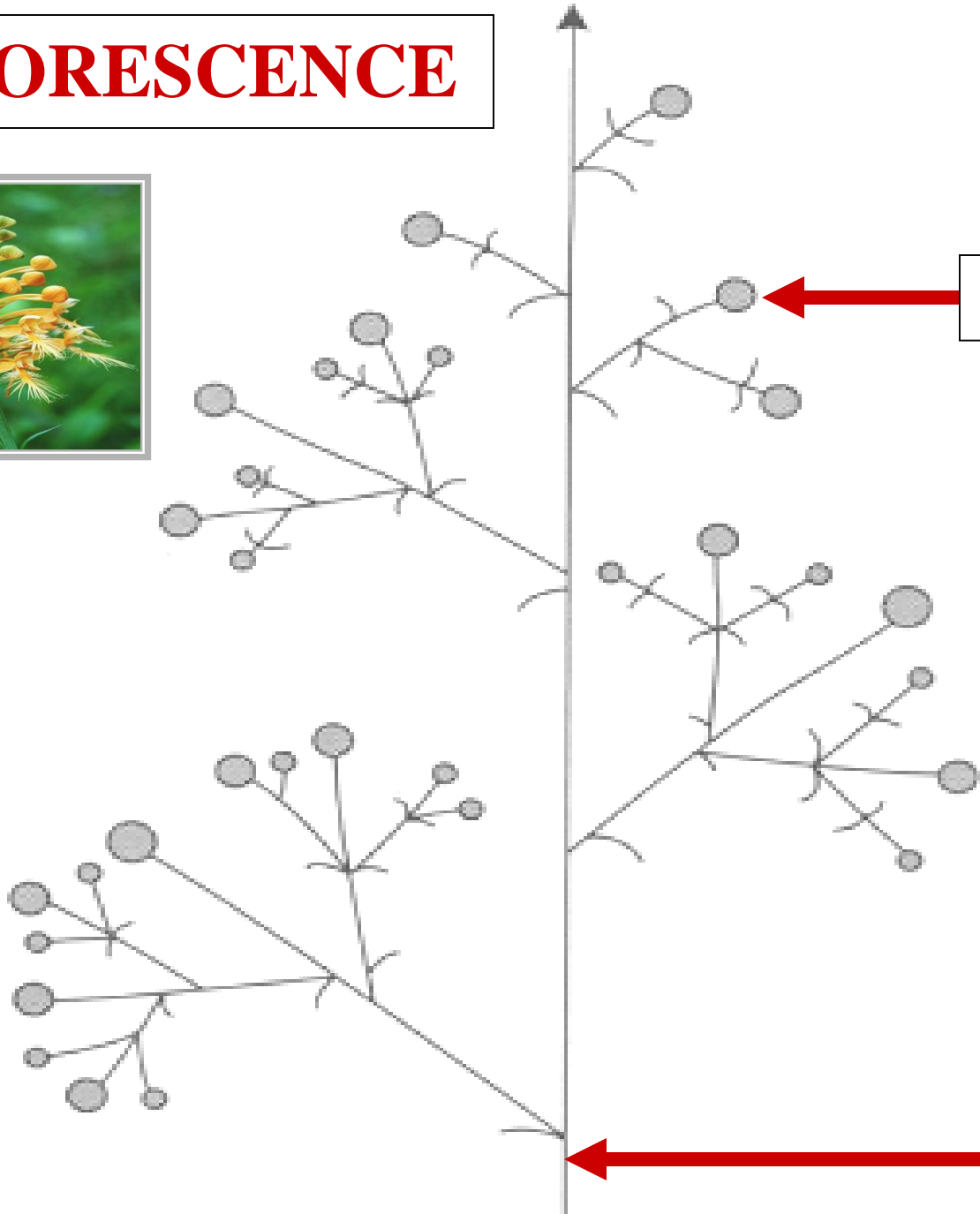
INFLORESCENCE



FLOWER



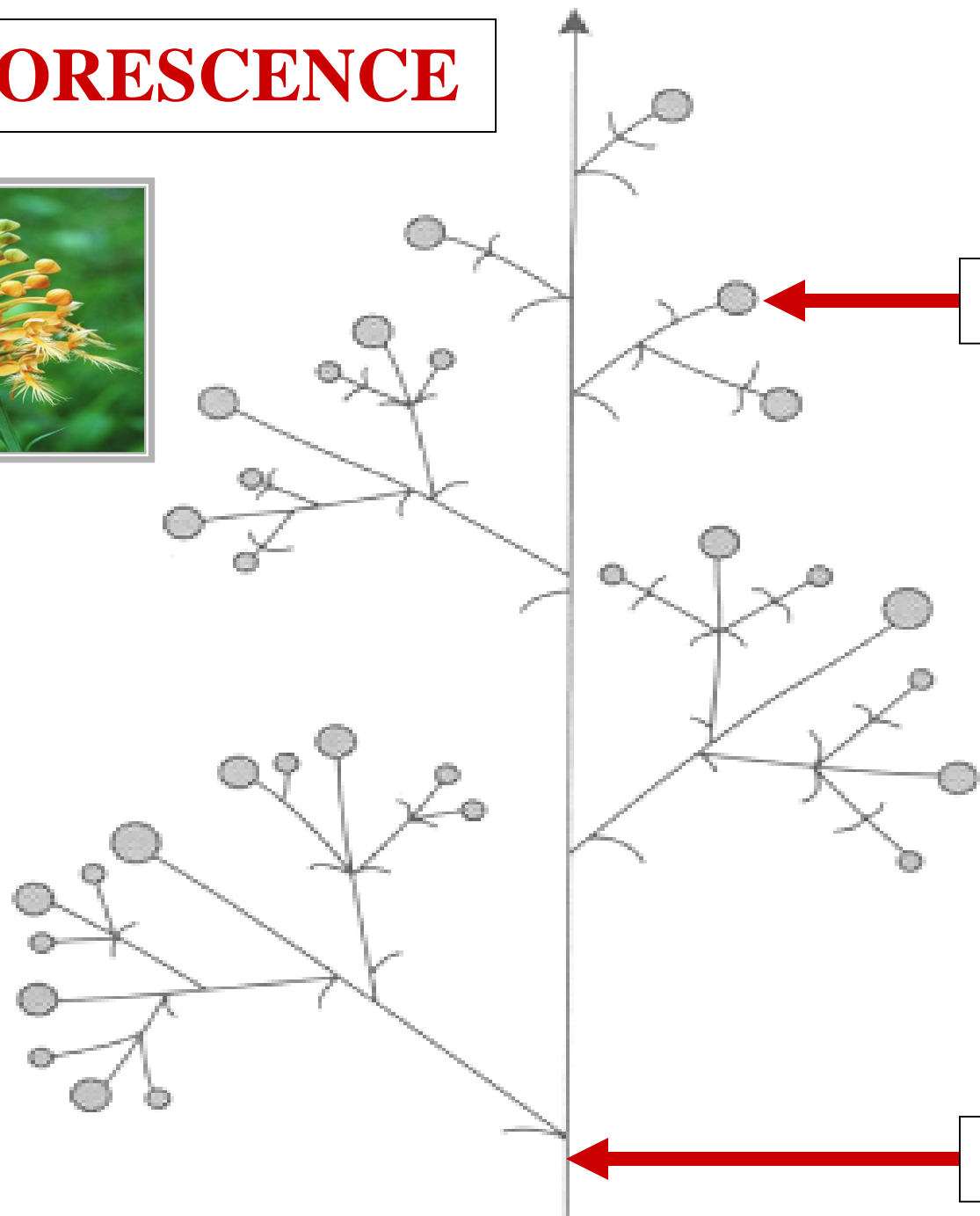
INFLORESCENCE



FLOWER

2

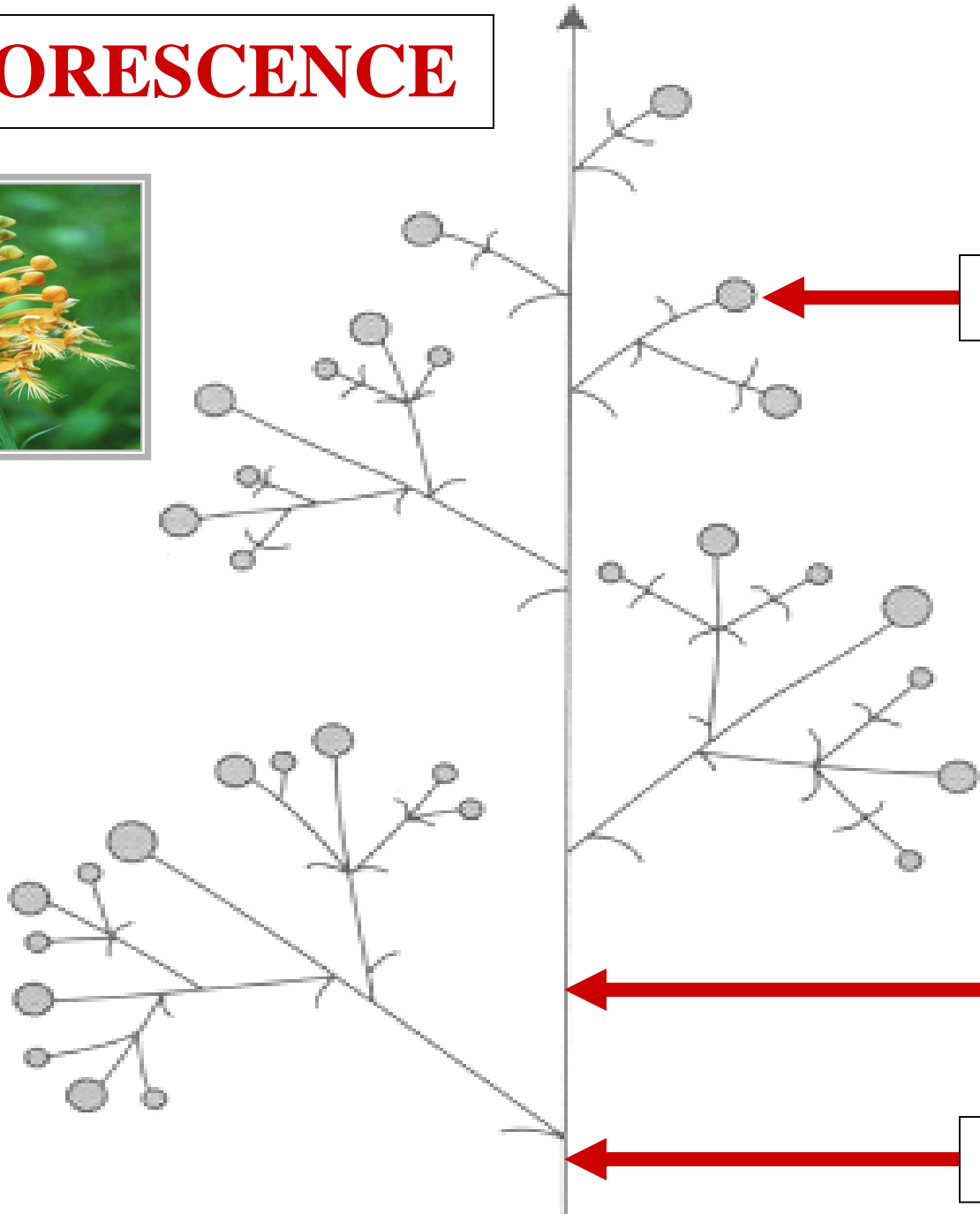
INFLORESCENCE



FLOWER

PEDUNCLE

INFLORESCENCE

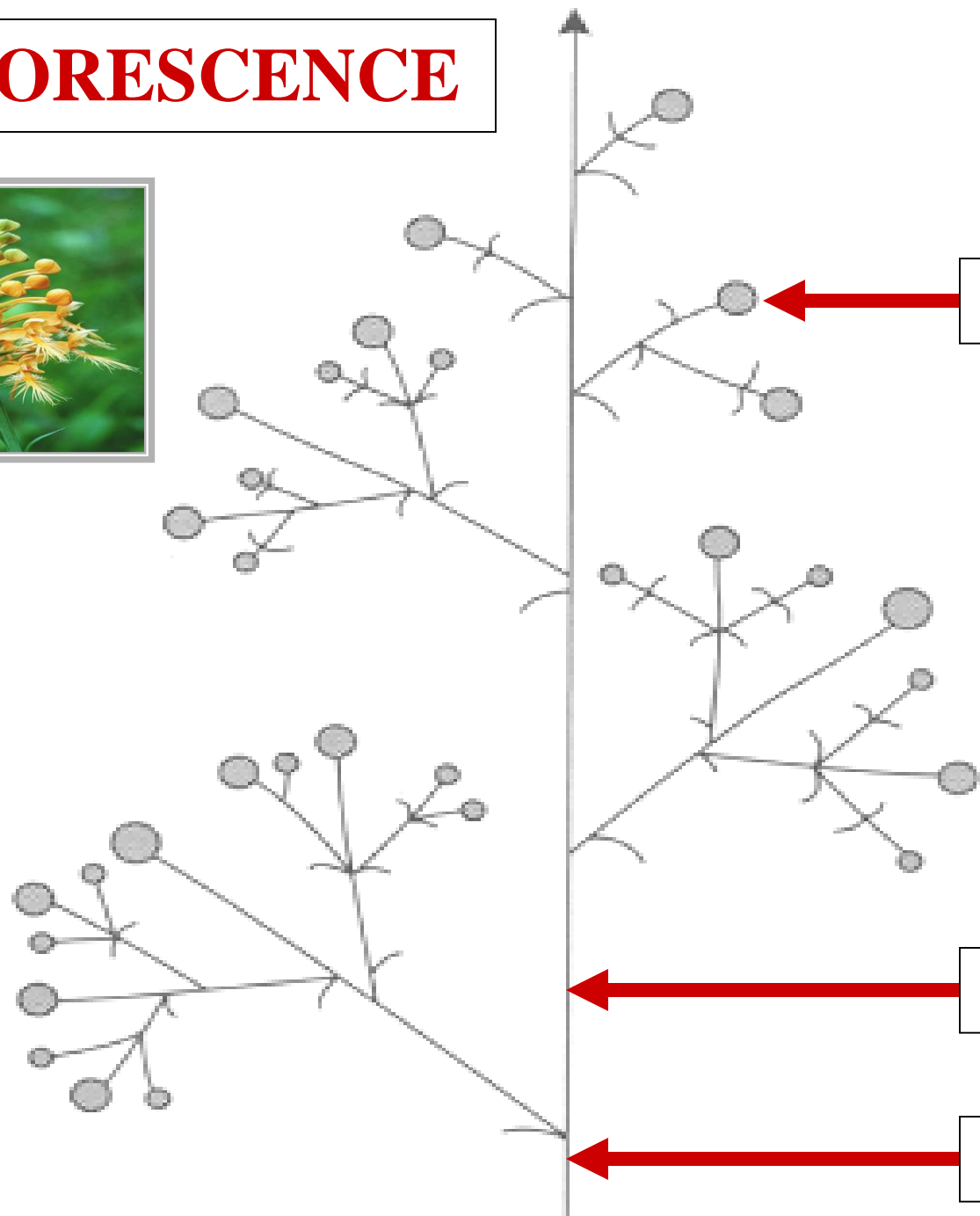


FLOWER

3

PEDUNCLE

INFLORESCENCE

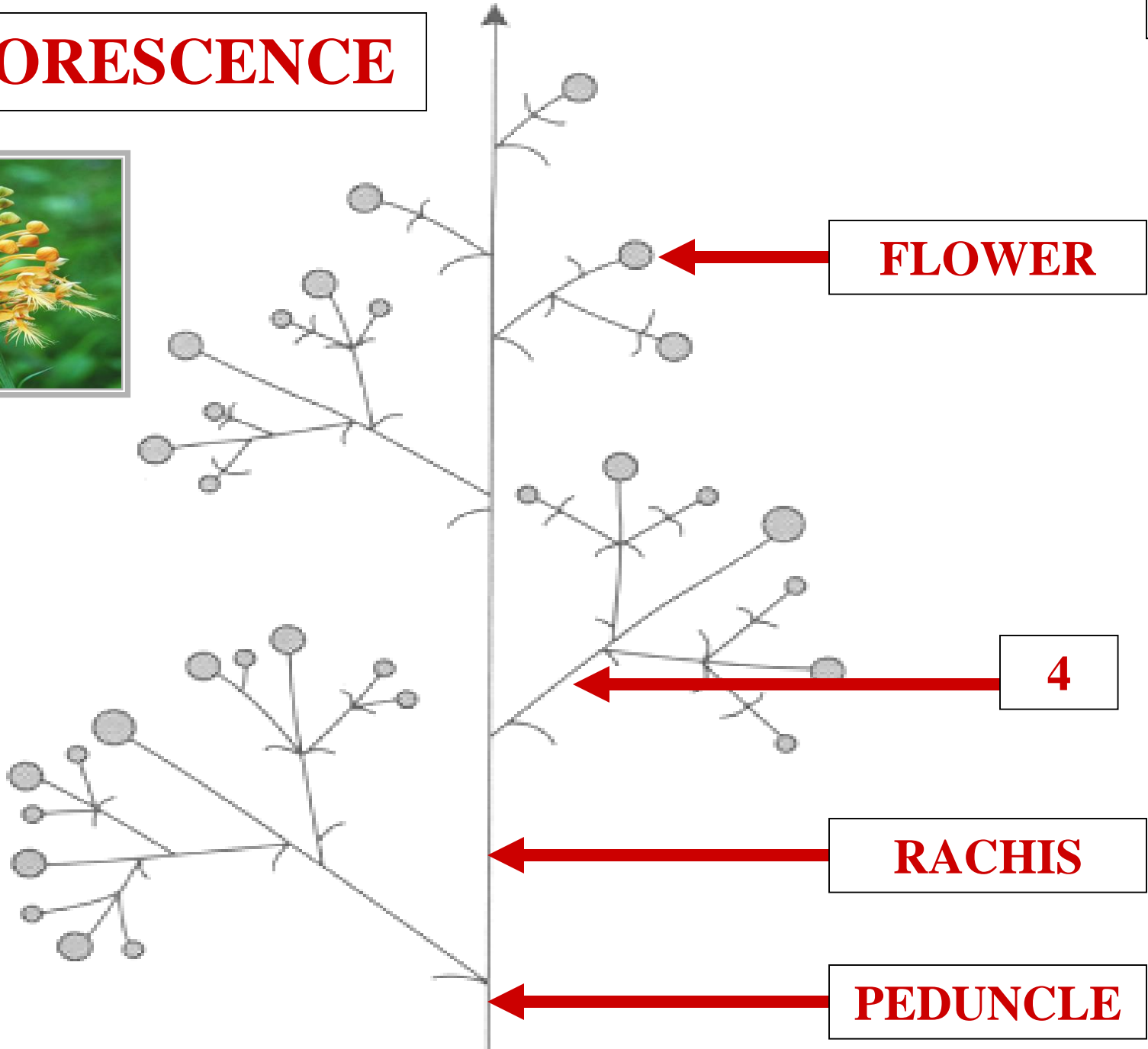


FLOWER

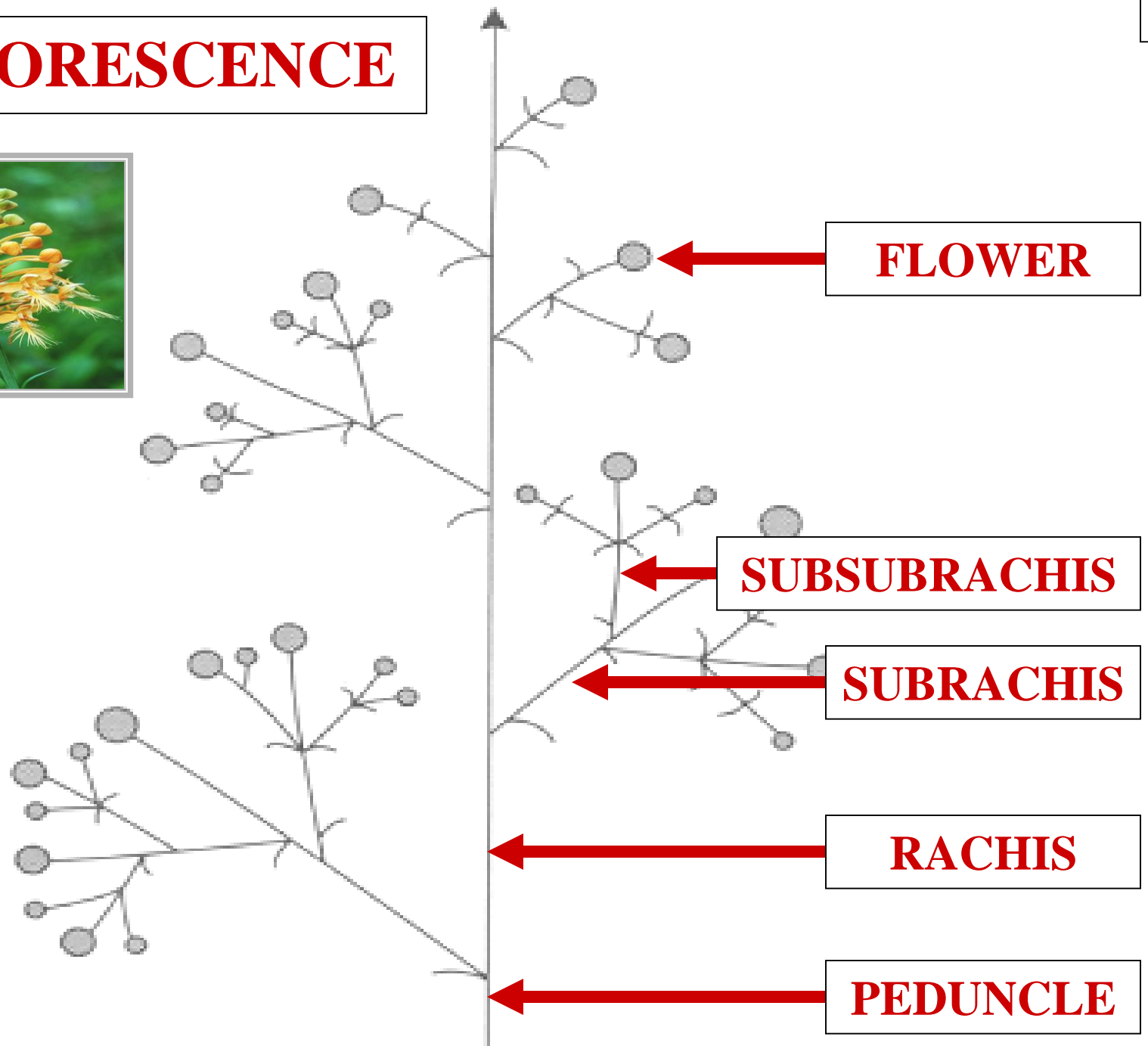
RACHIS

PEDUNCLE

INFLORESCENCE



INFLORESCENCE



FLOWER

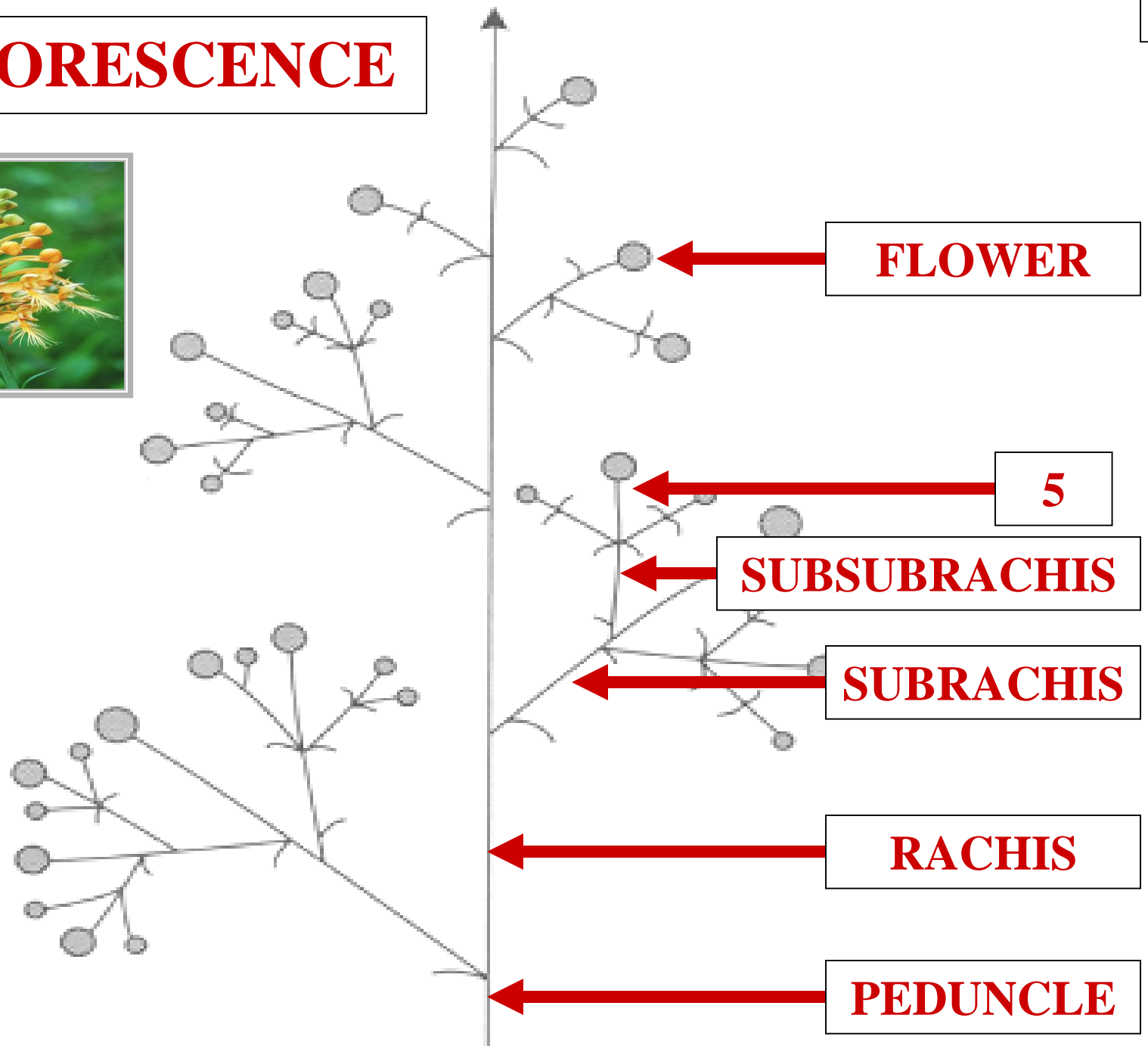
SUBSUBBRACHIS

SUBBRACHIS

RACHIS

PEDUNCLE

INFLORESCENCE



FLOWER

5

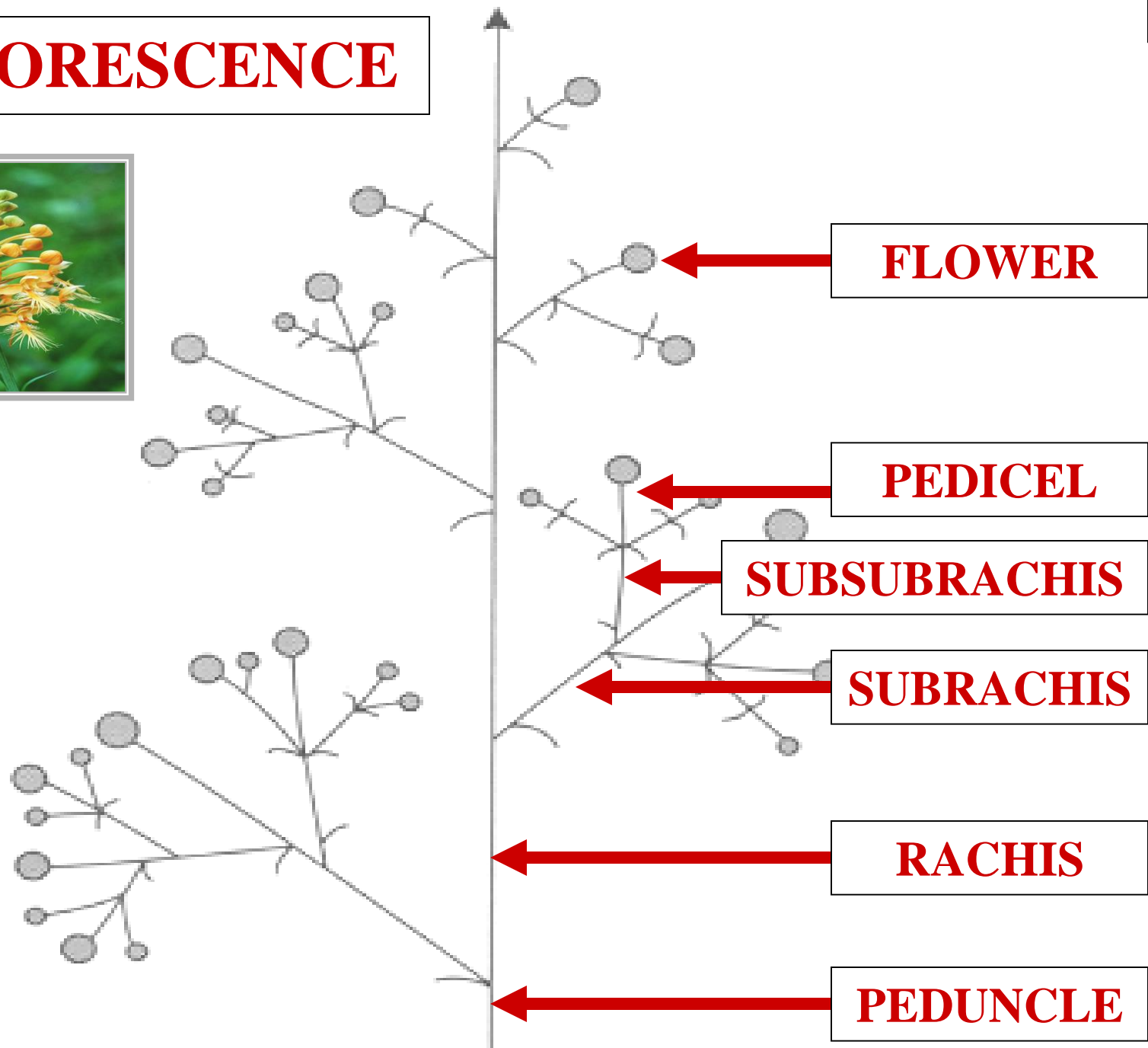
SUBSUBBRACHIS

SUBBRACHIS

RACHIS

PEDUNCLE

INFLORESCENCE



FLOWER

PEDICEL

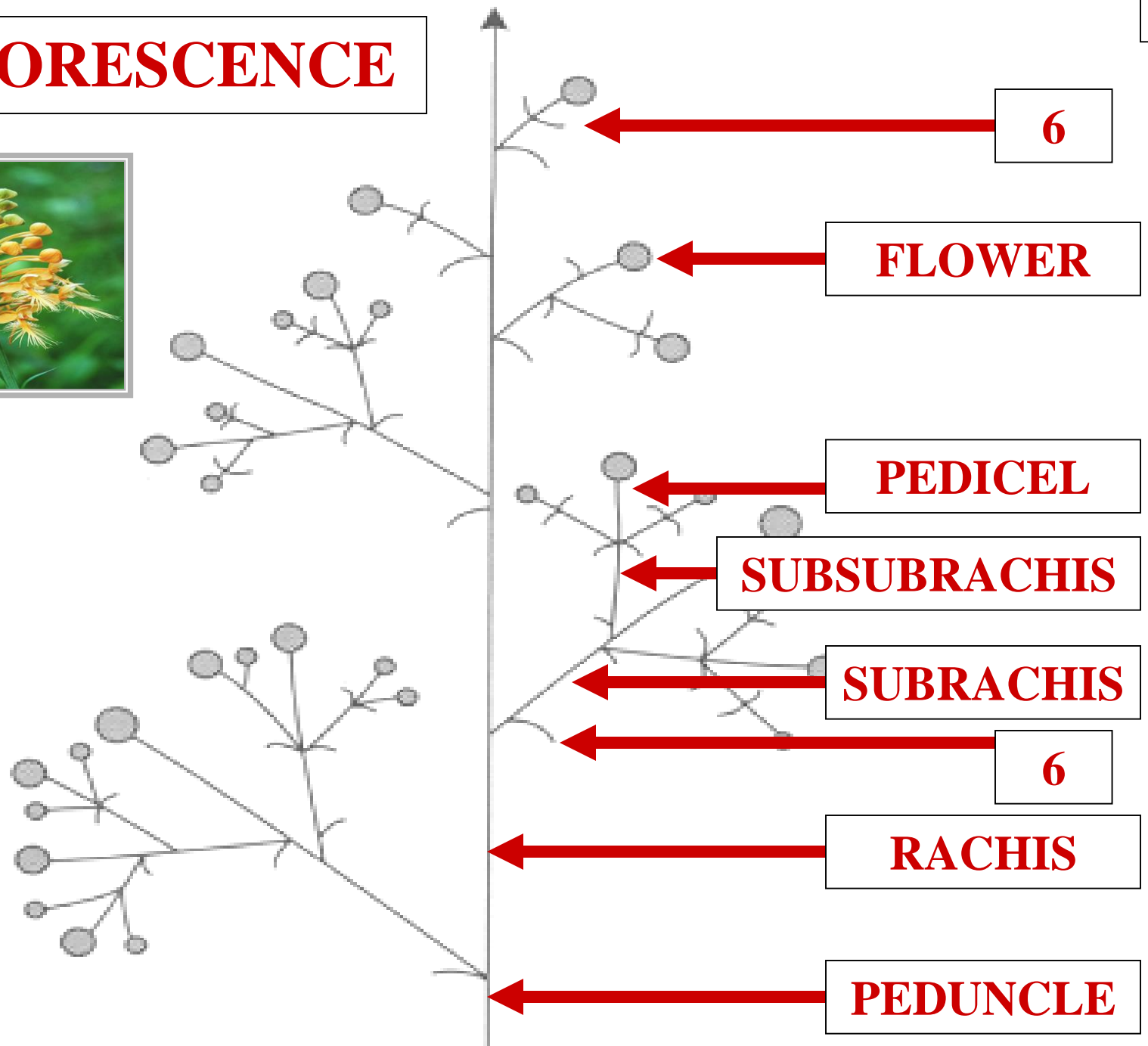
SUBSUBBRACHIS

SUBBRACHIS

RACHIS

PEDUNCLE

INFLORESCENCE



6

FLOWER

PEDICEL

SUBSUBRACHIS

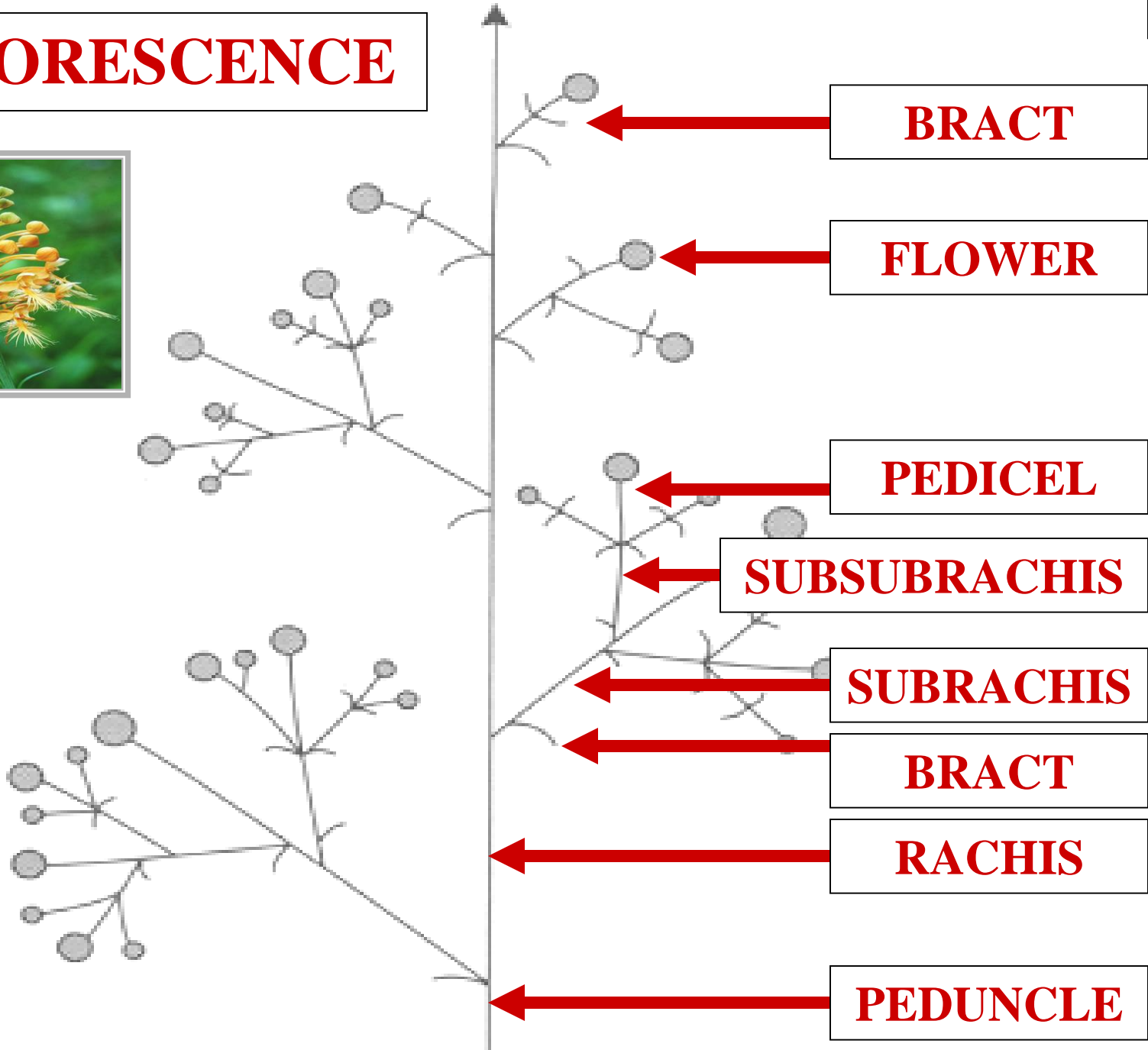
SUBRACHIS

6

RACHIS

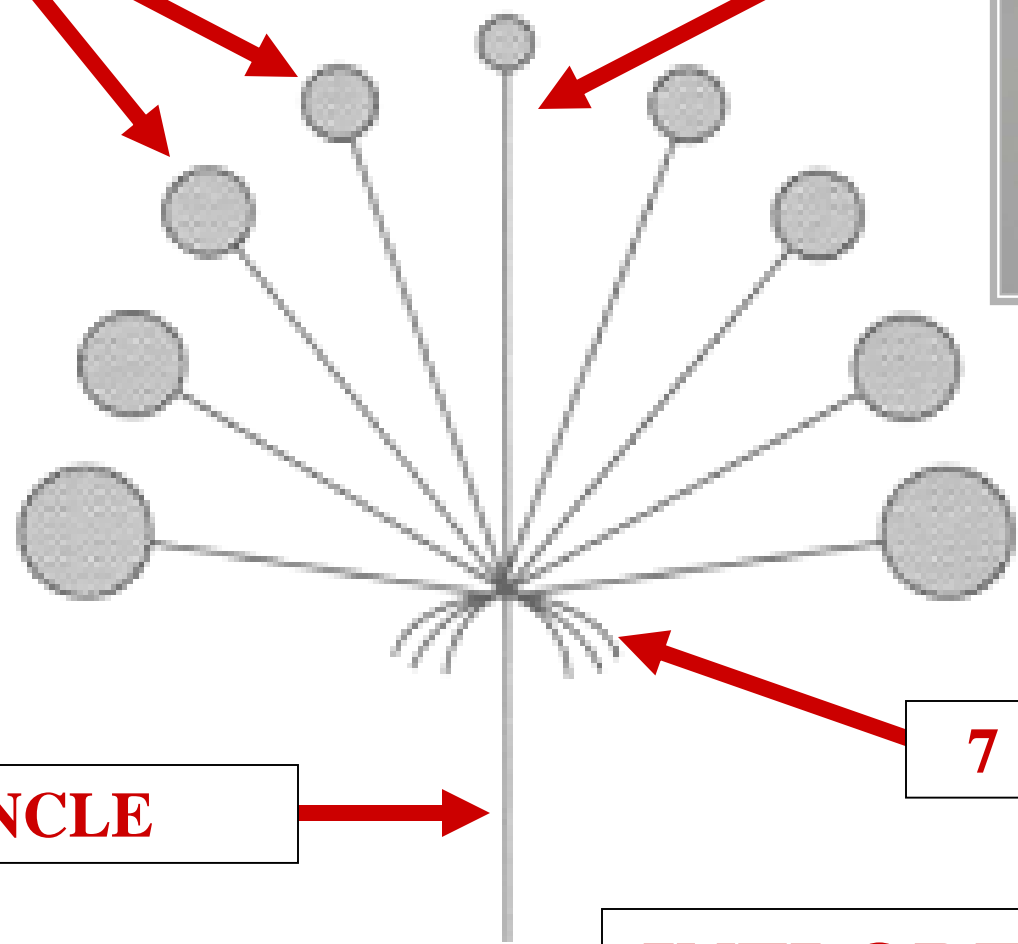
PEDUNCLE

INFLORESCENCE



FLOWERS

PEDICEL



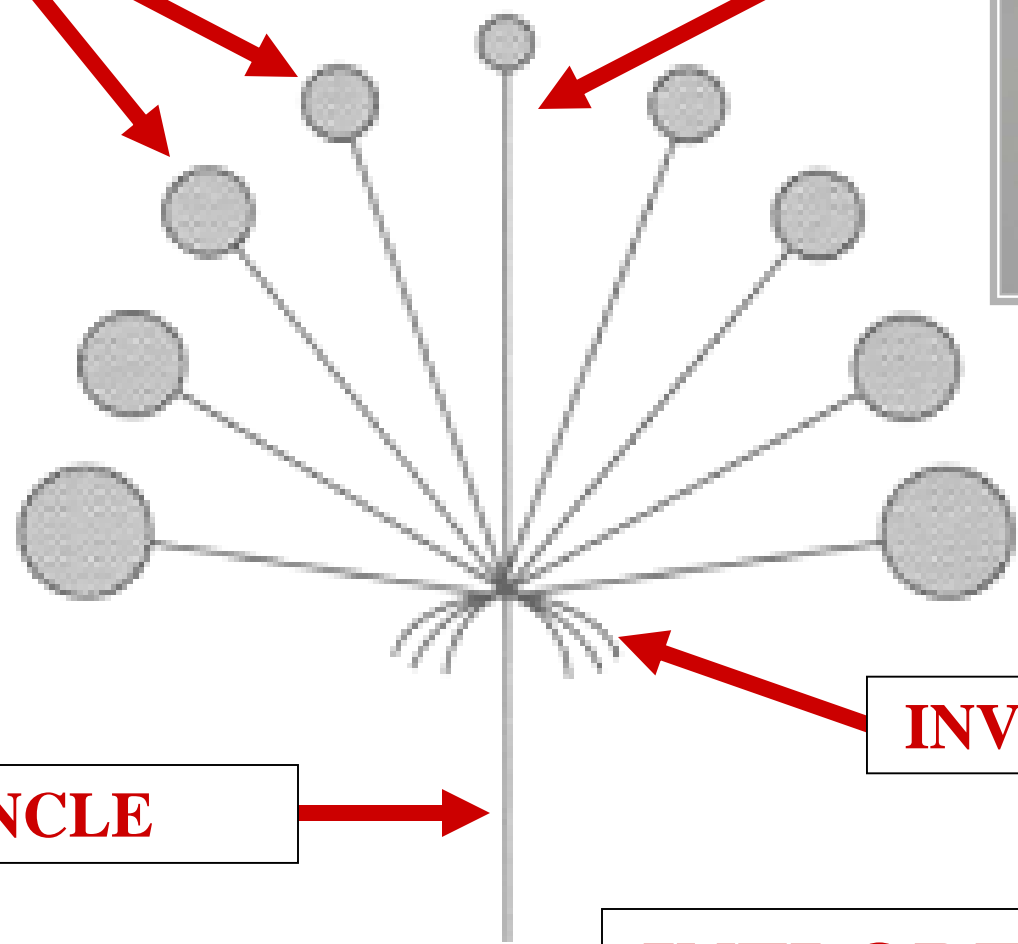
PEDUNCLE

7

INFLORESCENCE

FLOWERS

PEDICEL

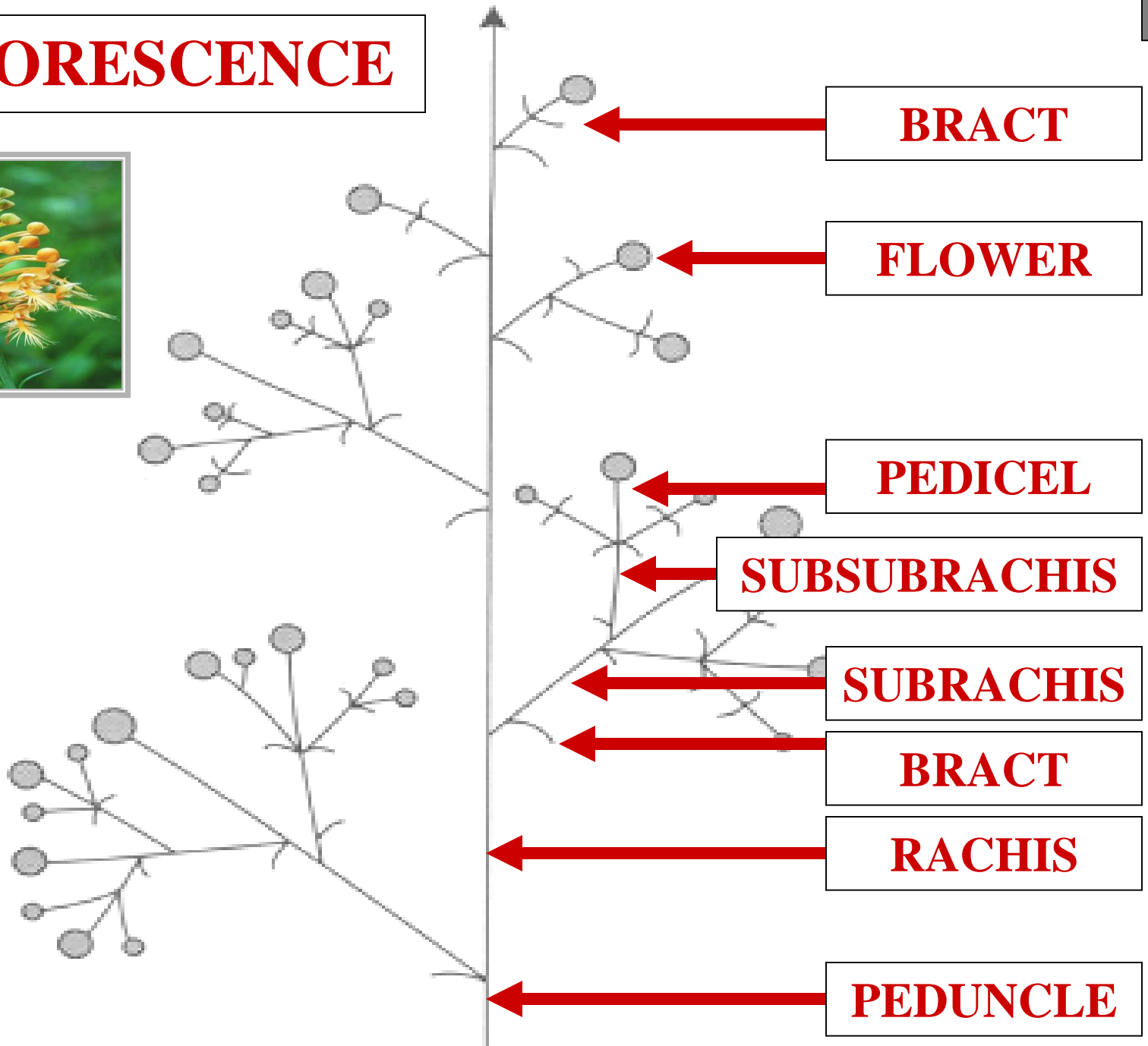


INVOLUCRE

PEDUNCLE

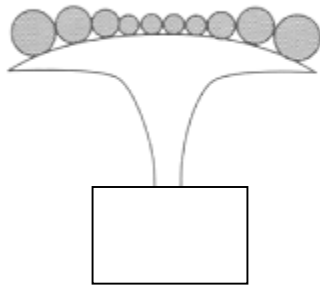
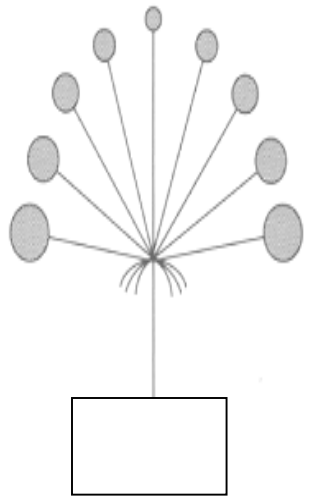
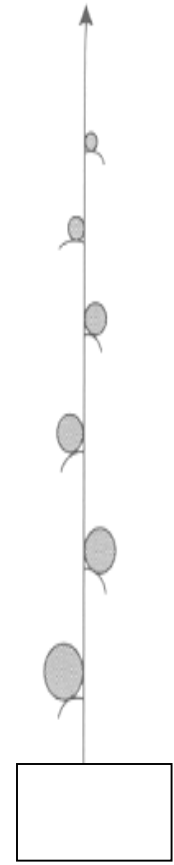
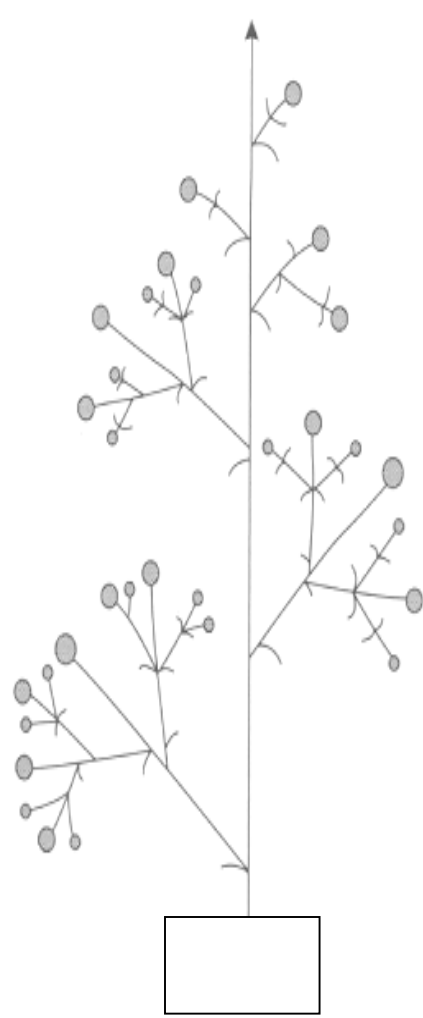
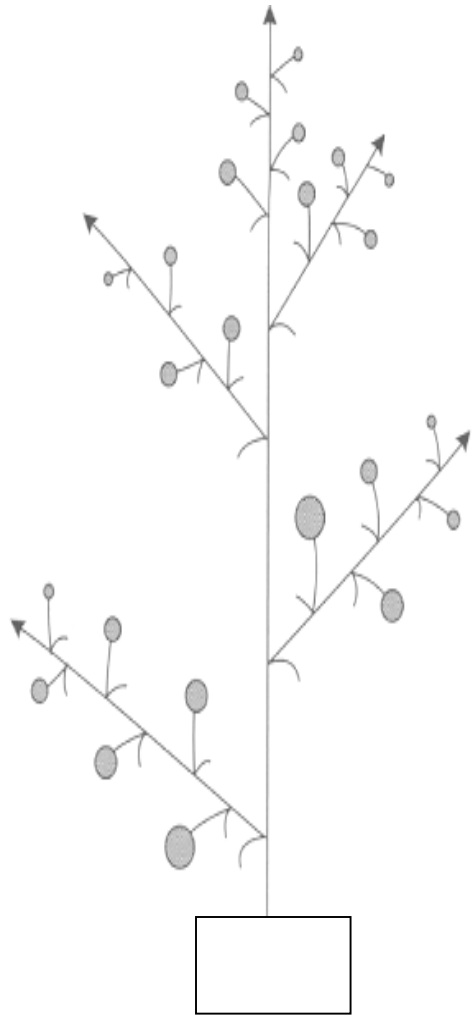
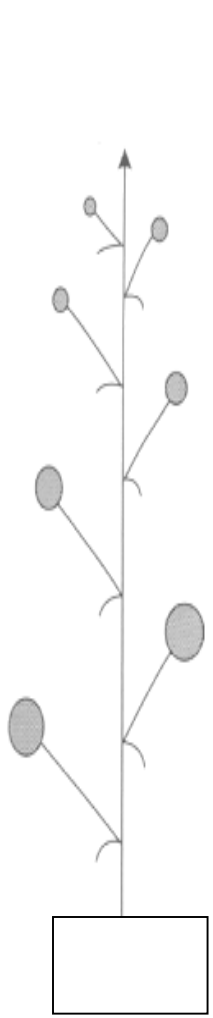
INFLORESCENCE

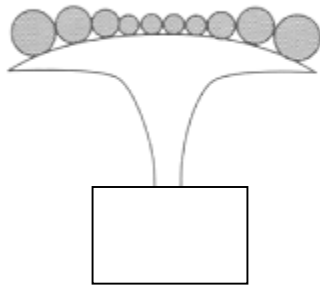
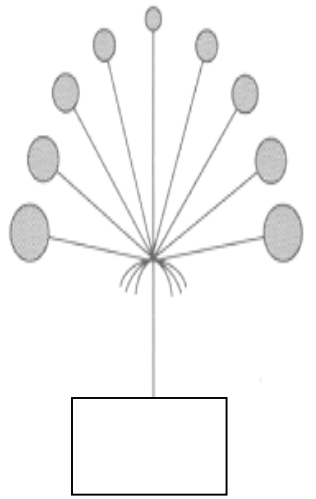
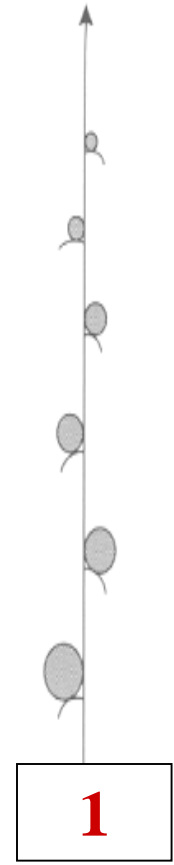
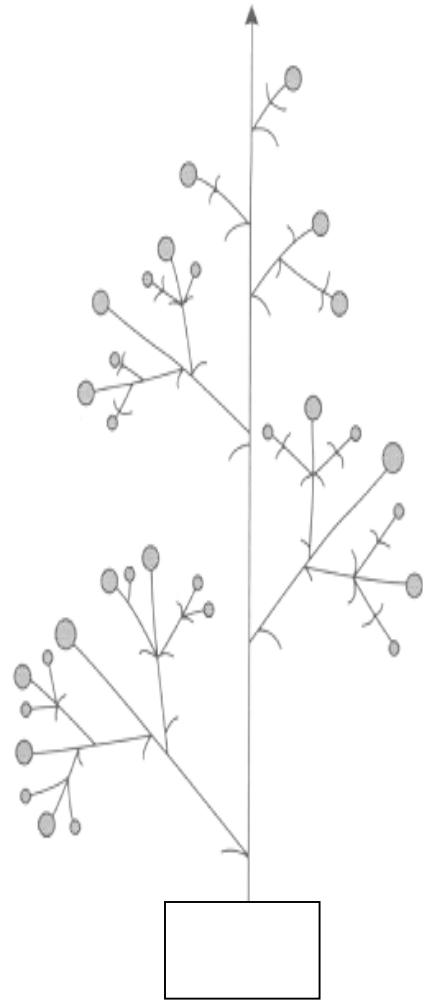
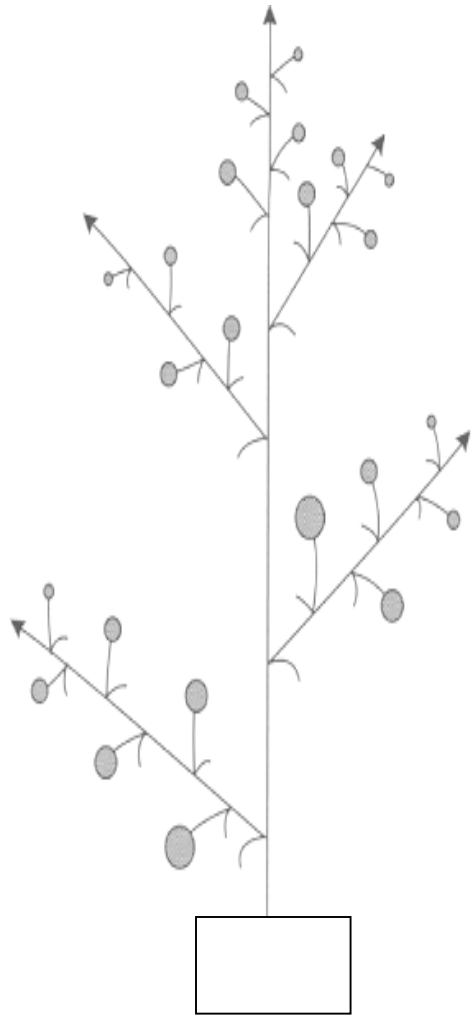
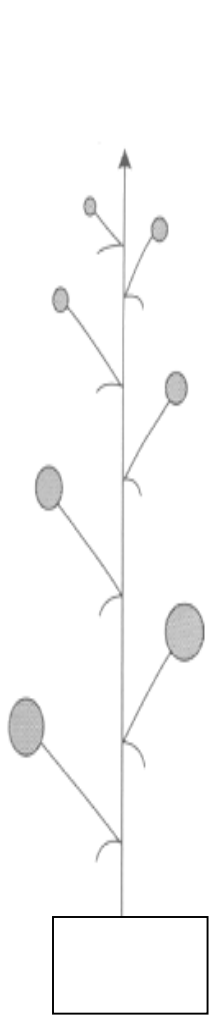
INFLORESCENCE

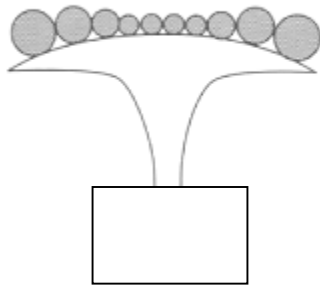
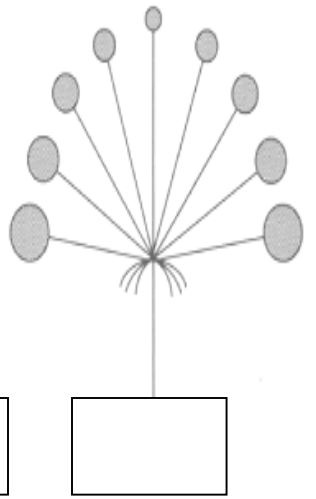
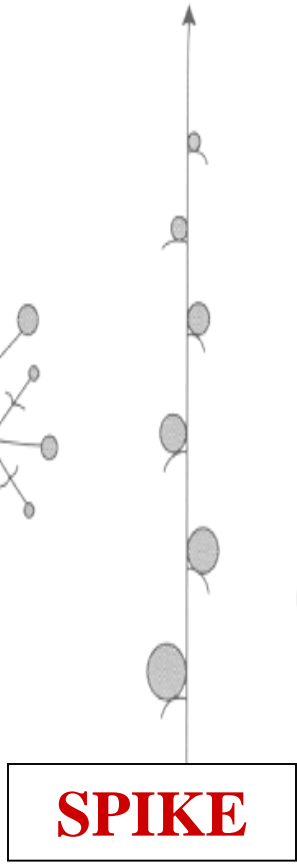
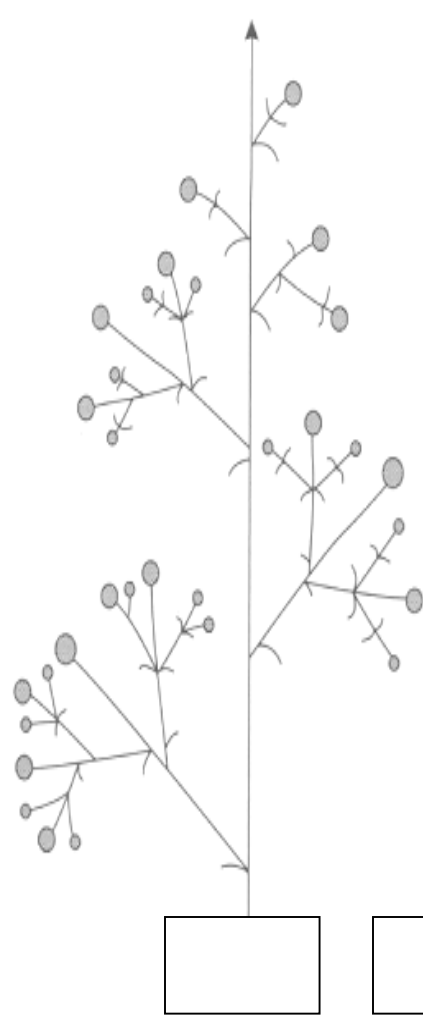
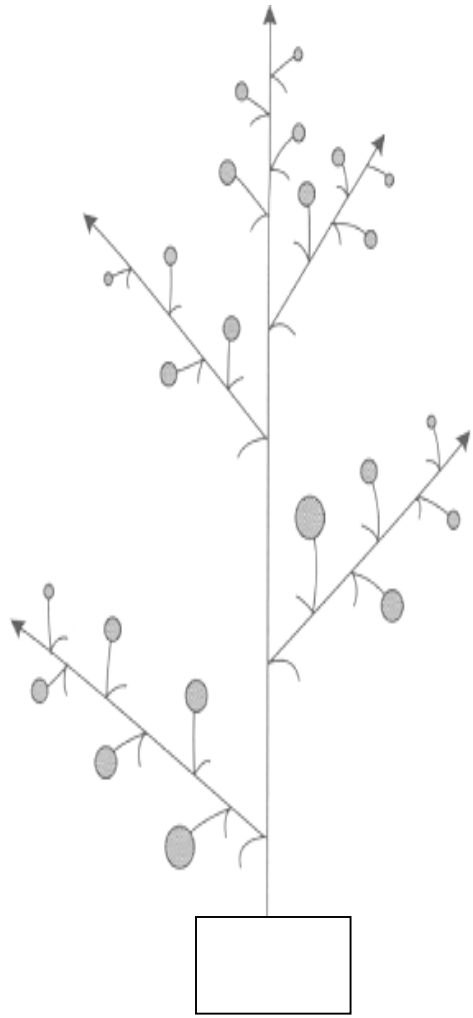
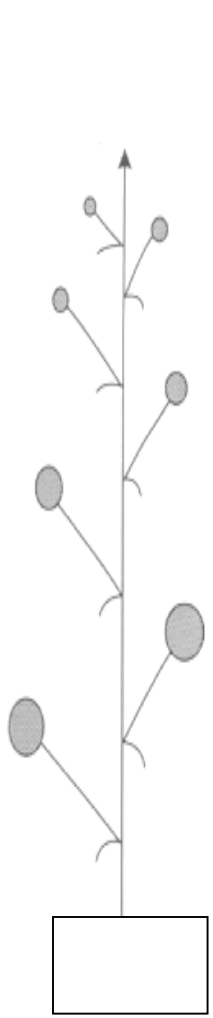


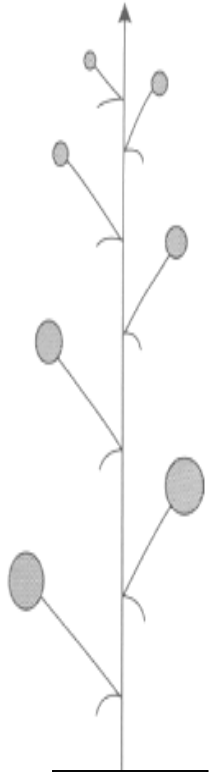


INFLORESCENCE TYPES

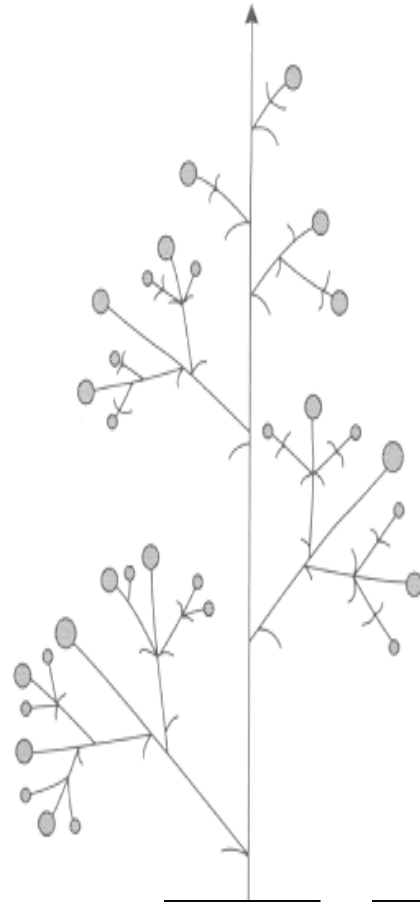
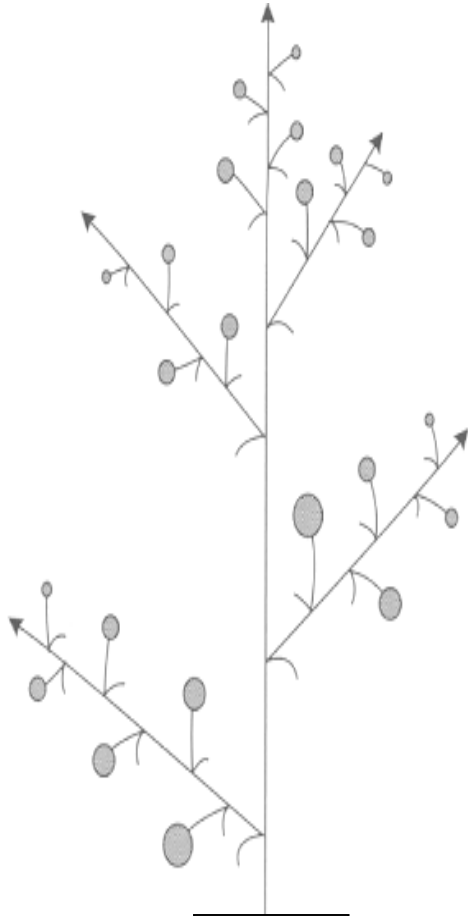




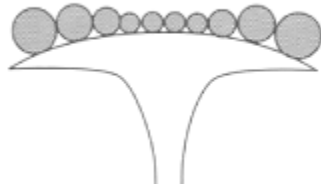
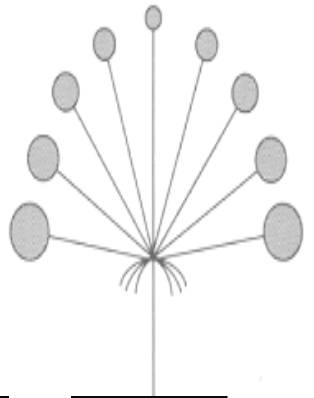


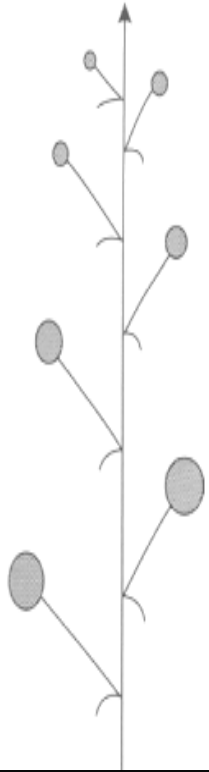


2

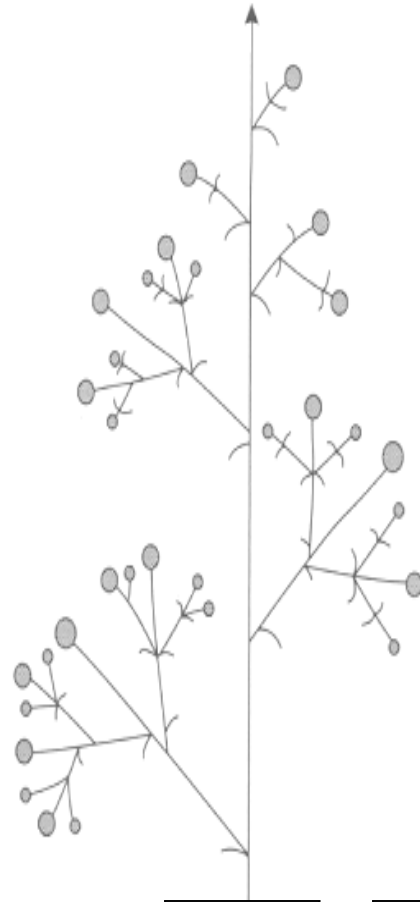
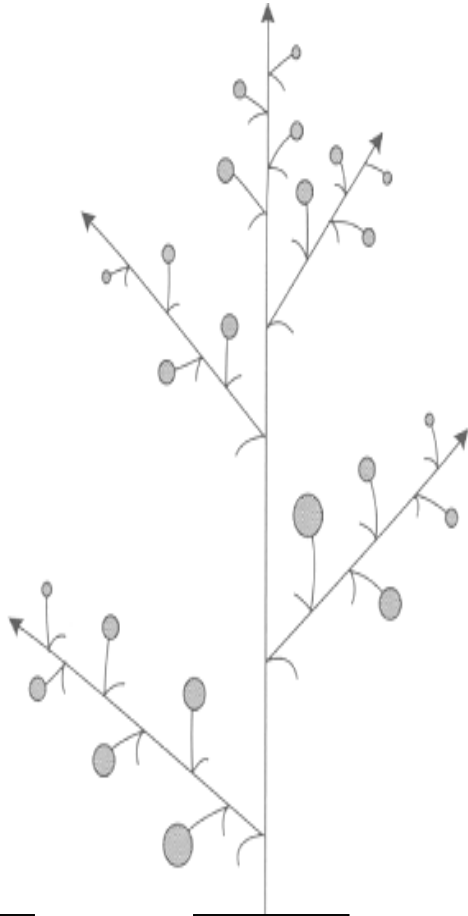


SPIKE

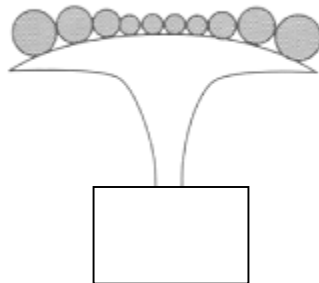
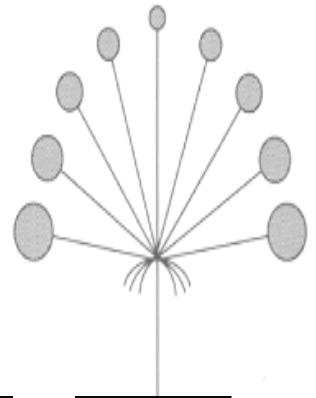


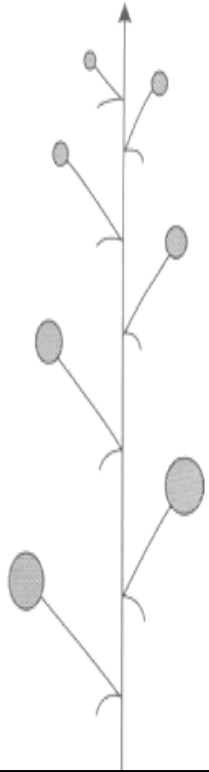


RACEME

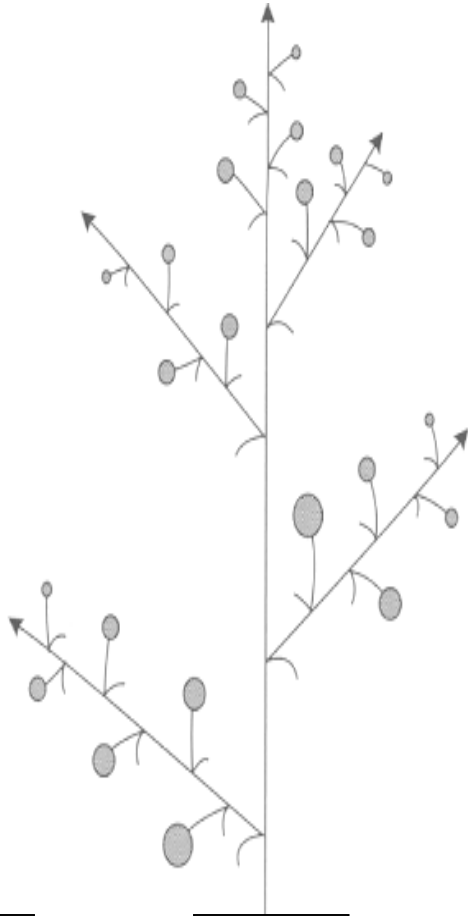


SPIKE

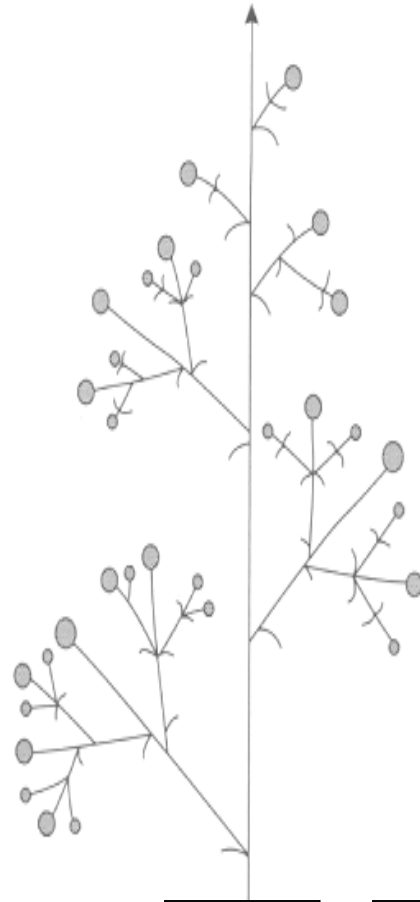




RACEME



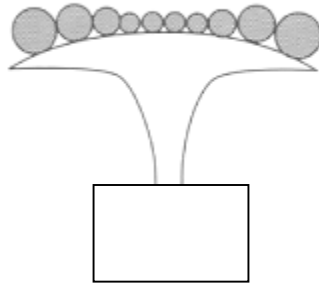
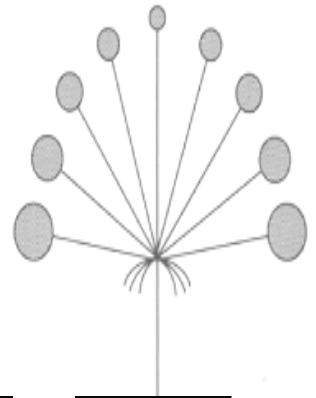
3

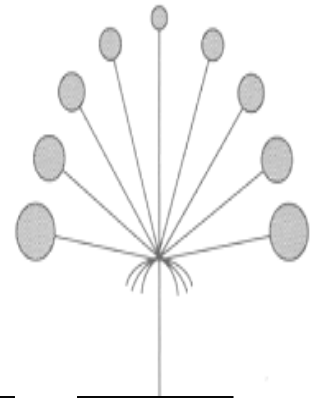
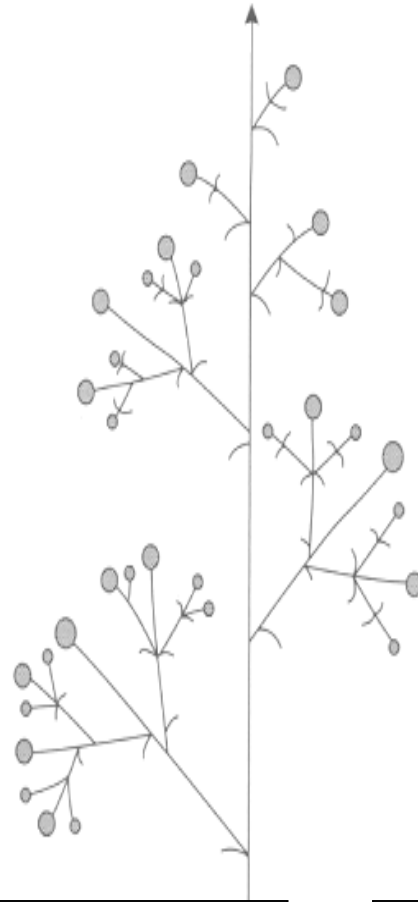
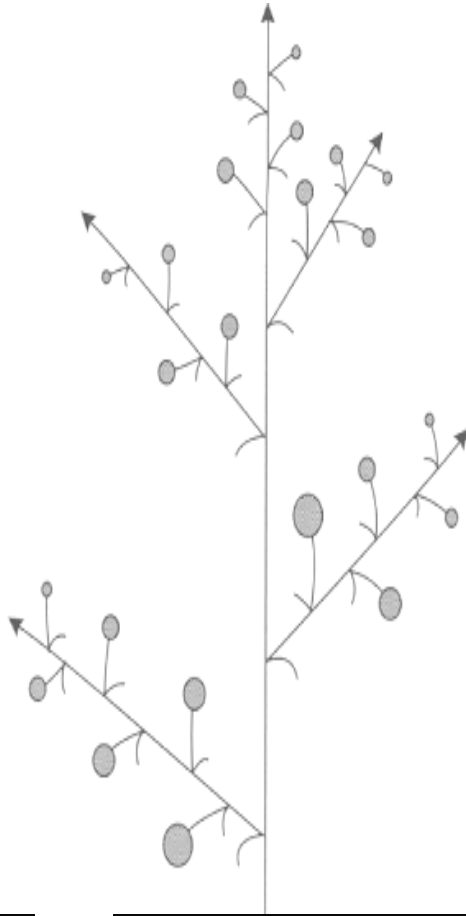
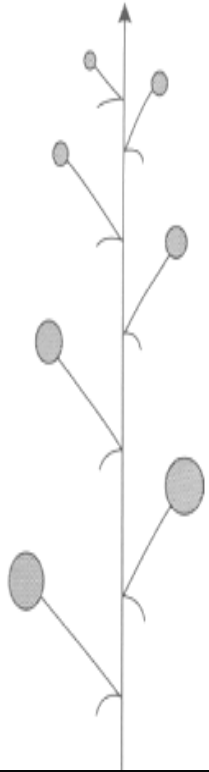


3



SPIKE

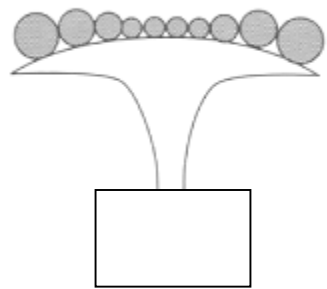


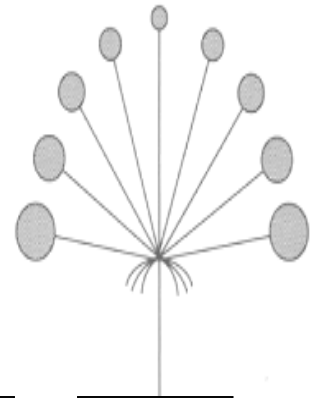
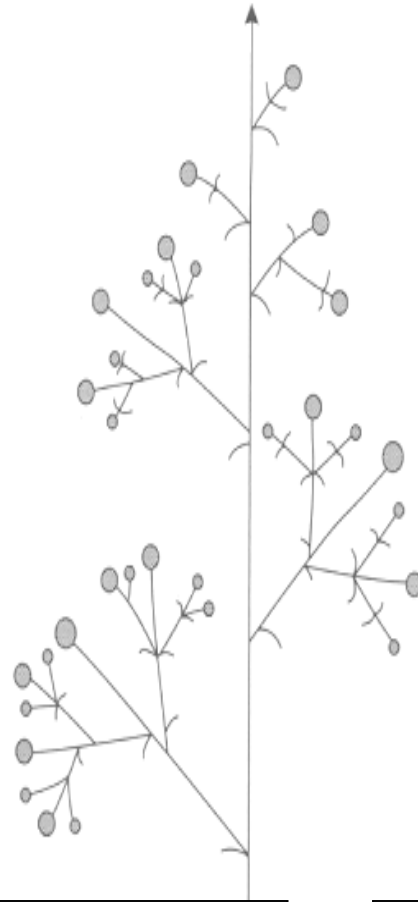
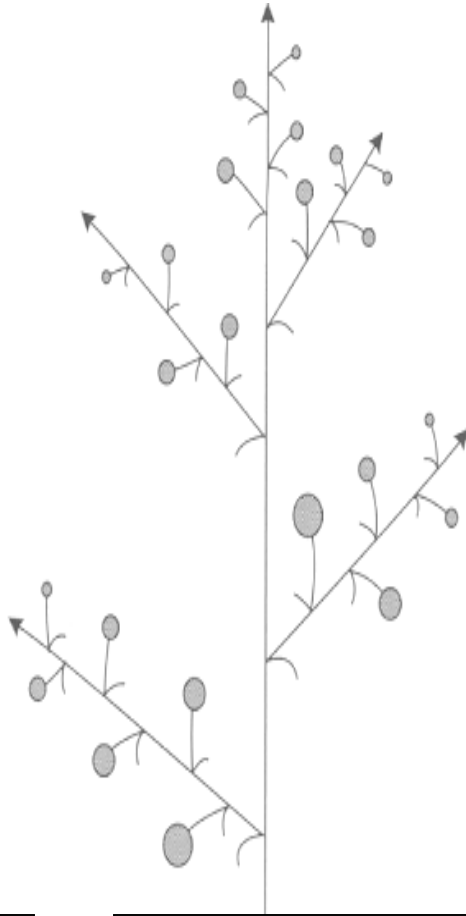
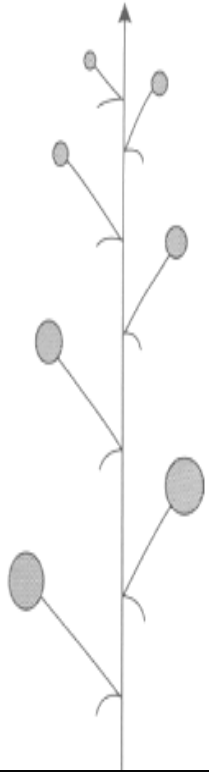


RACEME

PANICLE

SPIKE



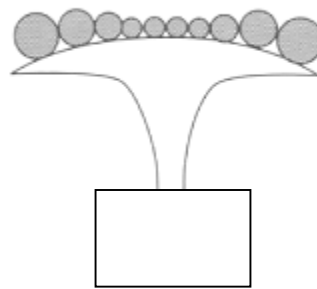


RACEME

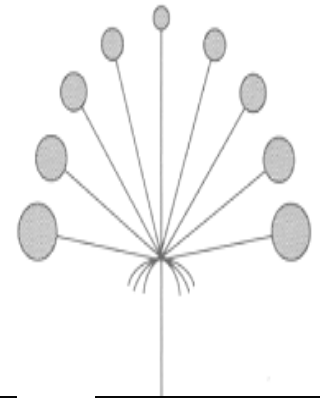
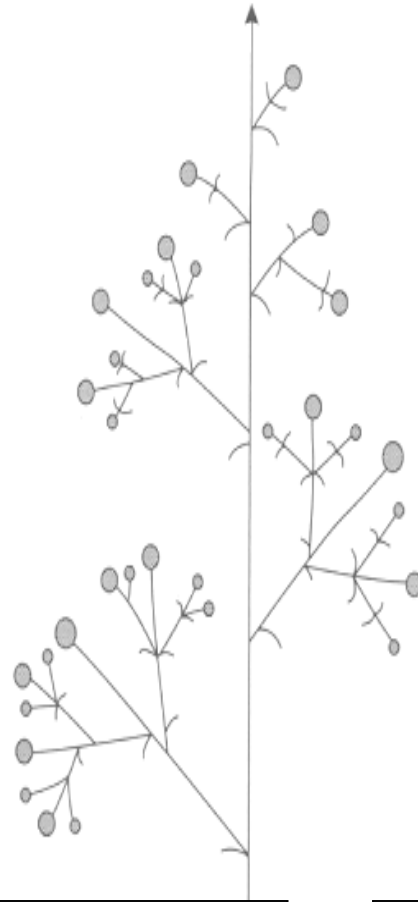
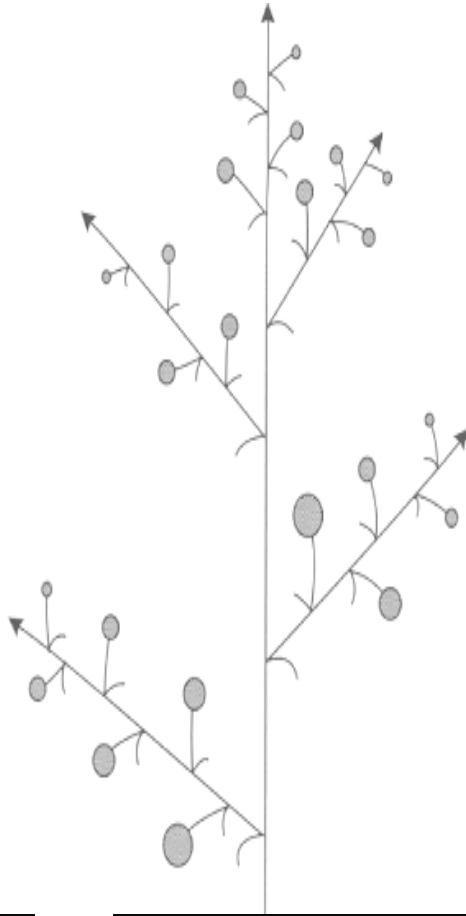
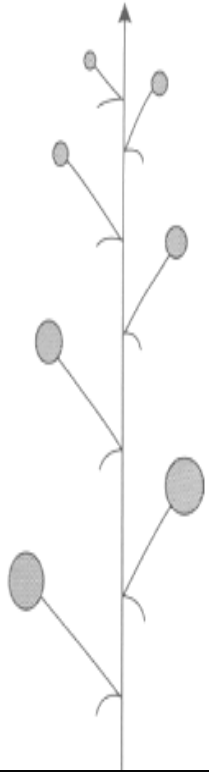
PANICLE

SPIKE

4



U

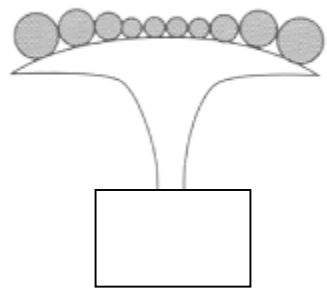


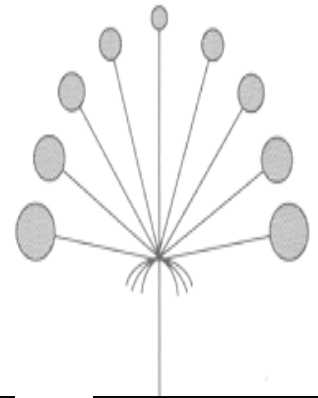
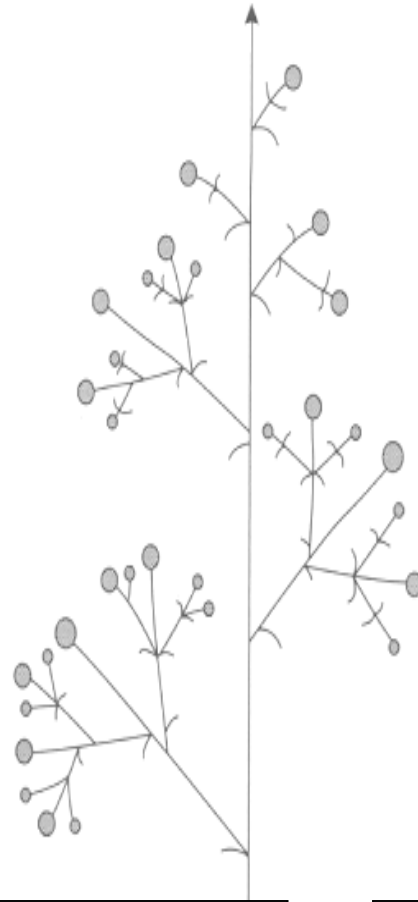
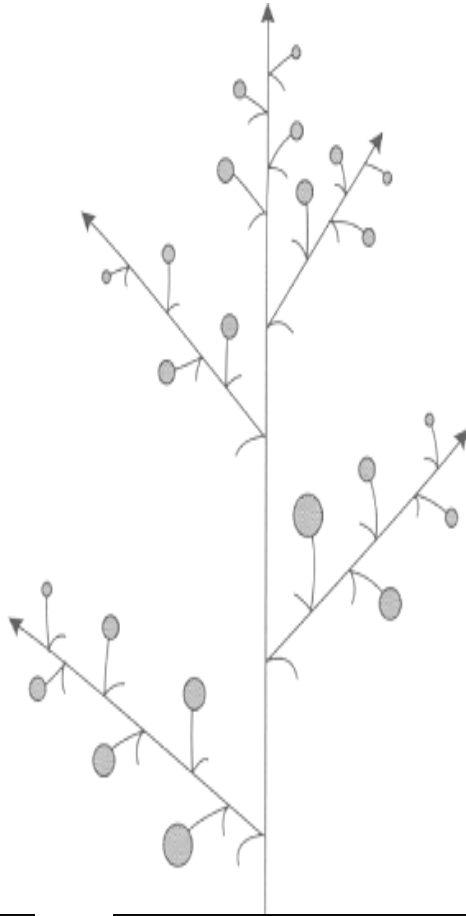
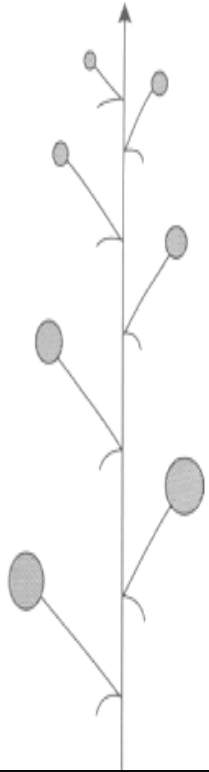
RACEME

PANICLE

SPIKE

UMBEL



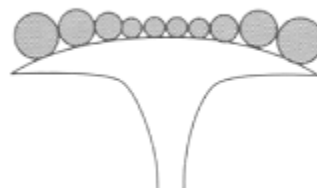


RACEME

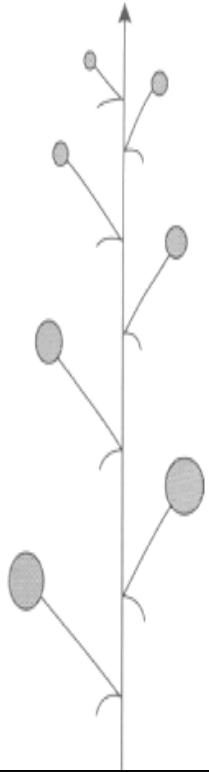
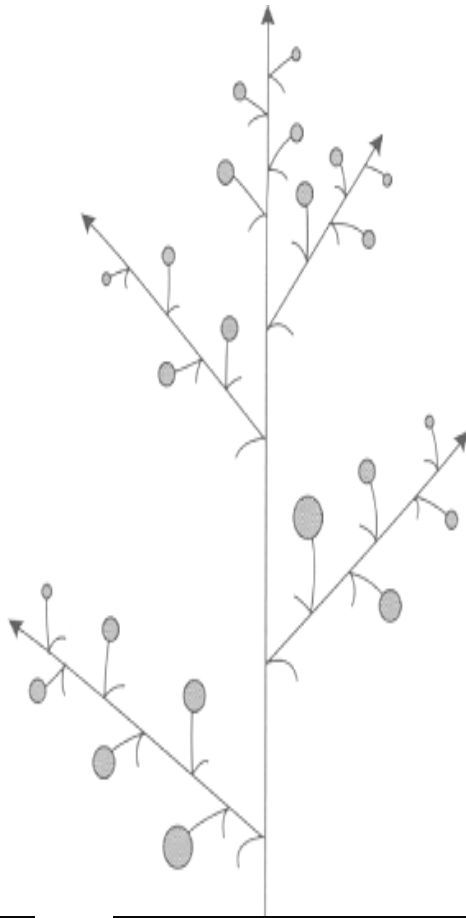
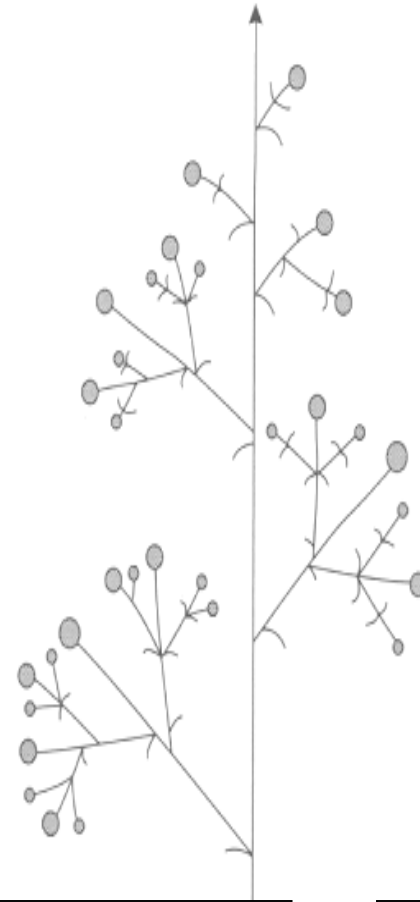
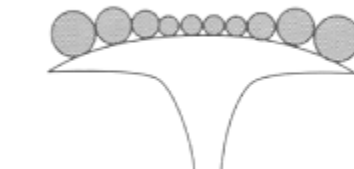
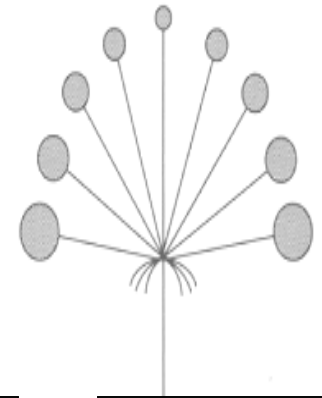
PANICLE

SPIKE

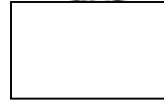
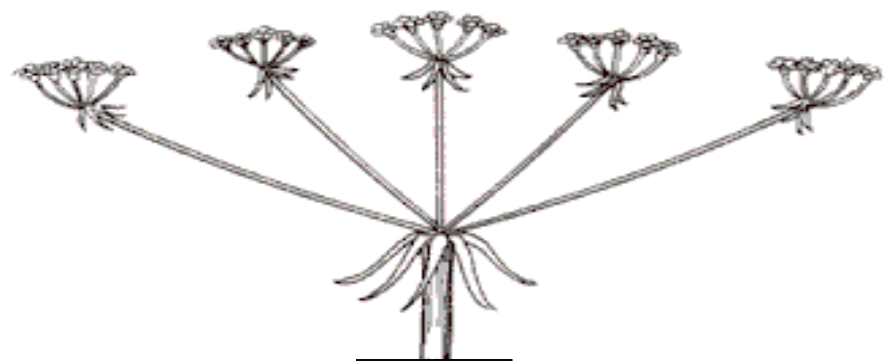
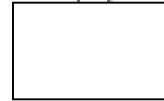
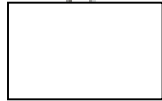
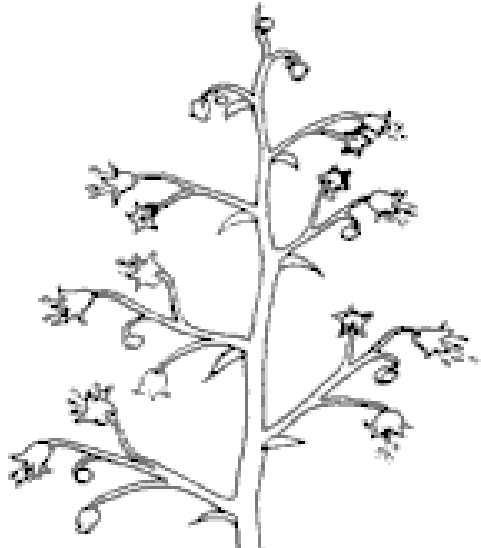
UMBEL

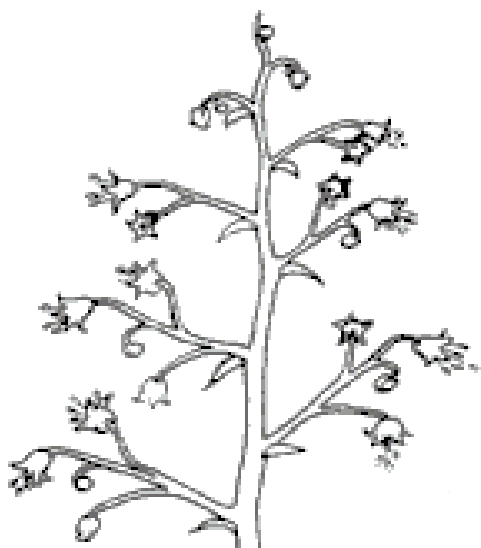


5

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

INFLORESCENCE TYPES APPLIED





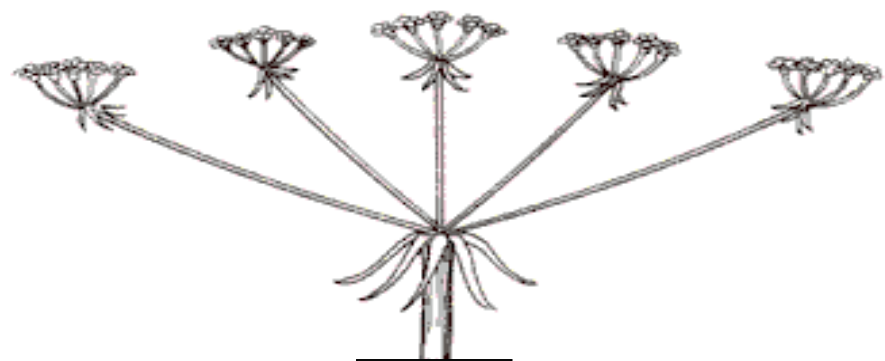
[]



SPIKE



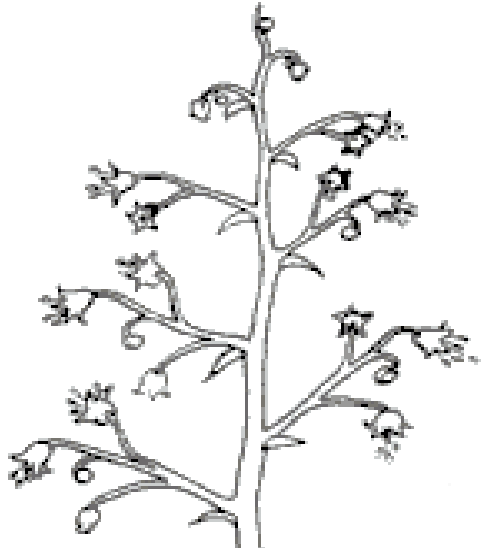
[]



[]



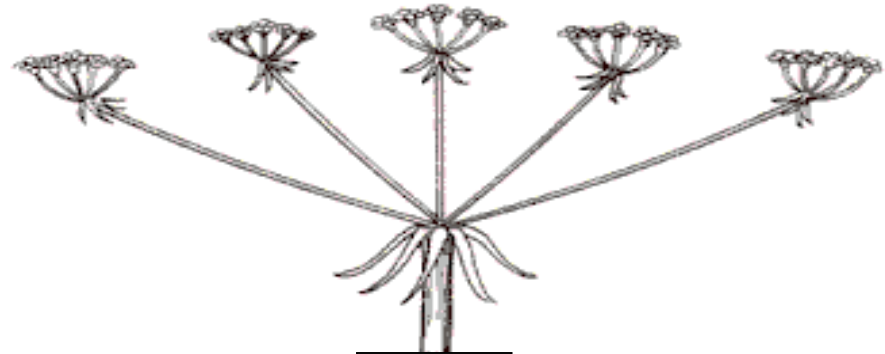
[]

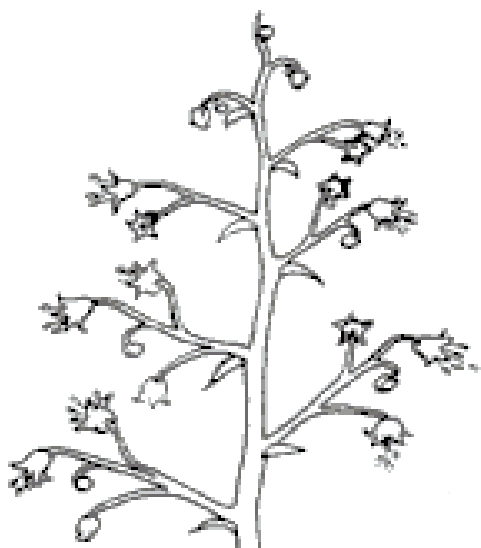


SPIKE



2

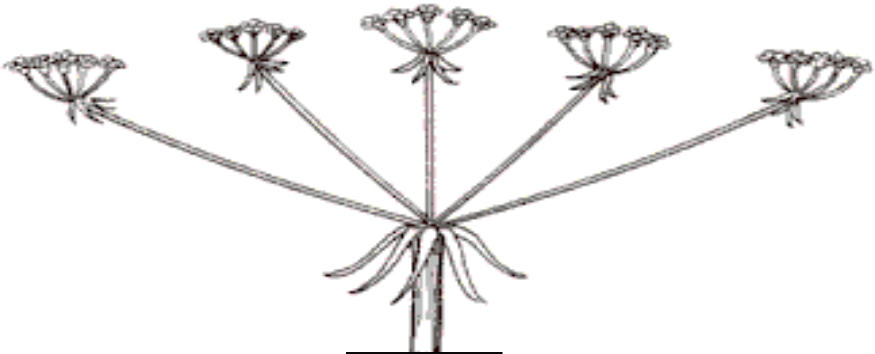


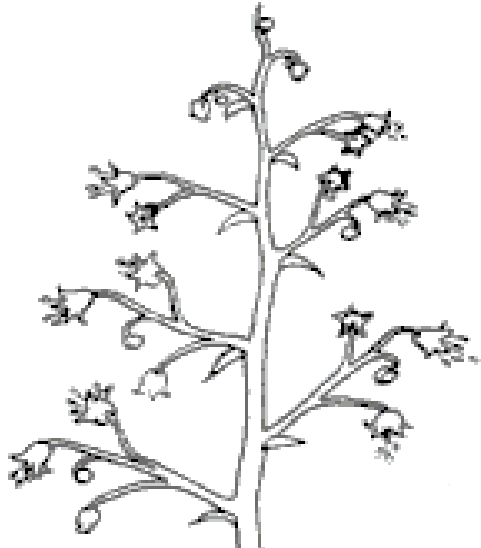


SPIKE



RACEME





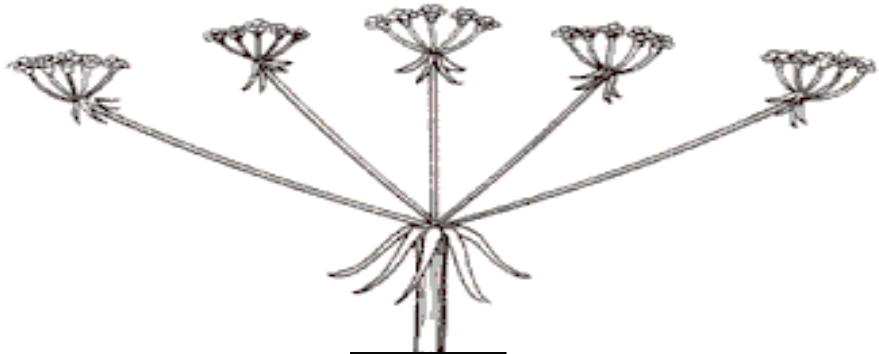
3

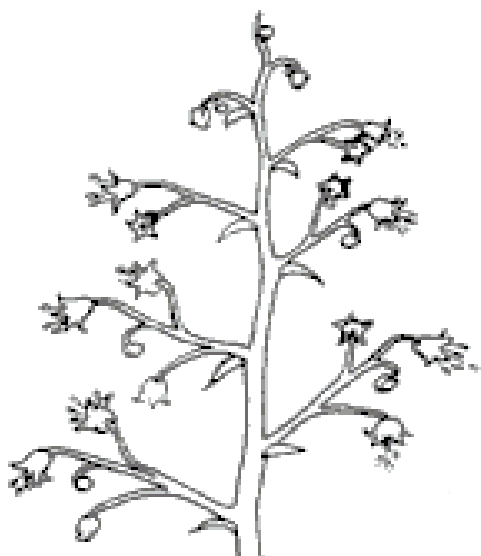


SPIKE



RACEME





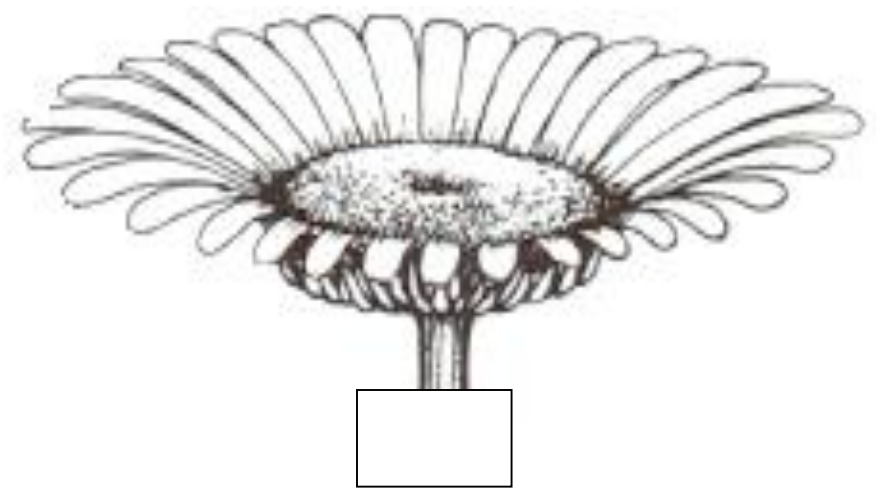
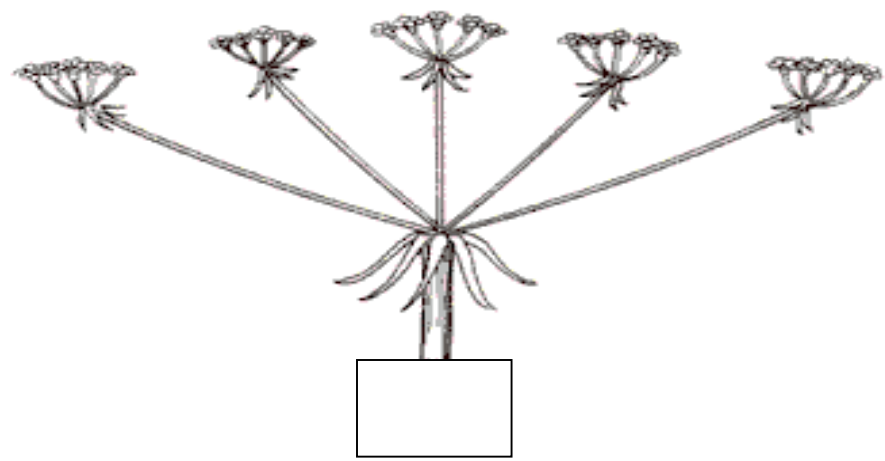
PANICLE

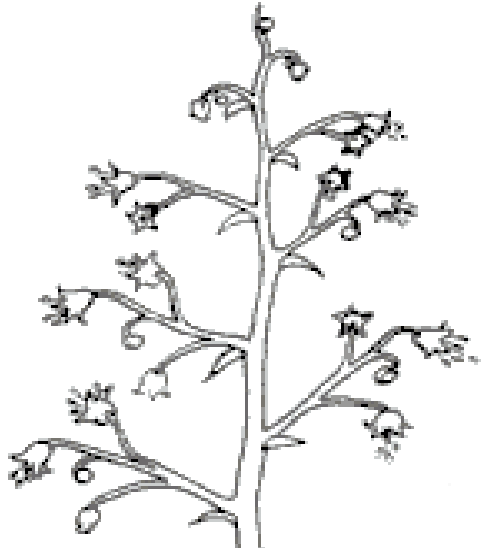


SPIKE



RACEME





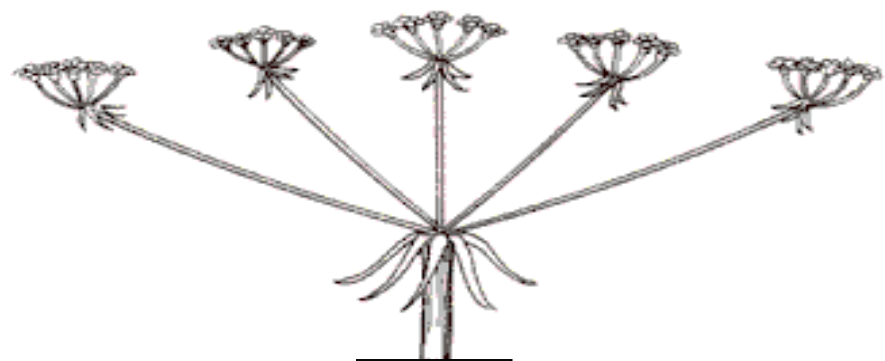
PANICLE



SPIKE

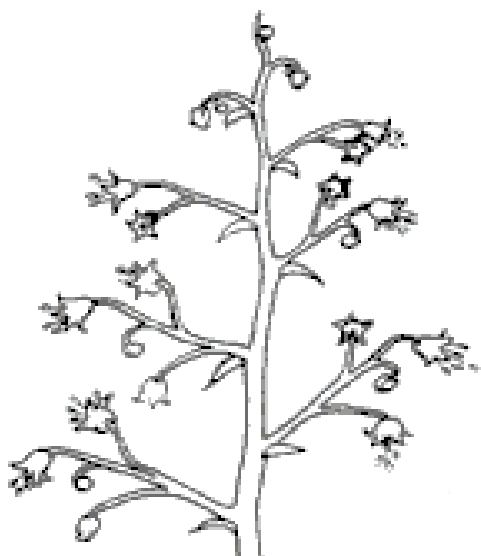


RACEME



4





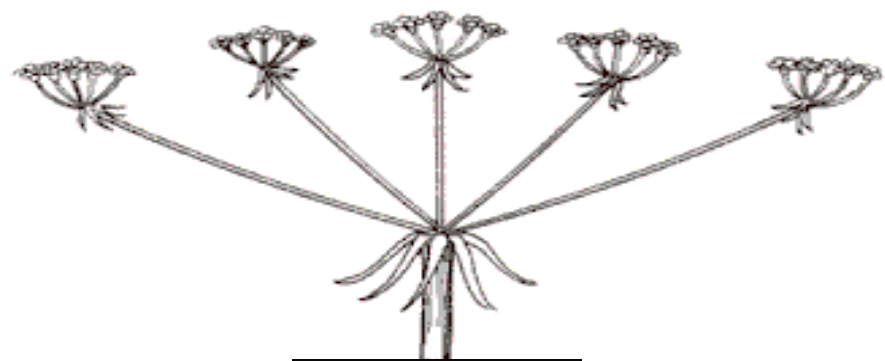
PANICLE



SPIKE

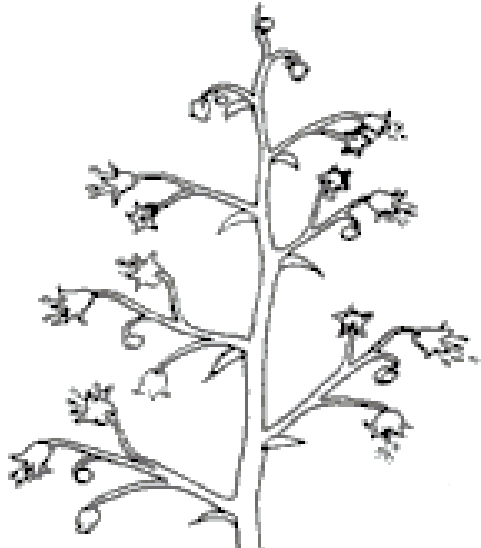


RACEME



UMBEL





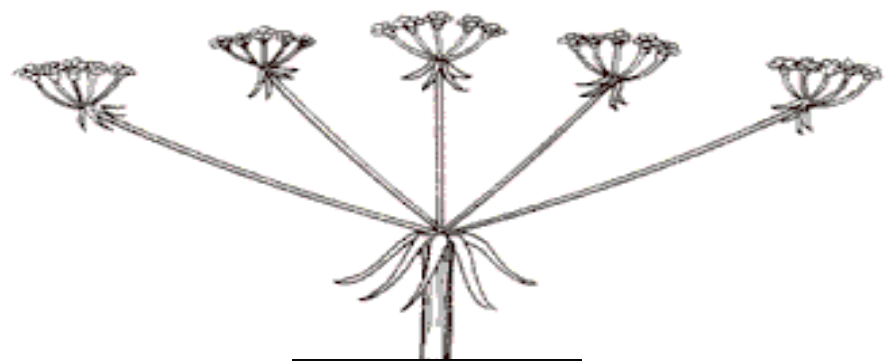
PANICLE



SPIKE



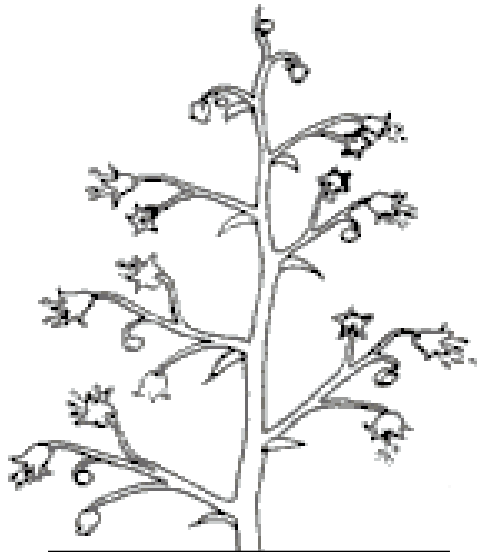
RACEME



UMBEL



5



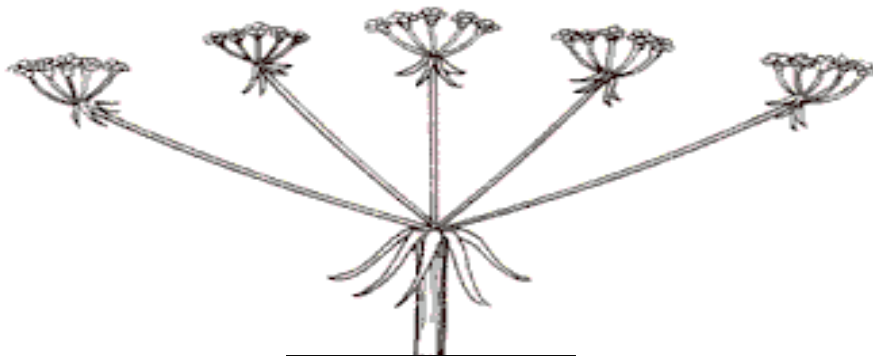
PANICLE



SPIKE



RACEME



UMBEL



CAPITULUM



INFLORESCENCE TYPES APPLIED



RACEME





UMBEL





CAPITULUM



**FLOWER
MORPHOLOGY
&
ANATOMY**



FLOWER

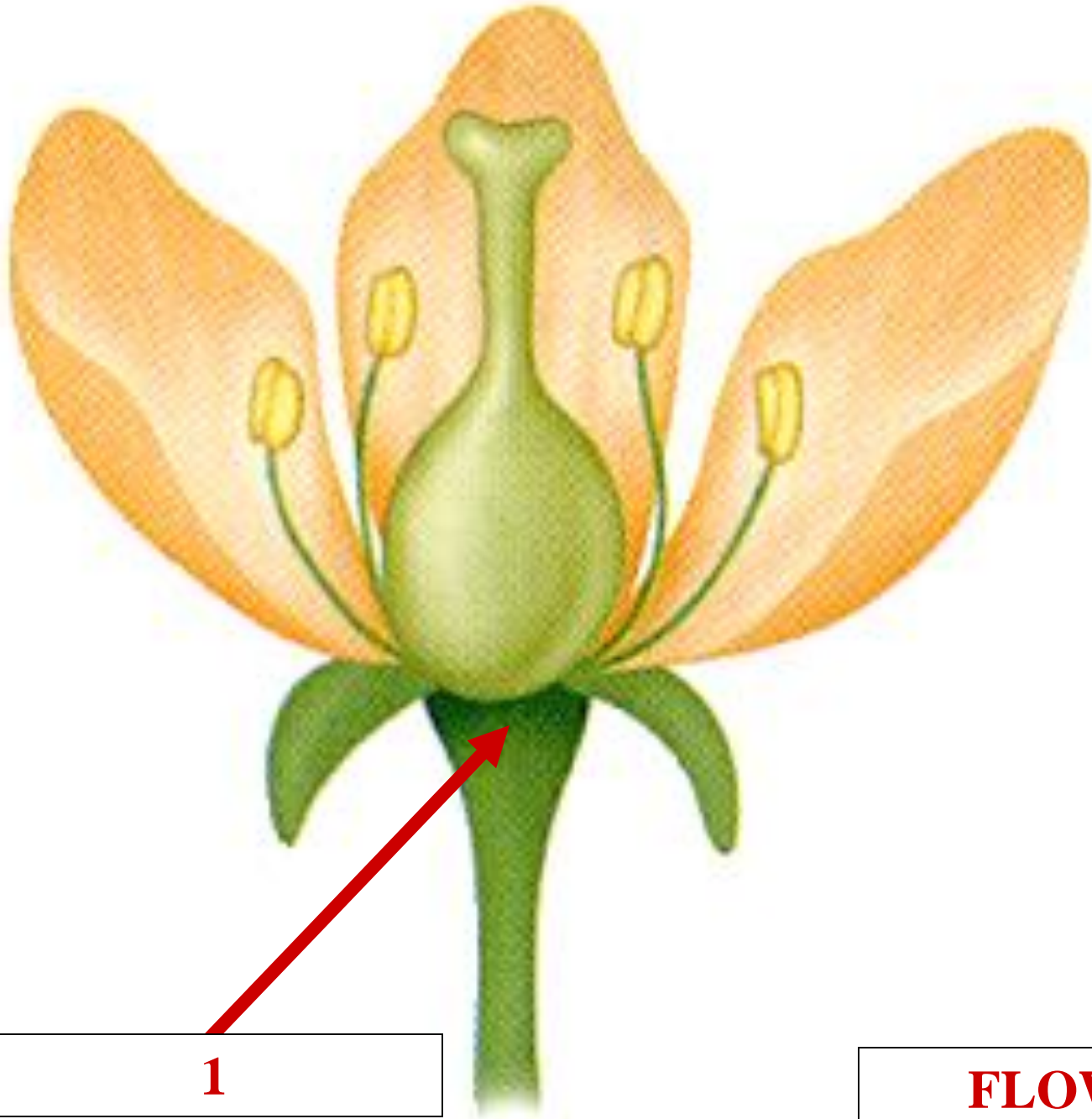




FLOWER SEGMENTS & WHORLS

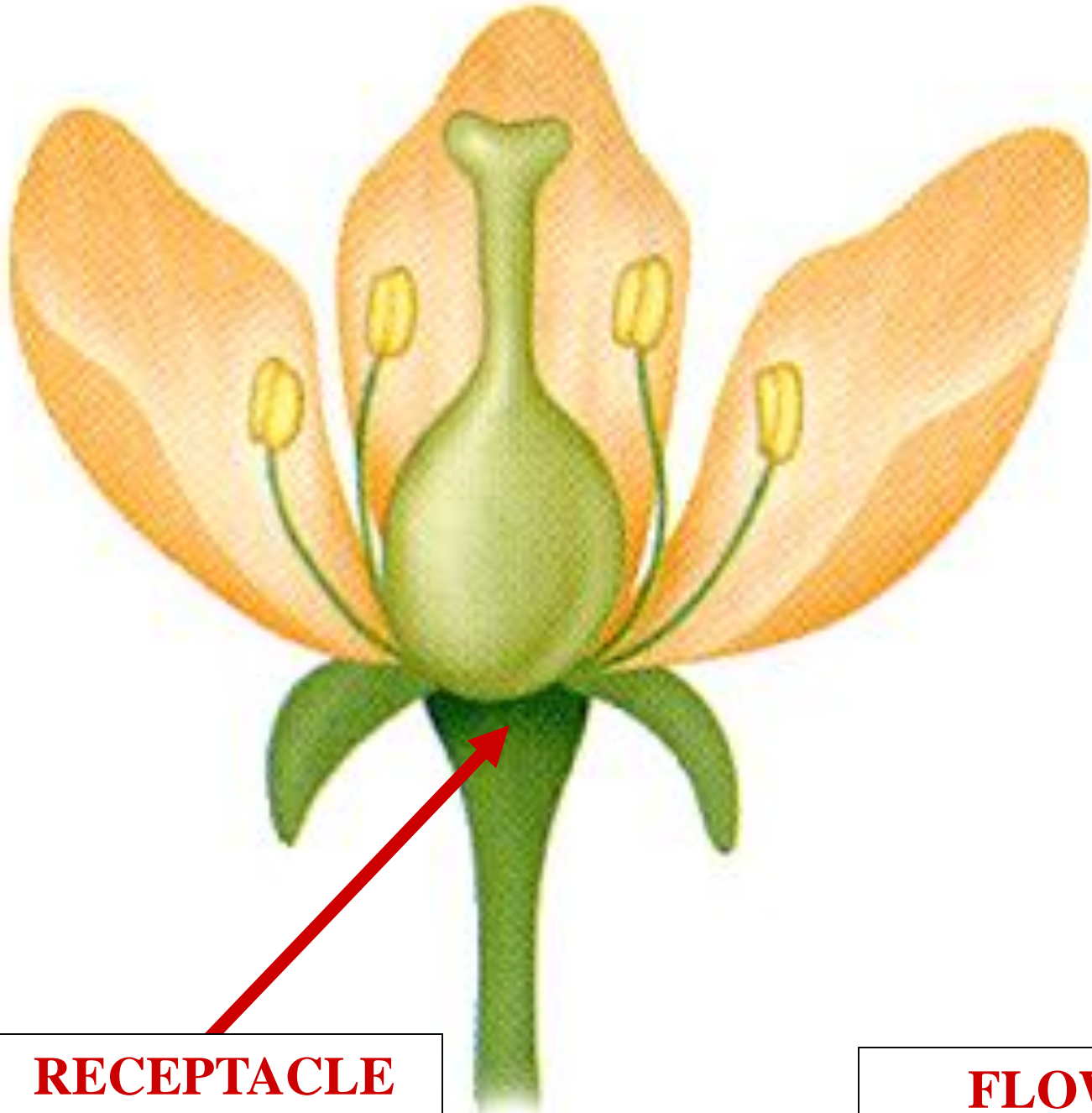


FLOWER



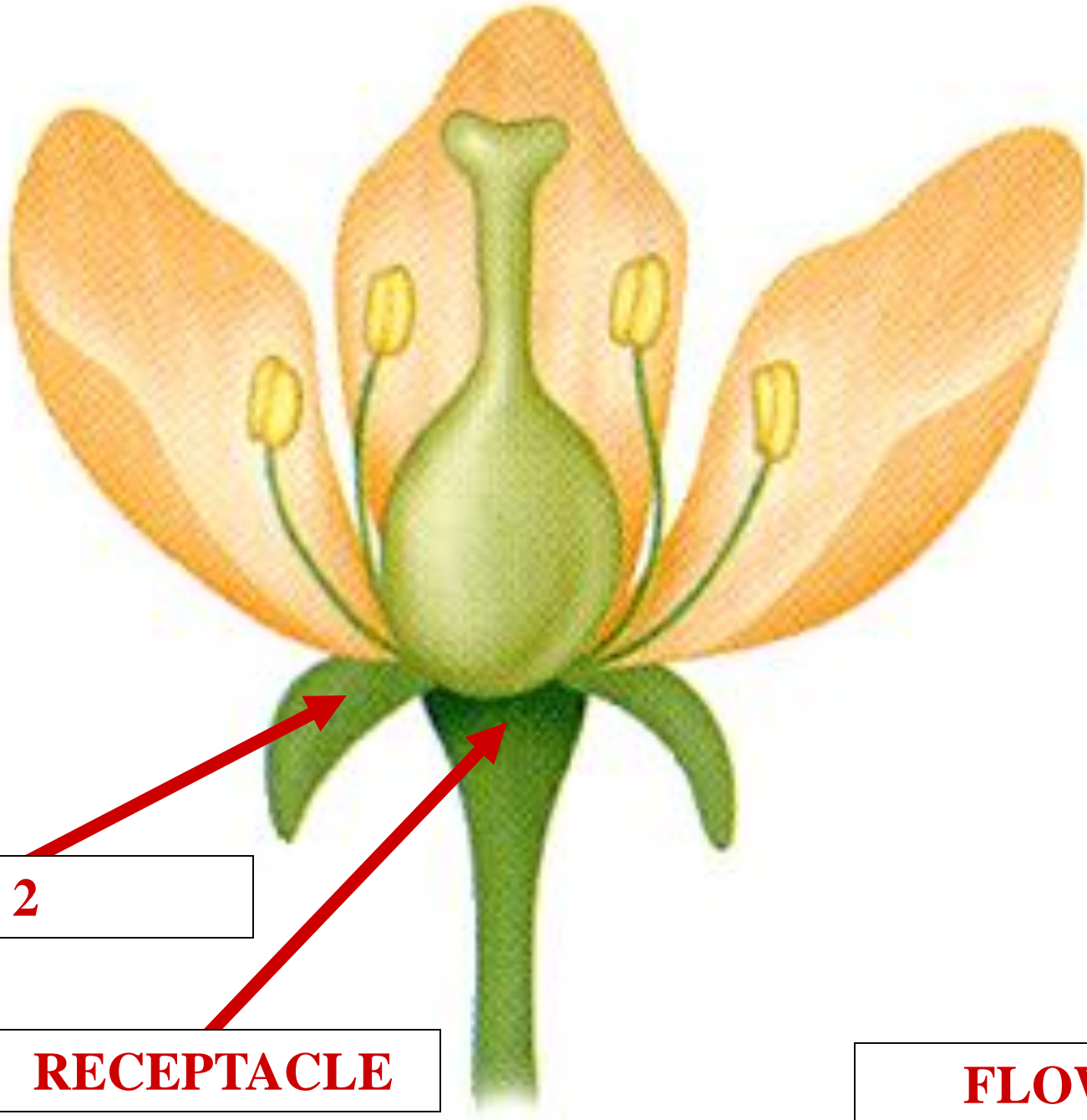
1

FLOWER



RECEPTACLE

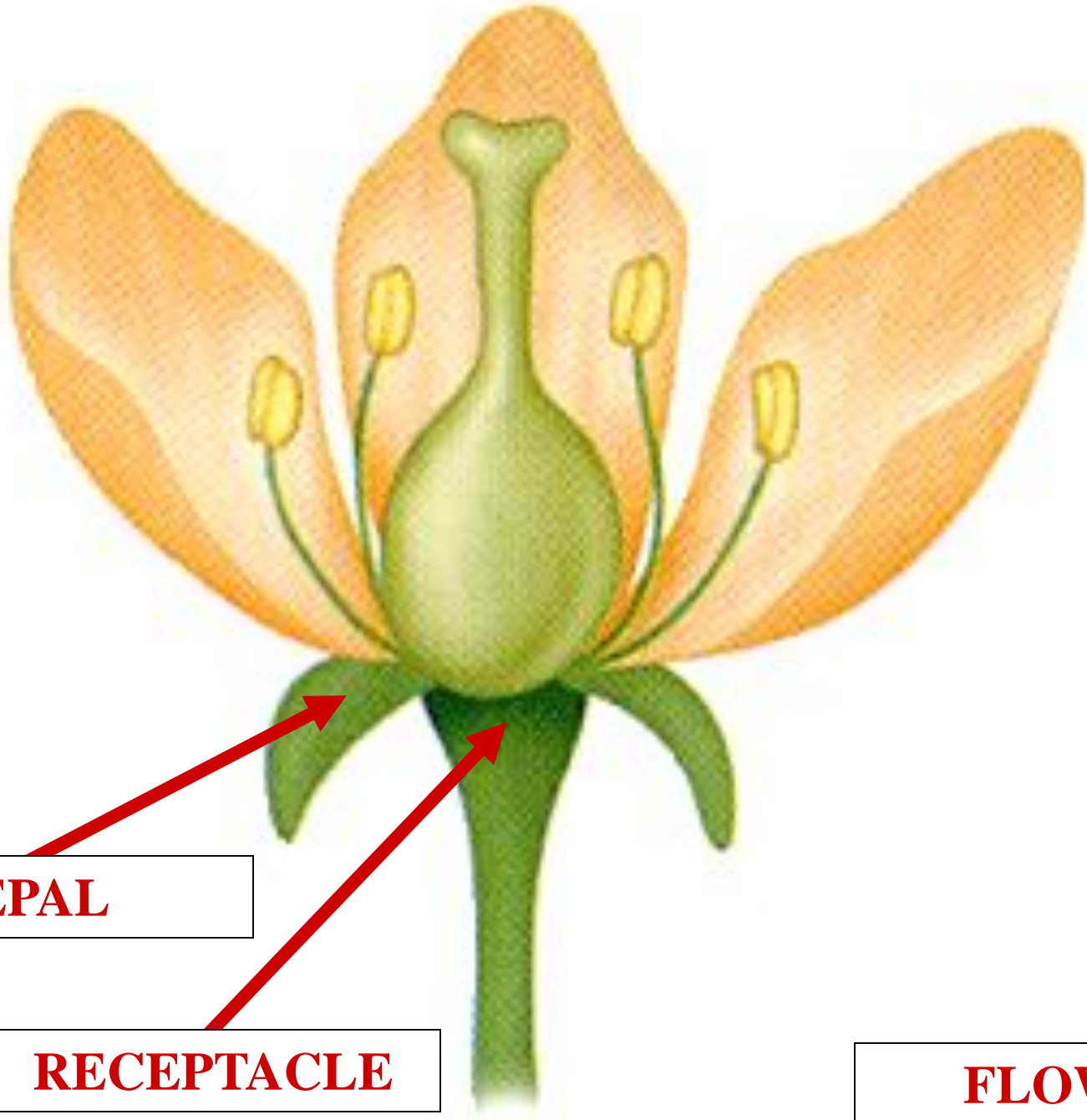
FLOWER



2

RECEPTACLE

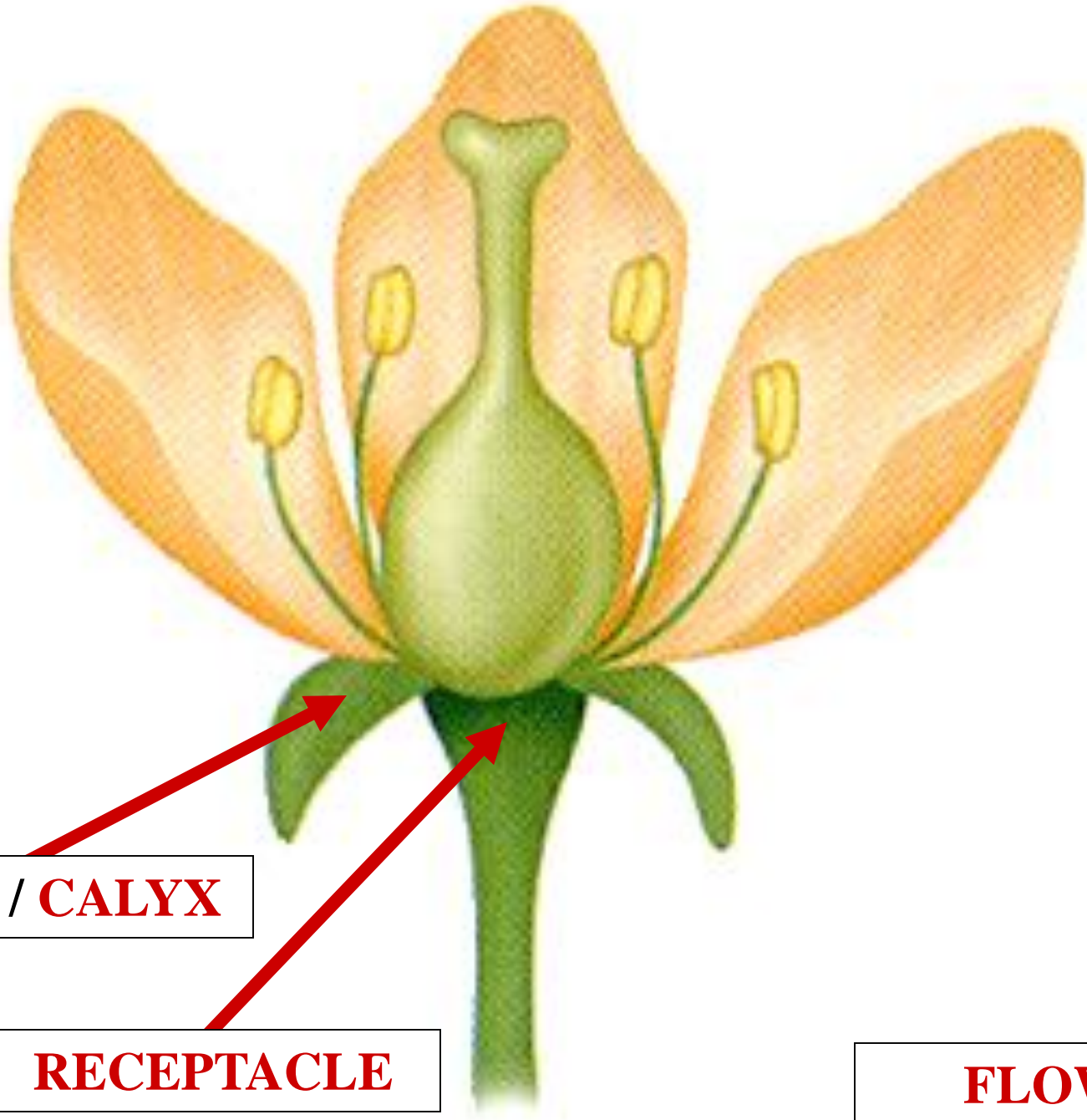
FLOWER



SEPAL

RECEPTACLE

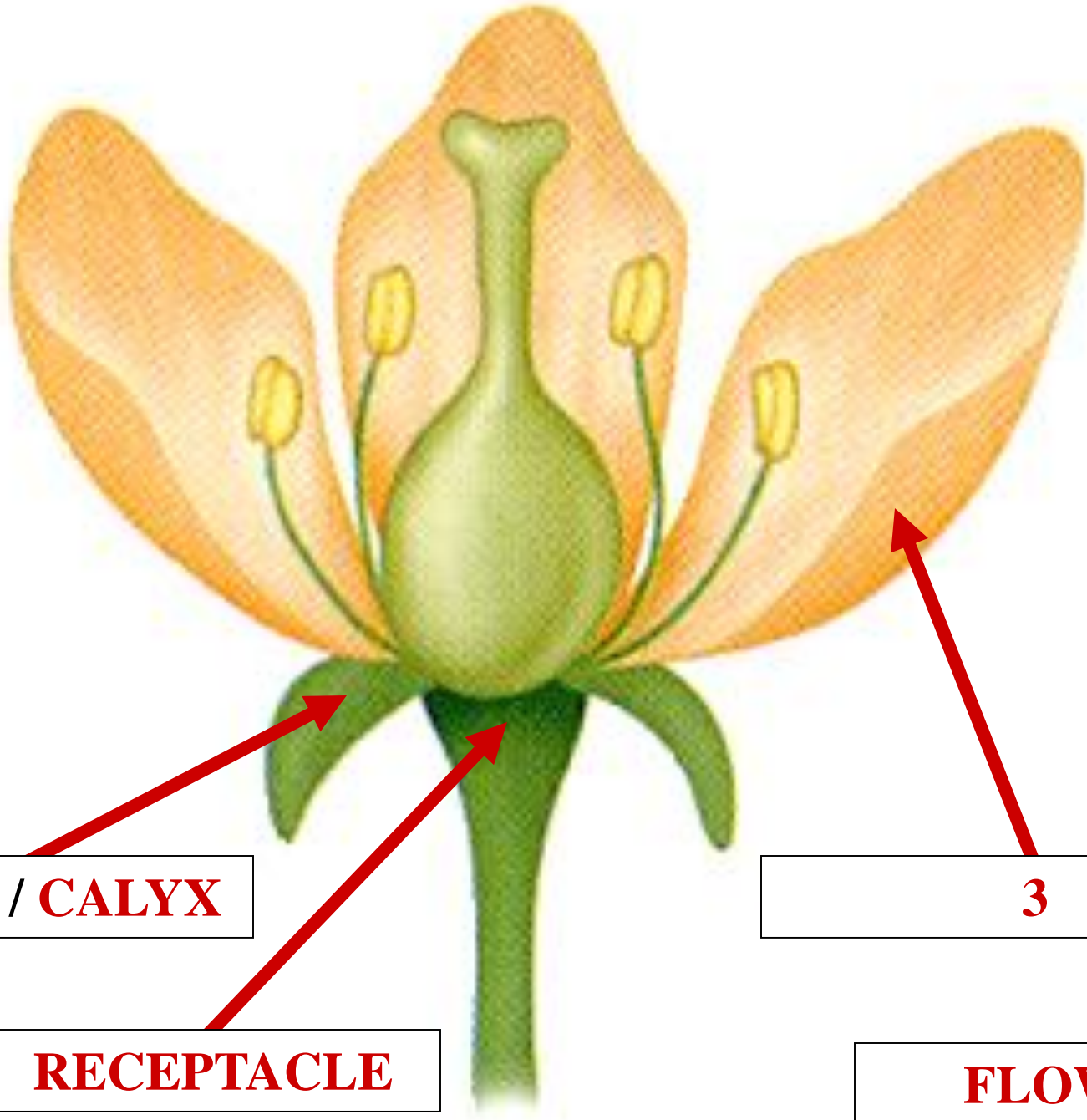
FLOWER



SEPAL / CALYX

RECEPTACLE

FLOWER

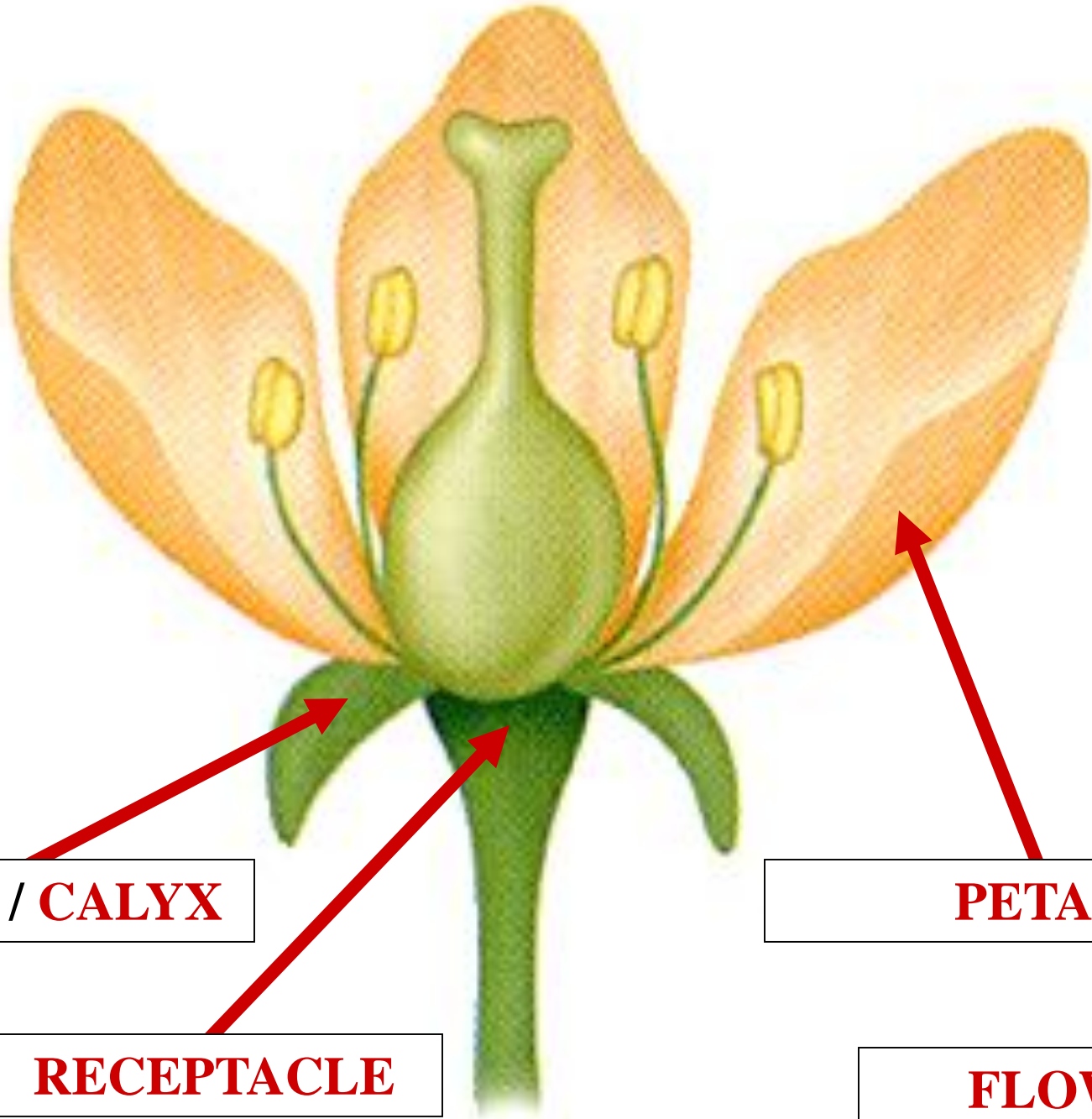


SEPAL / CALYX

RECEPTACLE

3

FLOWER

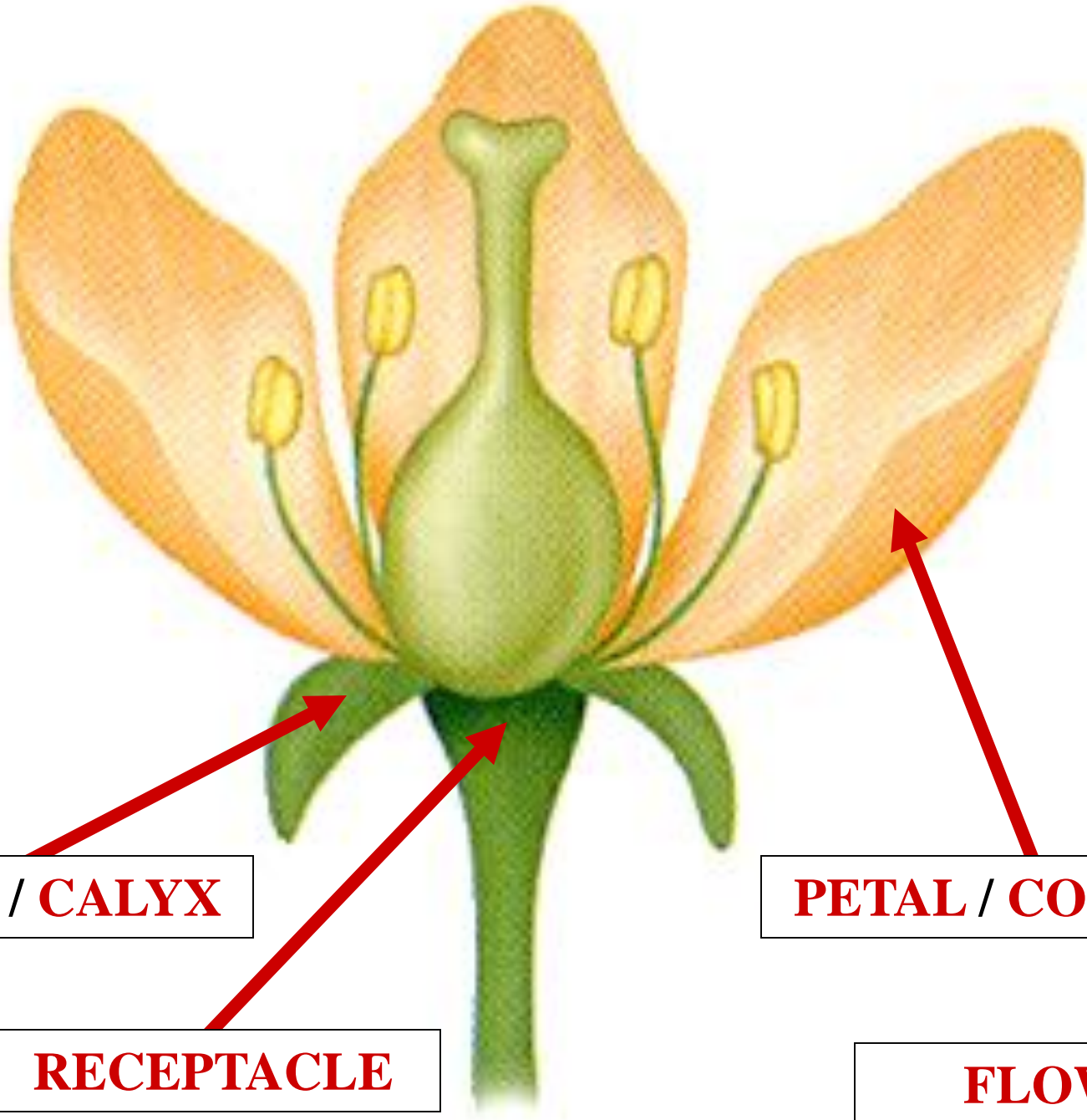


SEPAL / CALYX

PETAL

RECEPTACLE

FLOWER

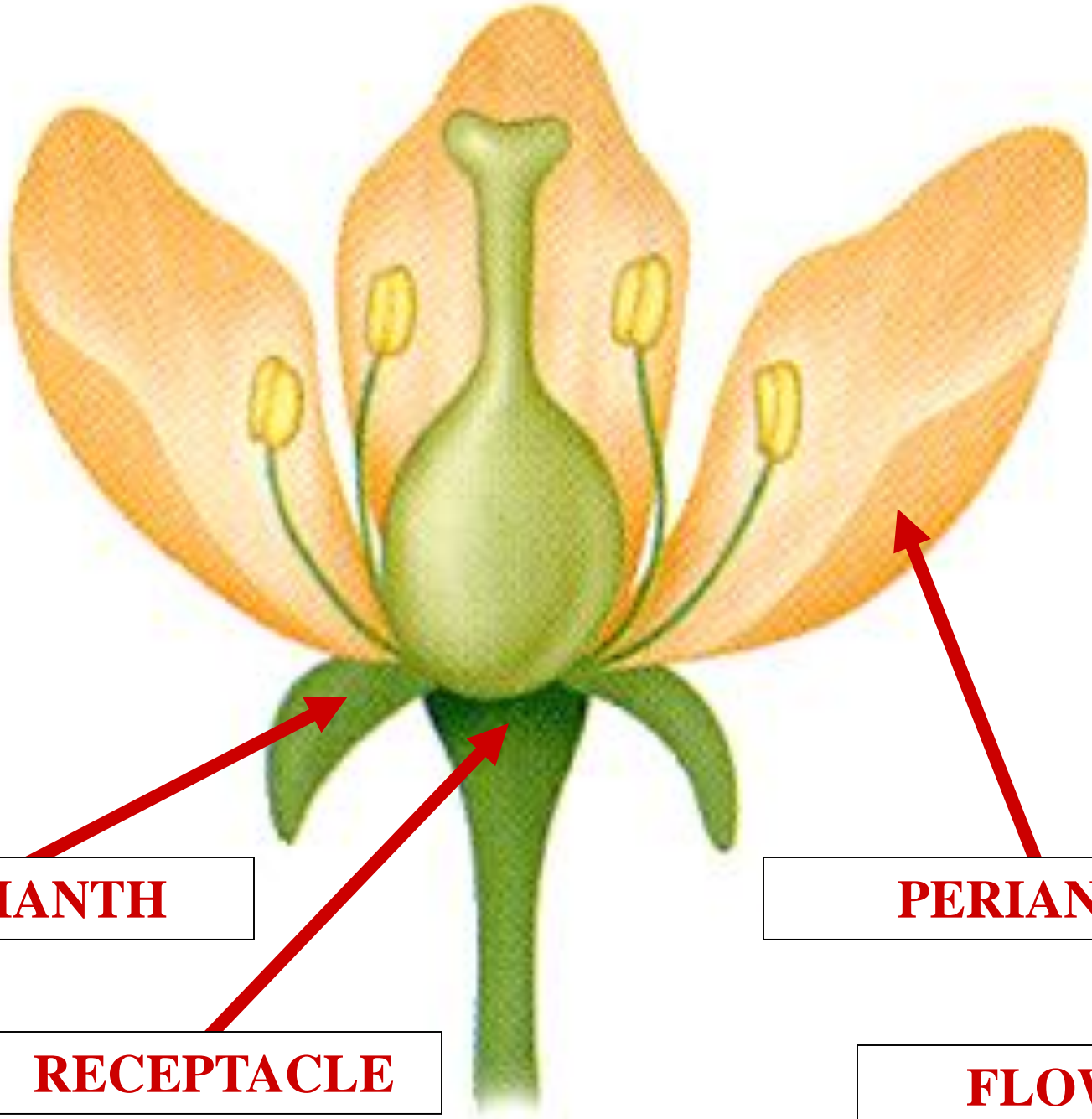


SEPAL / CALYX

RECEPTACLE

PETAL / COROLLA

FLOWER



PERIANTH

RECEPTACLE

PERIANTH

FLOWER

PERIANTH TERMS



TEPALS



SEPAL



PETAL





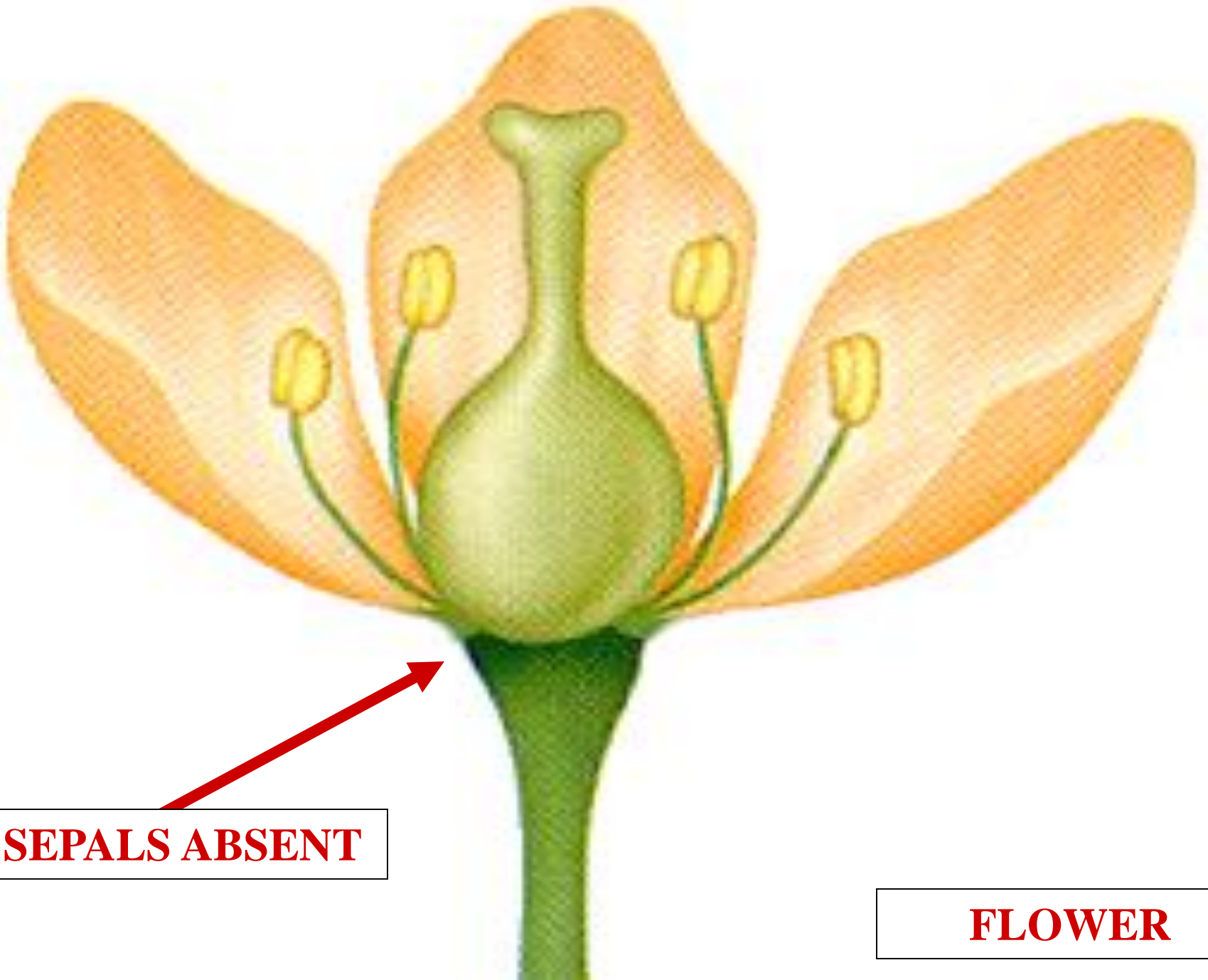
TEPALS



**ASEPALOUS
FLOWER
VS
APETALOUS
FLOWER**

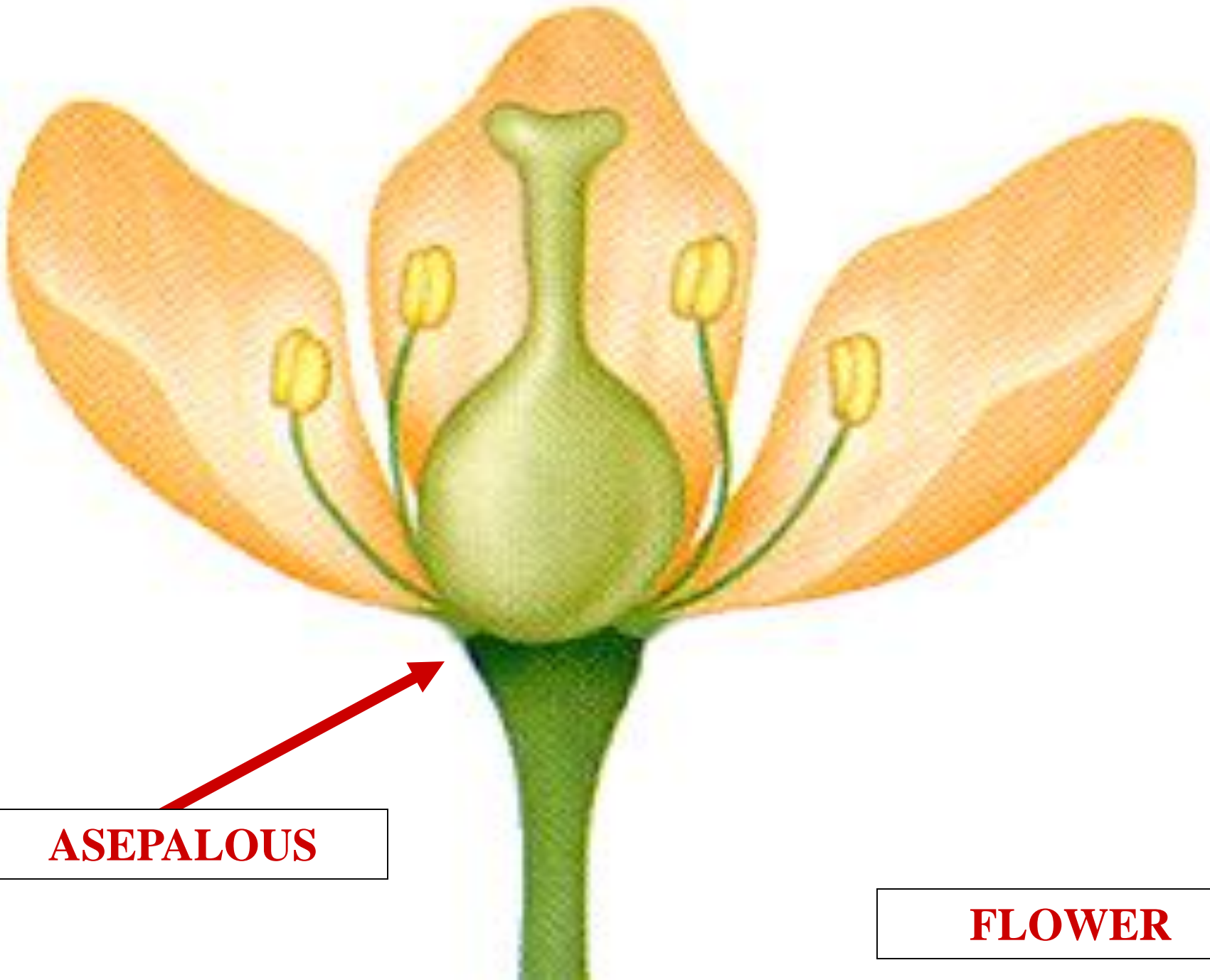


ASEPALOUS FLOWER



SEPALS ABSENT

FLOWER



ASEPALOUS

FLOWER

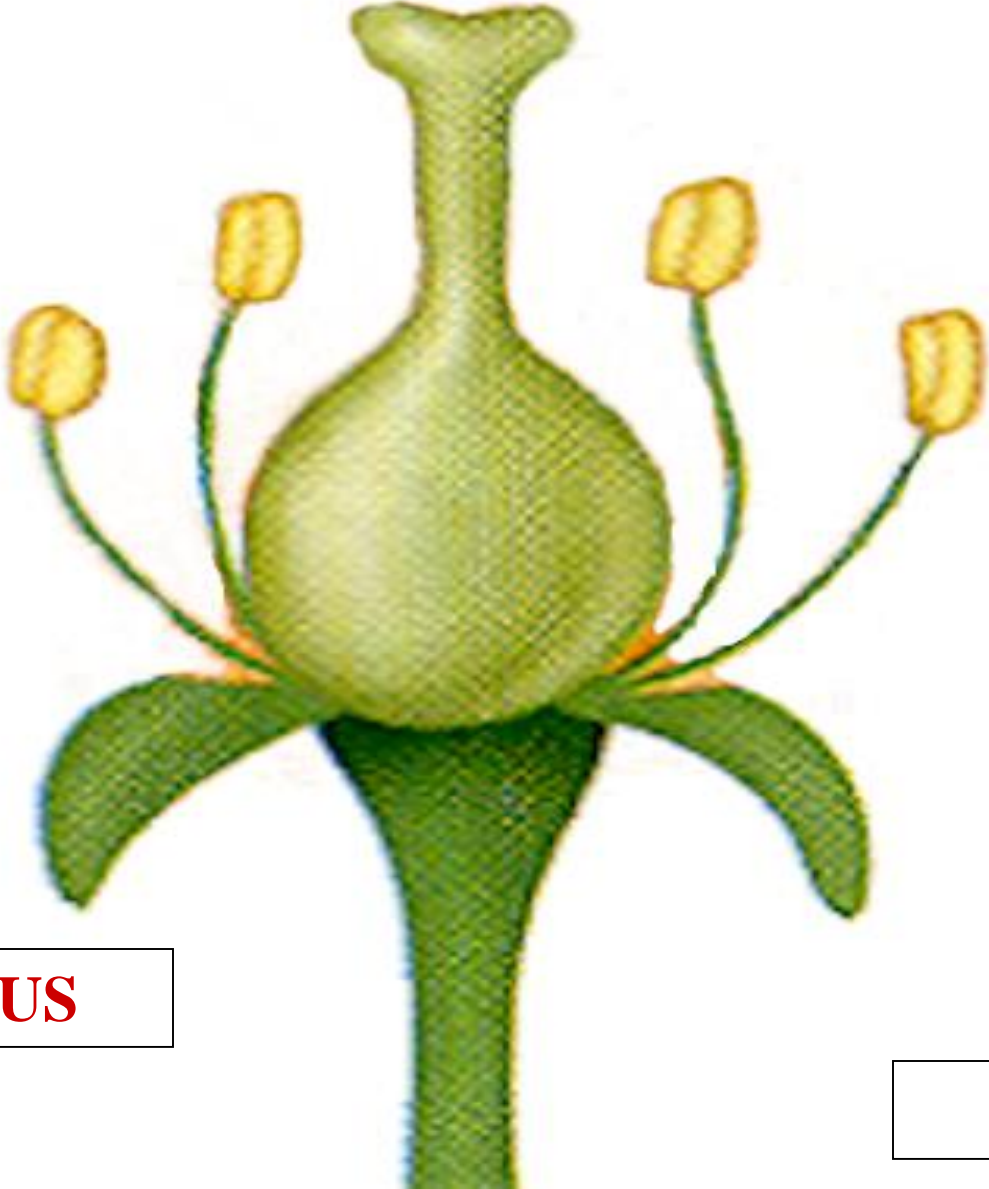


APETALOUS FLOWER



PETALS ABSENT

FLOWER

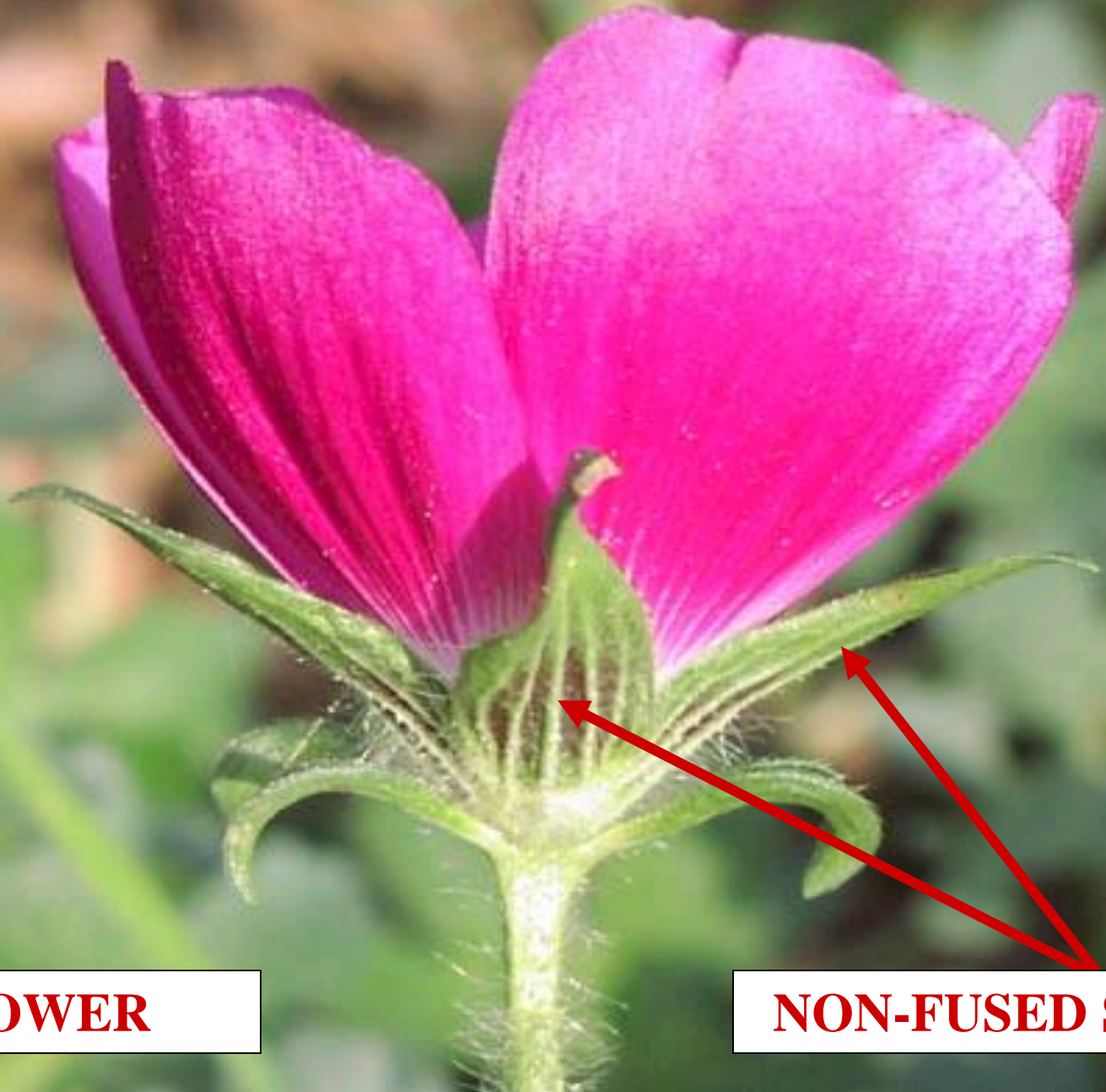


APETALOUS

FLOWER

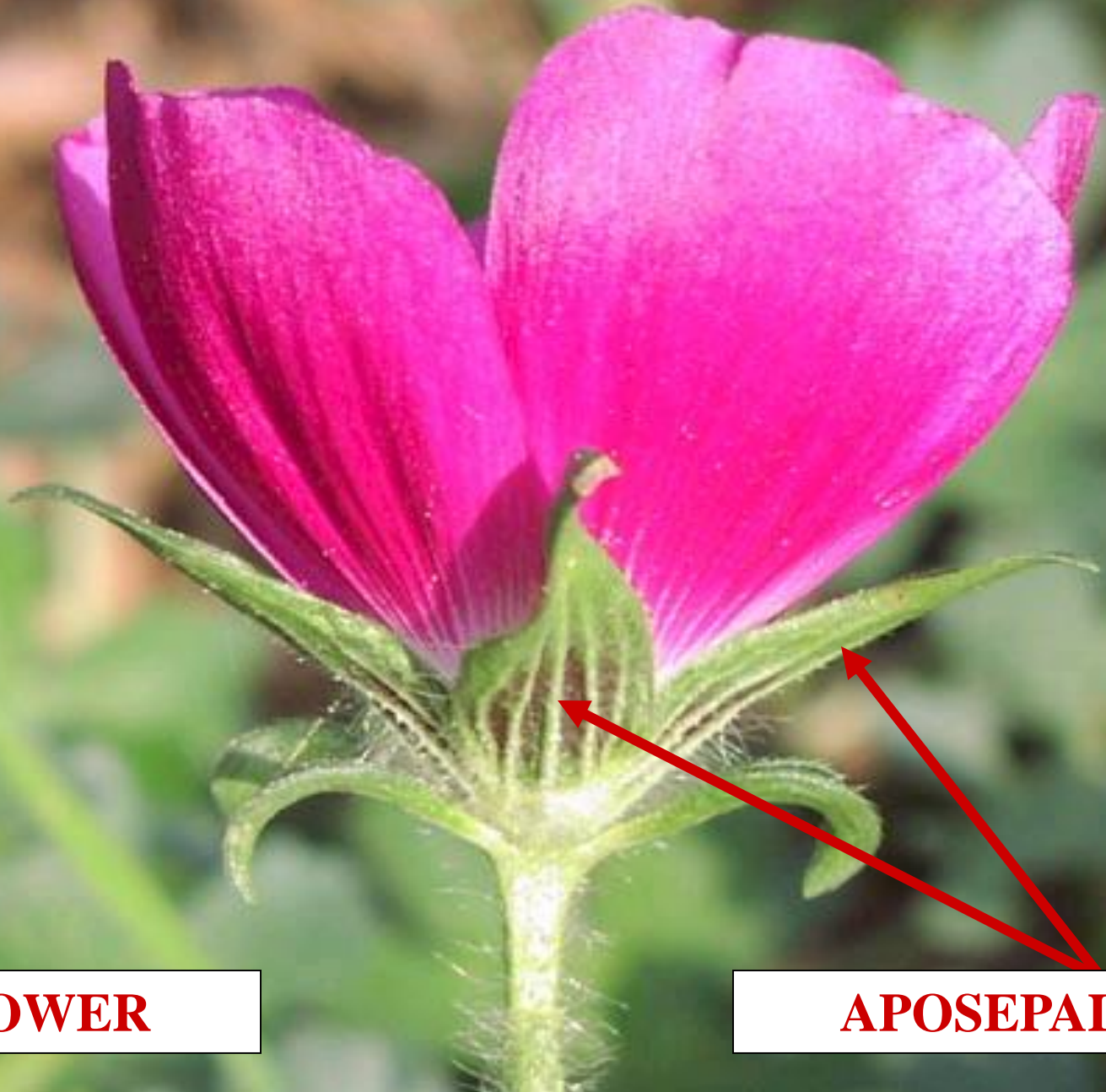
**APOSEPALOUS
FLOWER
VS
APOPETALOUS
FLOWER**

APOSEPALOUS FLOWER



FLOWER

NON-FUSED SEPALS



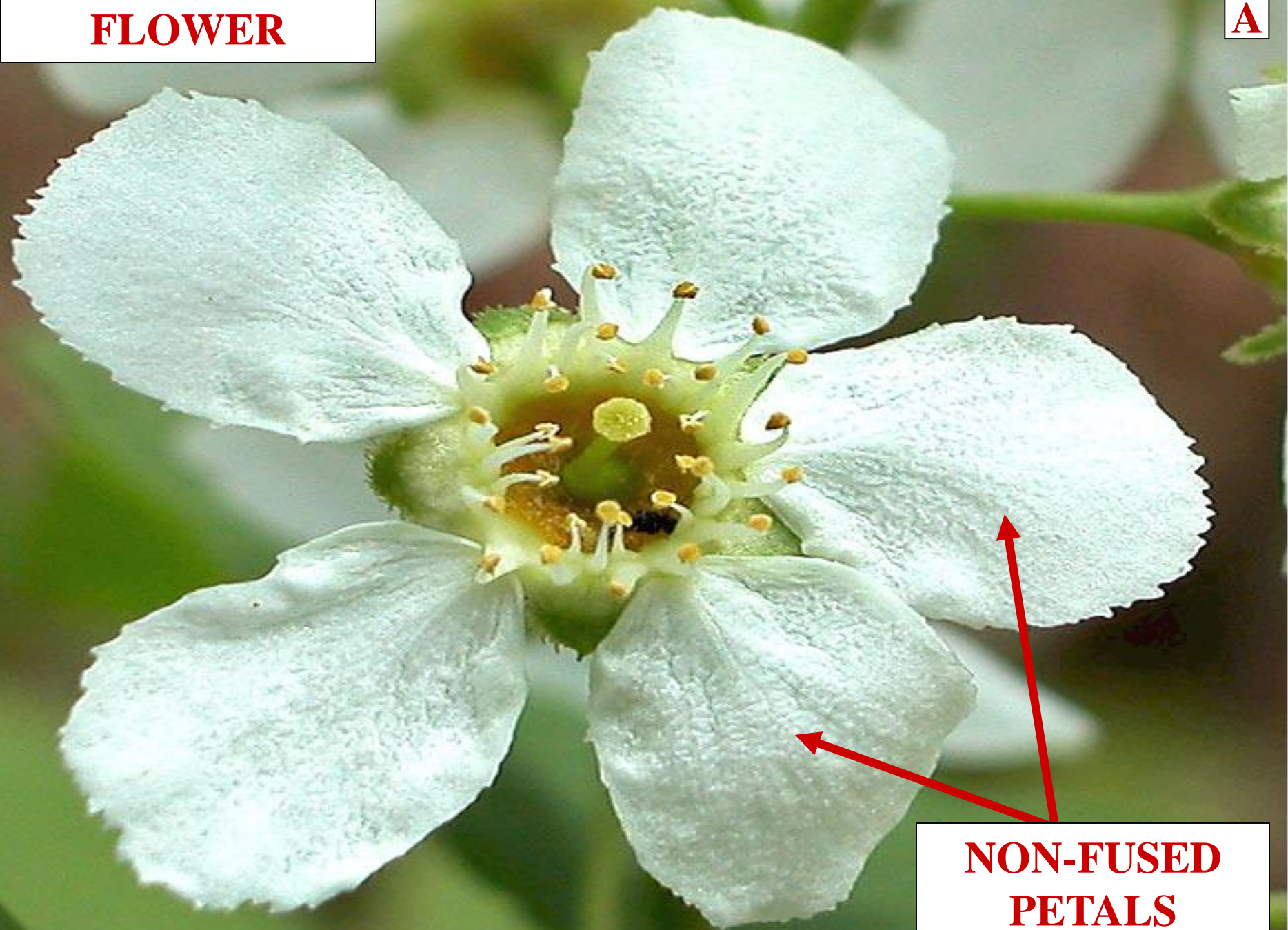
FLOWER

APOSEPALOUS

APOPETALOUS FLOWER

FLOWER

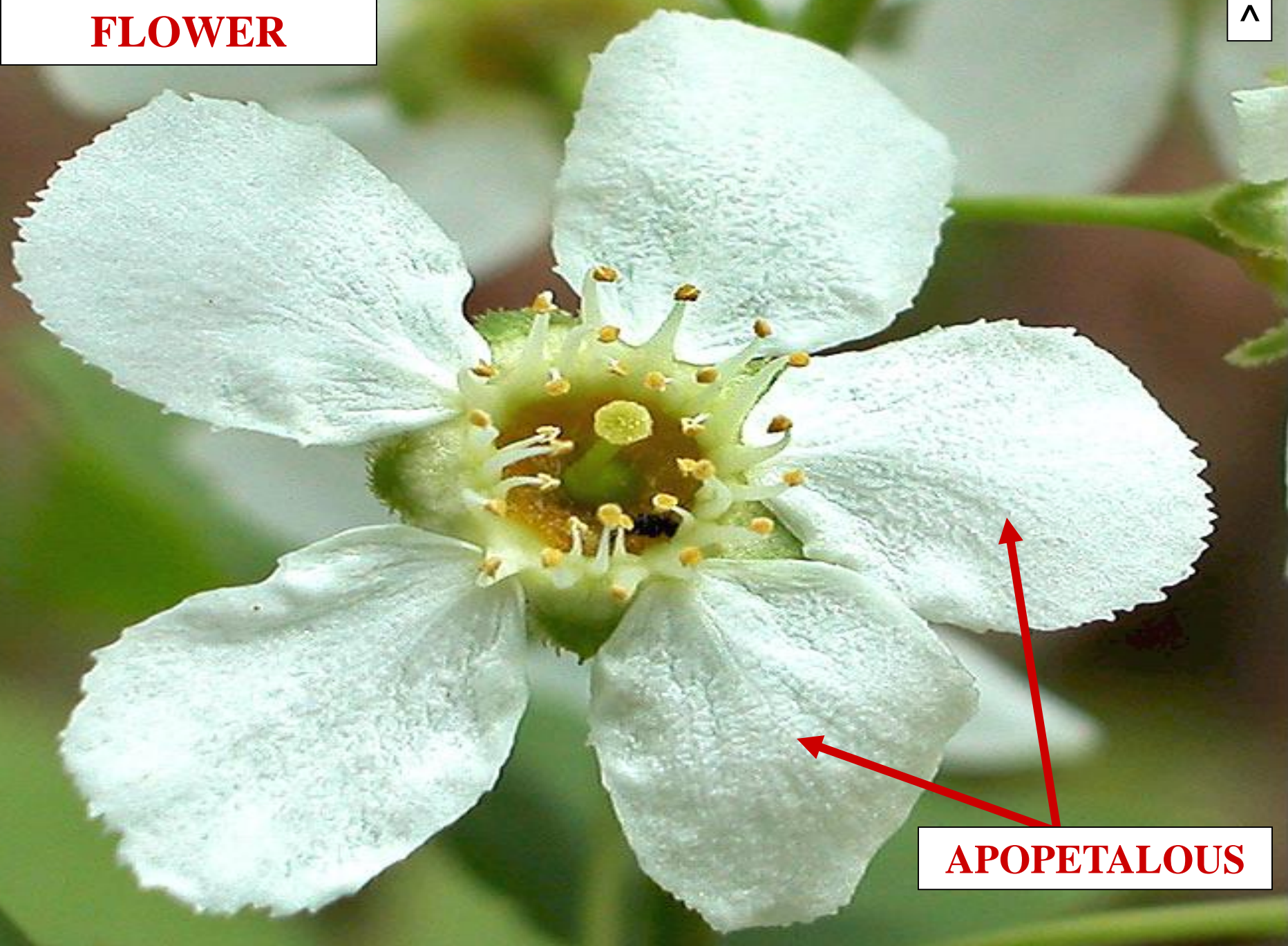
A



**NON-FUSED
PETALS**

FLOWER

^



APOPETALOUS

**SYNSEPALOUS
FLOWER
VS
SYMPETALOUS
FLOWER**

SYNSEPALOUS FLOWER

FUSED SEPALS

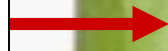


FLOWER

S

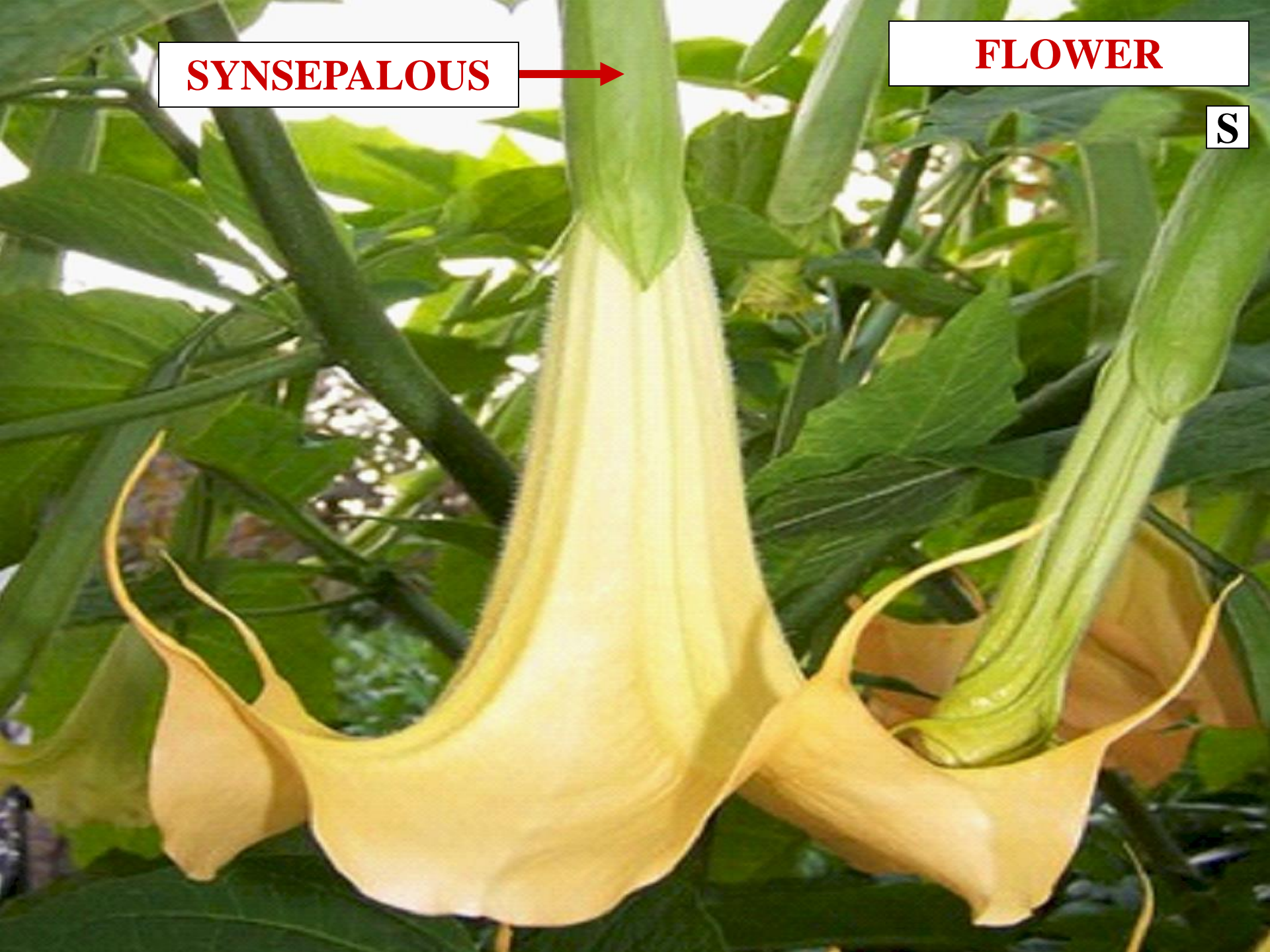


SYNSEPALOUS



FLOWER

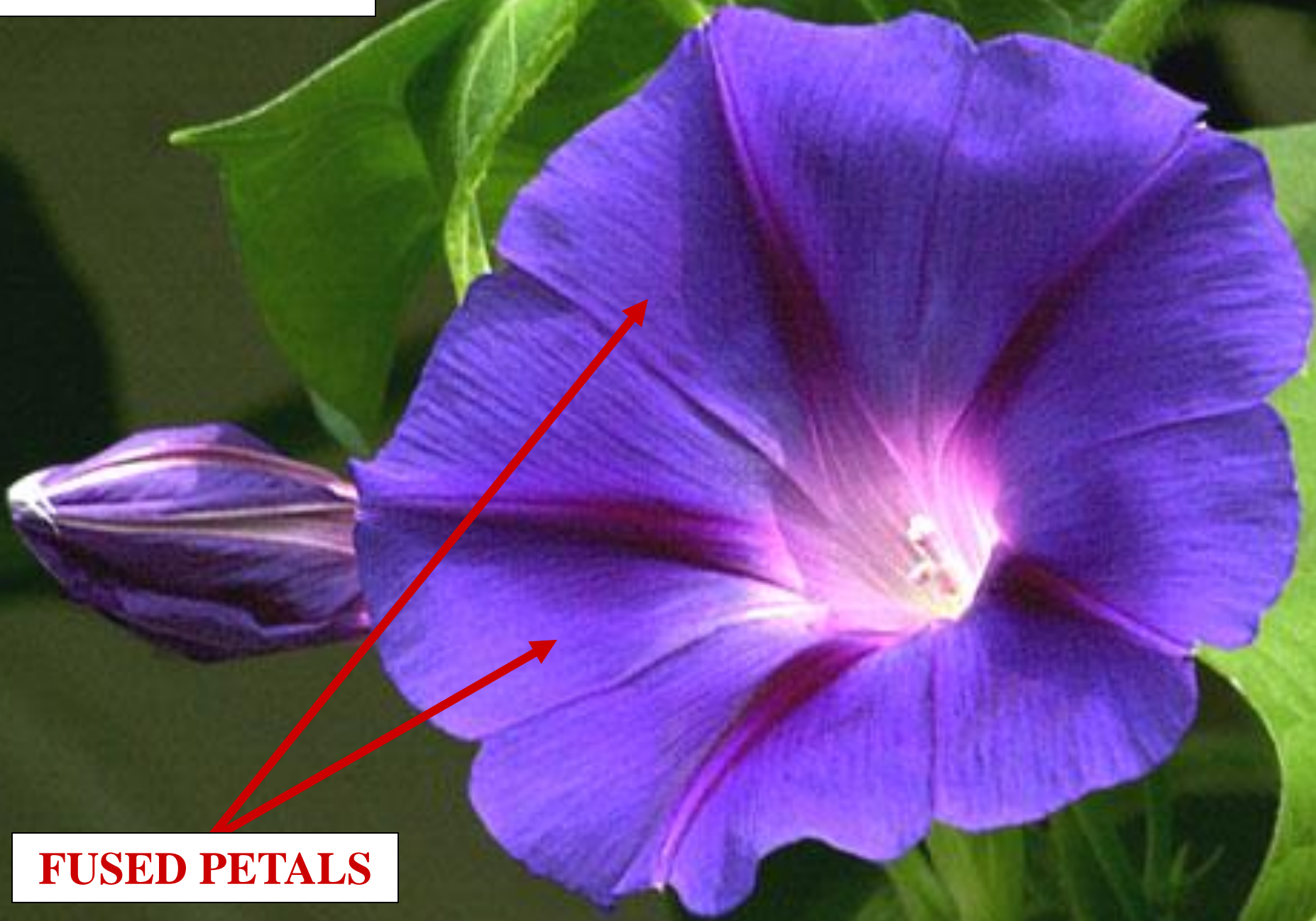
S



SYMPETALOUS FLOWER

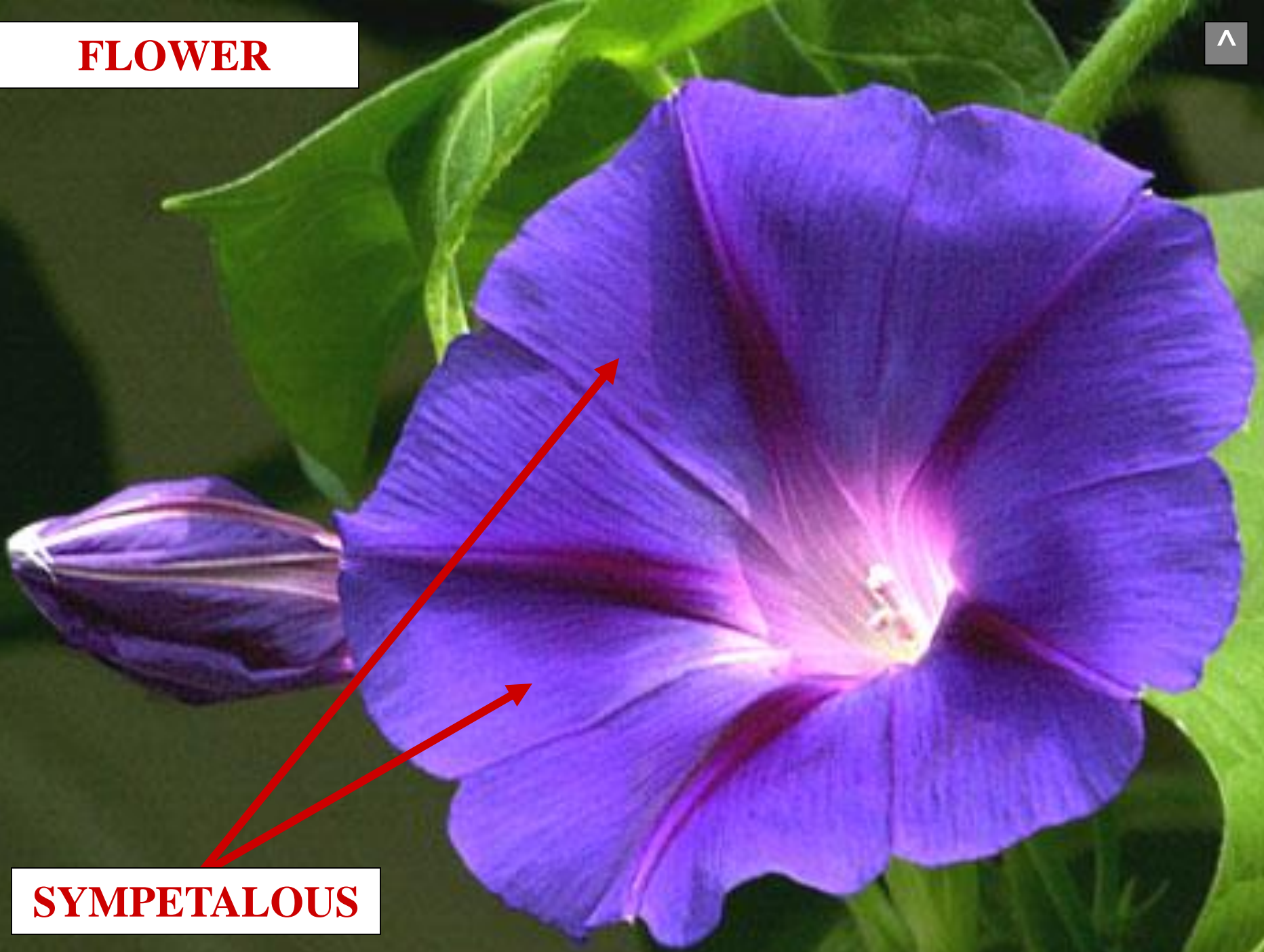
FLOWER

S



FUSED PETALS

FLOWER



SYMPETALOUS

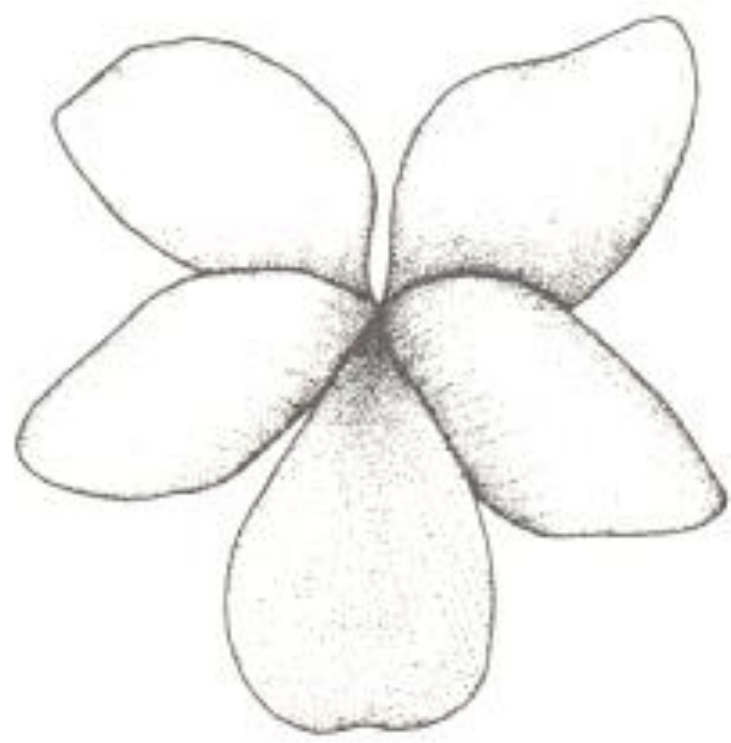
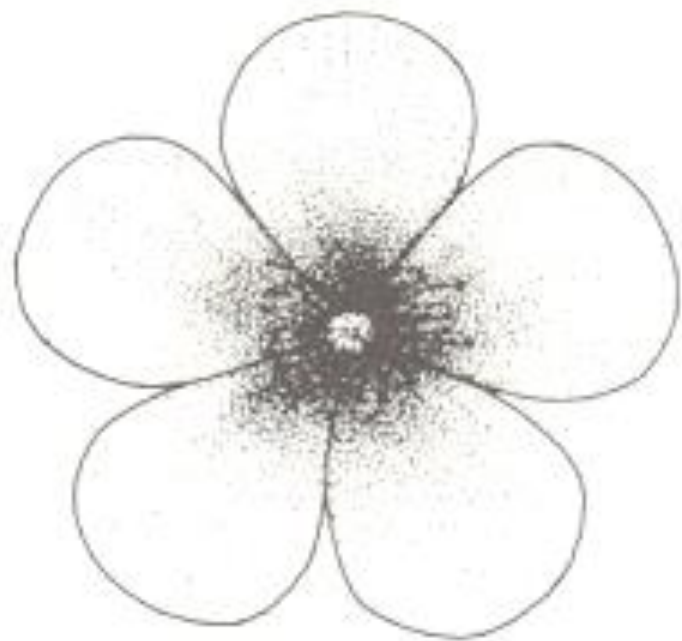


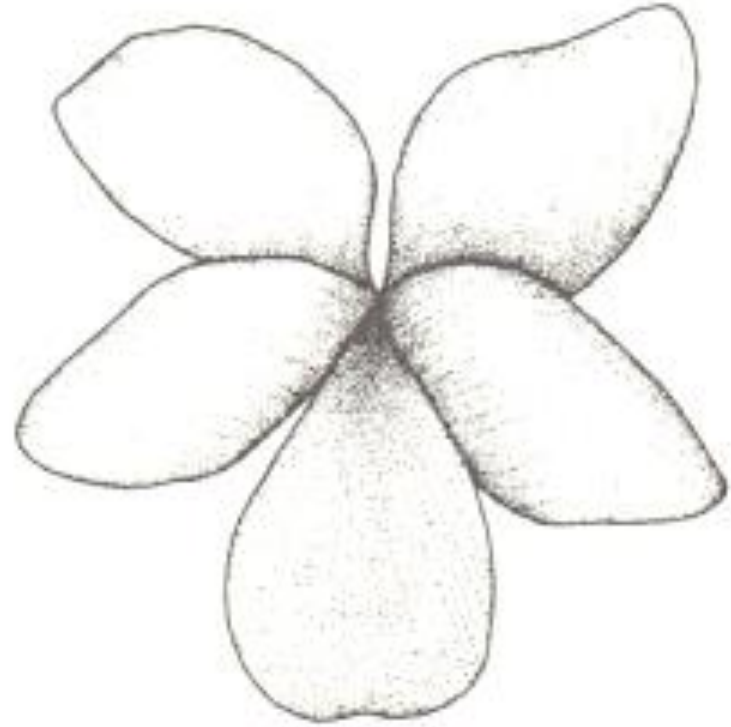
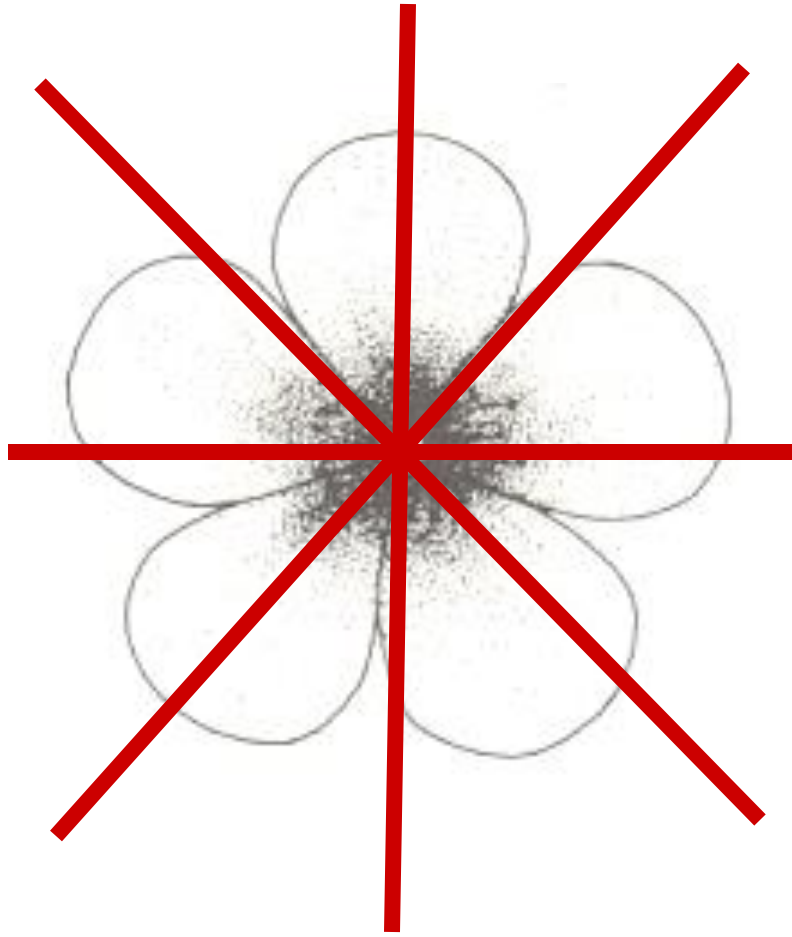
PERIANTH SYMMETRY

**ACTINOMORPHIC
FLOWER
VS
ZYGOMORPHIC
FLOWER**



ACTINOMORPHIC FLOWER

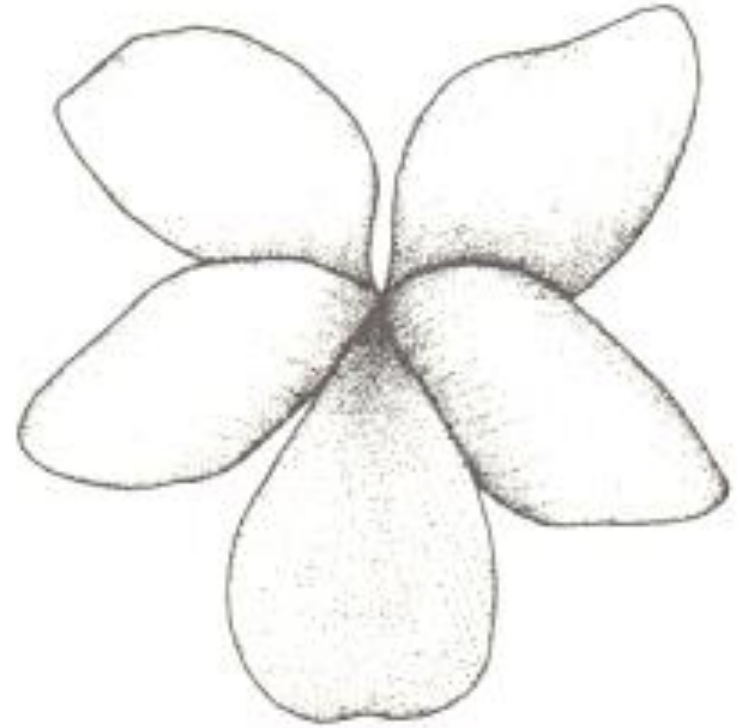
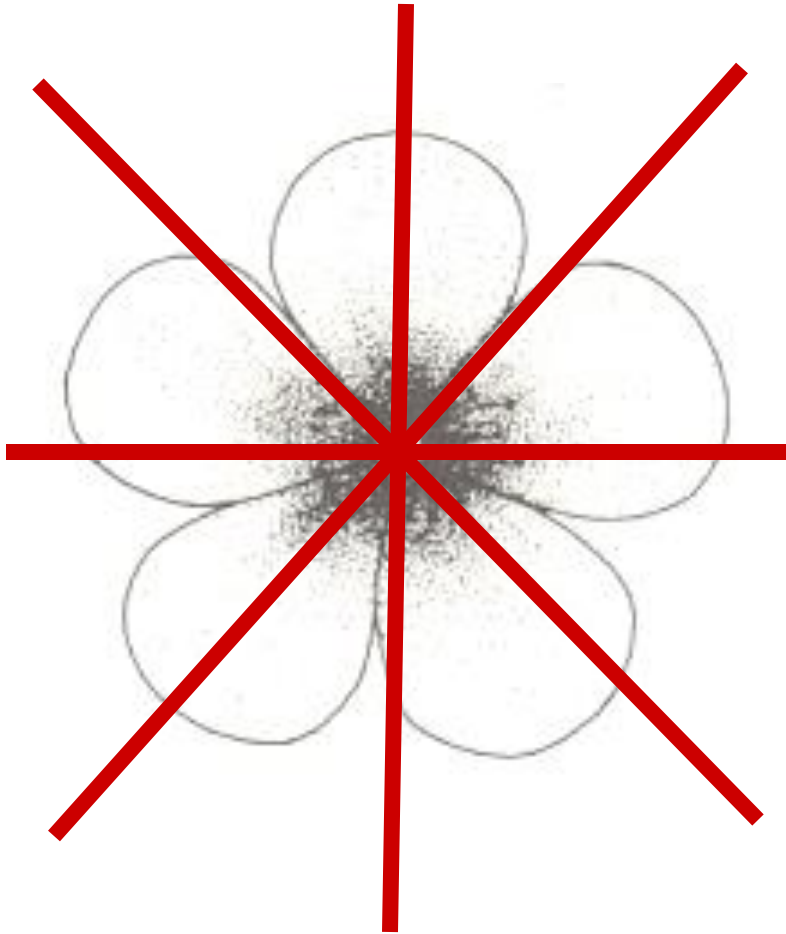




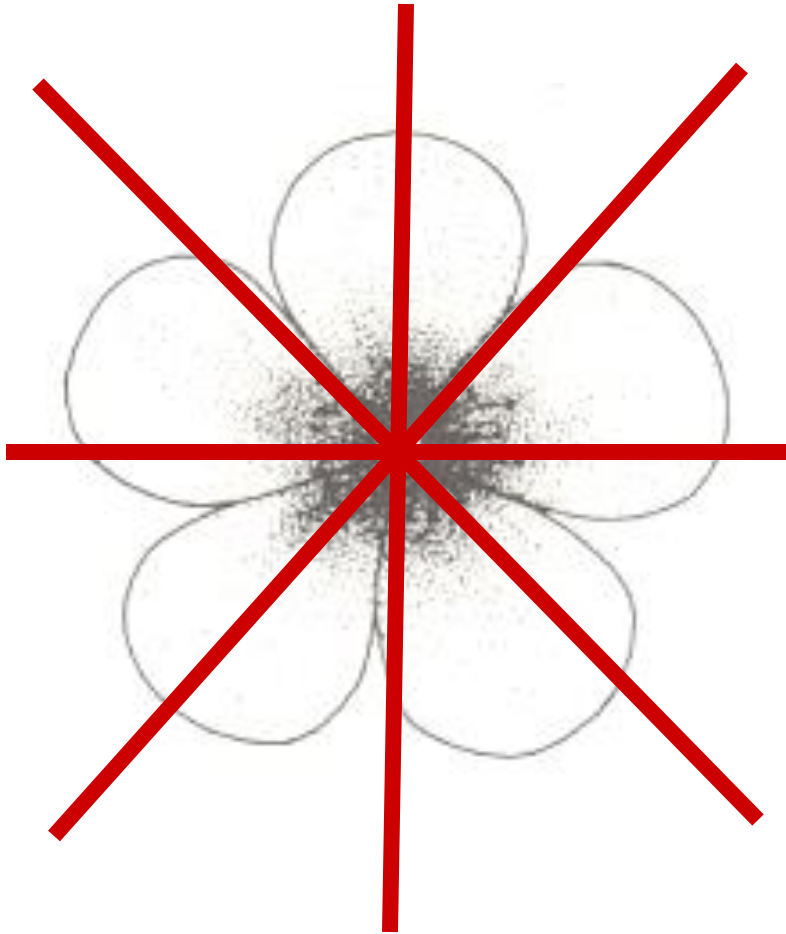
**ACTINOMORPHIC
FLOWER**



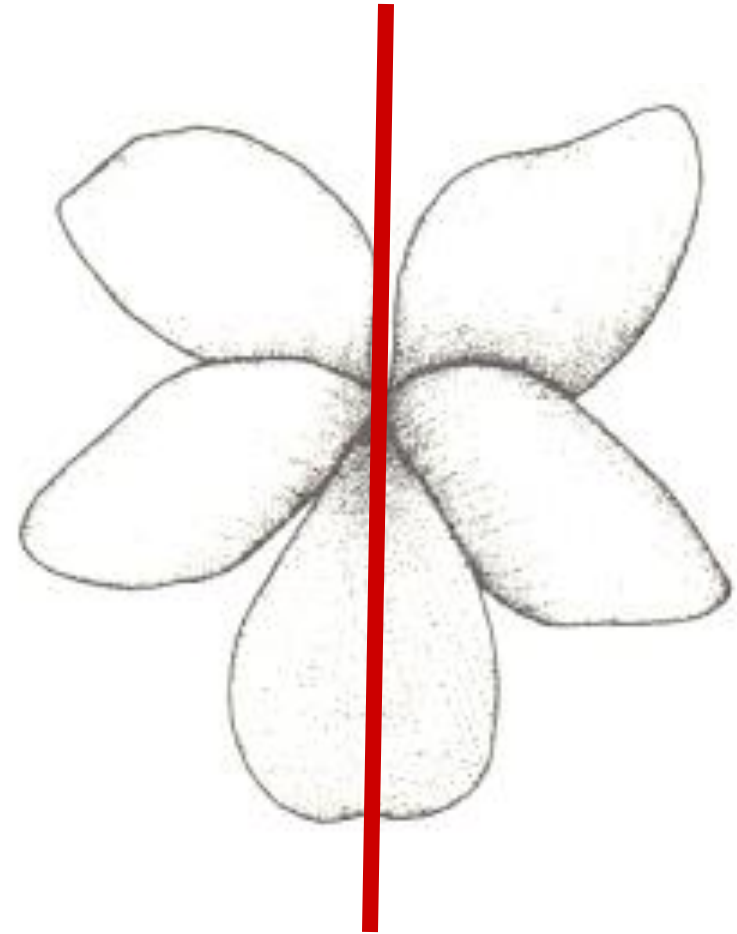
ZYGOMORPHIC FLOWER



**ACTINOMORPHIC
FLOWER**



**ACTINOMORPHIC
FLOWER**



**ZYGOMORPHIC
FLOWER**



PERIANTH SYMMETRY APPLIED



**ZYGOMORPHIC
FLOWER**



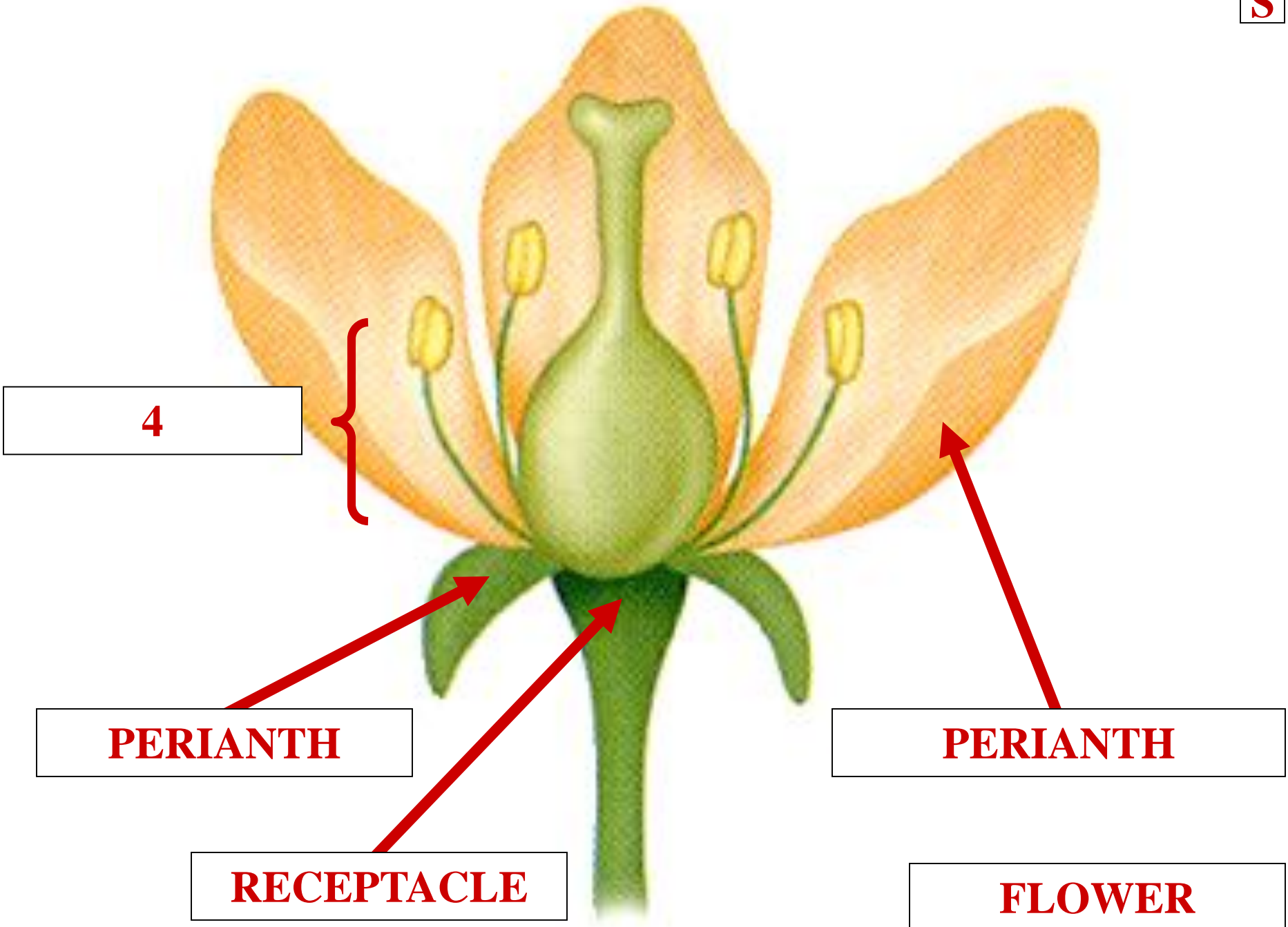


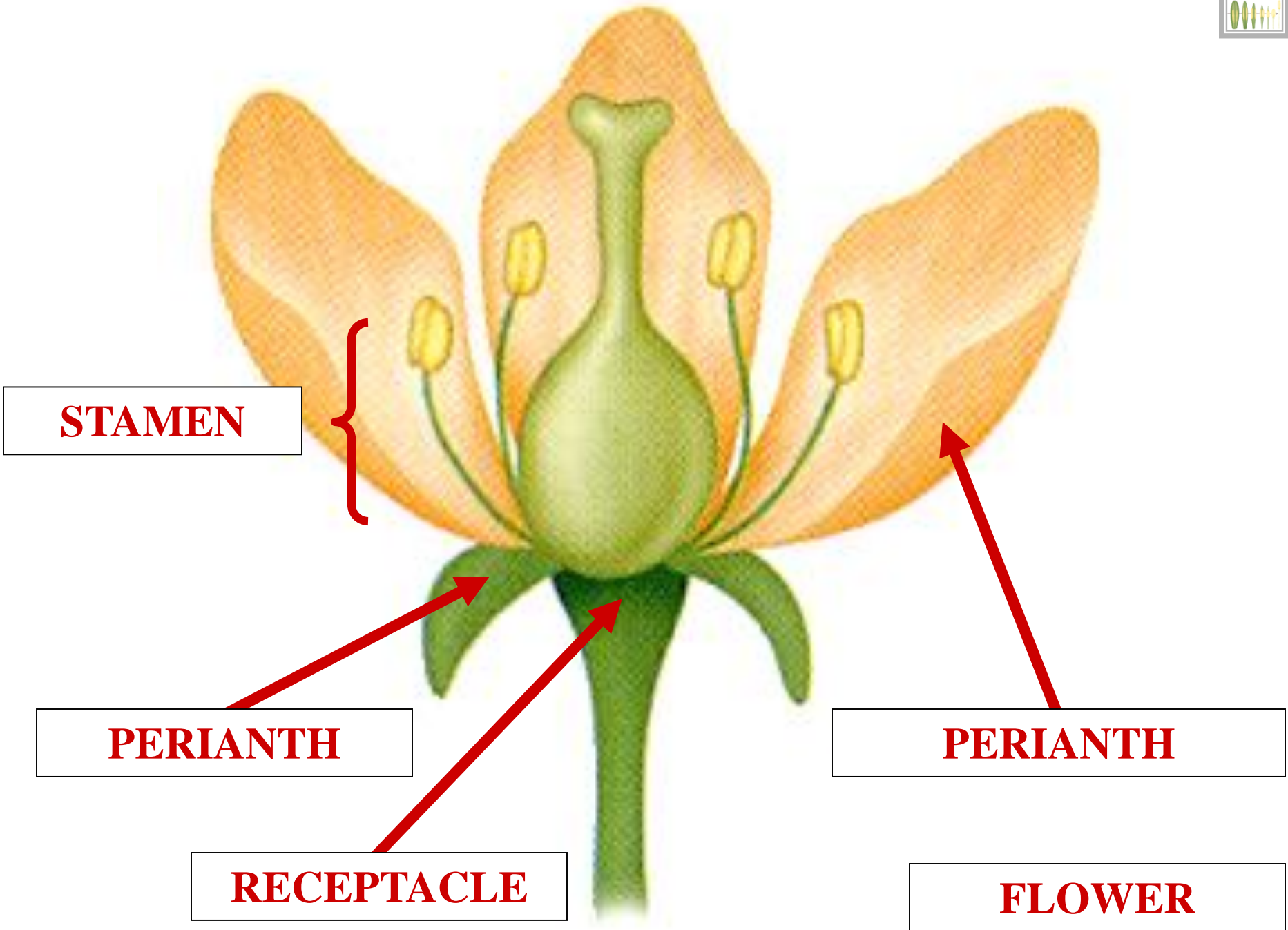
**ACTINOMORPHIC
FLOWER**





“MALE” FLOWER TERMS

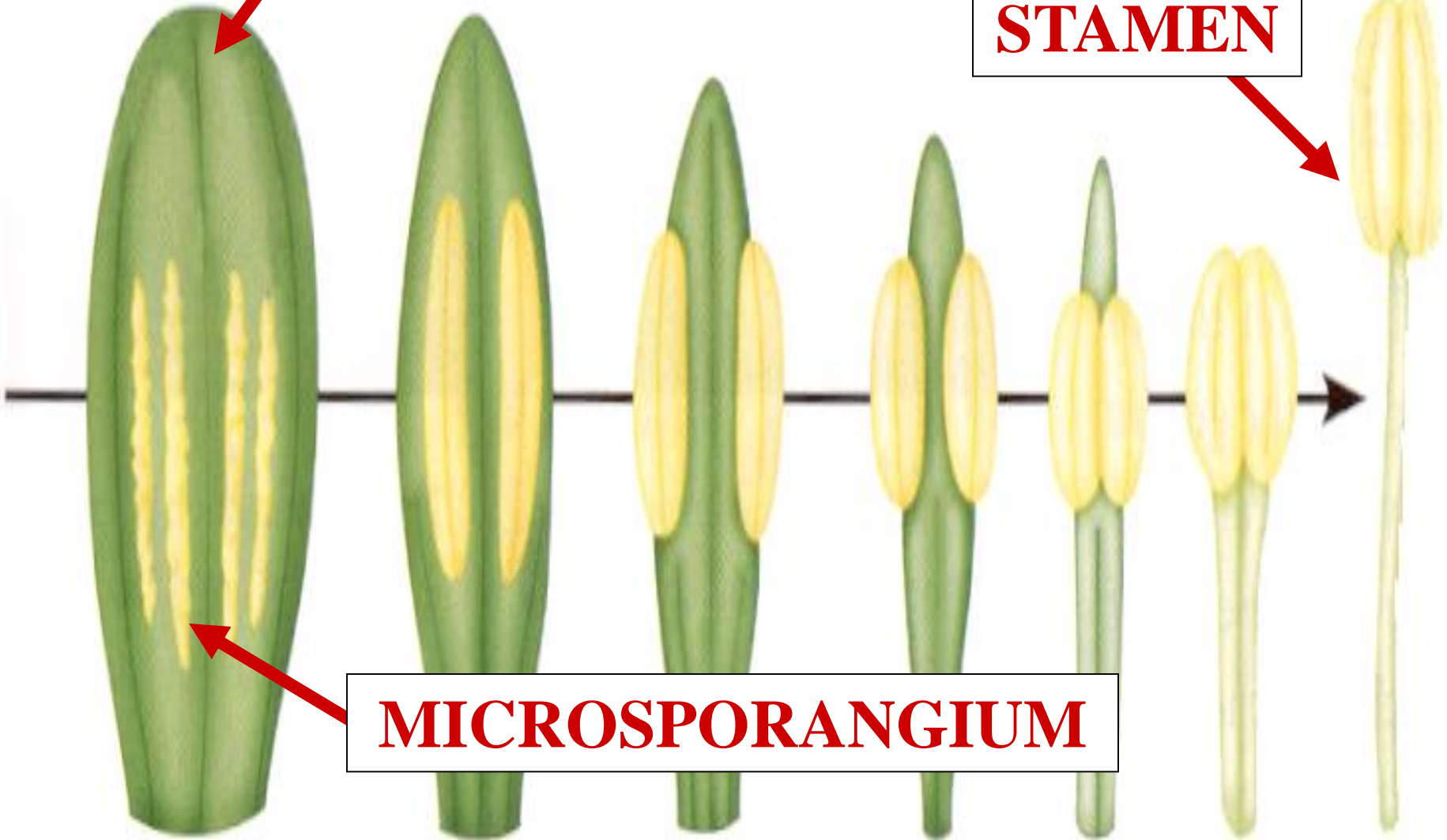




LEAF

STAMEN

MICROSPORANGIUM

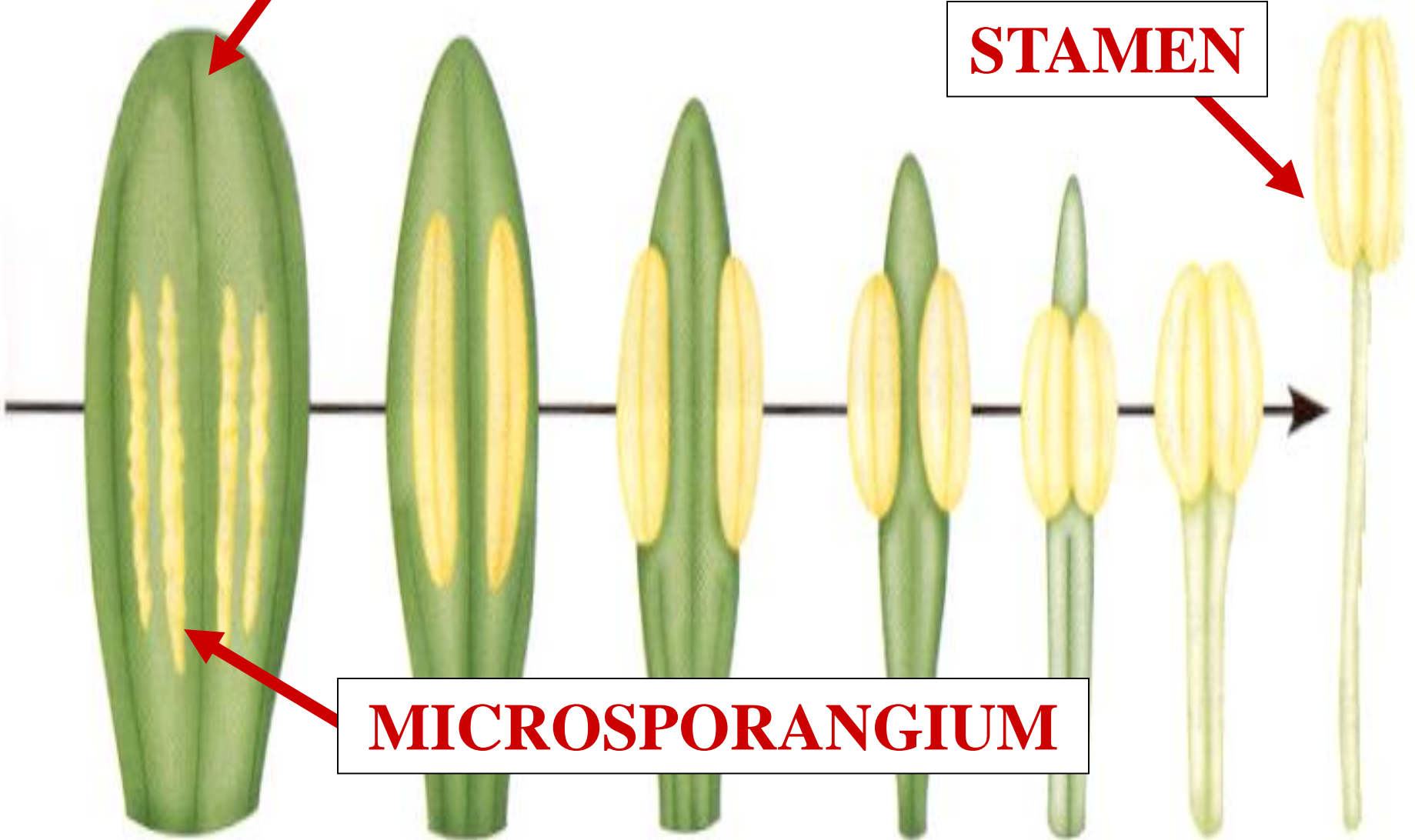


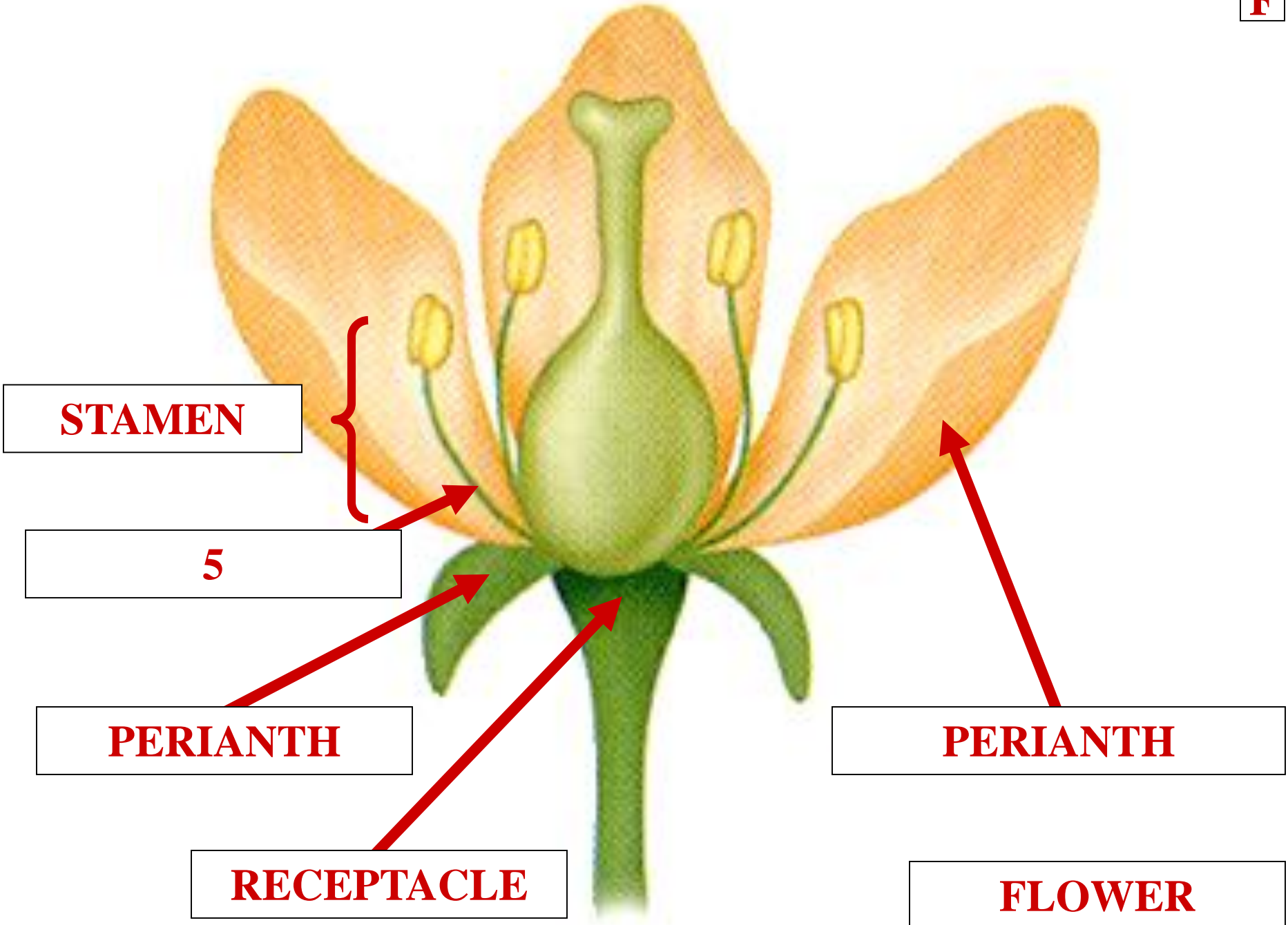


MICROSPOROPHYLL

STAMEN

MICROSPORANGIUM





STAMEN

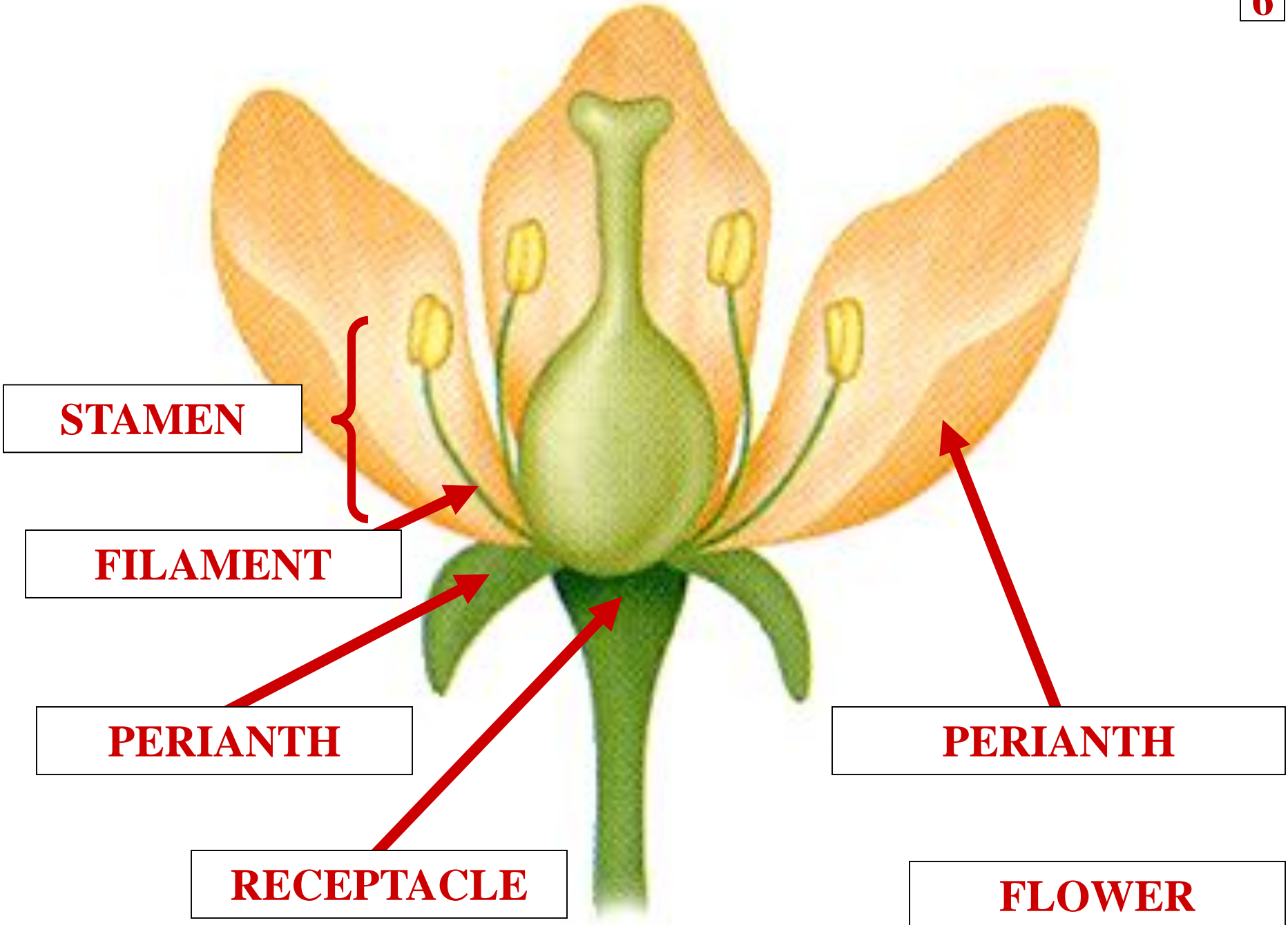
5

PERIANTH

RECEPTACLE

PERIANTH

FLOWER



STAMEN

FILAMENT

PERIANTH

RECEPTACLE

PERIANTH

FLOWER

6

STAMEN

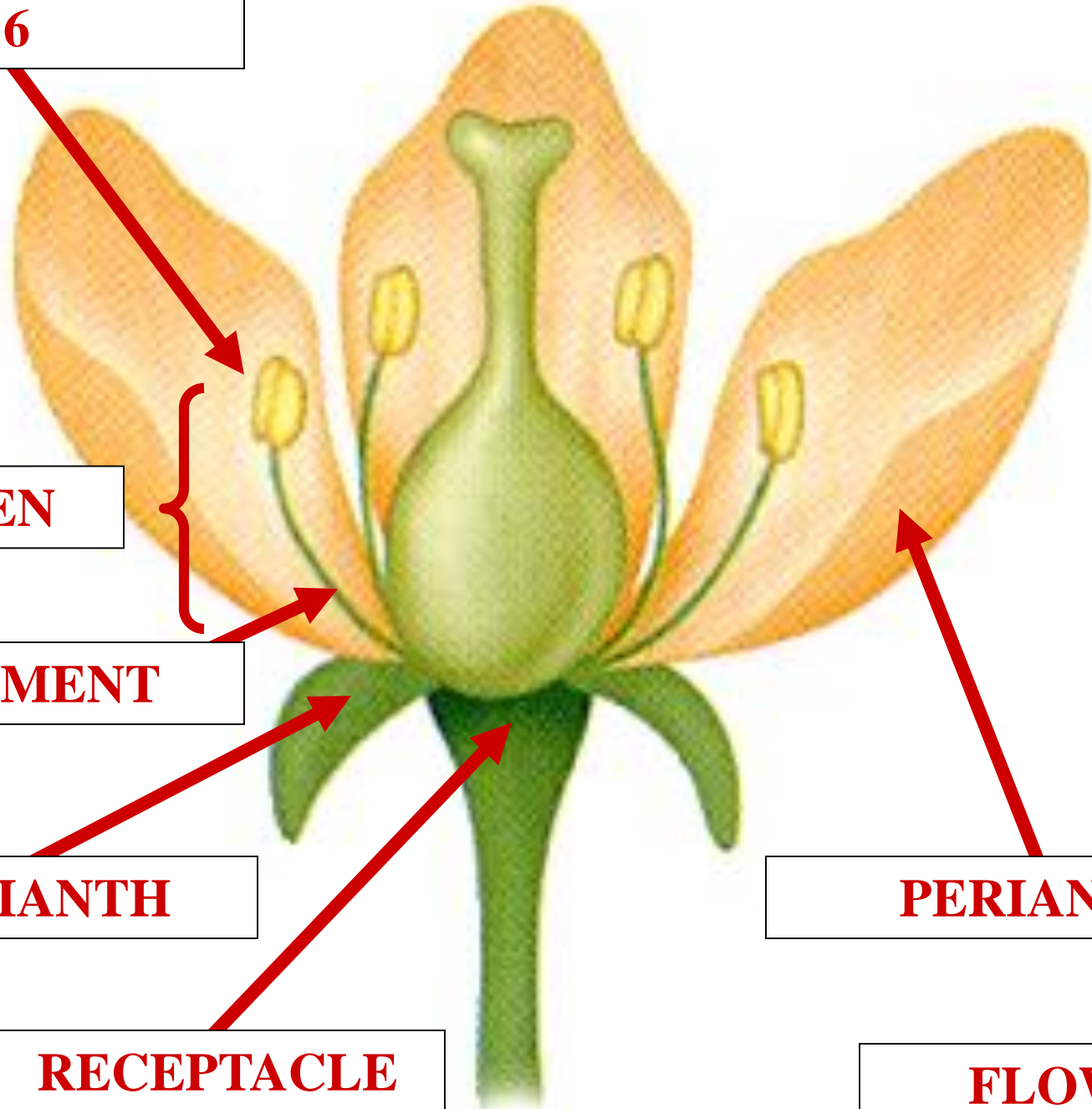
FILAMENT

PERIANTH

RECEPTACLE

PERIANTH

FLOWER



ANTHER

STAMEN

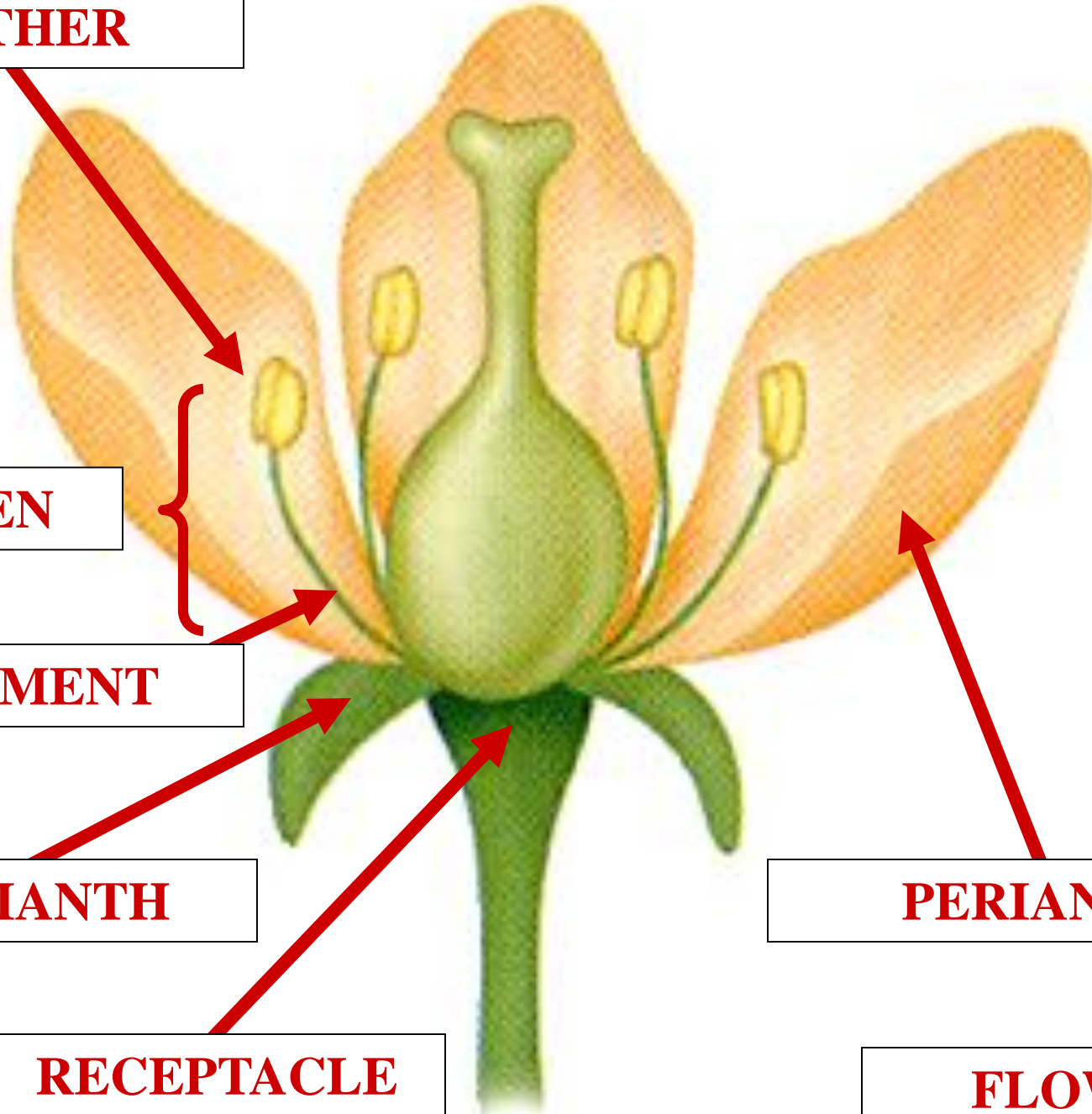
FILAMENT

PERIANTH

RECEPTACLE

PERIANTH

FLOWER





ANTHER

ANDROECIUM

STAMEN

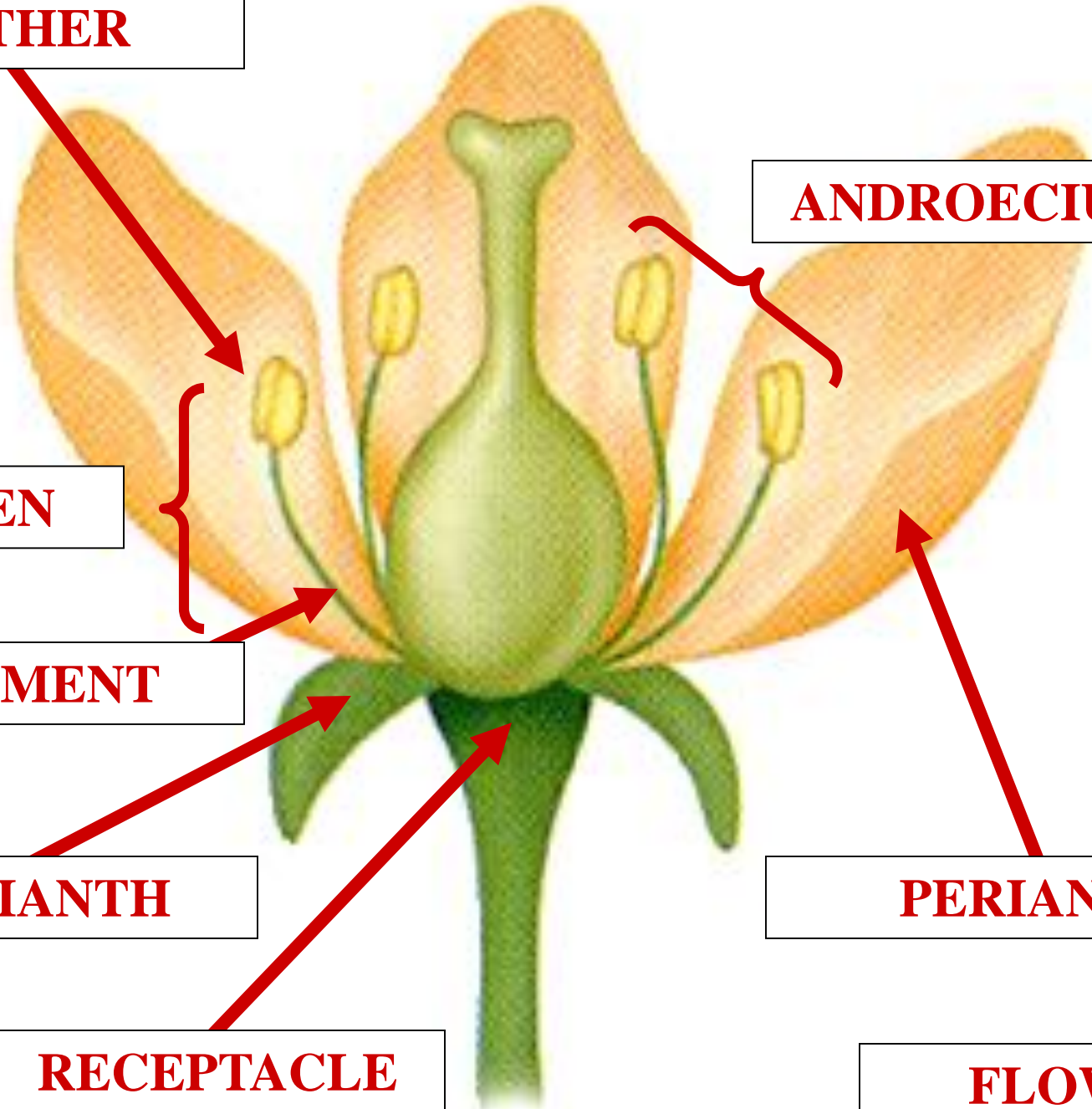
FILAMENT

PERIANTH

RECEPTACLE

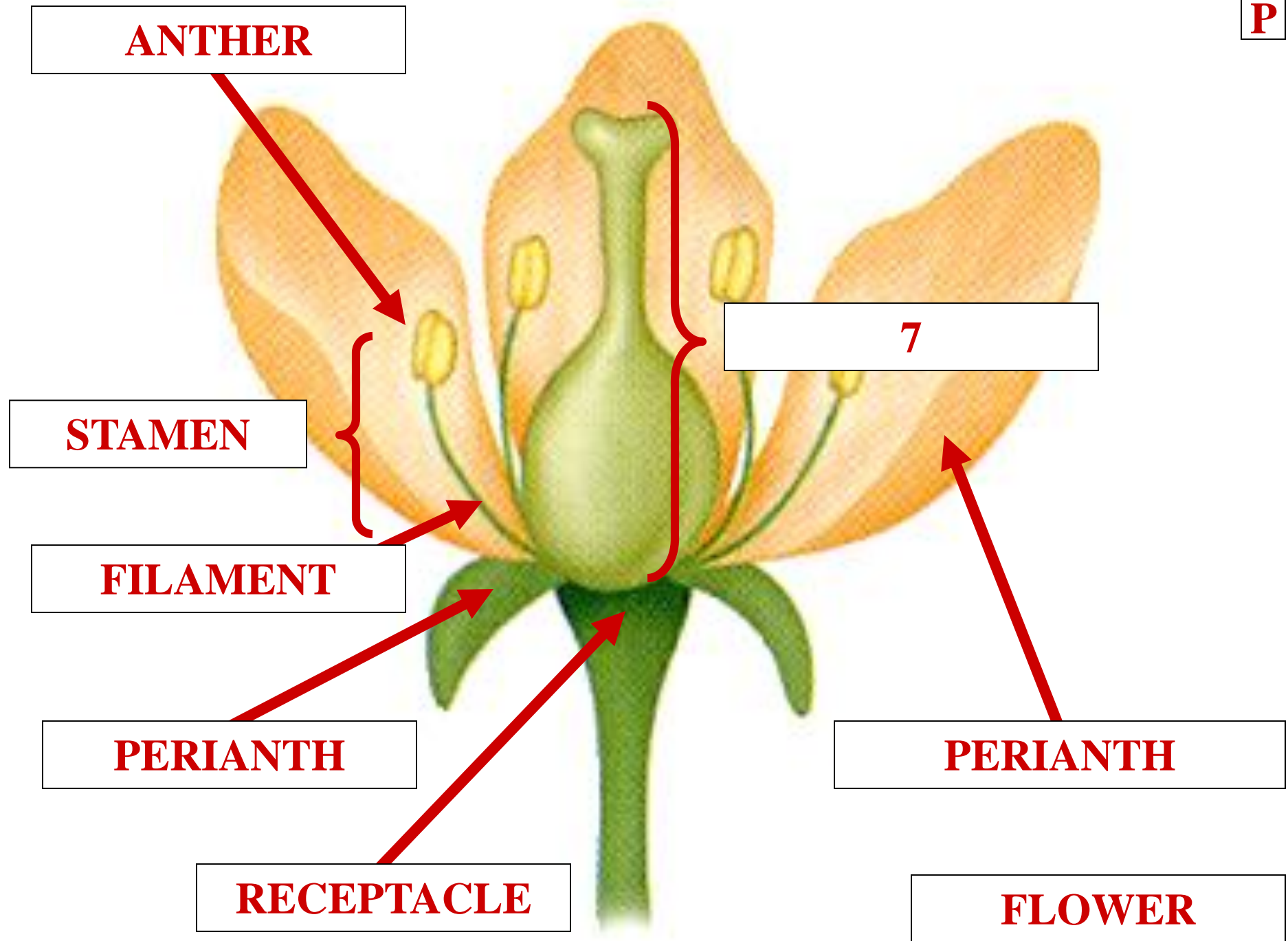
PERIANTH

FLOWER



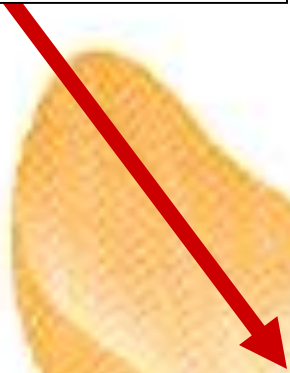


“FEMALE” FLOWER TERMS





ANTHER



STAMEN



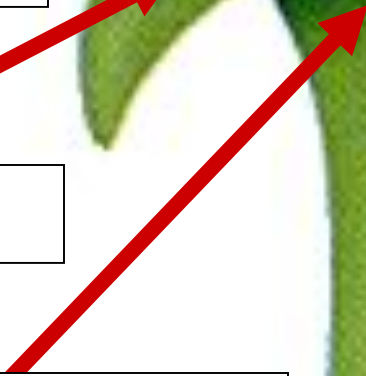
FILAMENT



PERIANTH



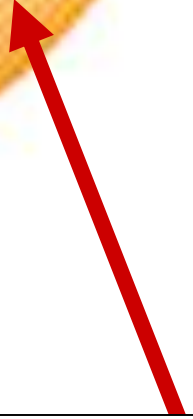
RECEPTACLE



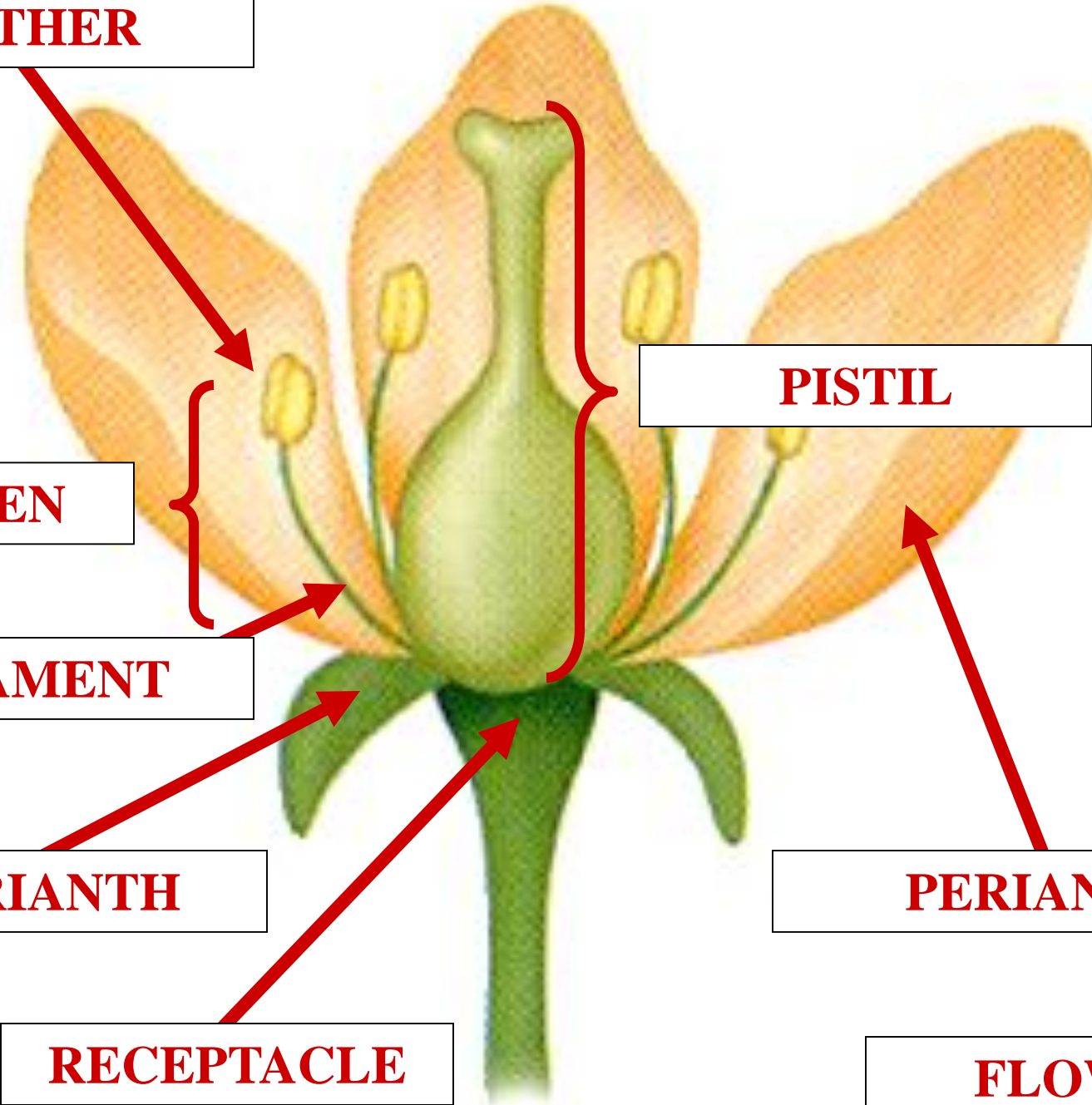
PISTIL



PERIANTH



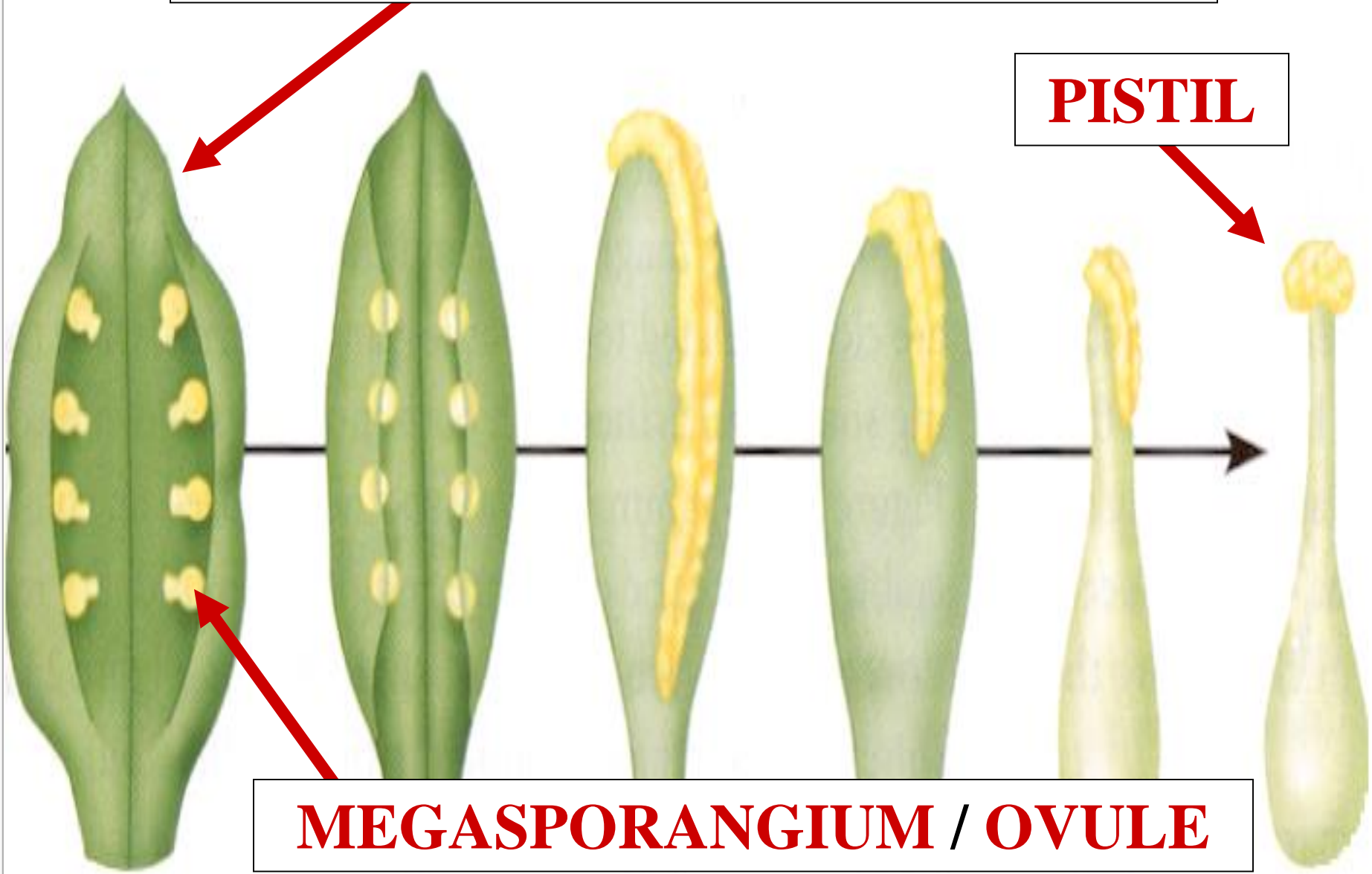
FLOWER



LEAF

PISTIL

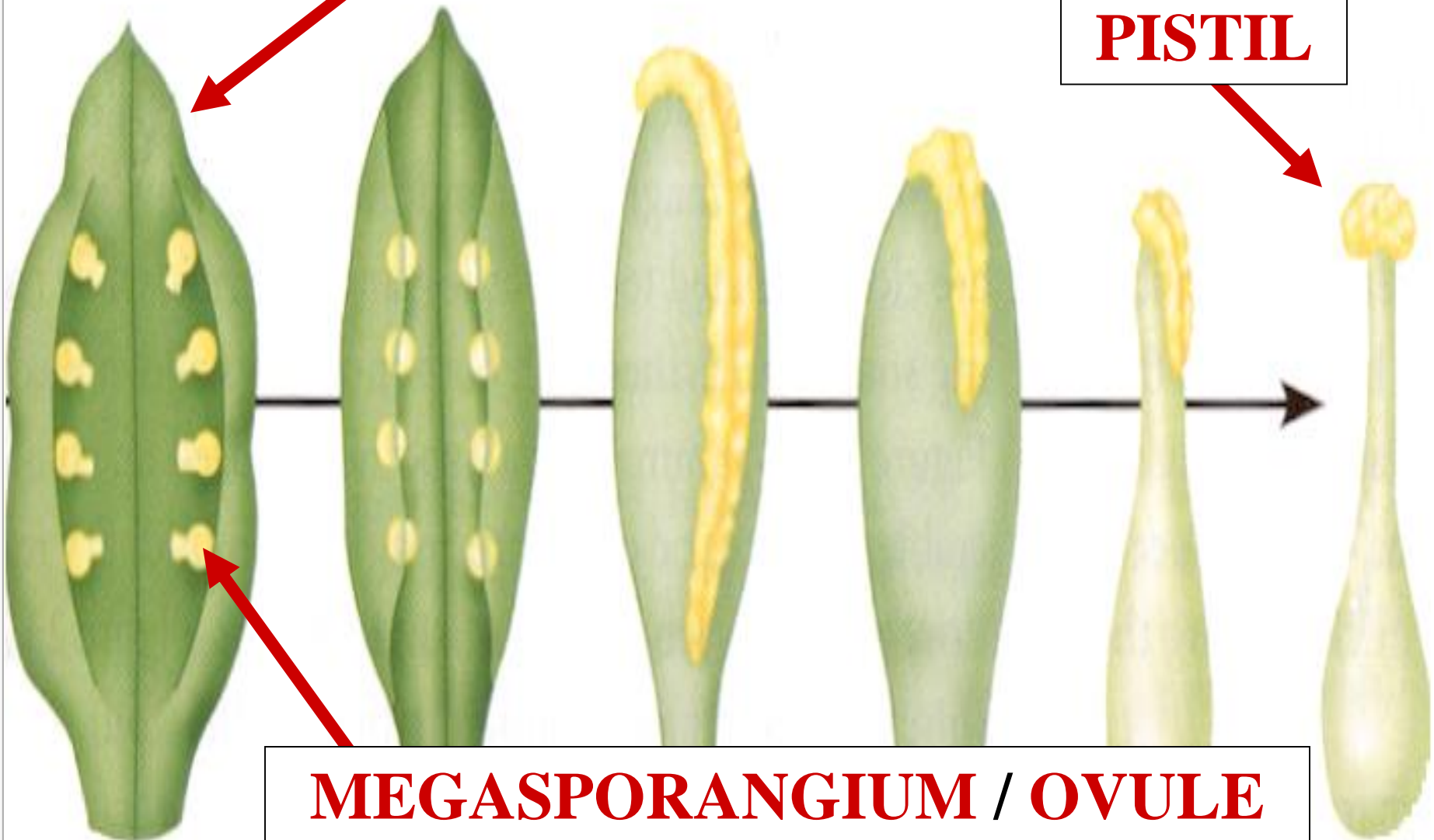
MEGASPORANGIUM / OVULE



MEGASPOROPHYLL

PISTIL

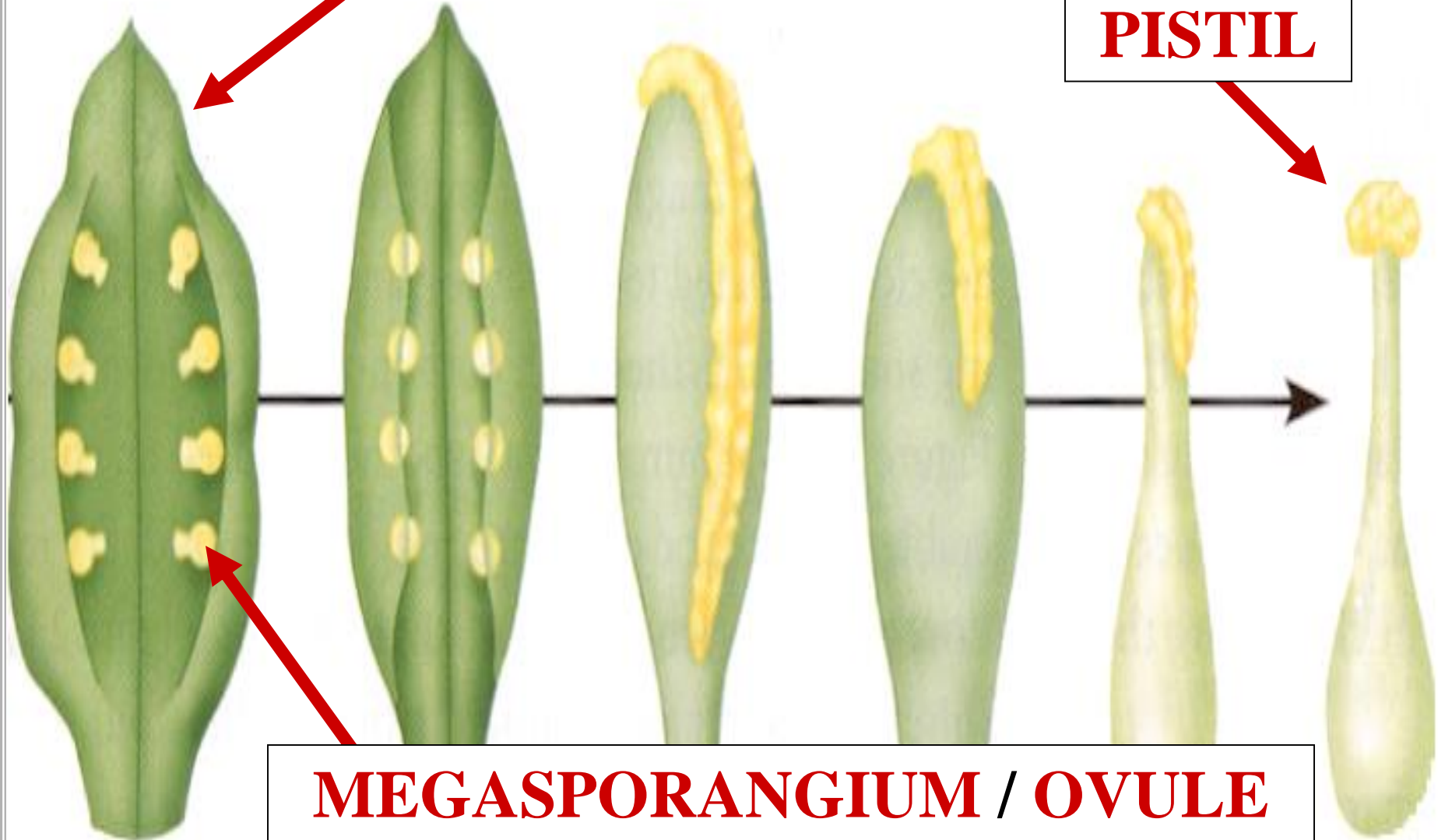
MEGASPORANGIUM / OVULE



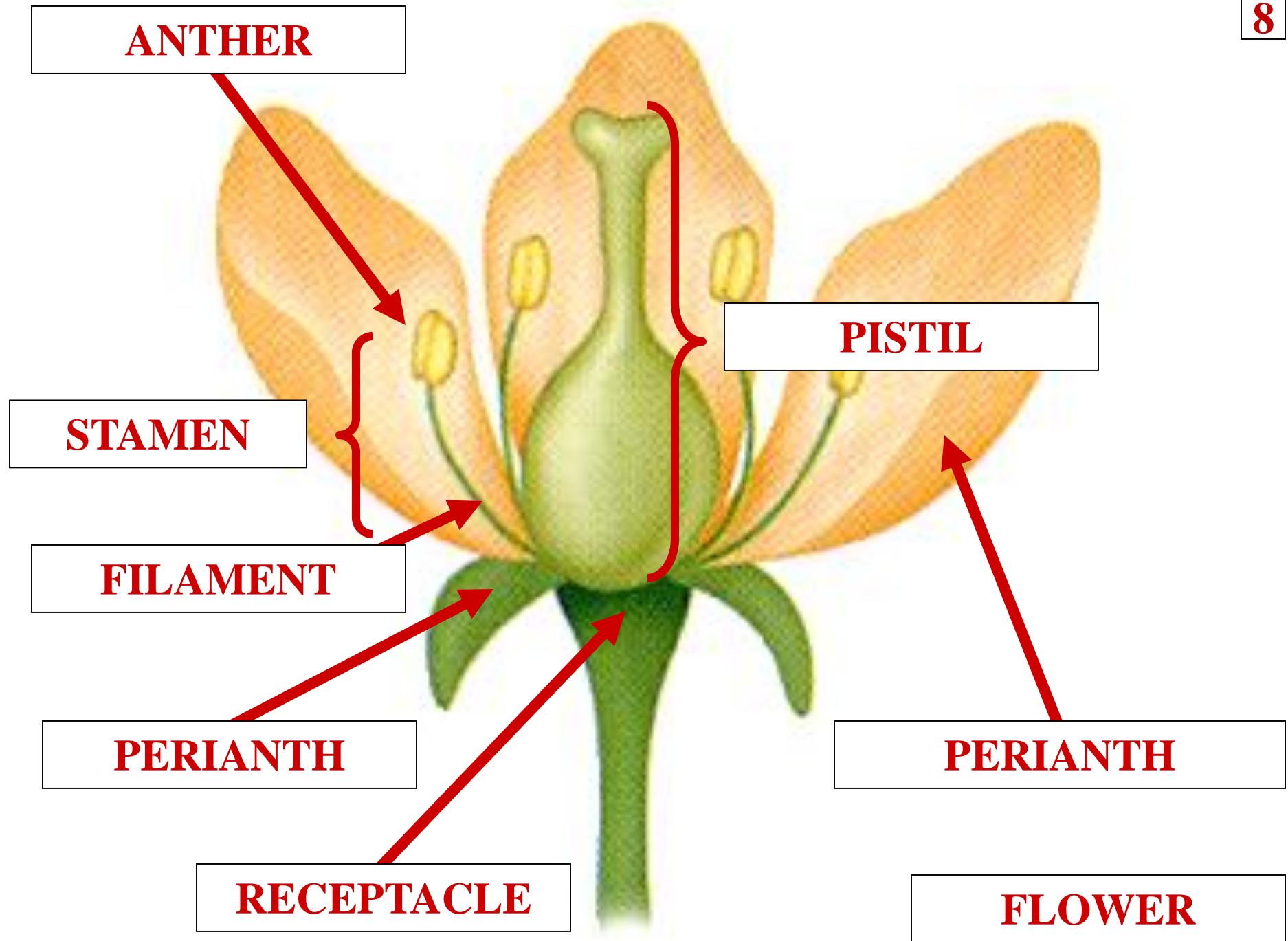
CARPEL(S)



PISTIL



MEGASPORANGIUM / OVULE



ANTHER

8

STAMEN

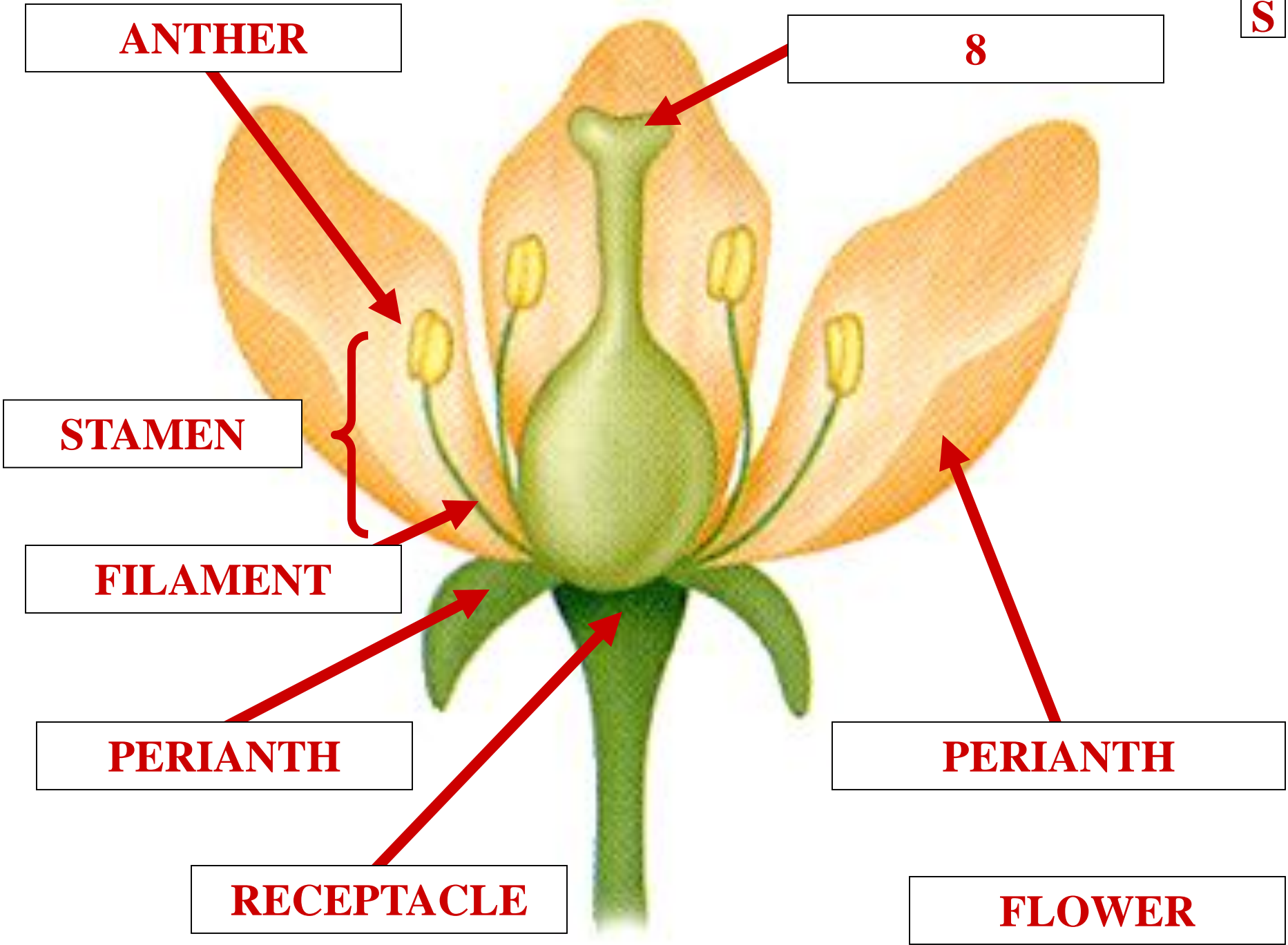
FILAMENT

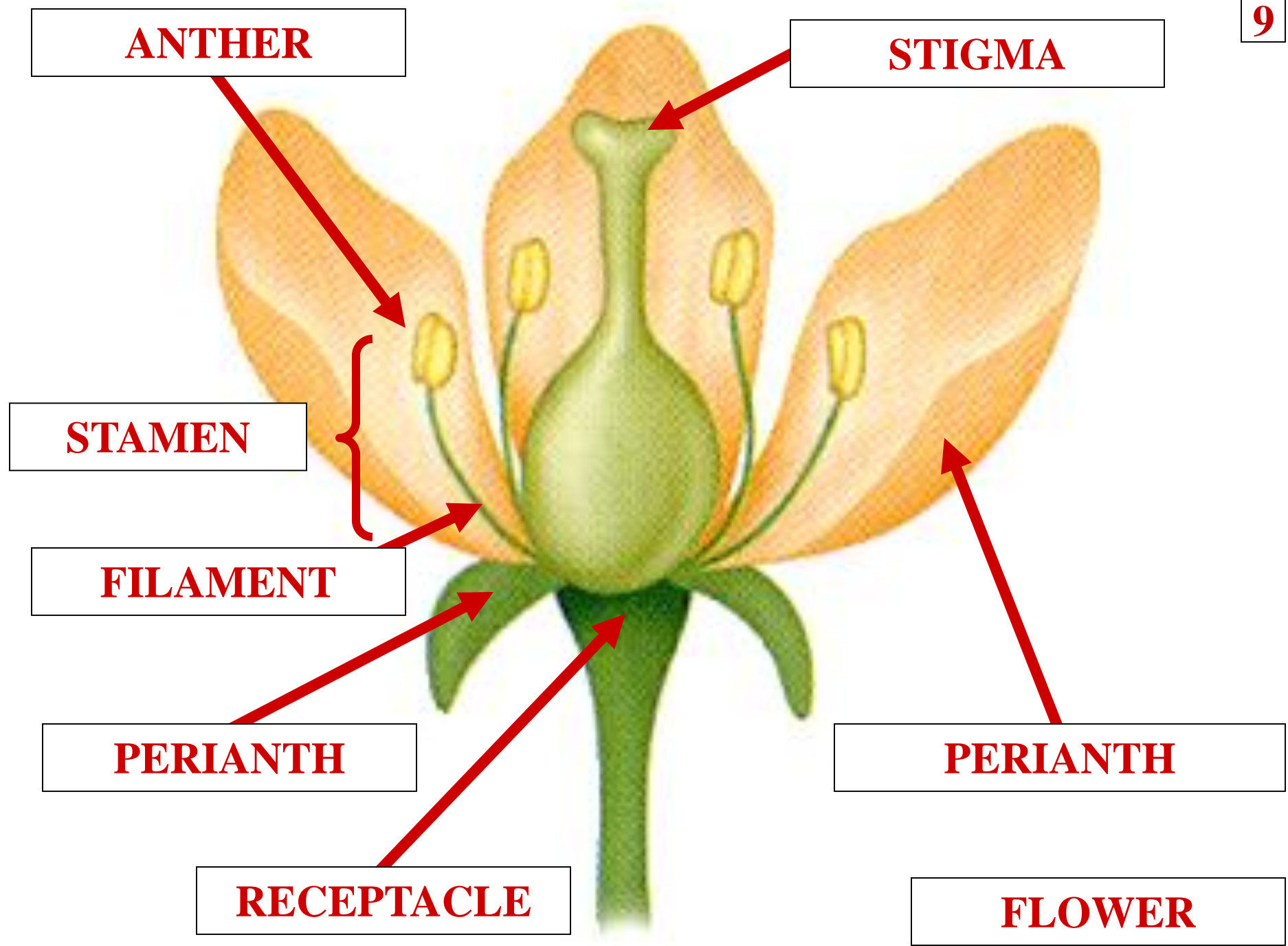
PERIANTH

RECEPTACLE

PERIANTH

FLOWER





ANTHER

STIGMA

9

STAMEN

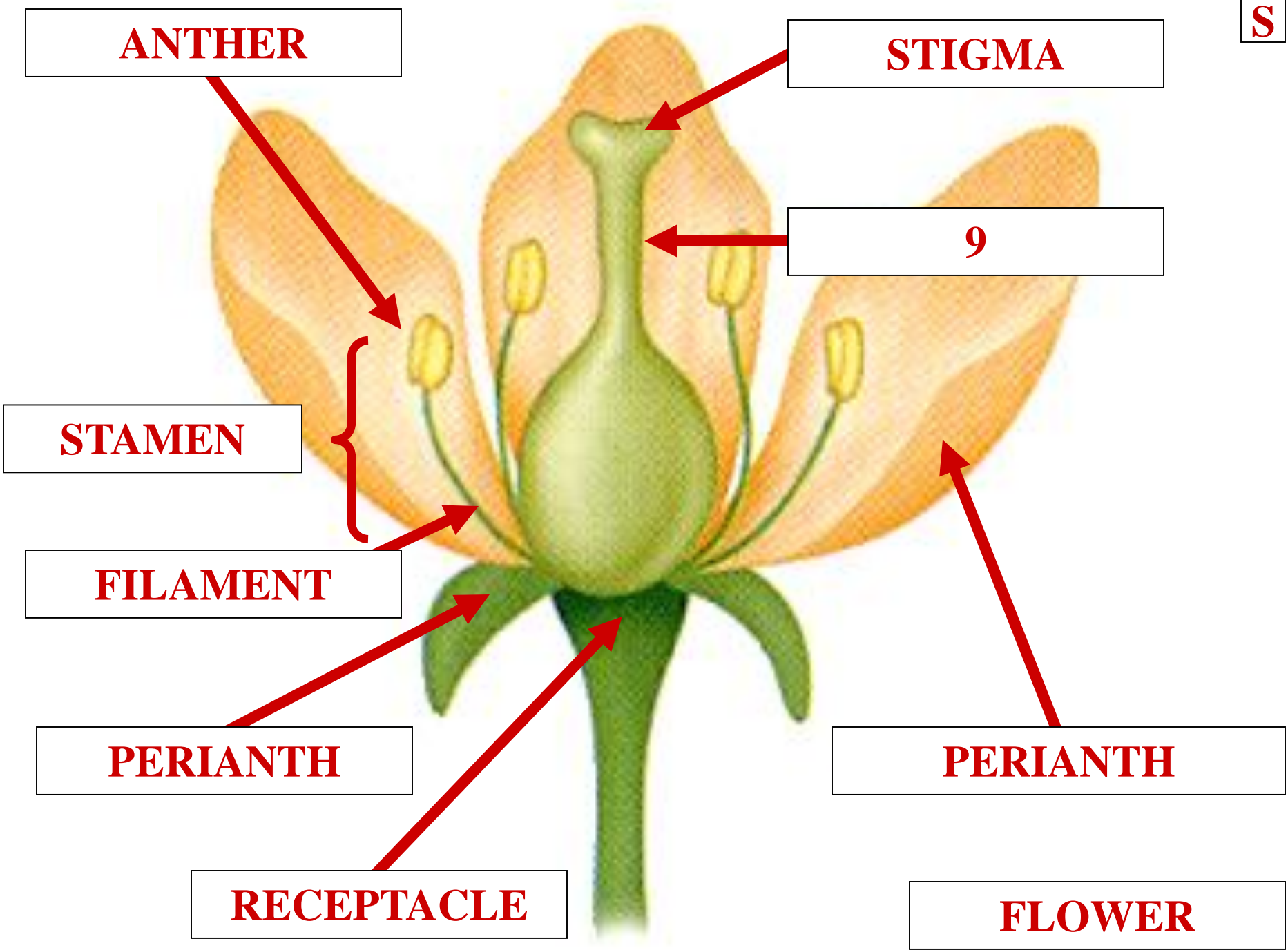
FILAMENT

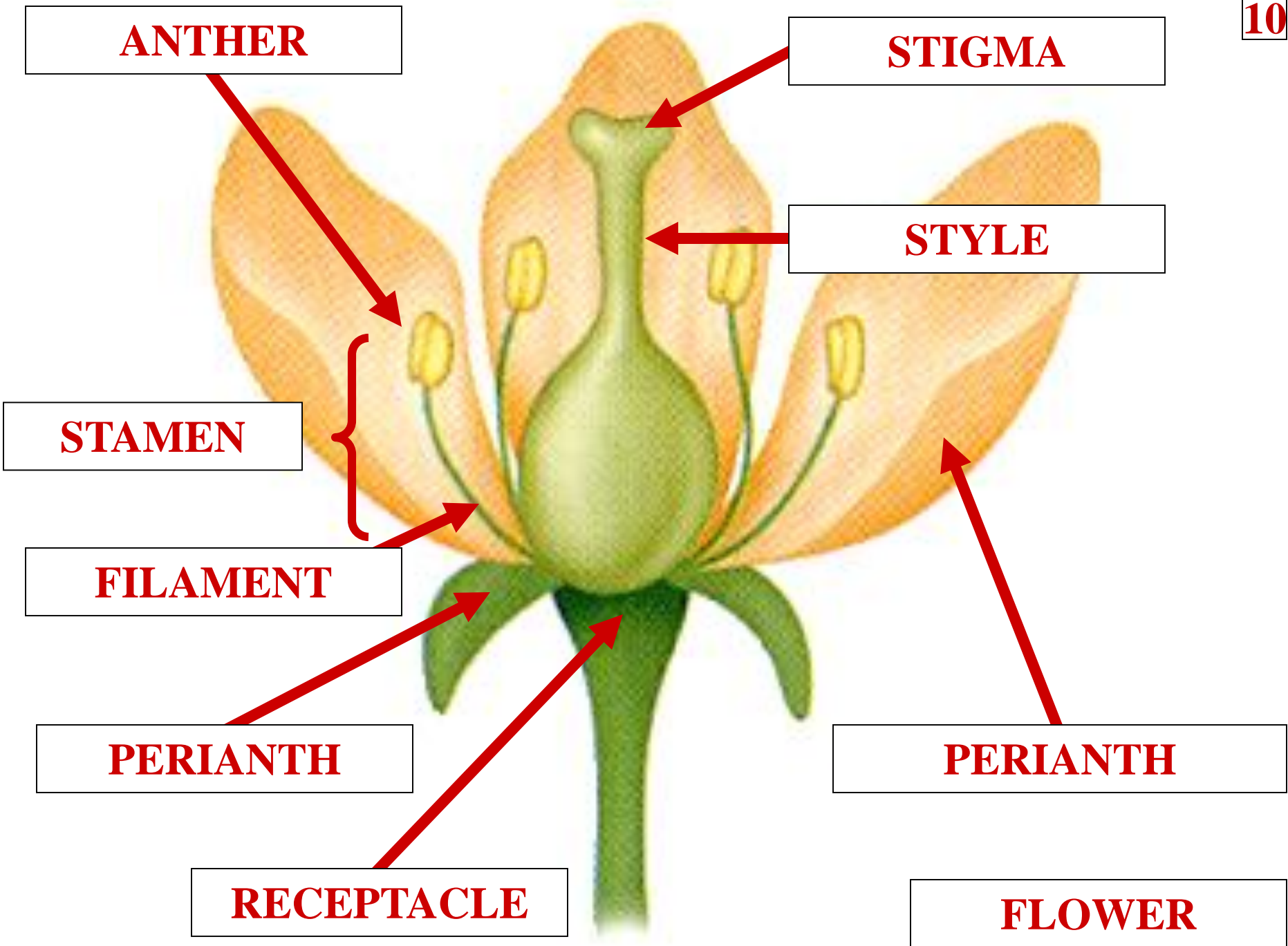
PERIANTH

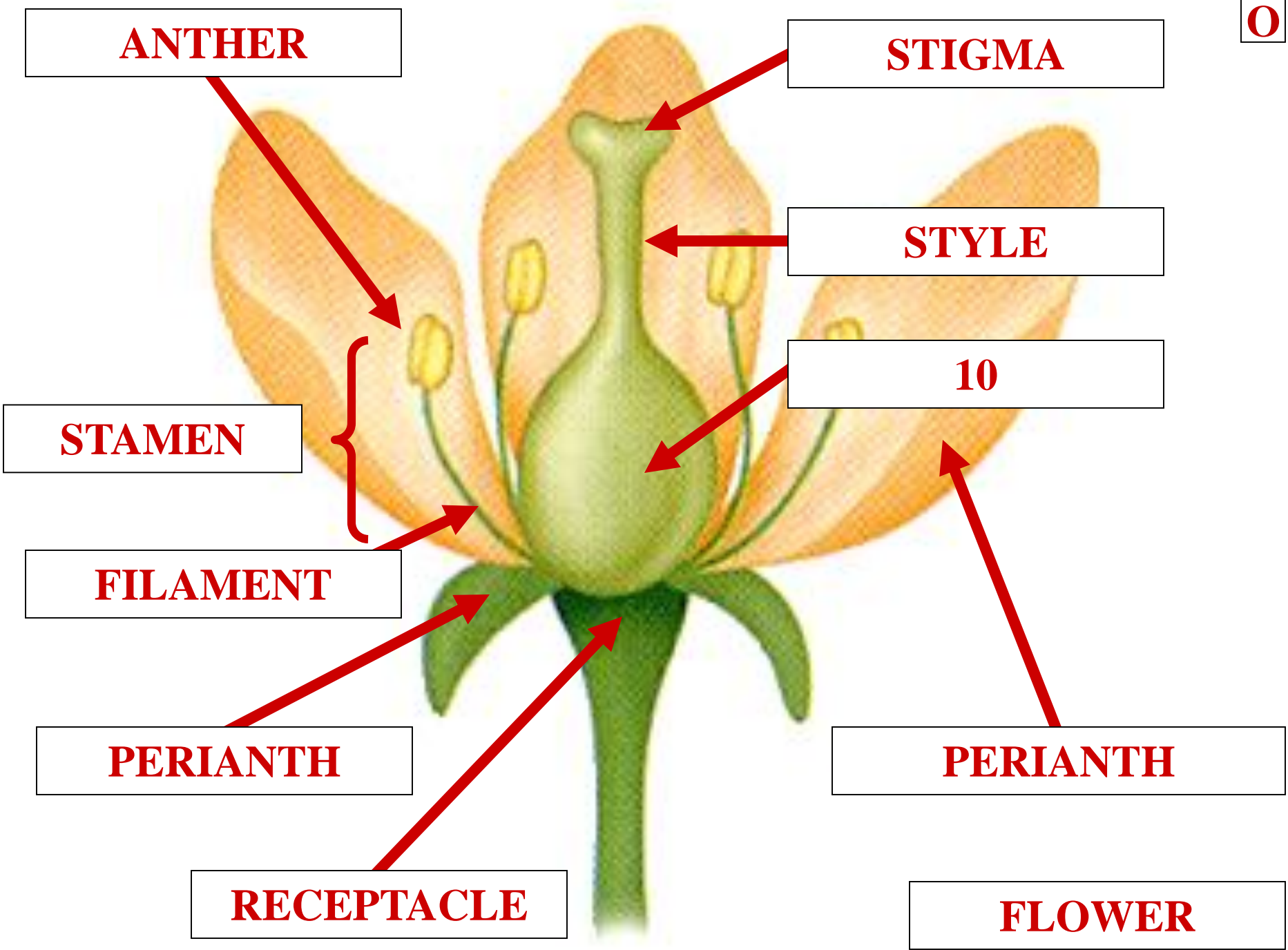
RECEPTACLE

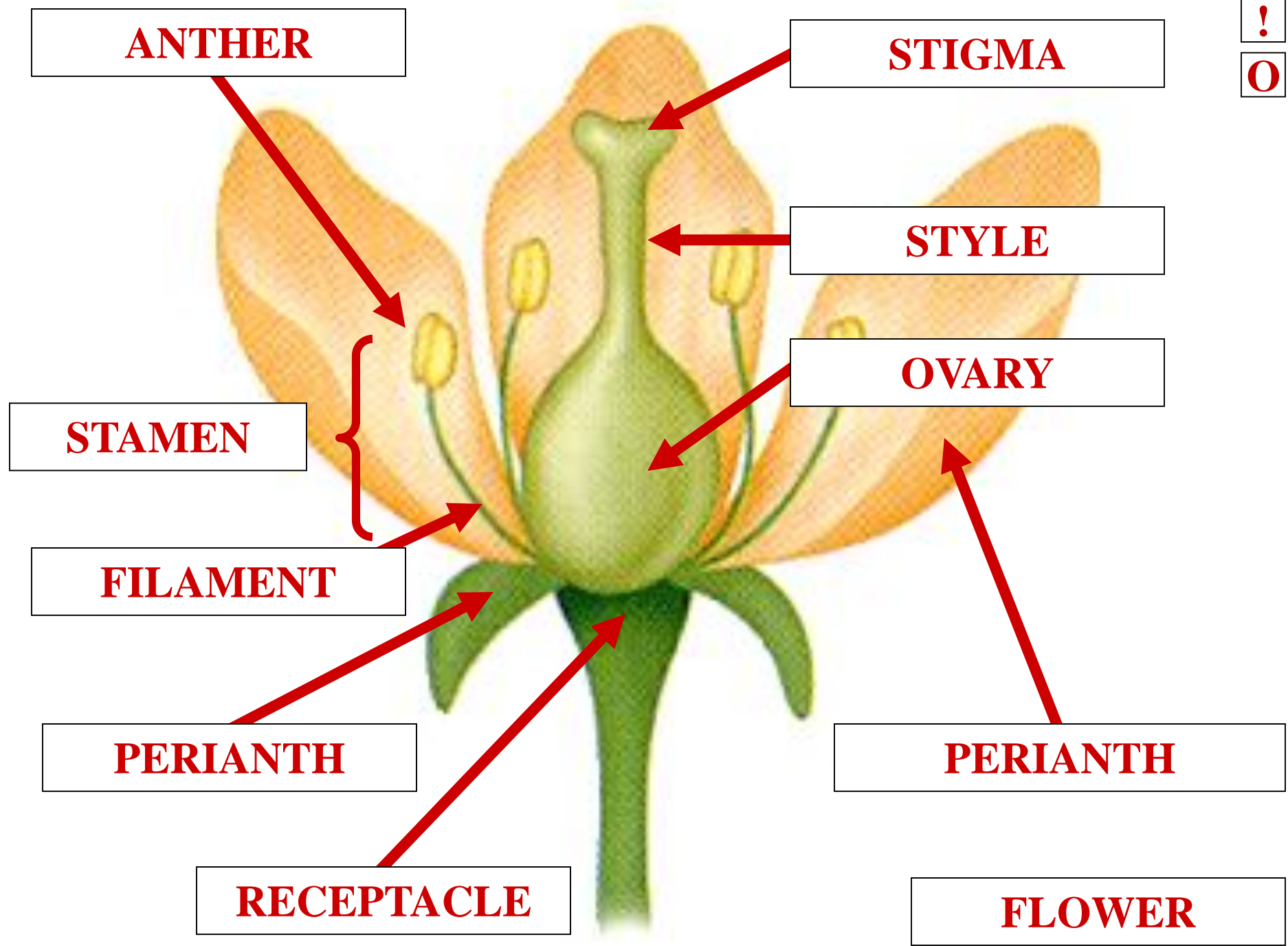
PERIANTH

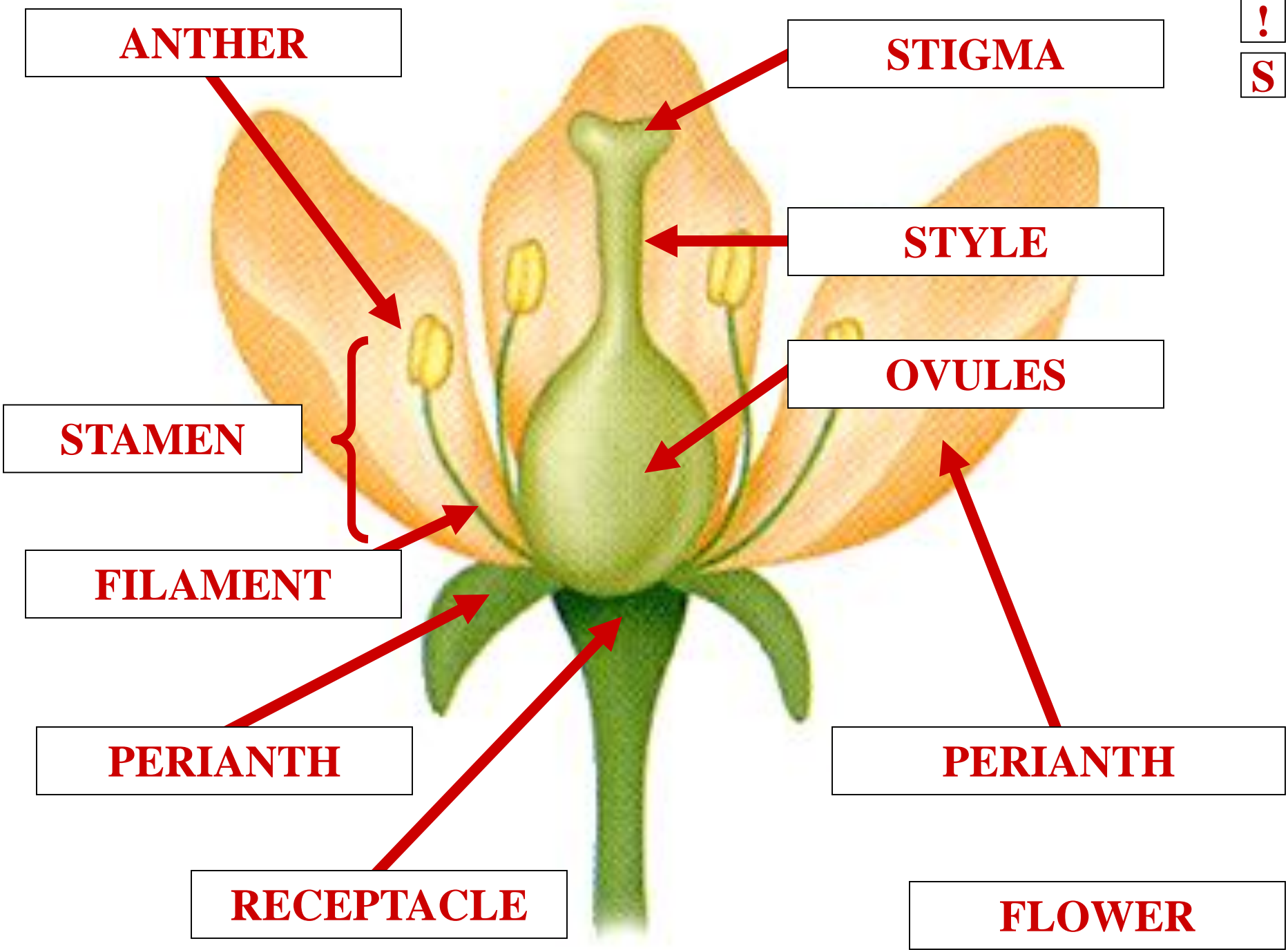
FLOWER











ANTHER

STIGMA

STYLE

OVULES

STAMEN

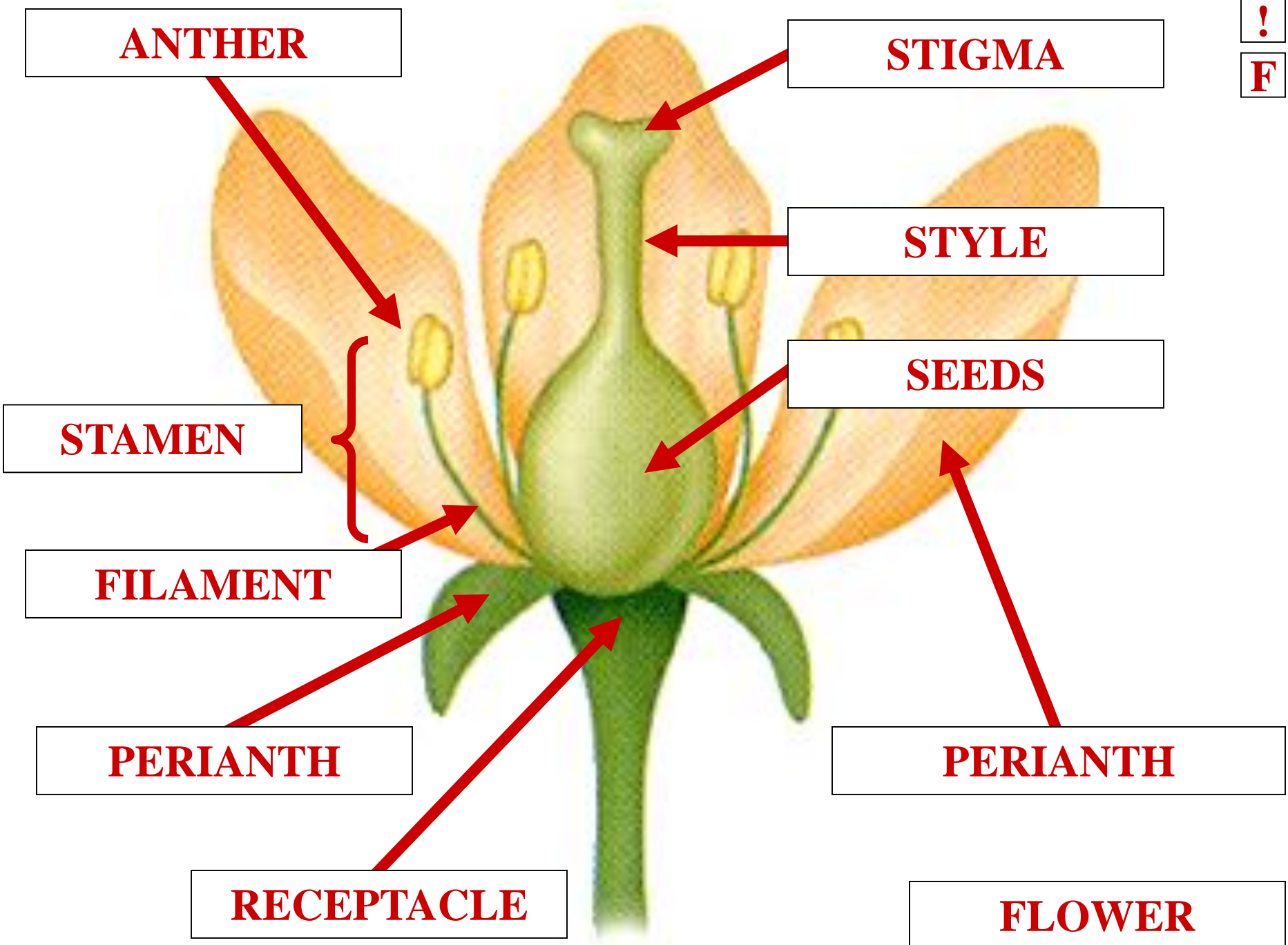
FILAMENT

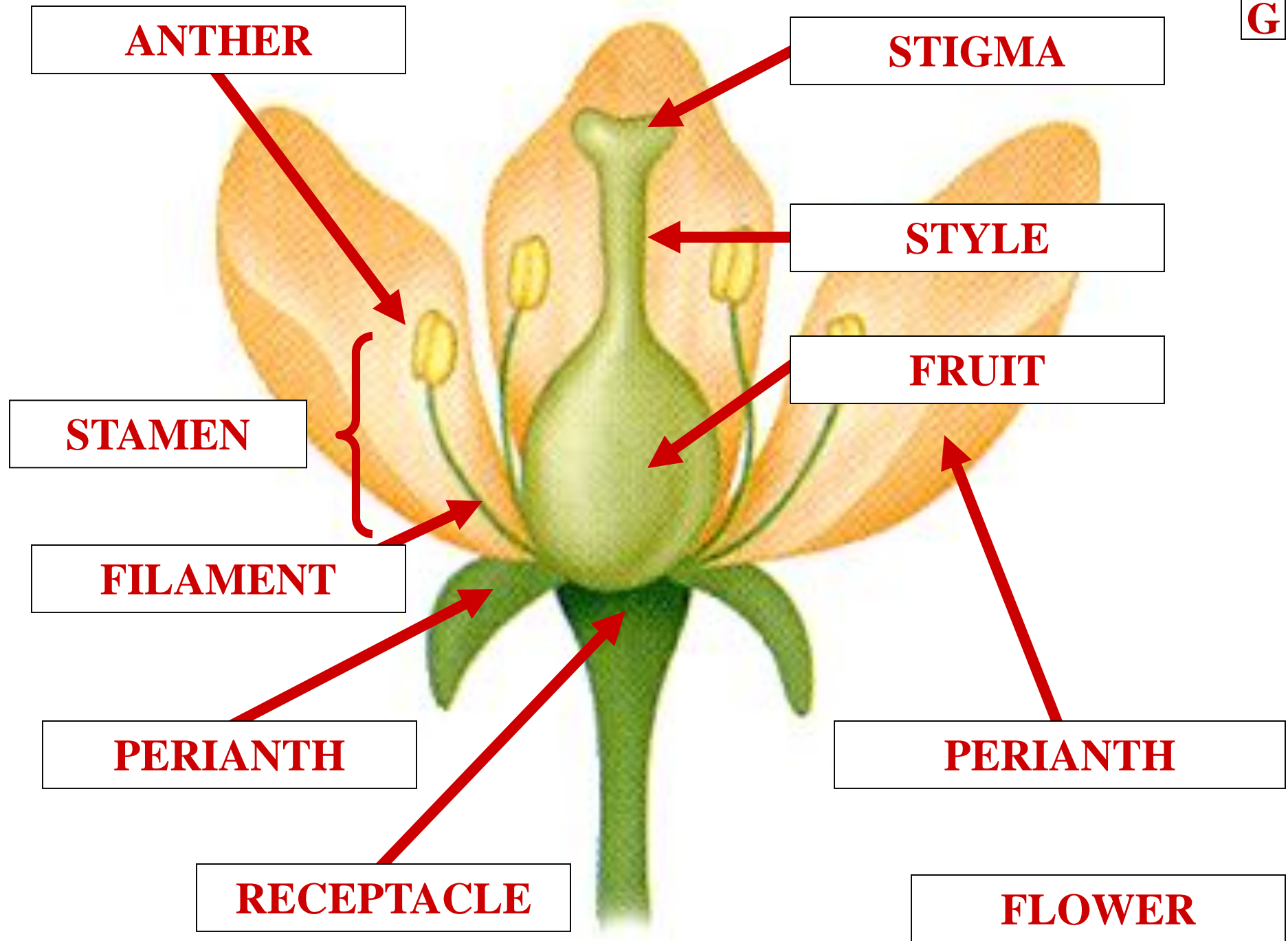
PERIANTH

RECEPTACLE

PERIANTH

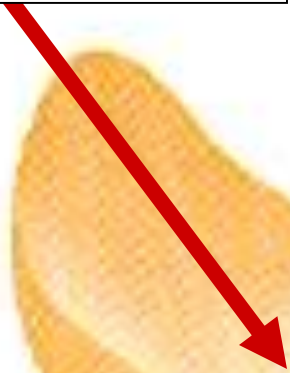
FLOWER







ANTHER



GYNOECIUM



STAMEN



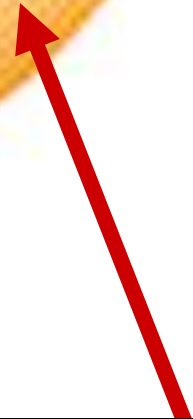
FILAMENT



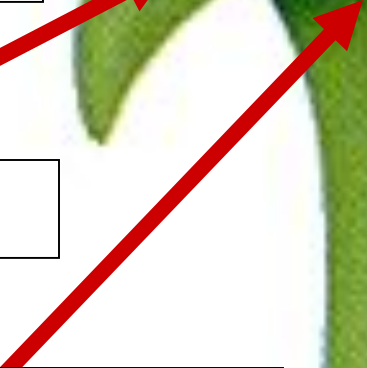
PERIANTH



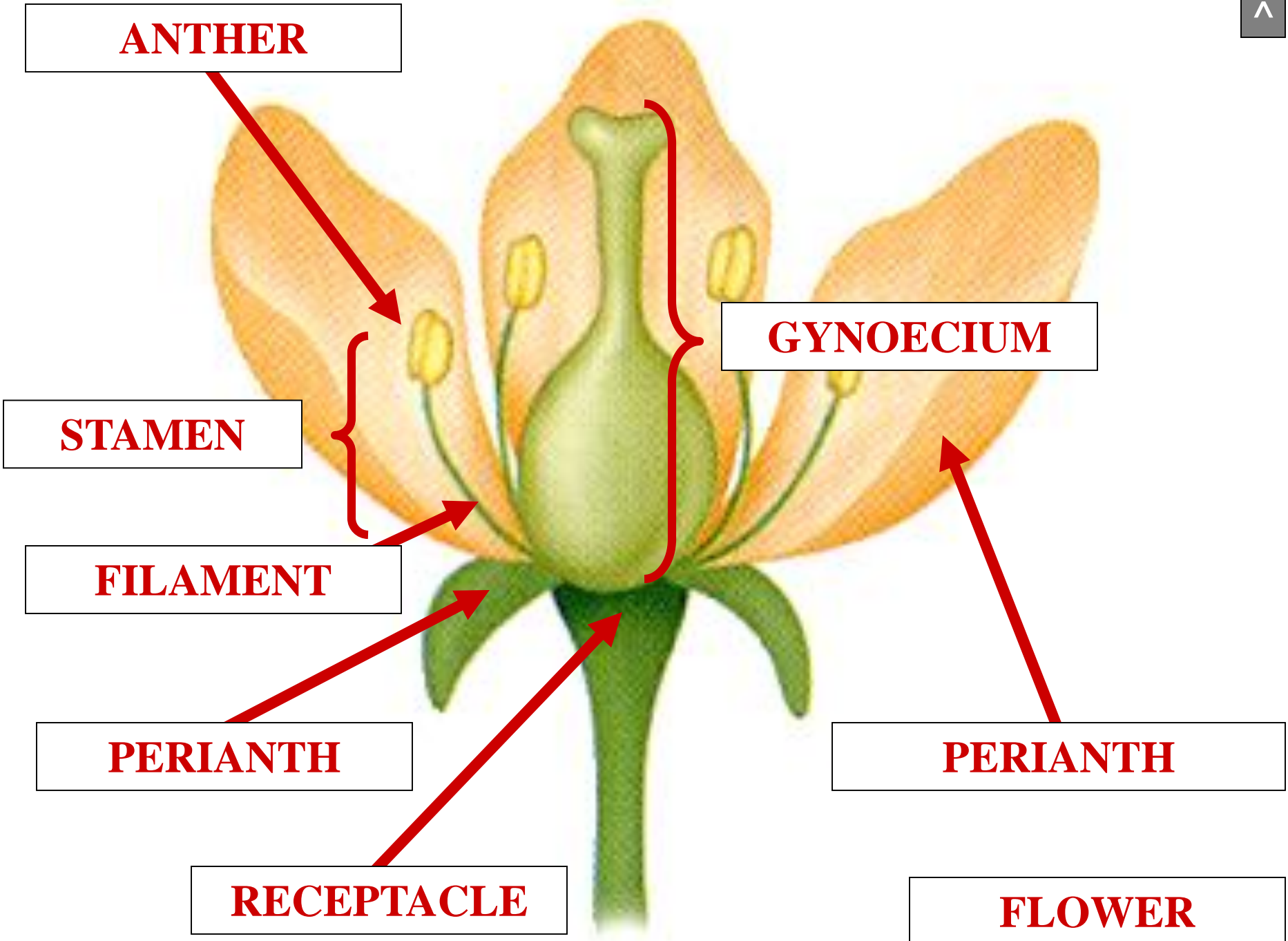
PERIANTH



RECEPTACLE

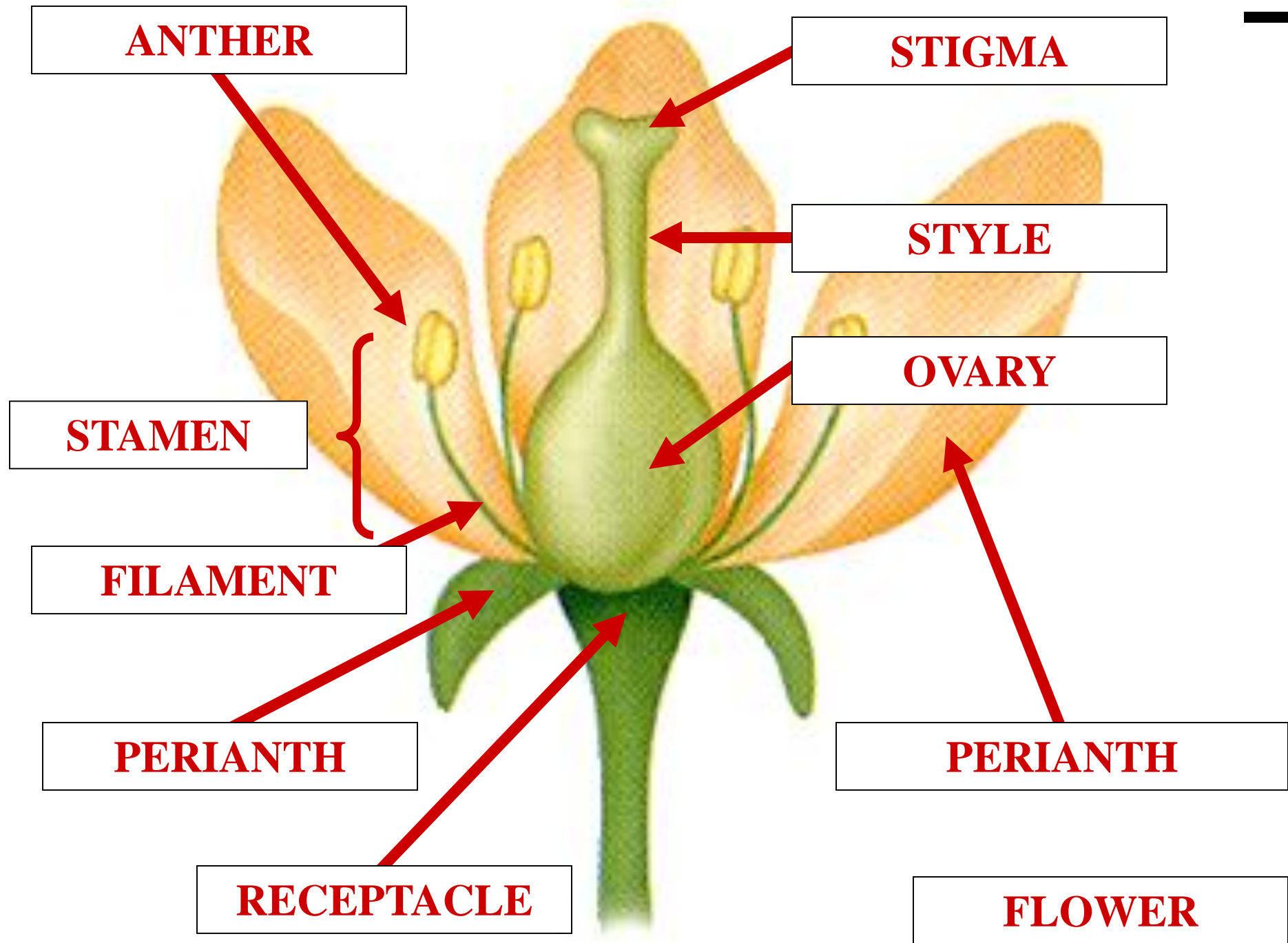


FLOWER





OVARY ANATOMY





ANTHER

STIGMA

STYLE

OVARY

STAMEN

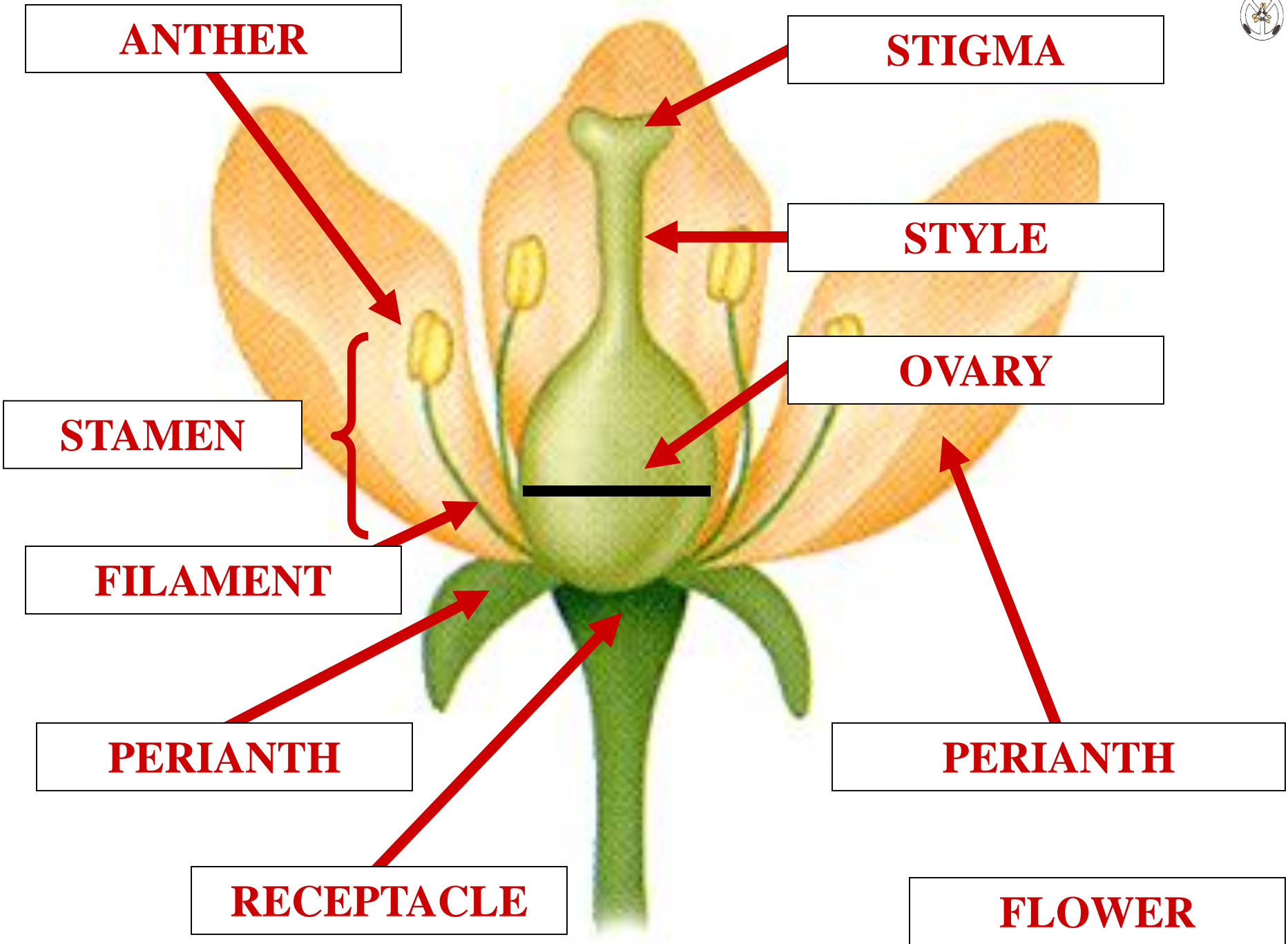
FILAMENT

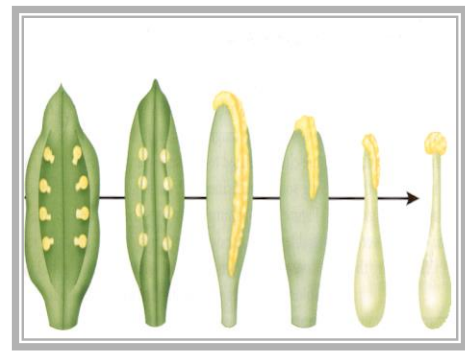
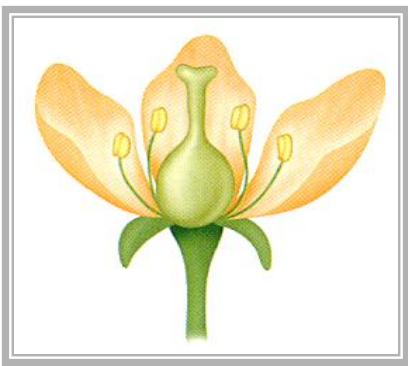
PERIANTH

RECEPTACLE

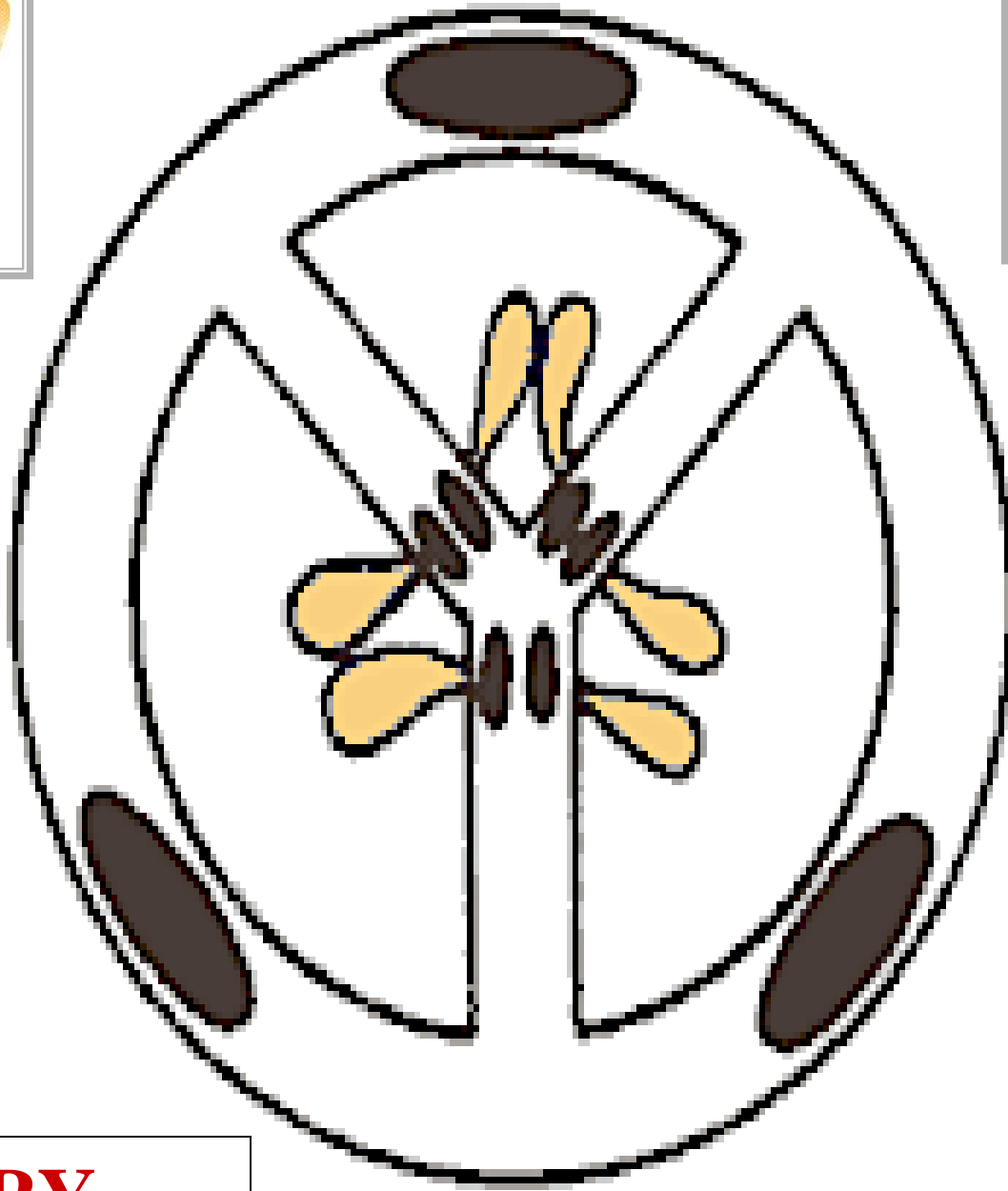
PERIANTH

FLOWER



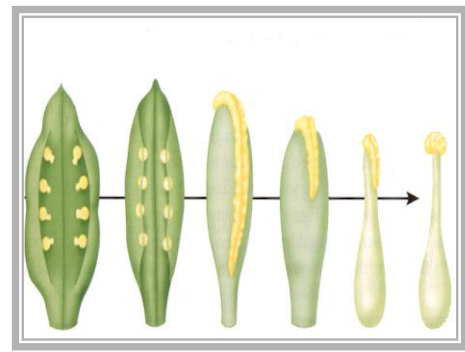
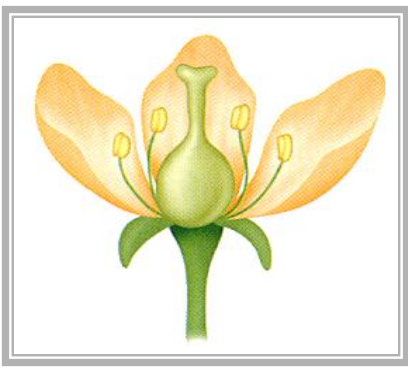


1

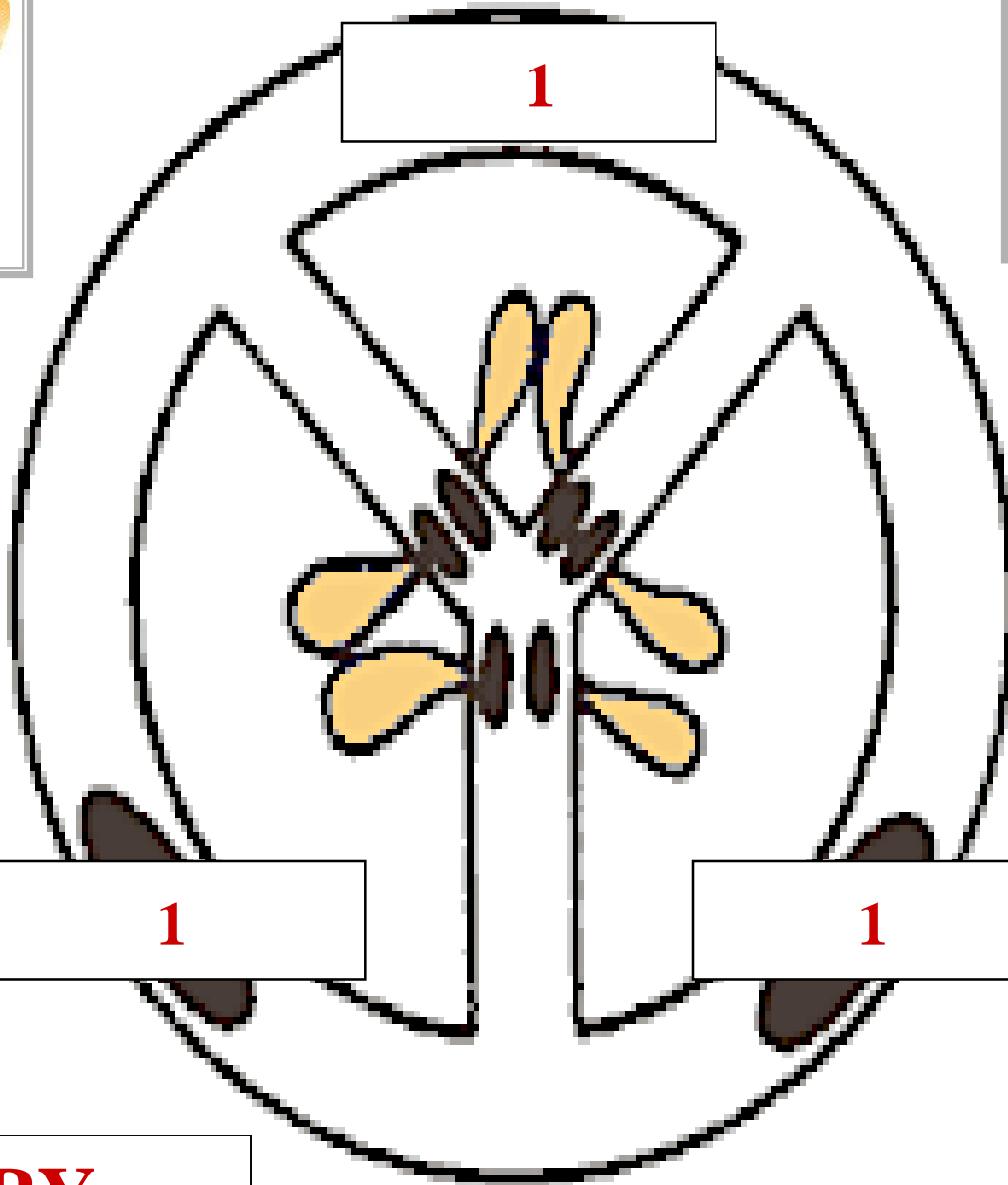


OVARY

C.S.



C



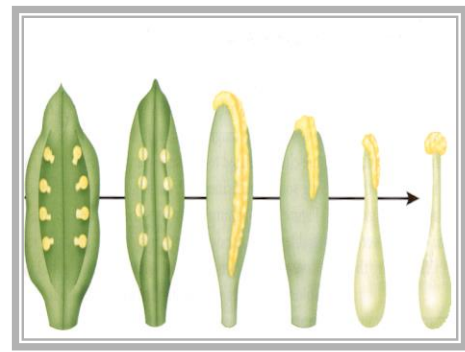
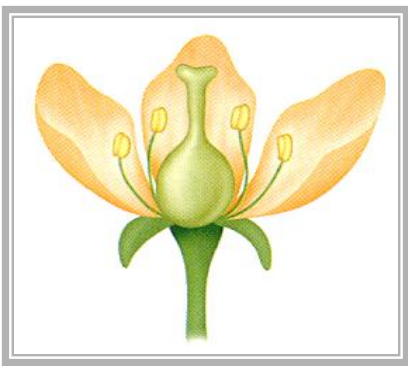
1

1

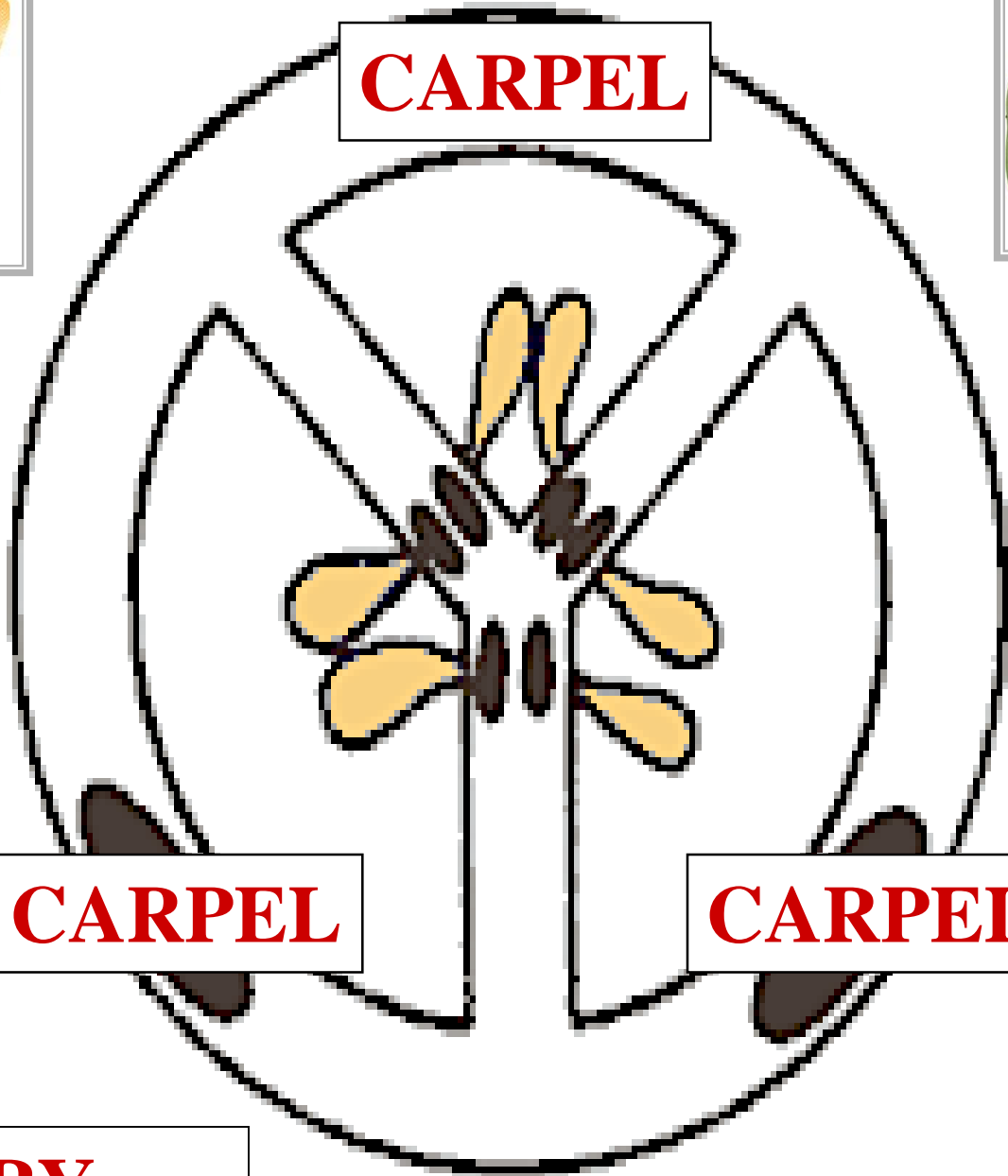
1

OVARY

C.S.



2



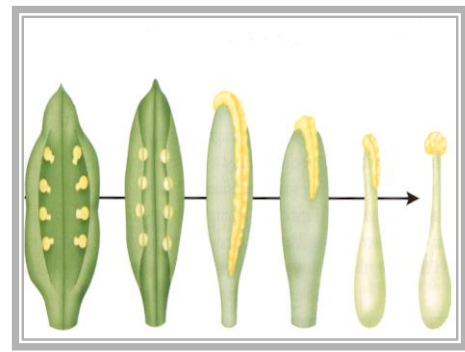
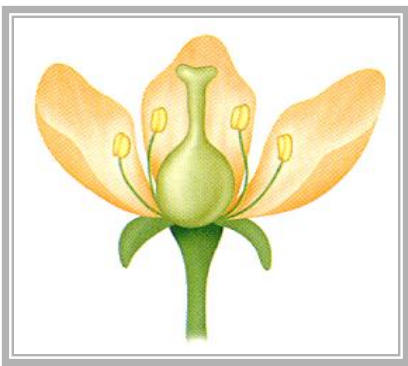
CARPEL

CARPEL

CARPEL

OVARY

C.S.



L

CARPEL

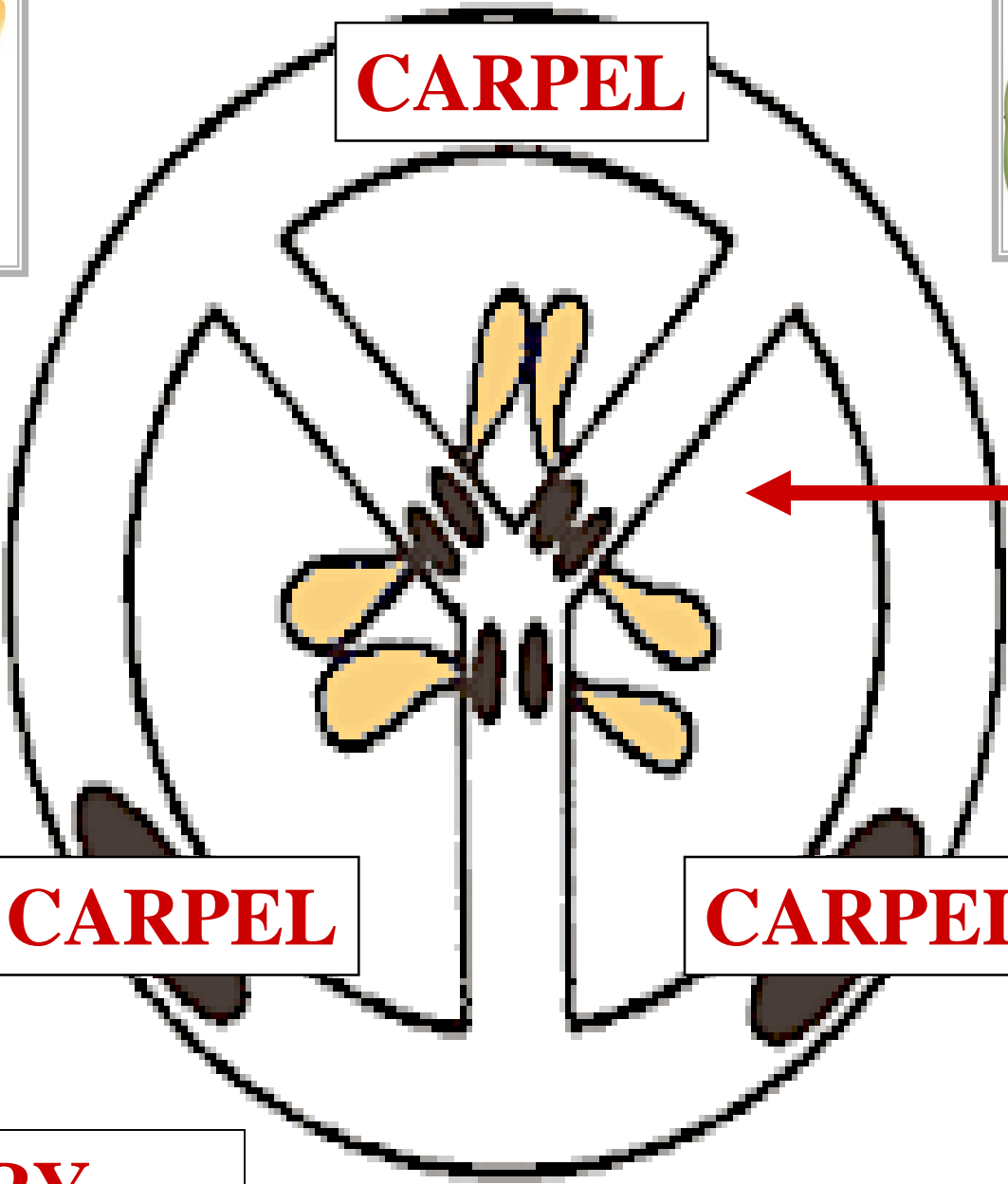
CARPEL

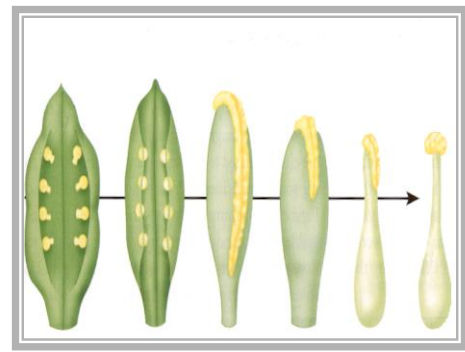
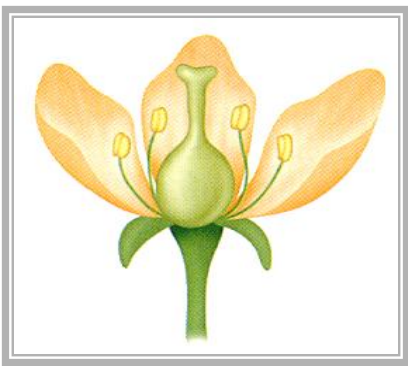
CARPEL

2

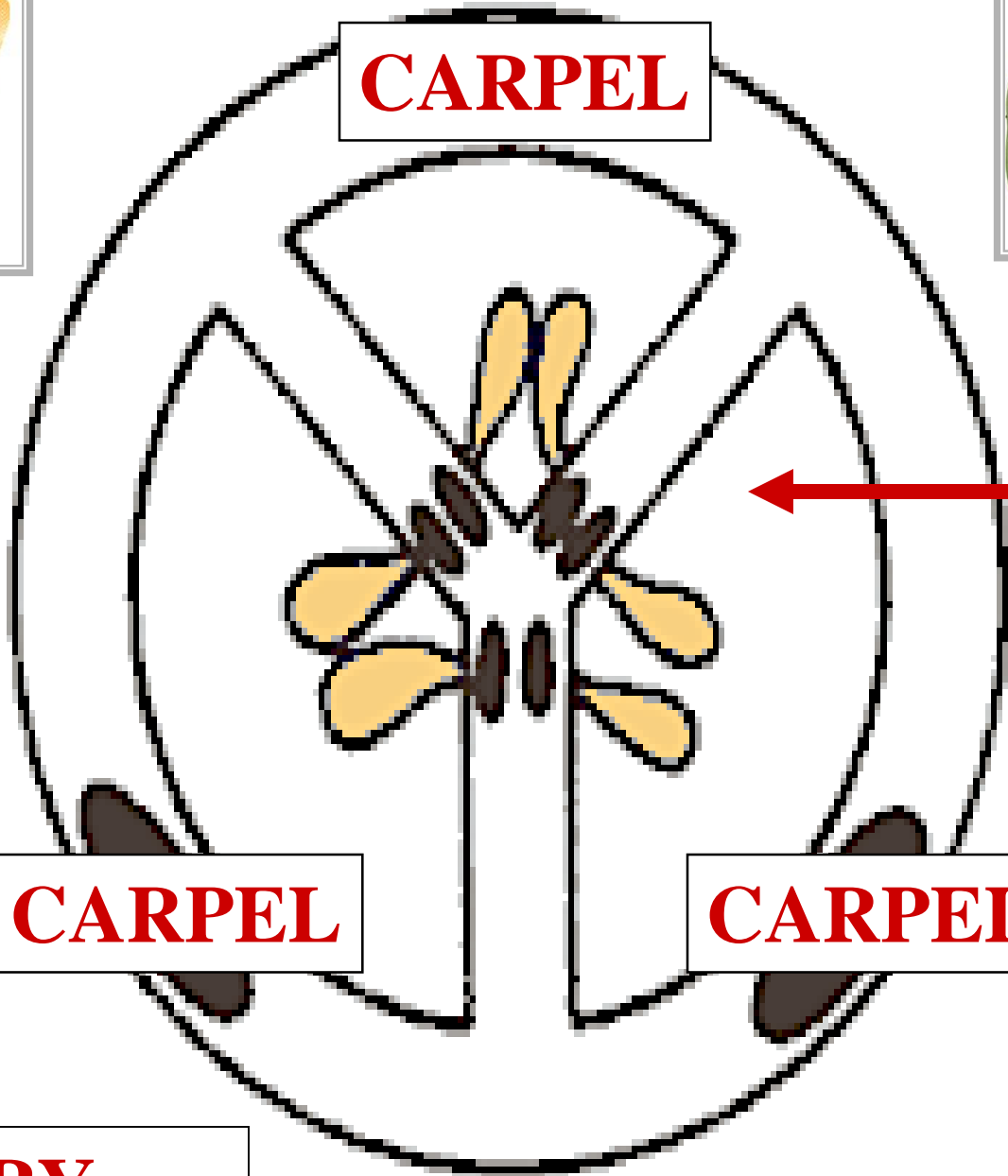
OVARY

C.S.





3



CARPEL

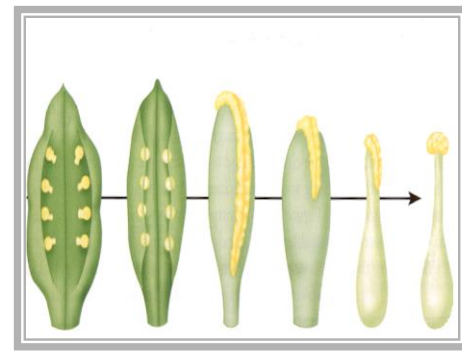
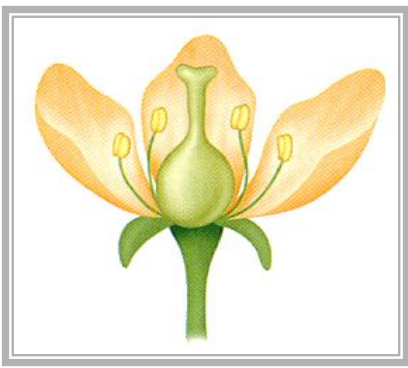
LOCULE

CARPEL

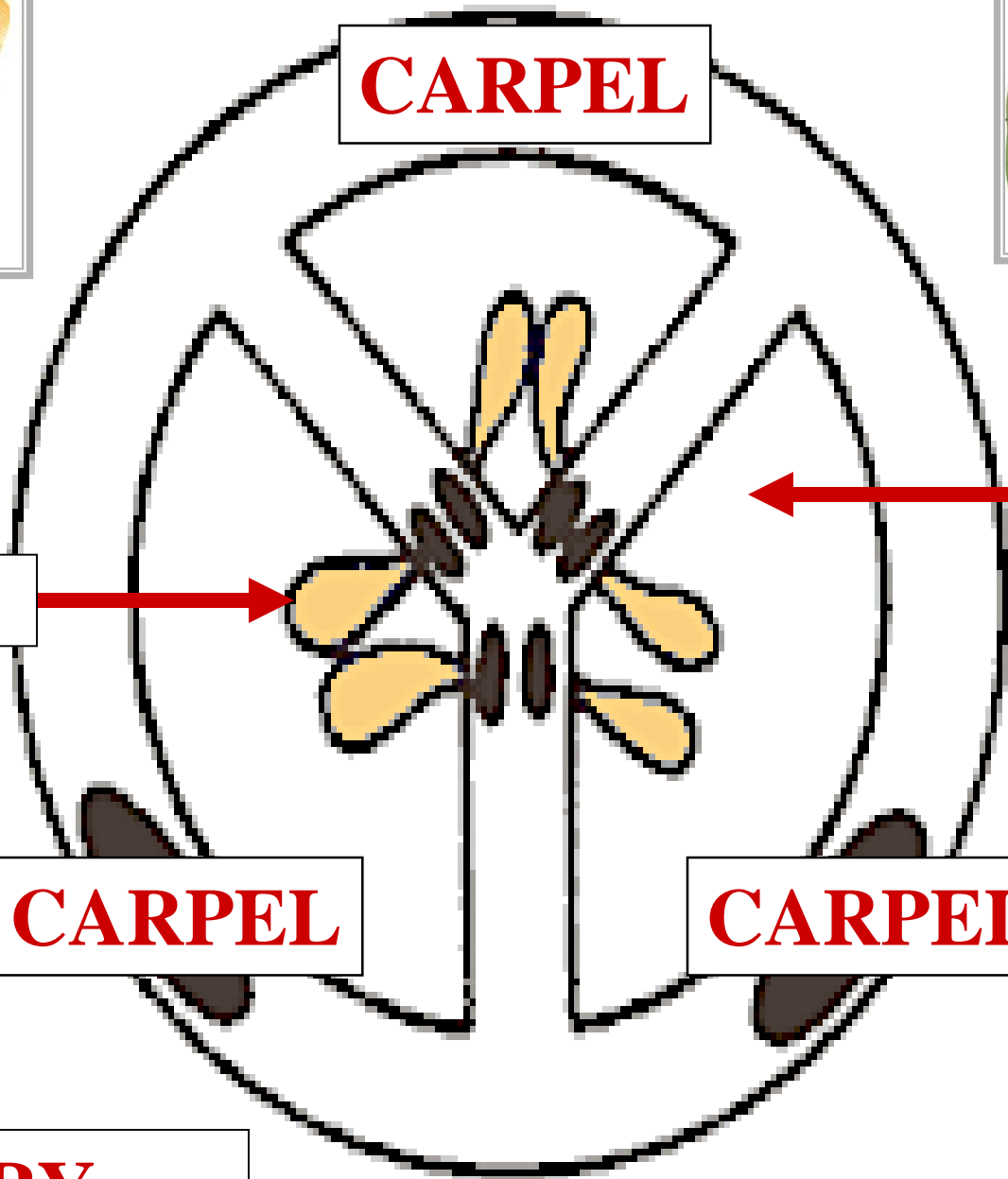
CARPEL

OVARY

C.S.



O



CARPEL

LOCULE

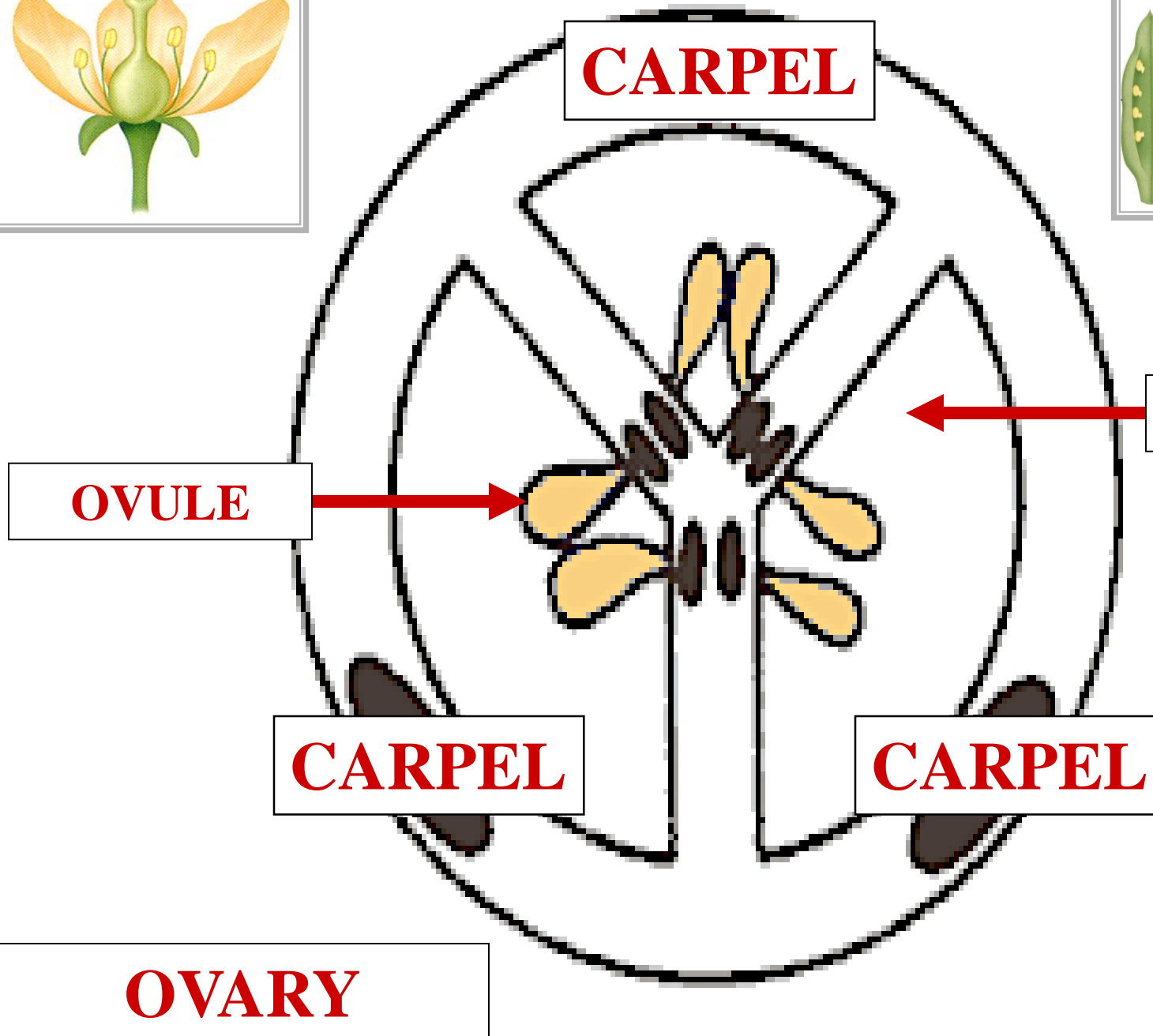
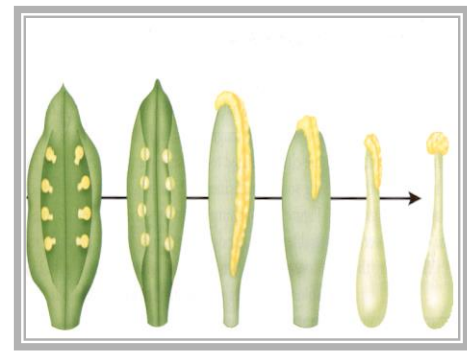
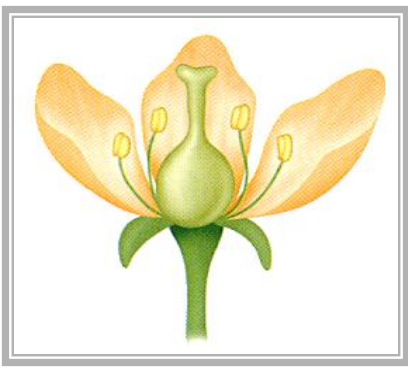
3

CARPEL

CARPEL

OVARY

C.S.



OVARY

C.S.

OVARY POSITION



HYPOGYNOUS FLOWER



1



2



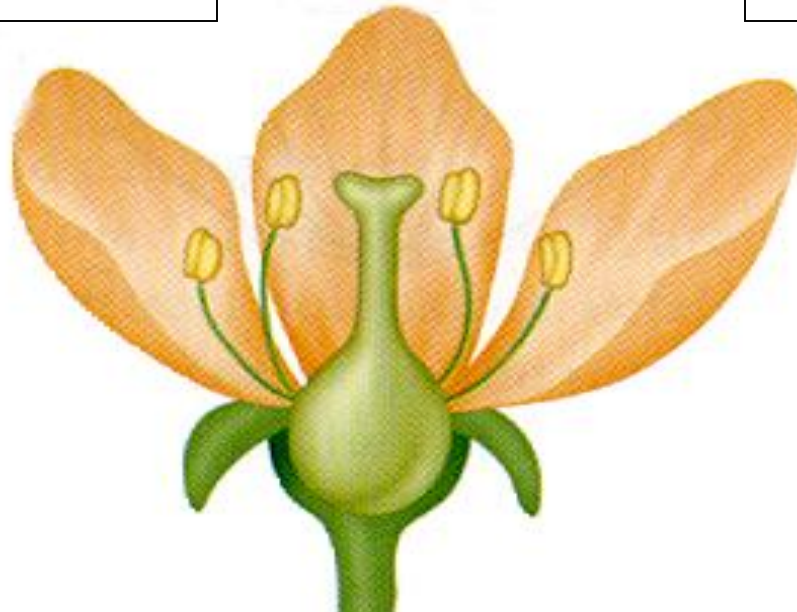
3



HYPOGYNOUS



2



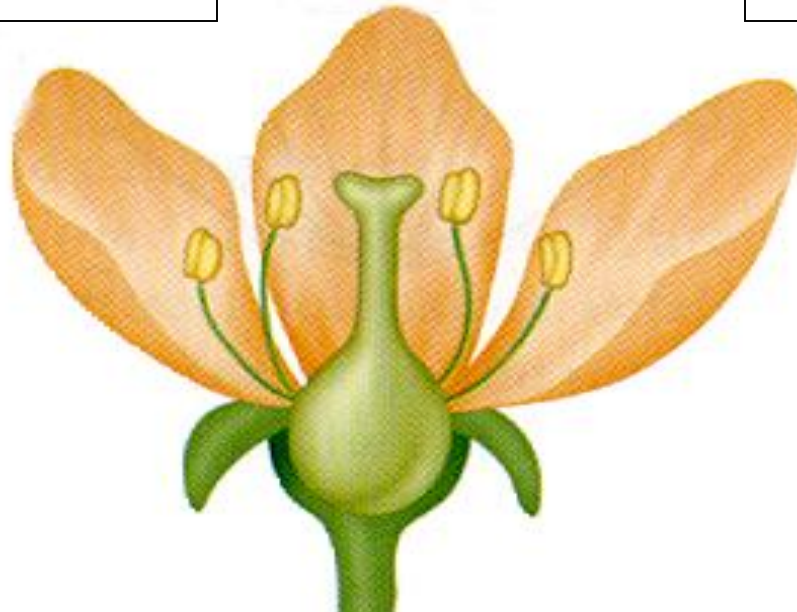
3



SUPERIOR



2



3



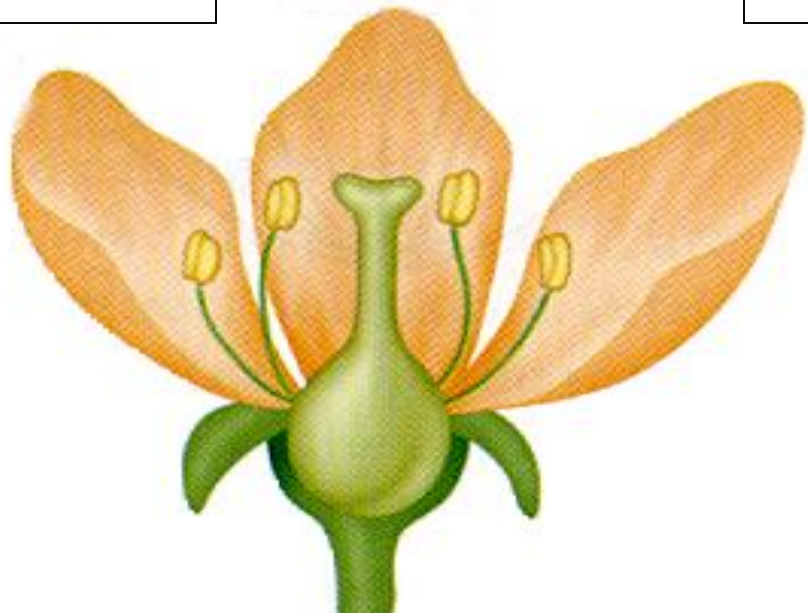
EPIGYNOUS FLOWER



HYPOGYNOUS



2



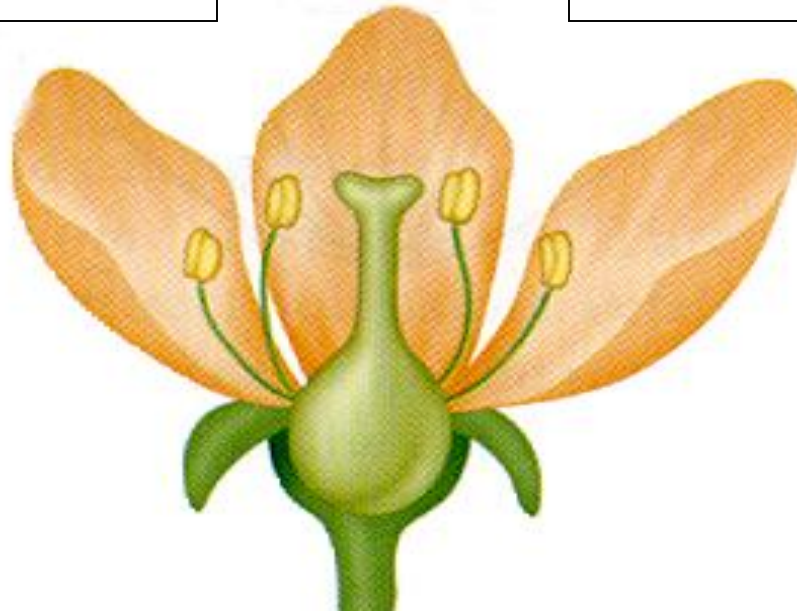
3



HYPOGYNOUS



EPIGYNOUS



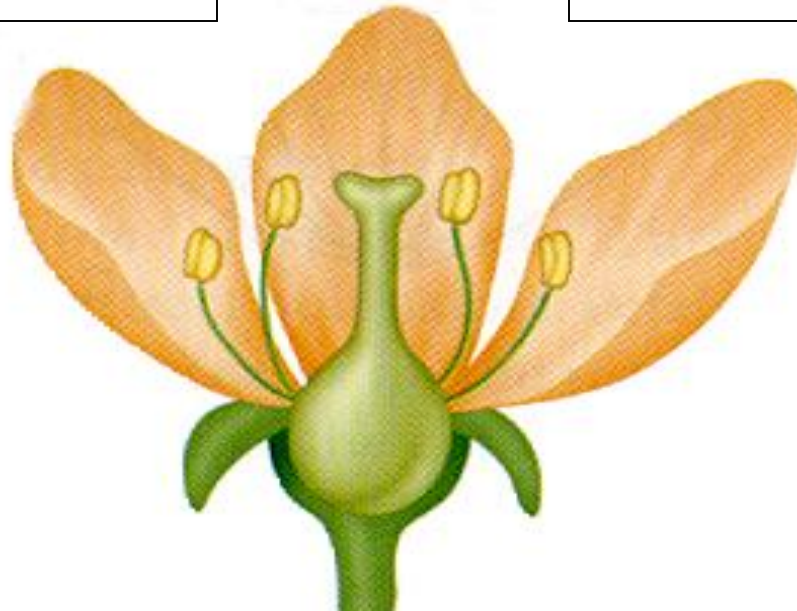
3



HYPOGYNOUS



INFERIOR



3



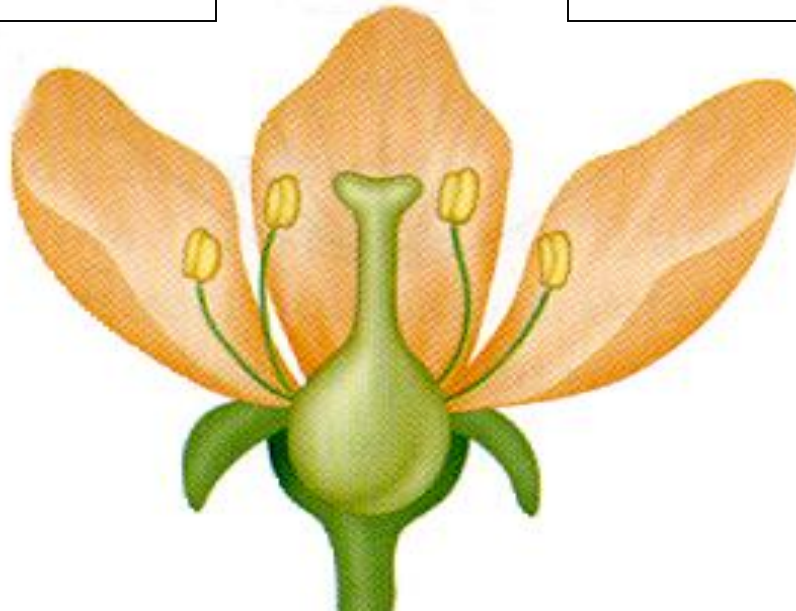
PERIGYNOUS FLOWER



HYPOGYNOUS



EPIGYNOUS



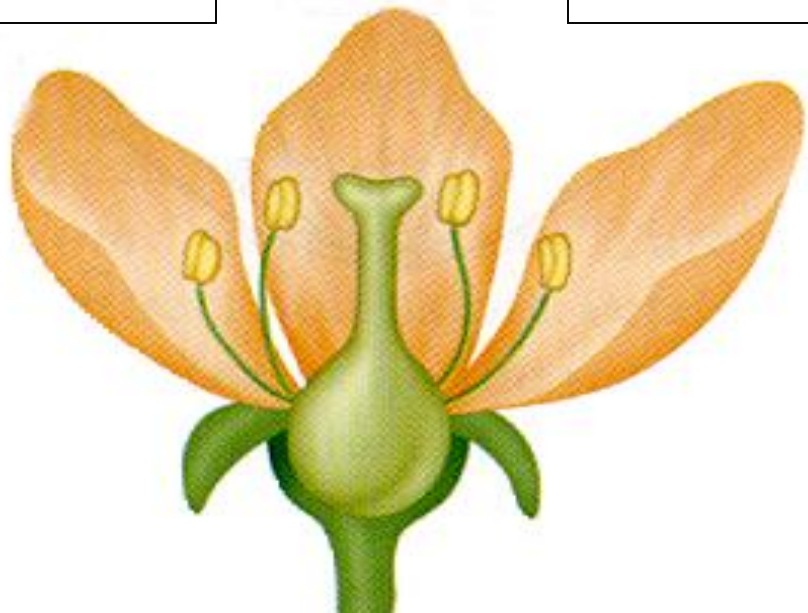
3



HYPOGYNOUS



EPIGYNOUS



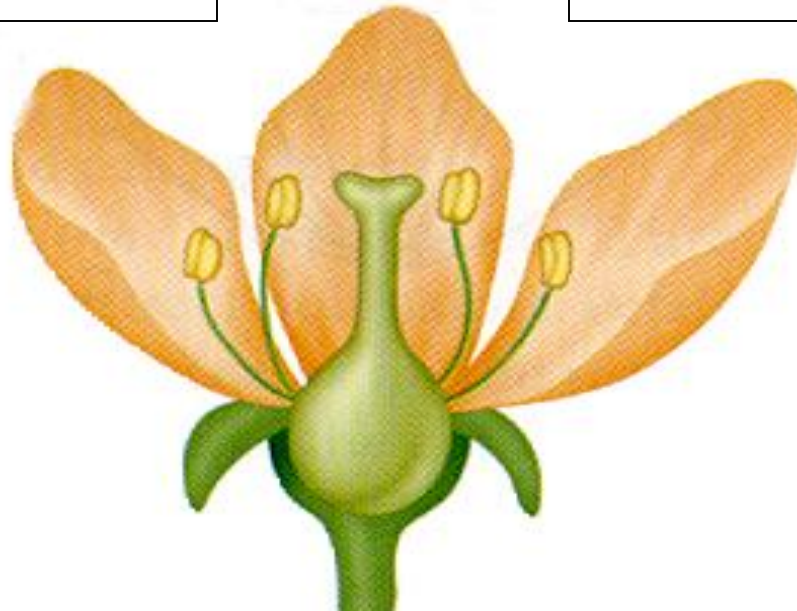
PERIGYNOUS



HYPOGYNOUS



EPIGYNOUS



SUPERIOR



GENERAL FLOWER TERMS

**COMPLETE
FLOWER
VS
INCOMPLETE
FLOWER**



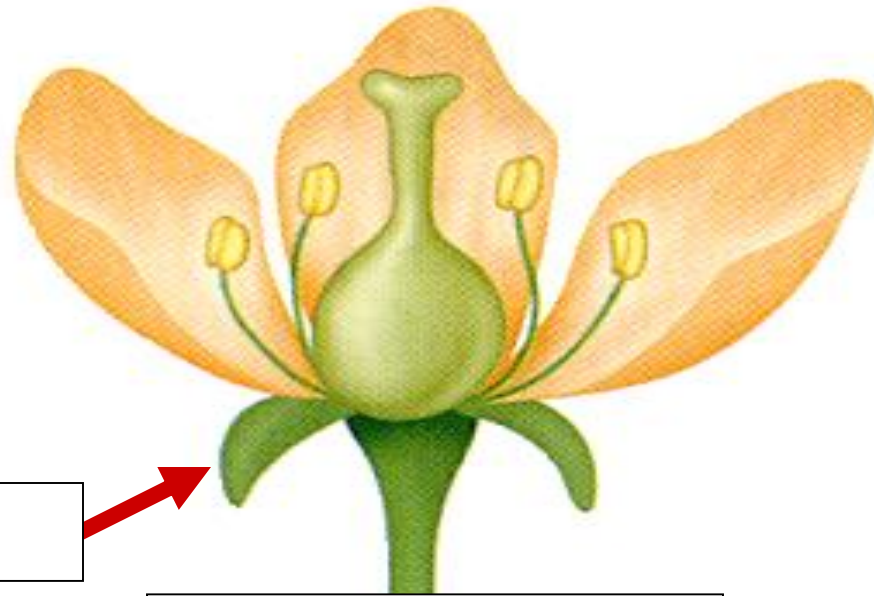
COMPLETE FLOWER



COMPLETE



INCOMPLETE

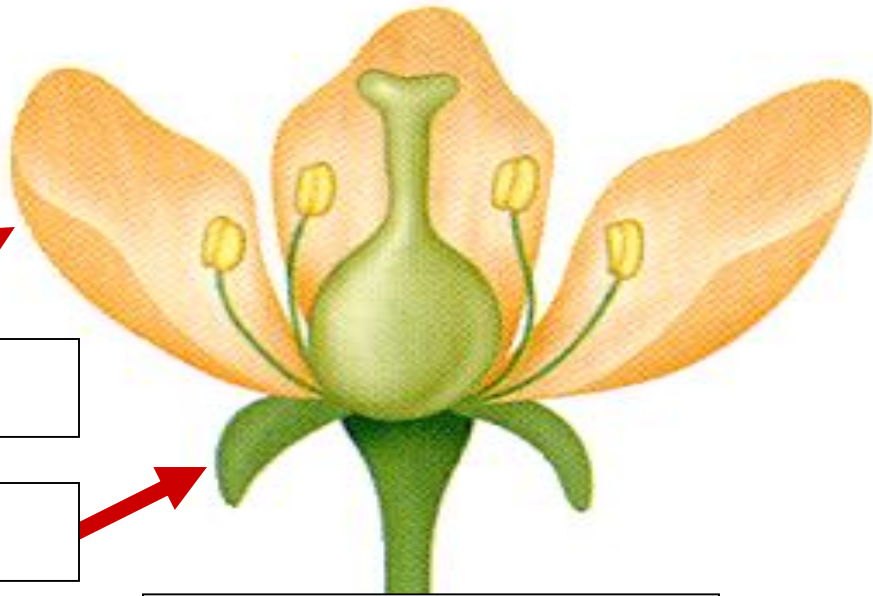


CALYX

COMPLETE



INCOMPLETE



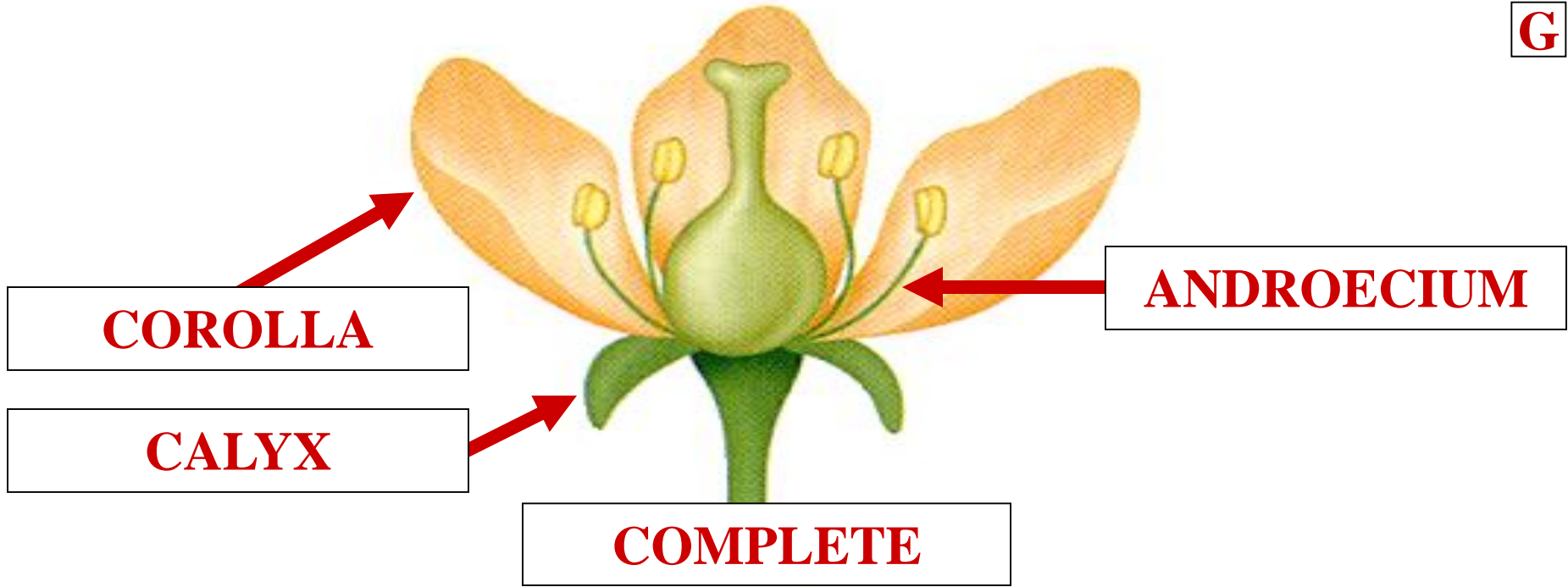
COROLLA

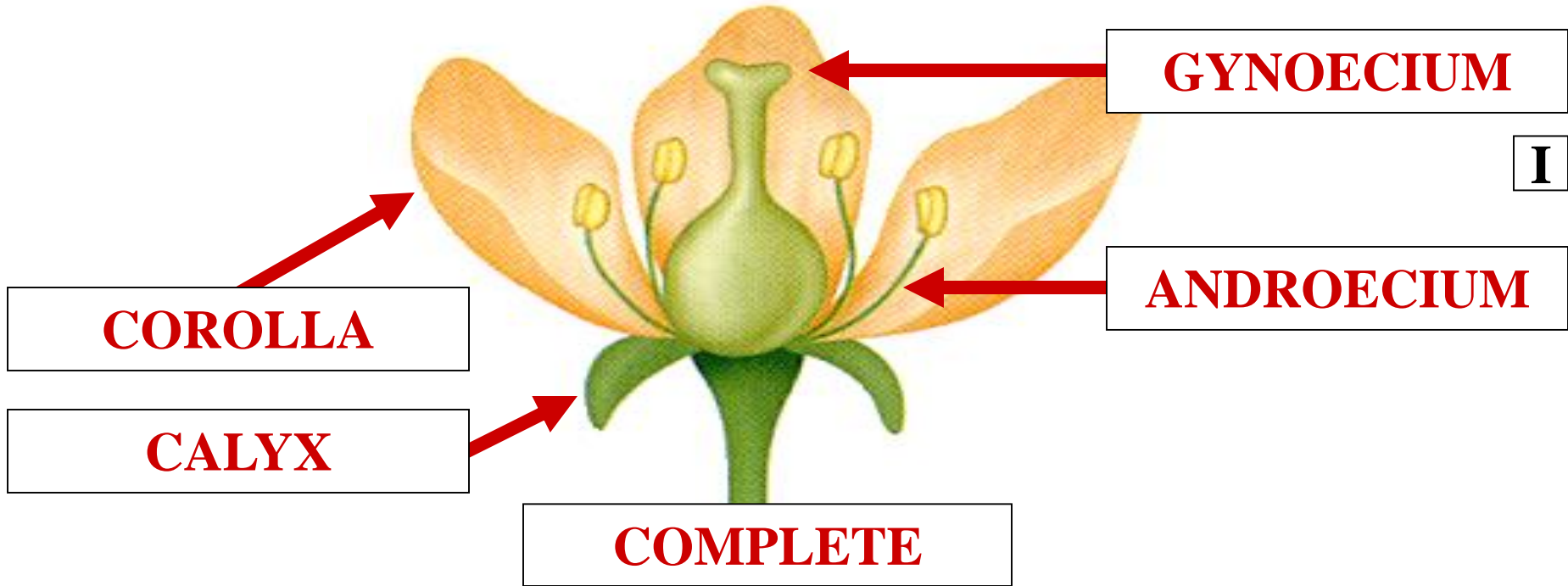
CALYX

COMPLETE



INCOMPLETE

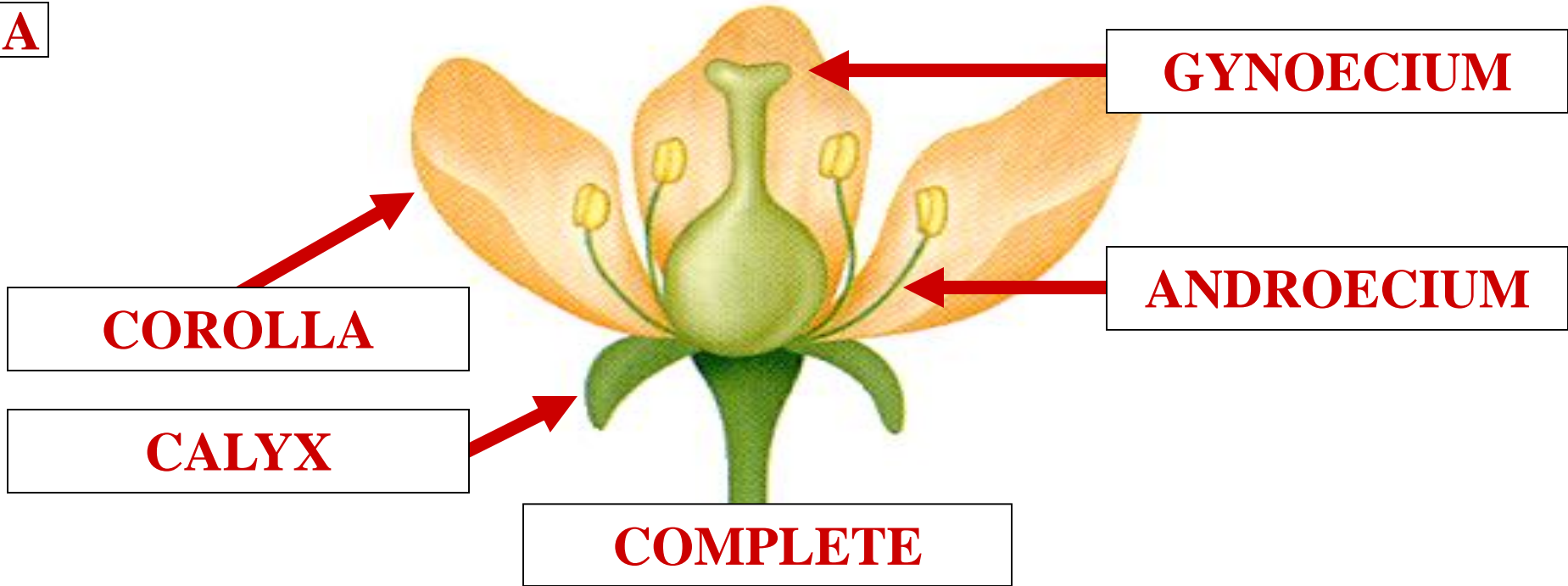






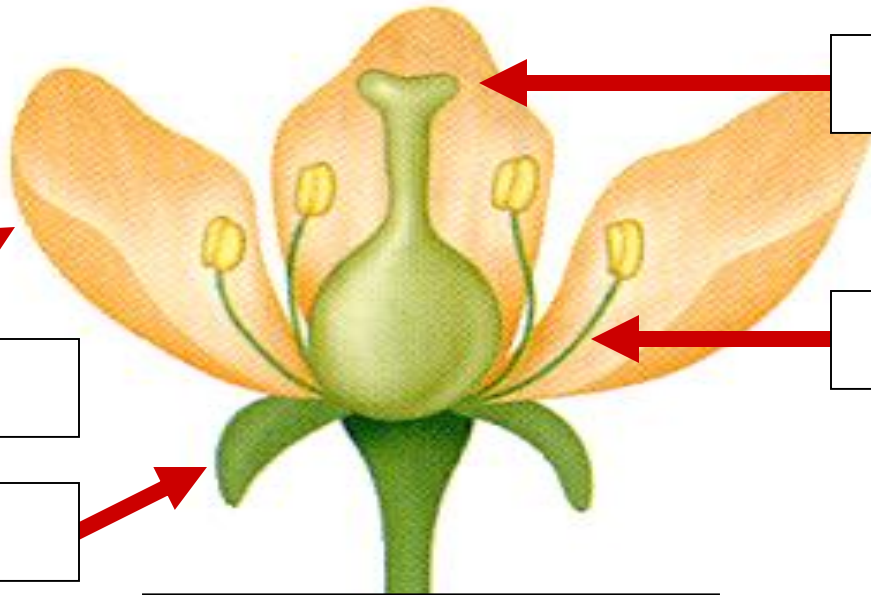
INCOMPLETE FLOWER

A



^

+



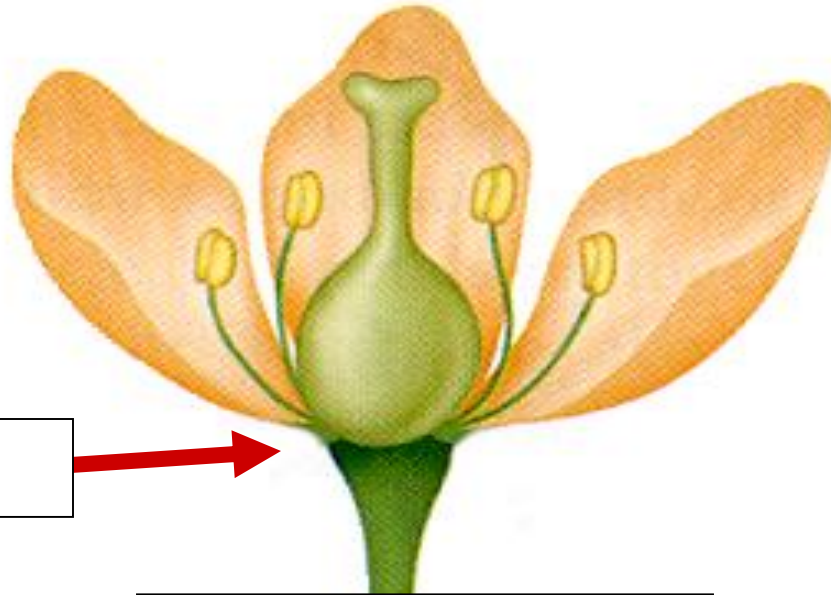
GYNOECIUM

ANDROECIUM

COROLLA

CALYX

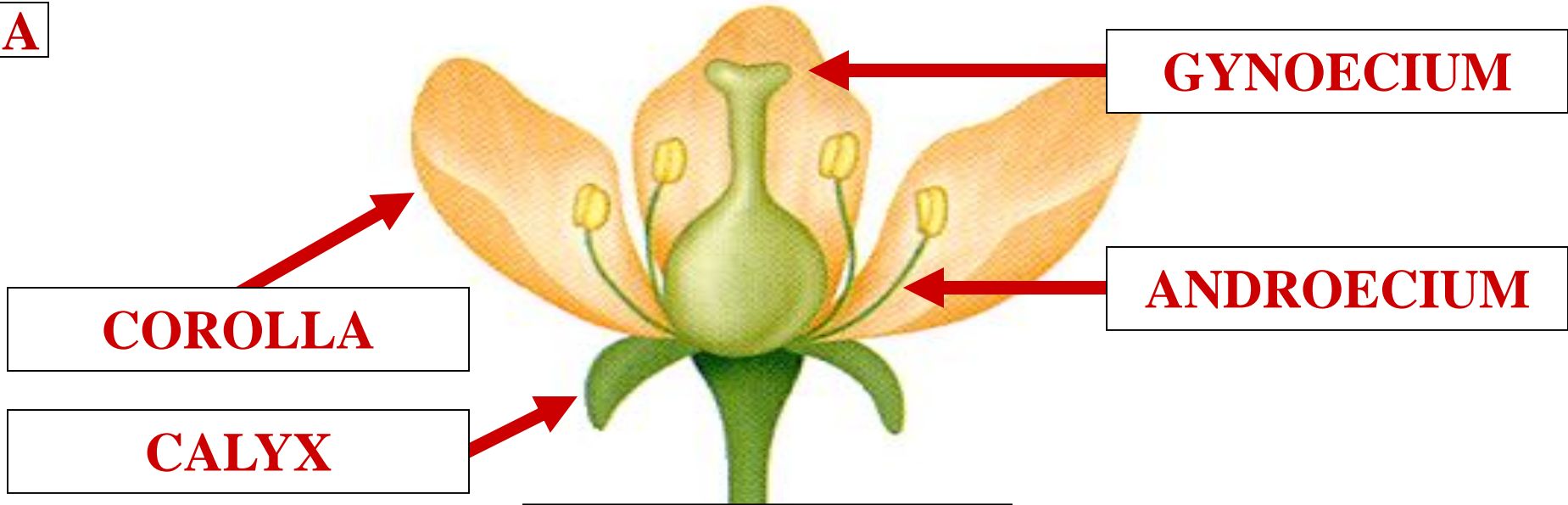
COMPLETE



ASEPALOUS

INCOMPLETE

A



COROLLA

CALYX

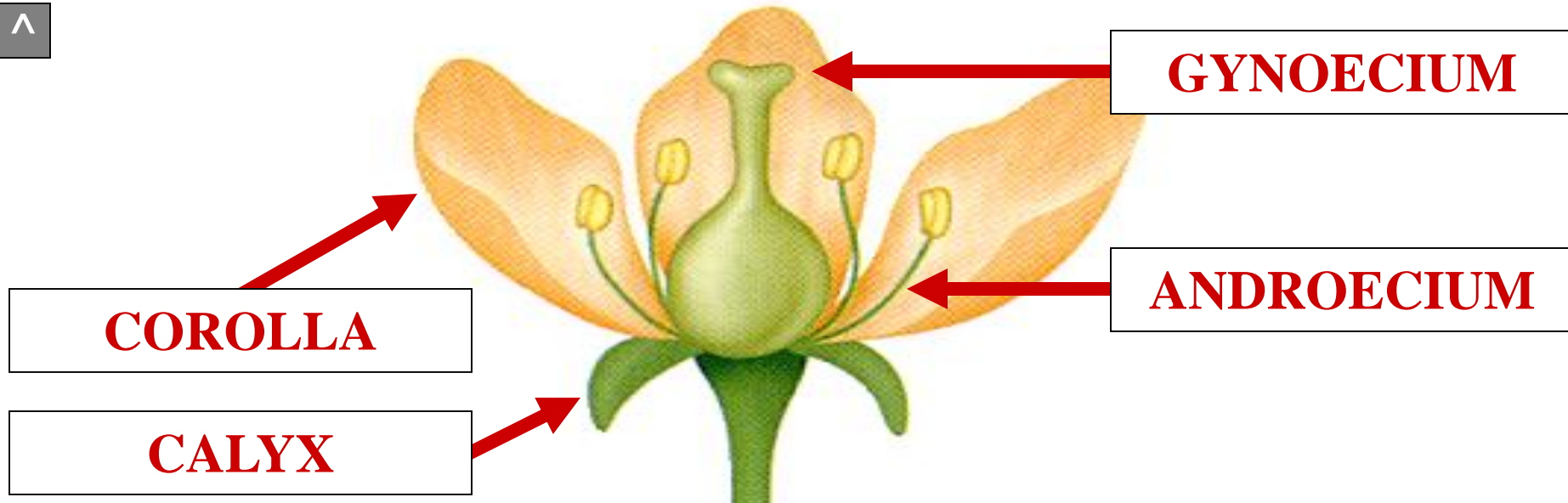
GYNOECIUM

ANDROECIUM

COMPLETE



INCOMPLETE



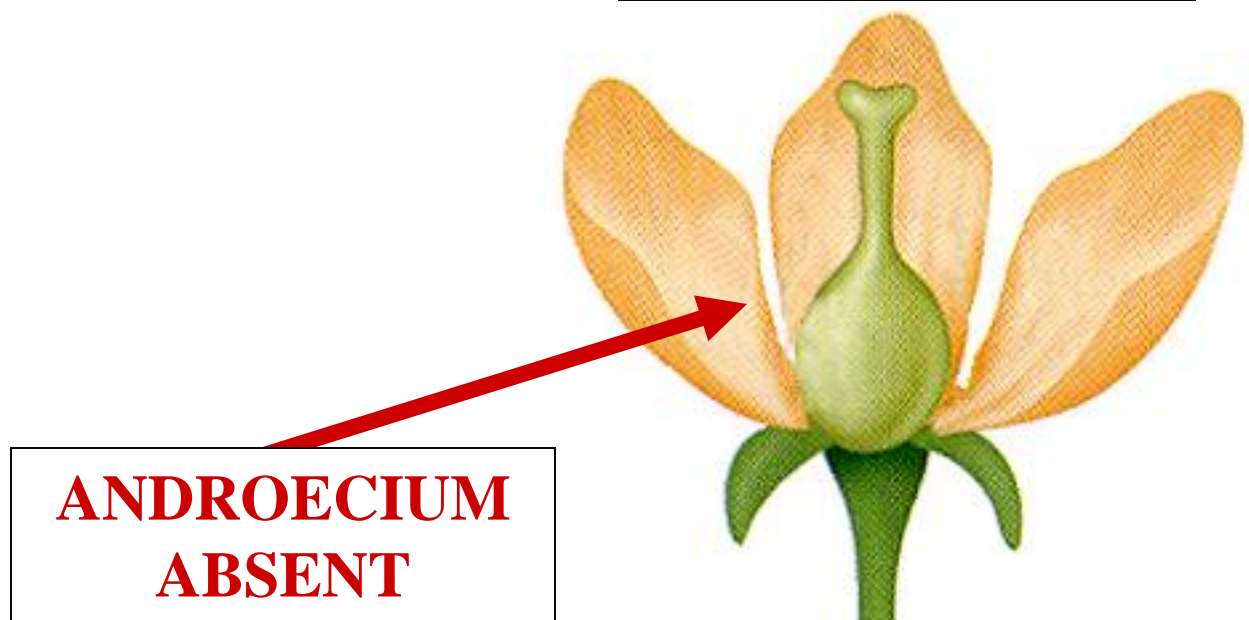
GYNOECIUM

ANDROECIUM

COROLLA

CALYX

COMPLETE



**ANDROECIUM
ABSENT**

INCOMPLETE

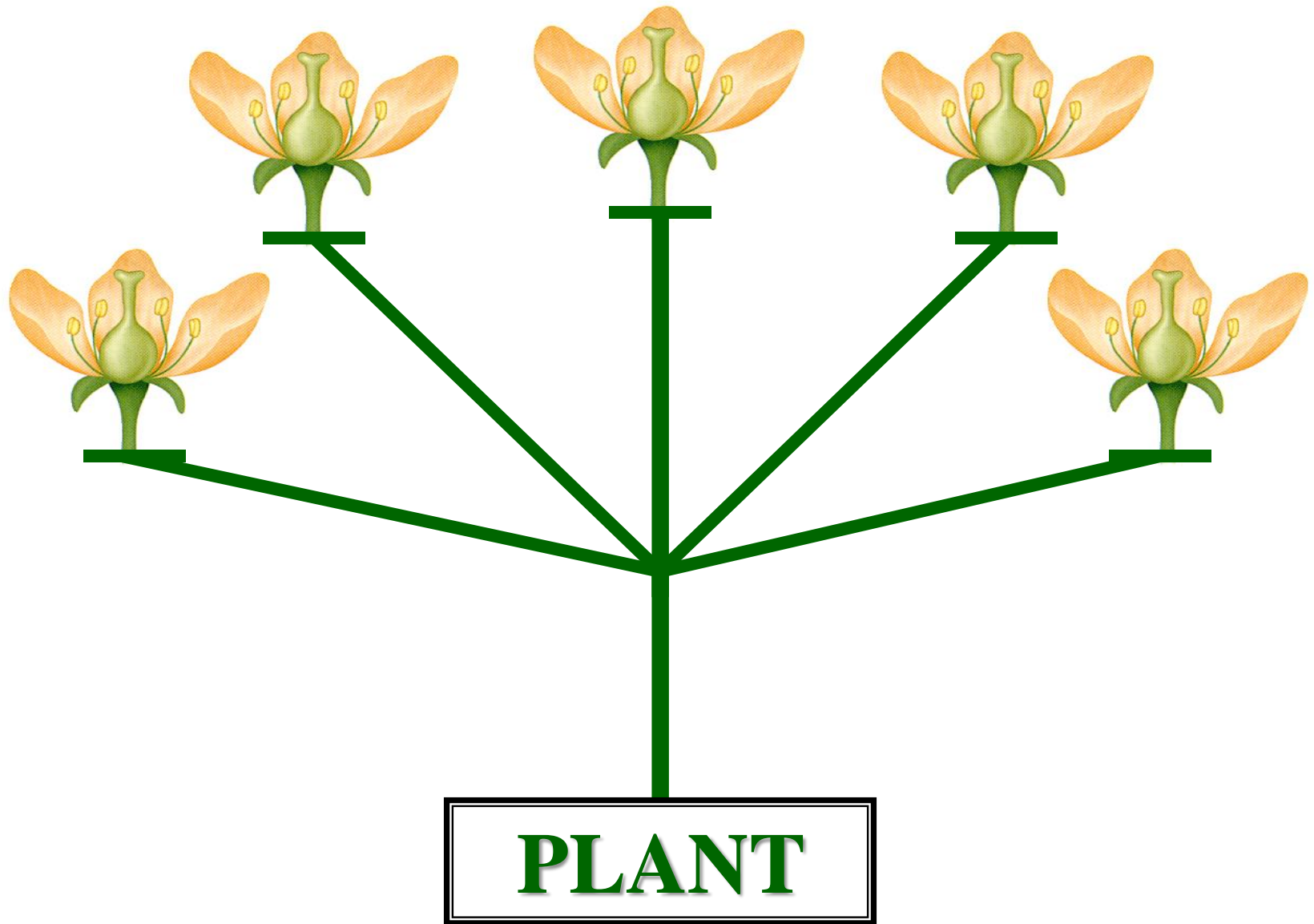


SEX CONDITION

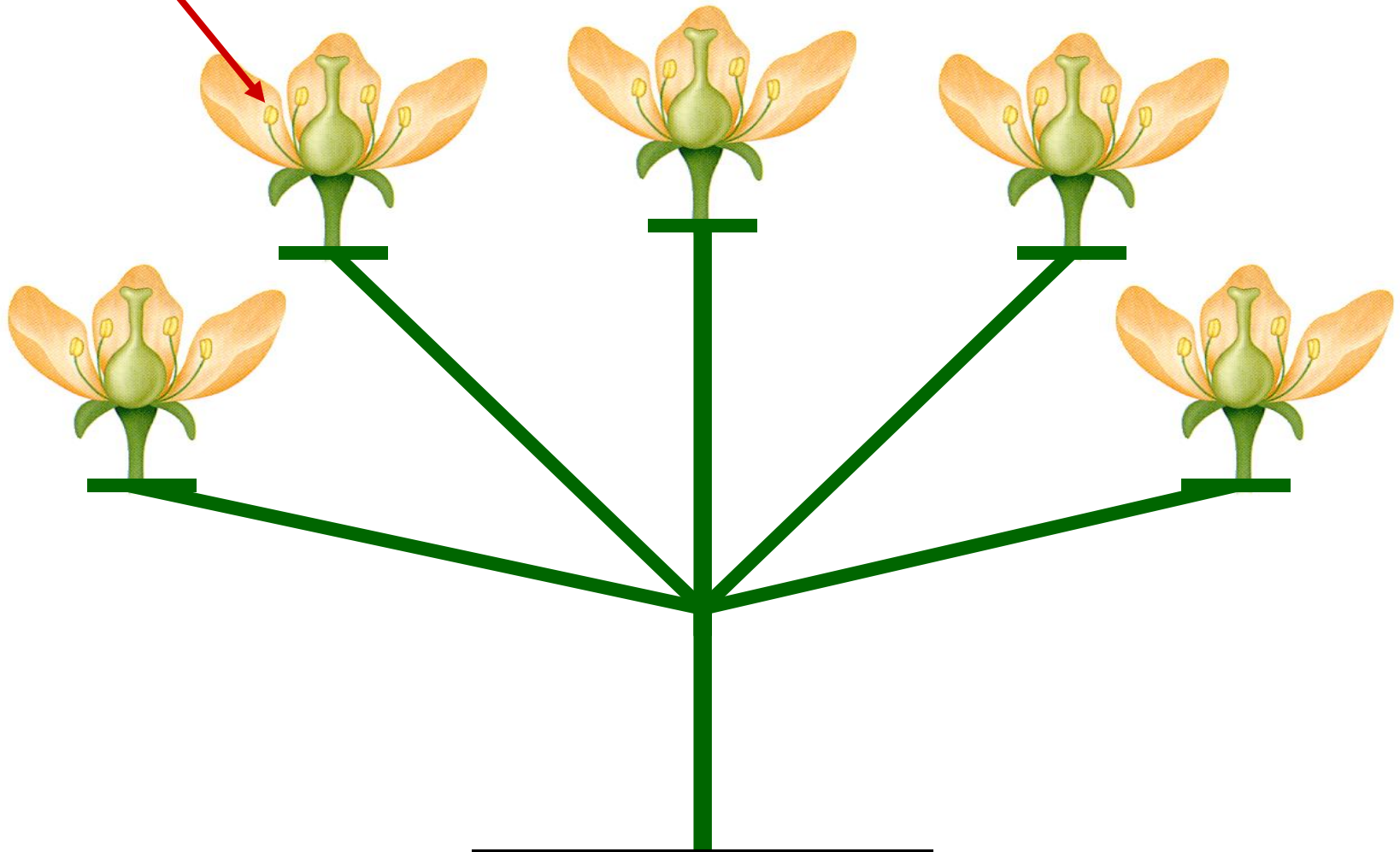
**PERFECT
FLOWER
VS
IMPERFECT
FLOWER**



PERFECT FLOWER



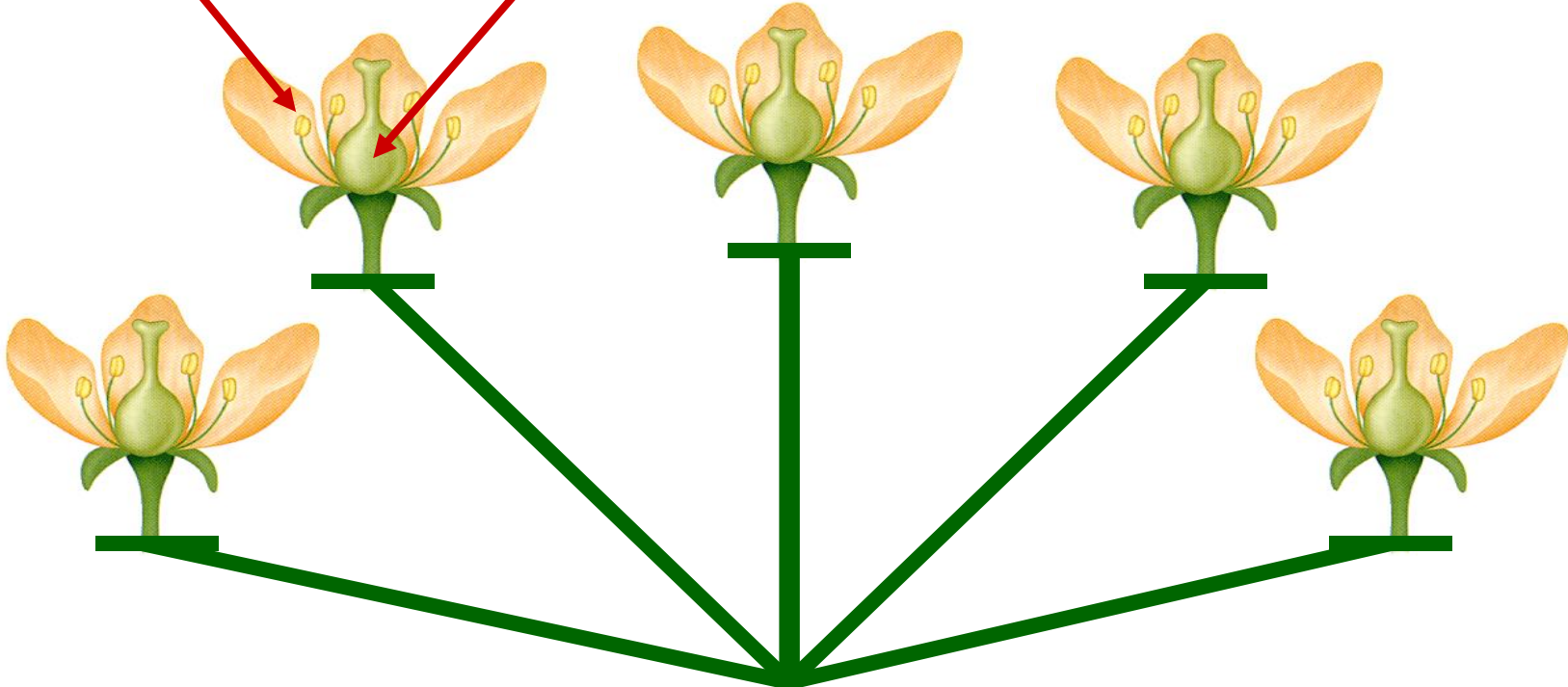
ANDROECIUM



PLANT

ANDROECIUM

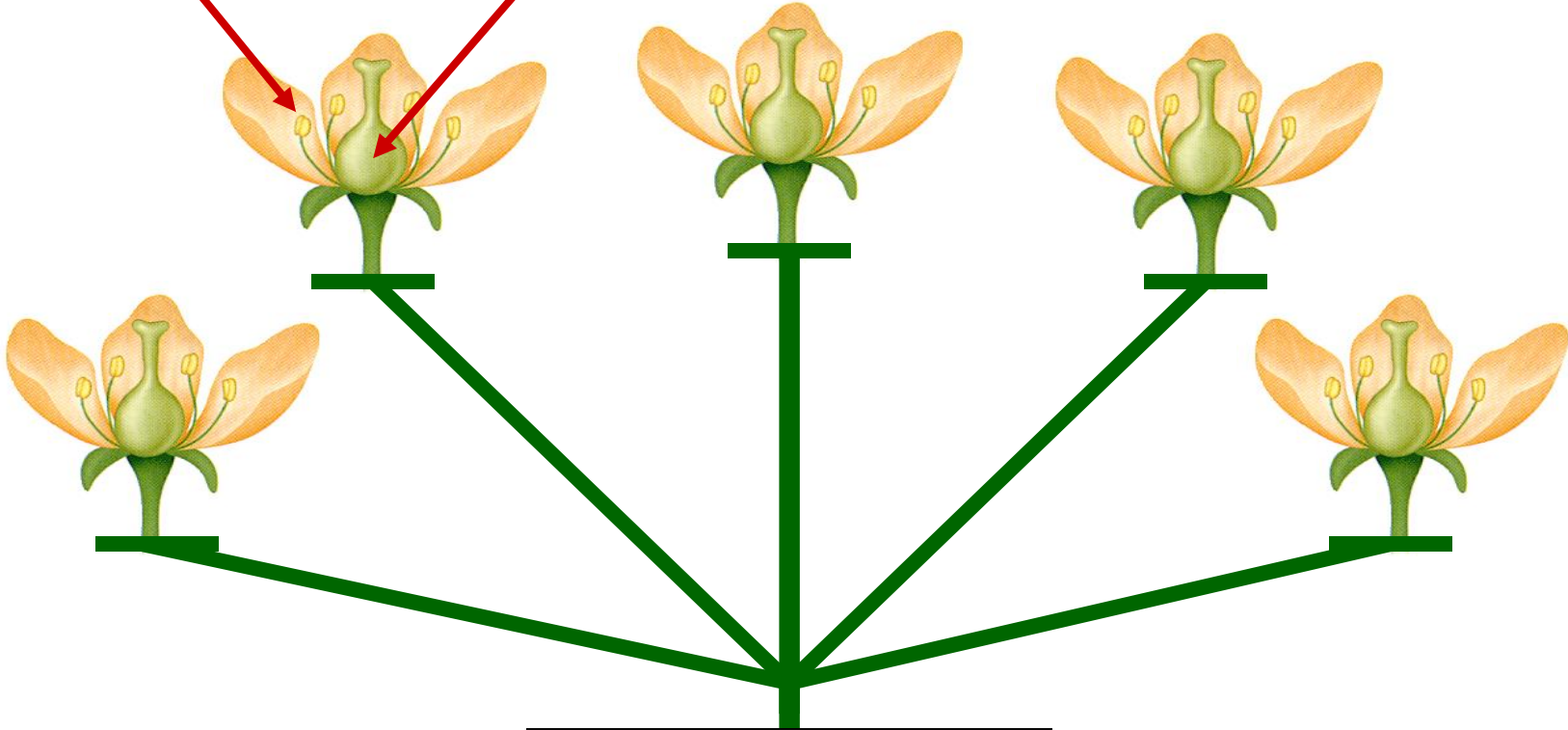
GYNOECIUM



PLANT

ANDROECIUM

GYNOECIUM

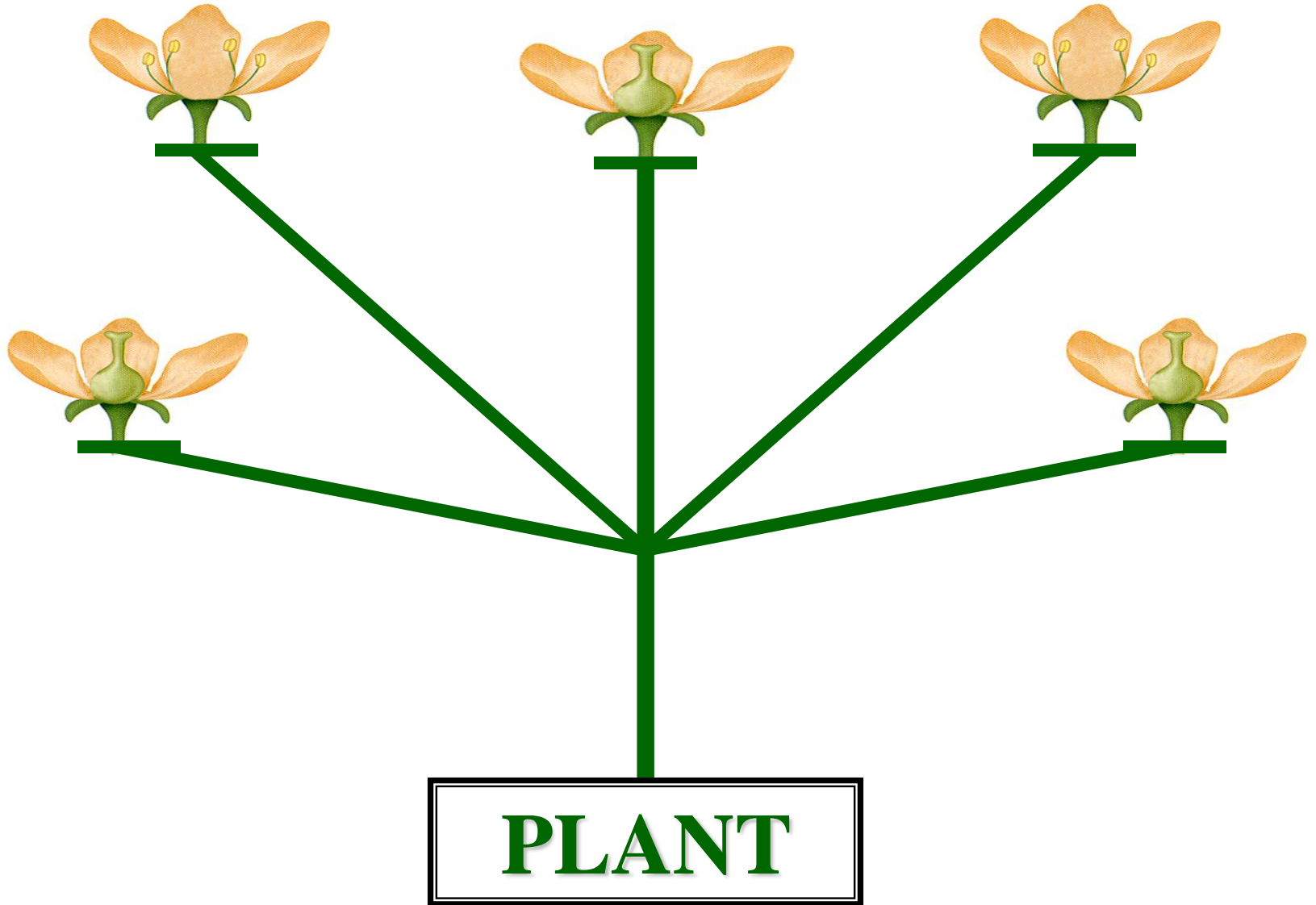


**PERFECT
FLOWERS**

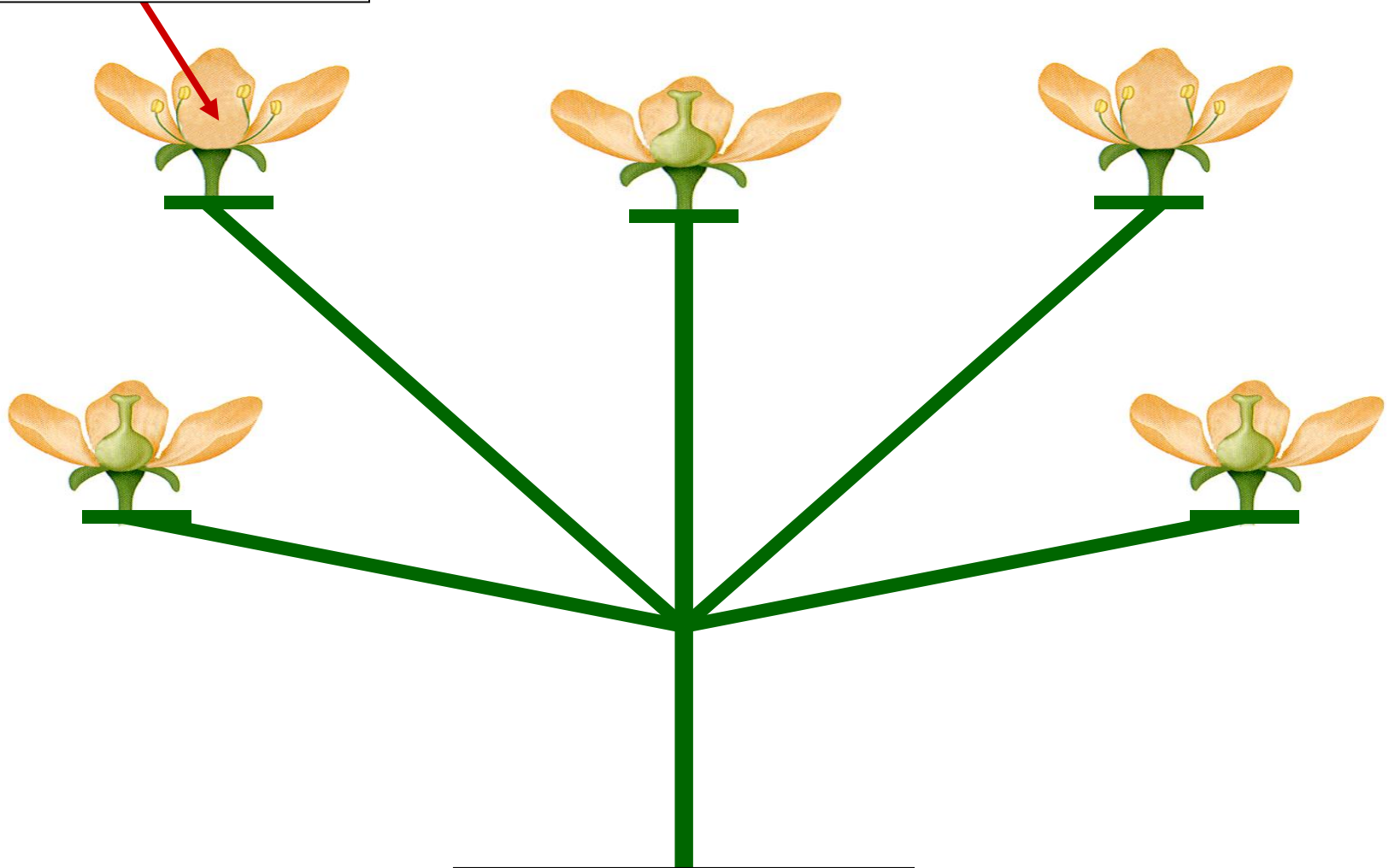
PLANT



IMPERFECT FLOWER



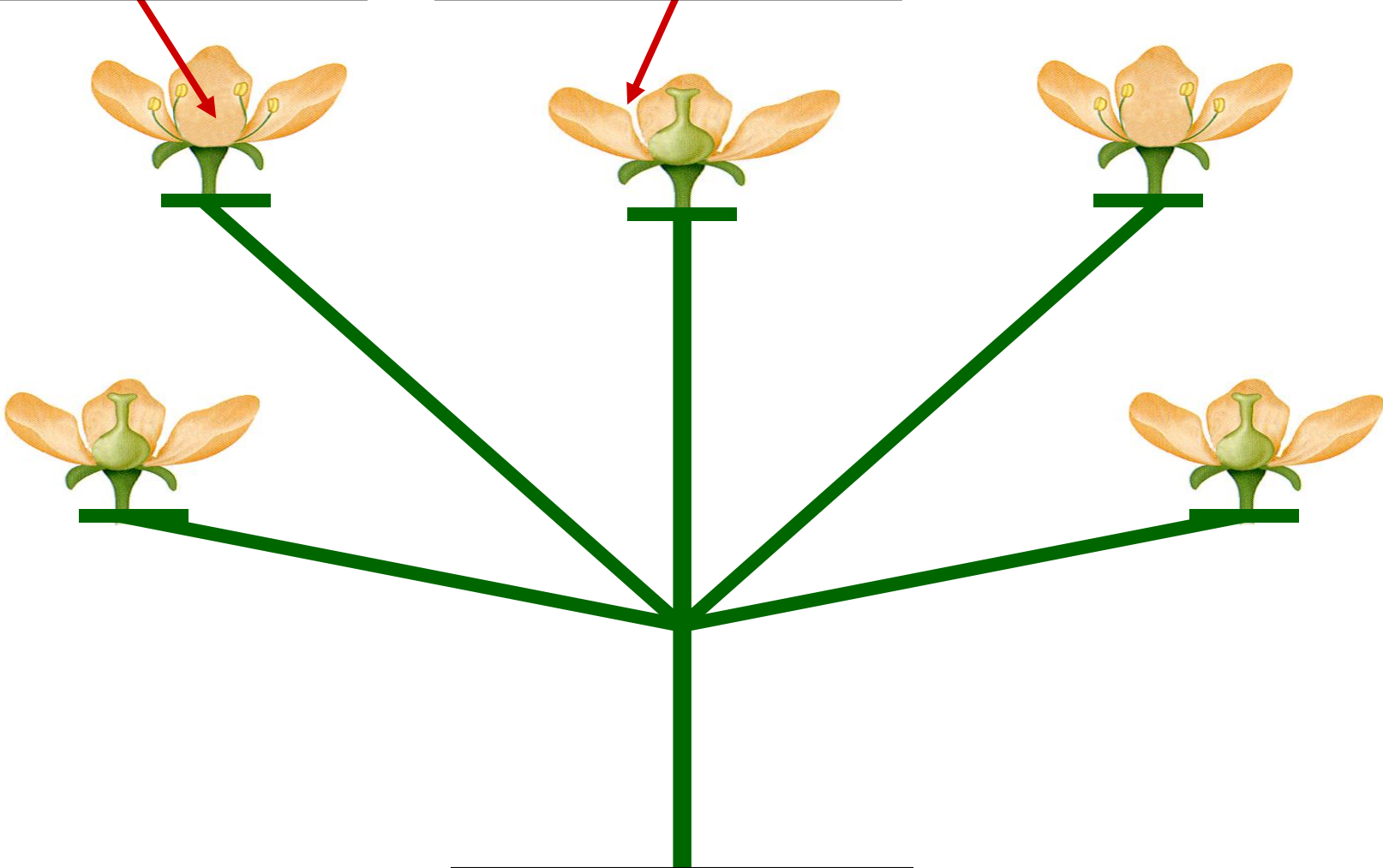
**GYNOECIUM
ABSENT**



PLANT

**GYNOECIUM
ABSENT**

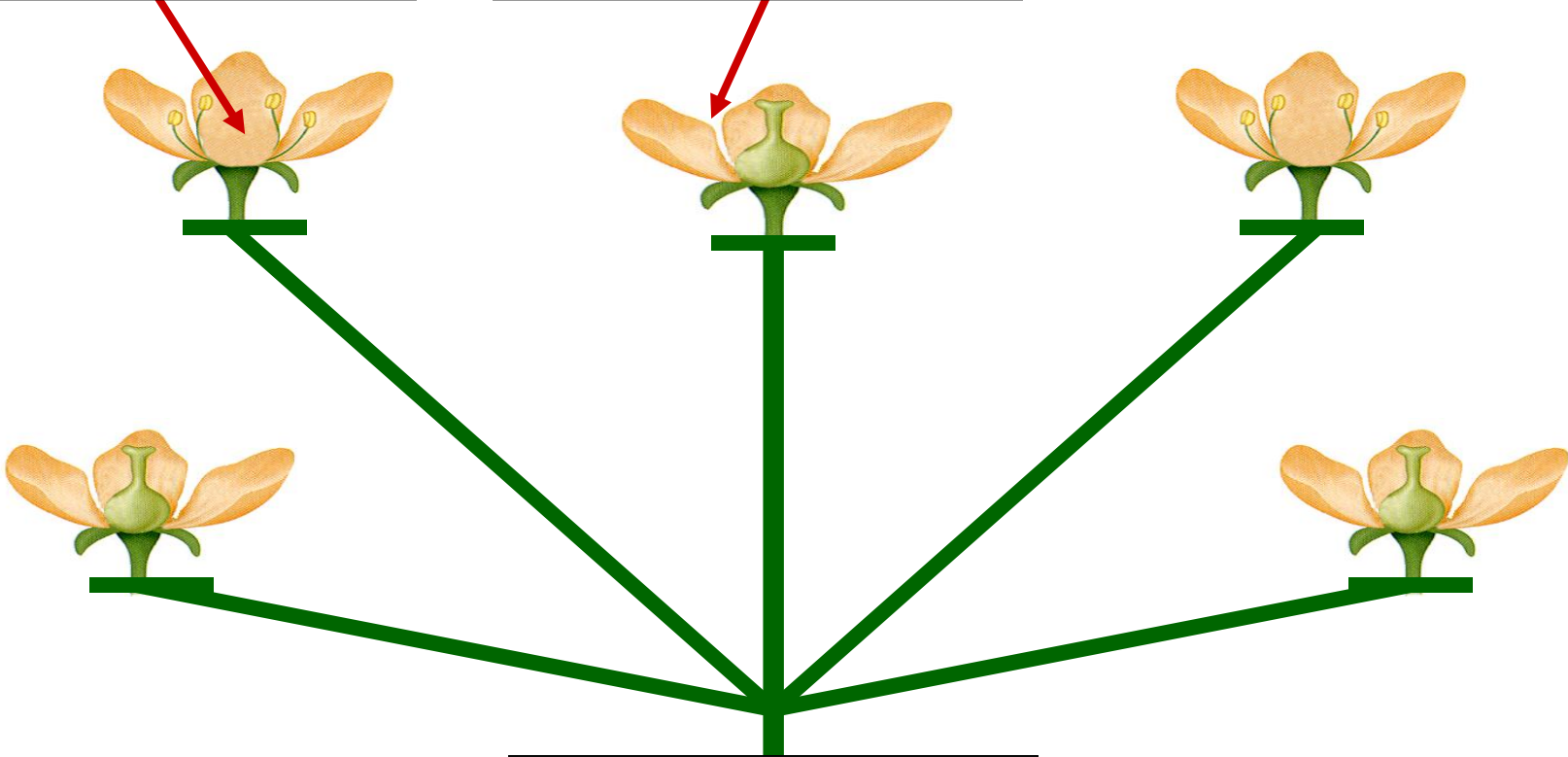
**ANDROECIUM
ABSENT**



PLANT

**GYNOECIUM
ABSENT**

**ANDROECIUM
ABSENT**



**IMPERFECT
FLOWERS**

PLANT

MONOECIOUS

VS

DIOECIOUS

VS

POLYGAMOUS

MONOECECIOUS PLANT

DIOECIOUS PLANT

POLYGAMOUS PLANT

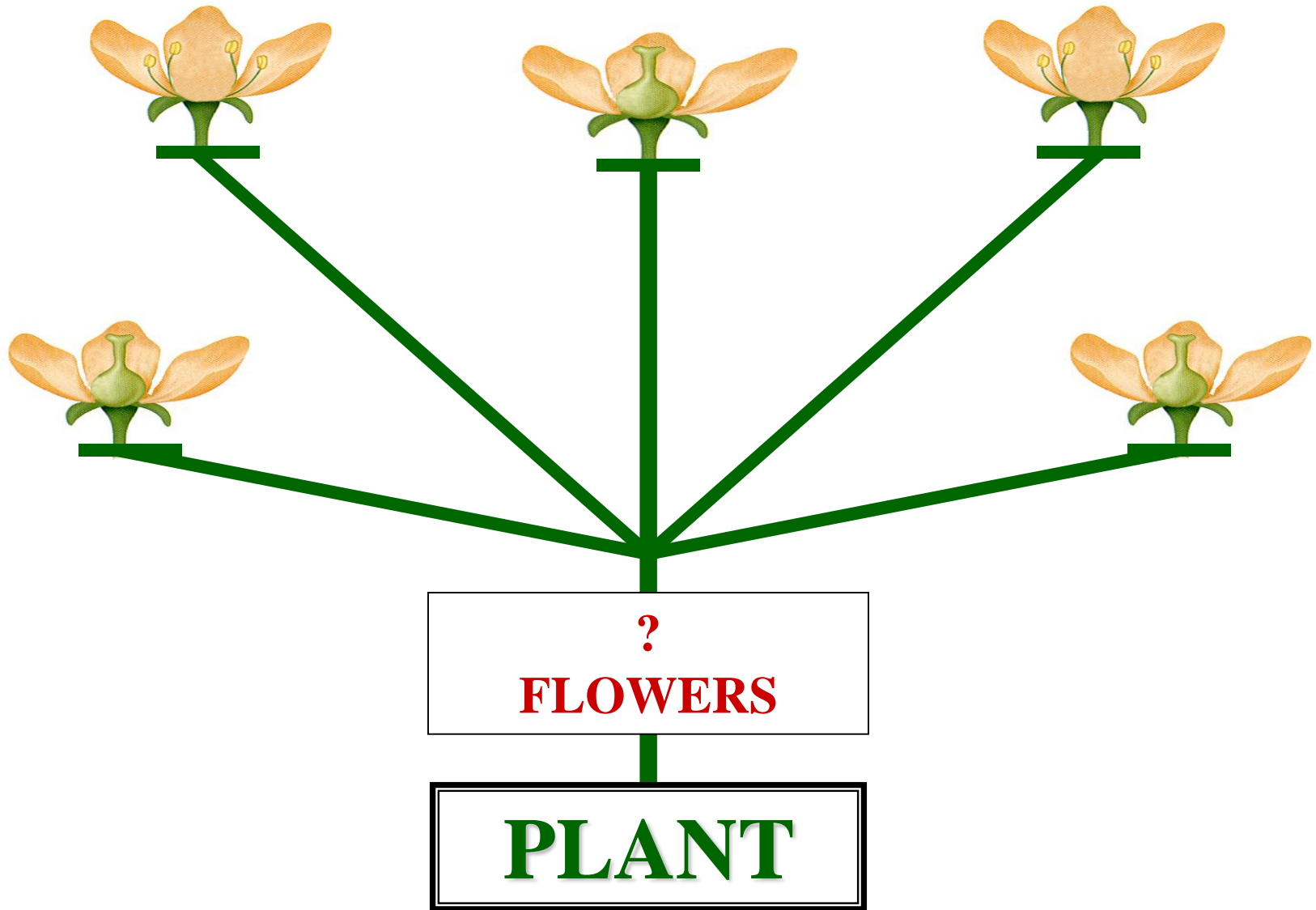


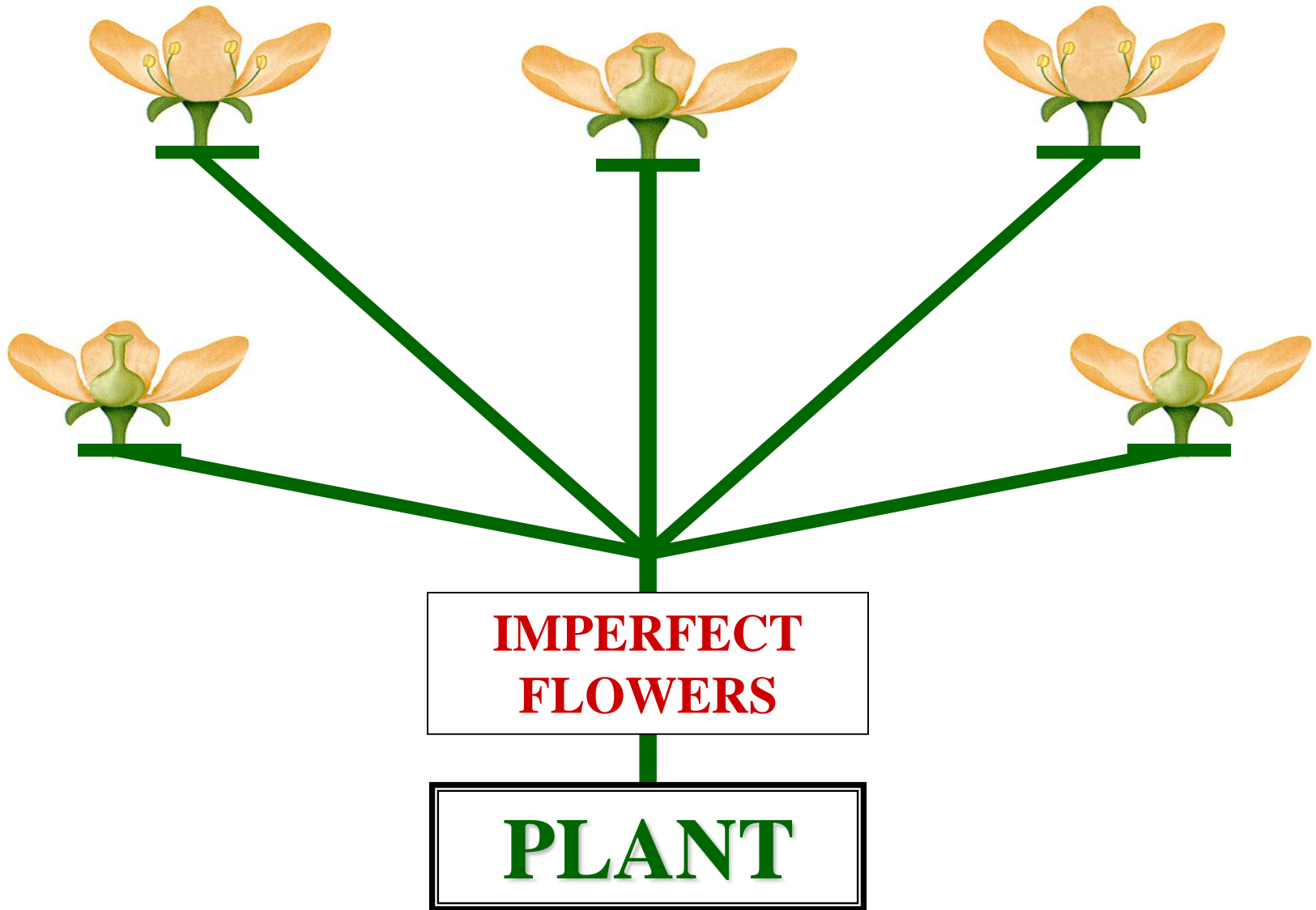
MONOECIOUS

DIOECIOUS

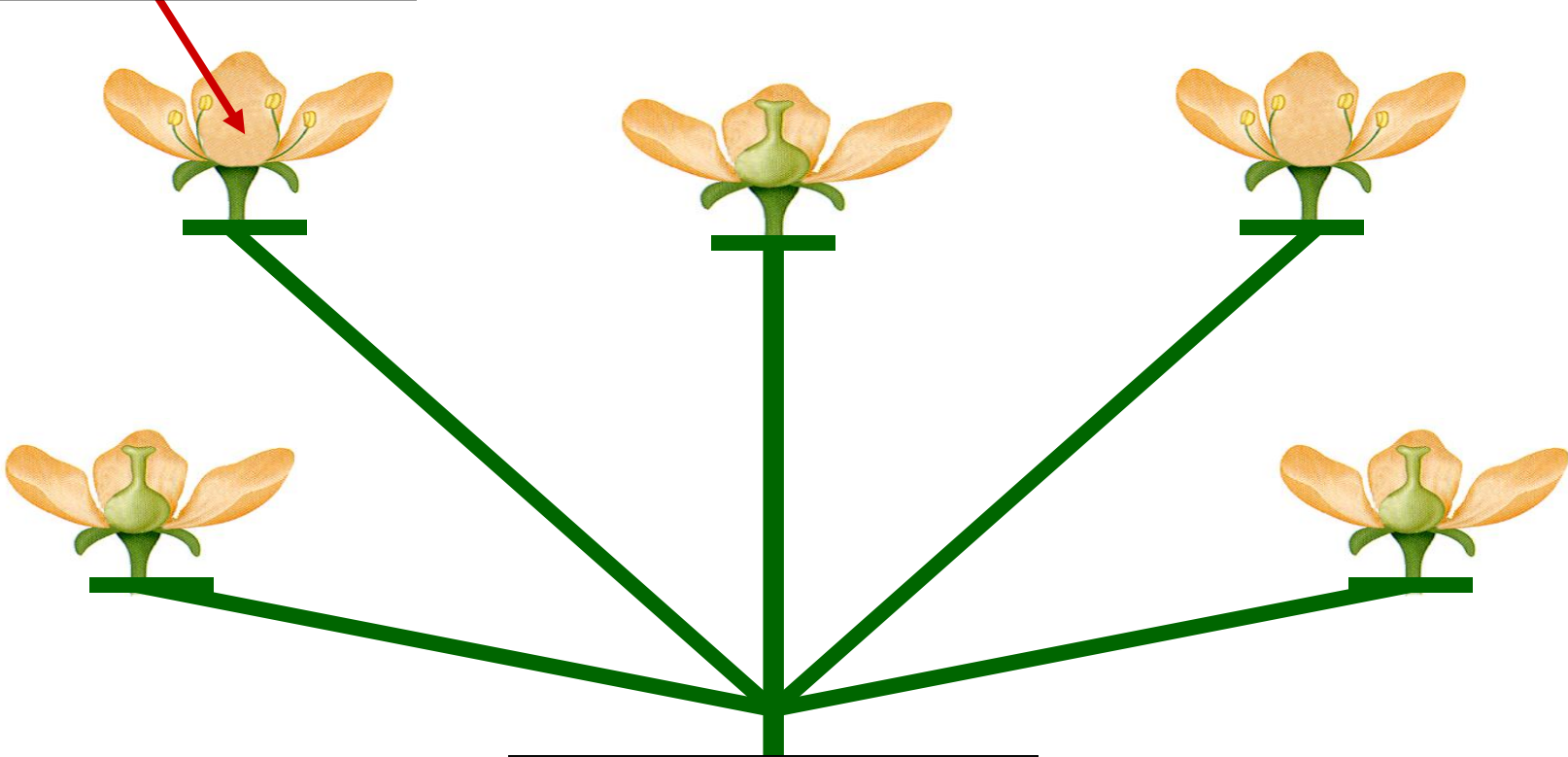
POLYGAMOUS

APPLIED





**STAMINATE
FLOWER**

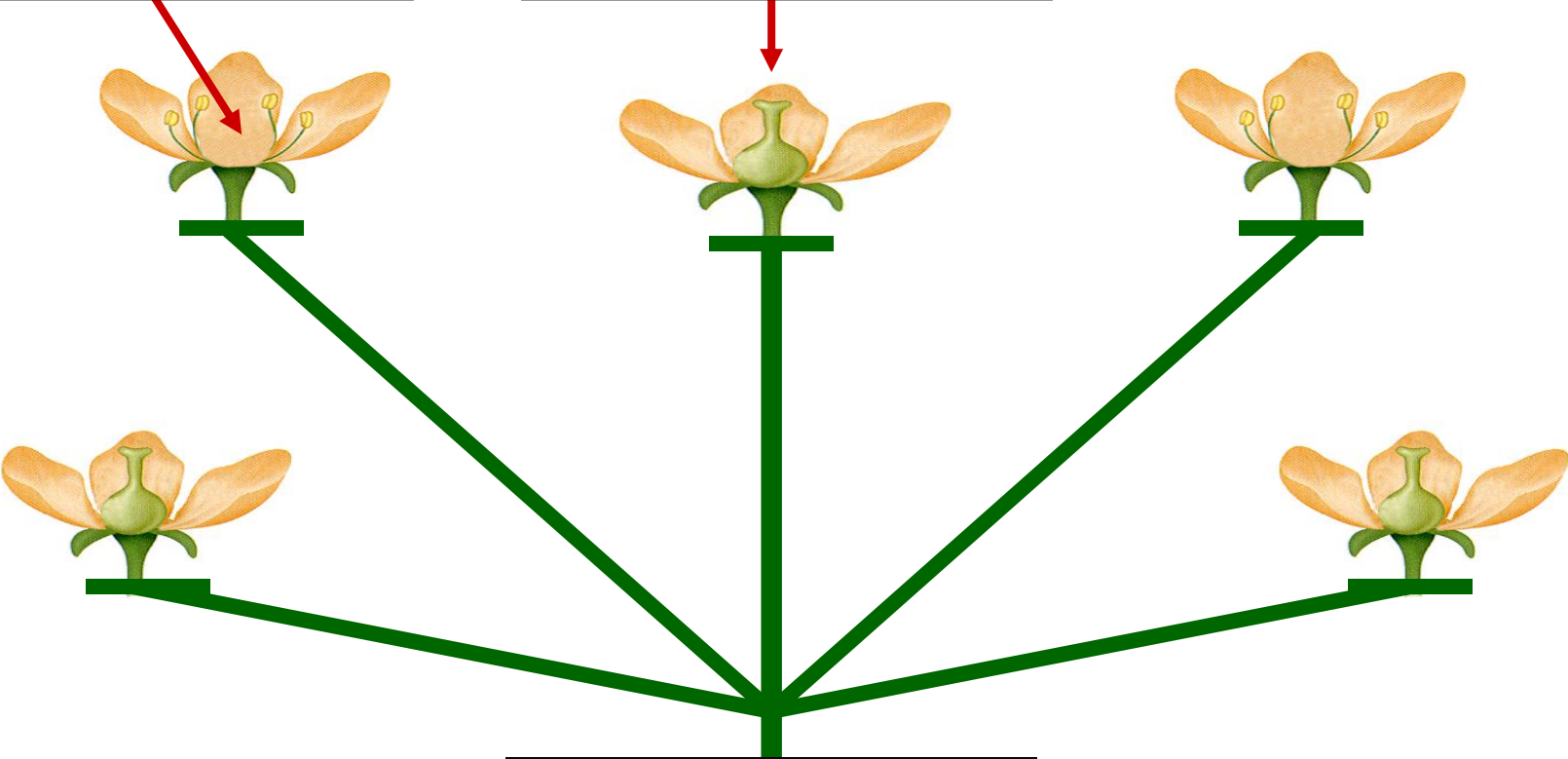


**IMPERFECT
FLOWERS**

PLANT

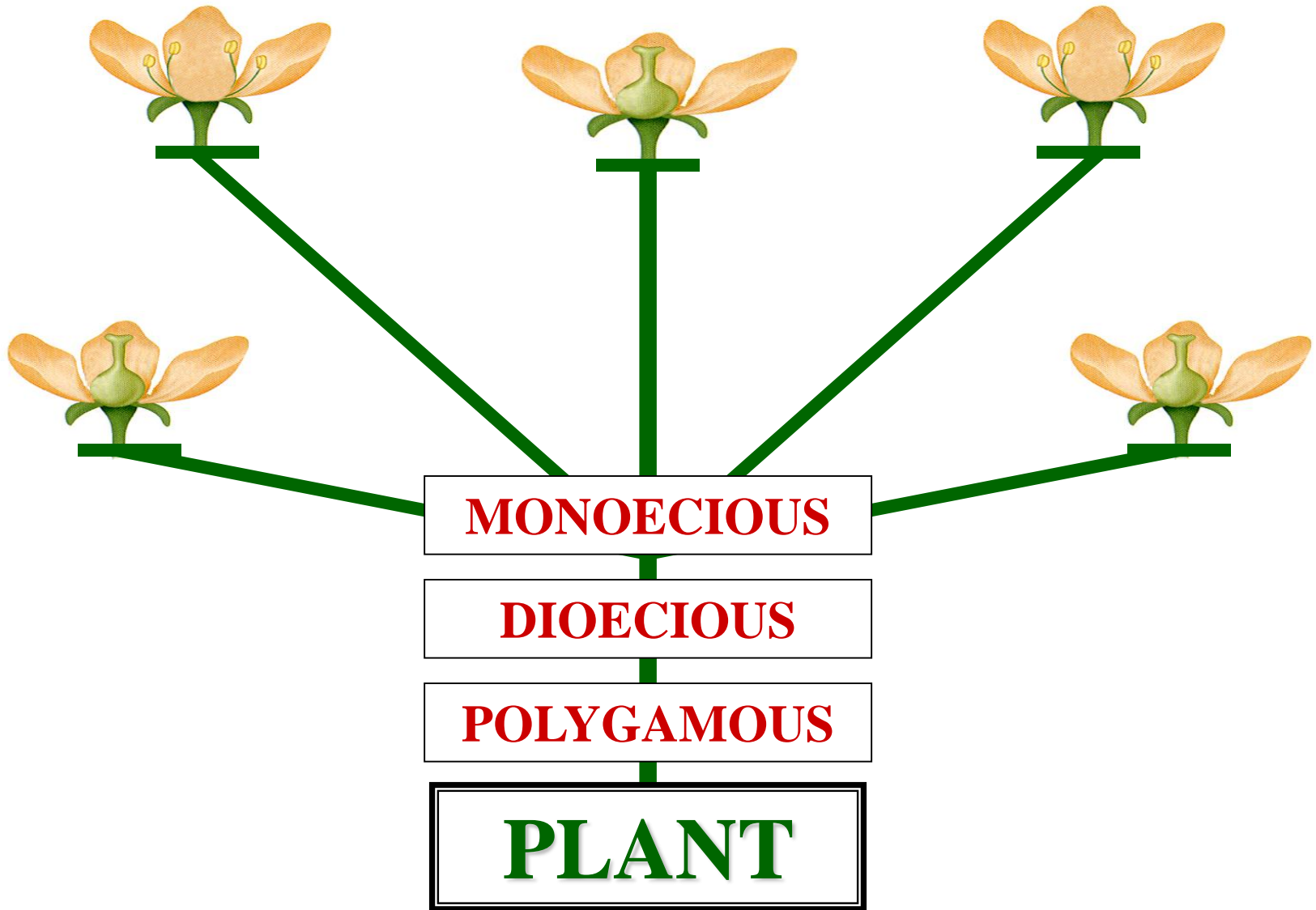
**STAMINATE
FLOWER**

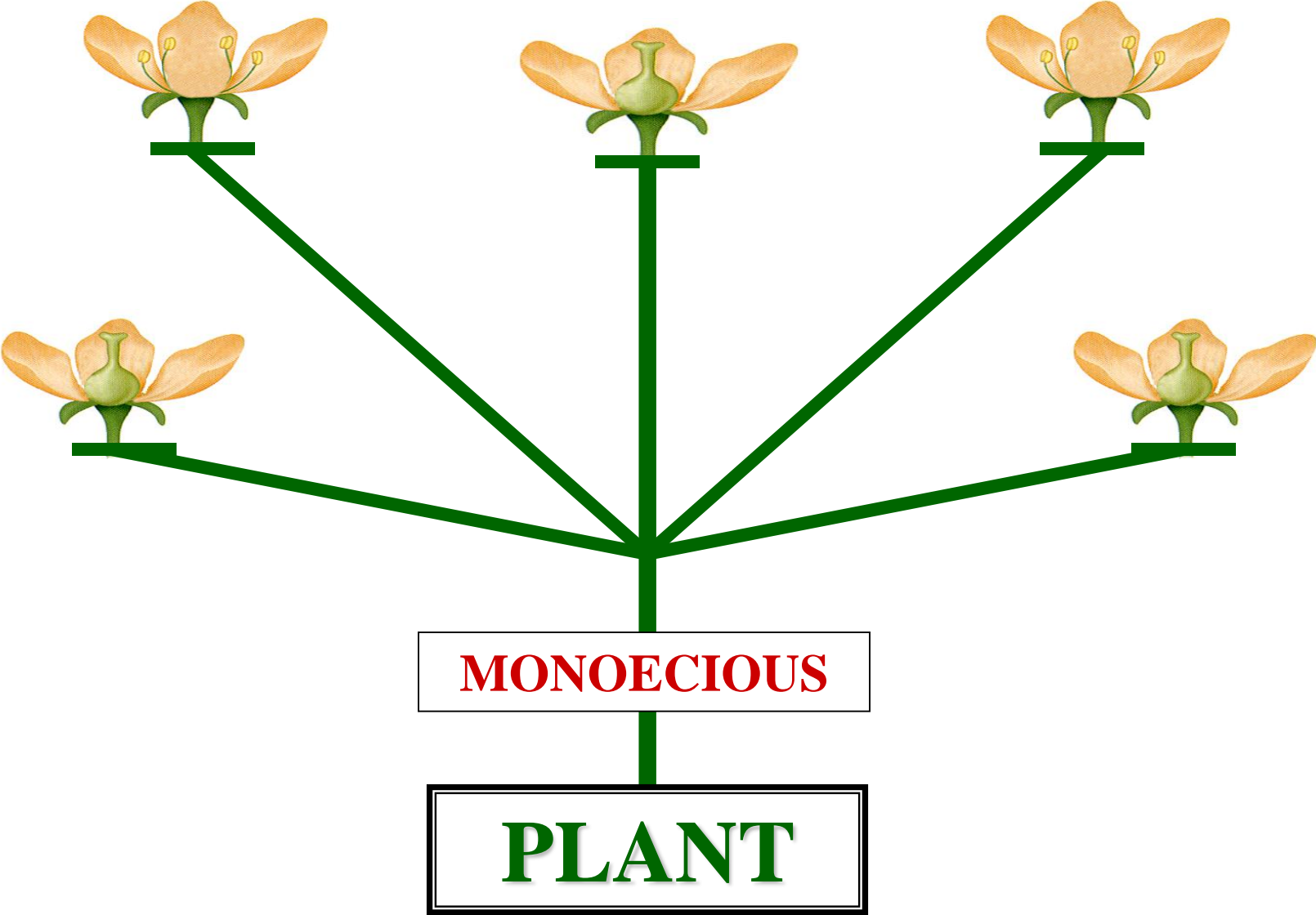
**PISTILATE
FLOWER**



**IMPERFECT
FLOWERS**

PLANT





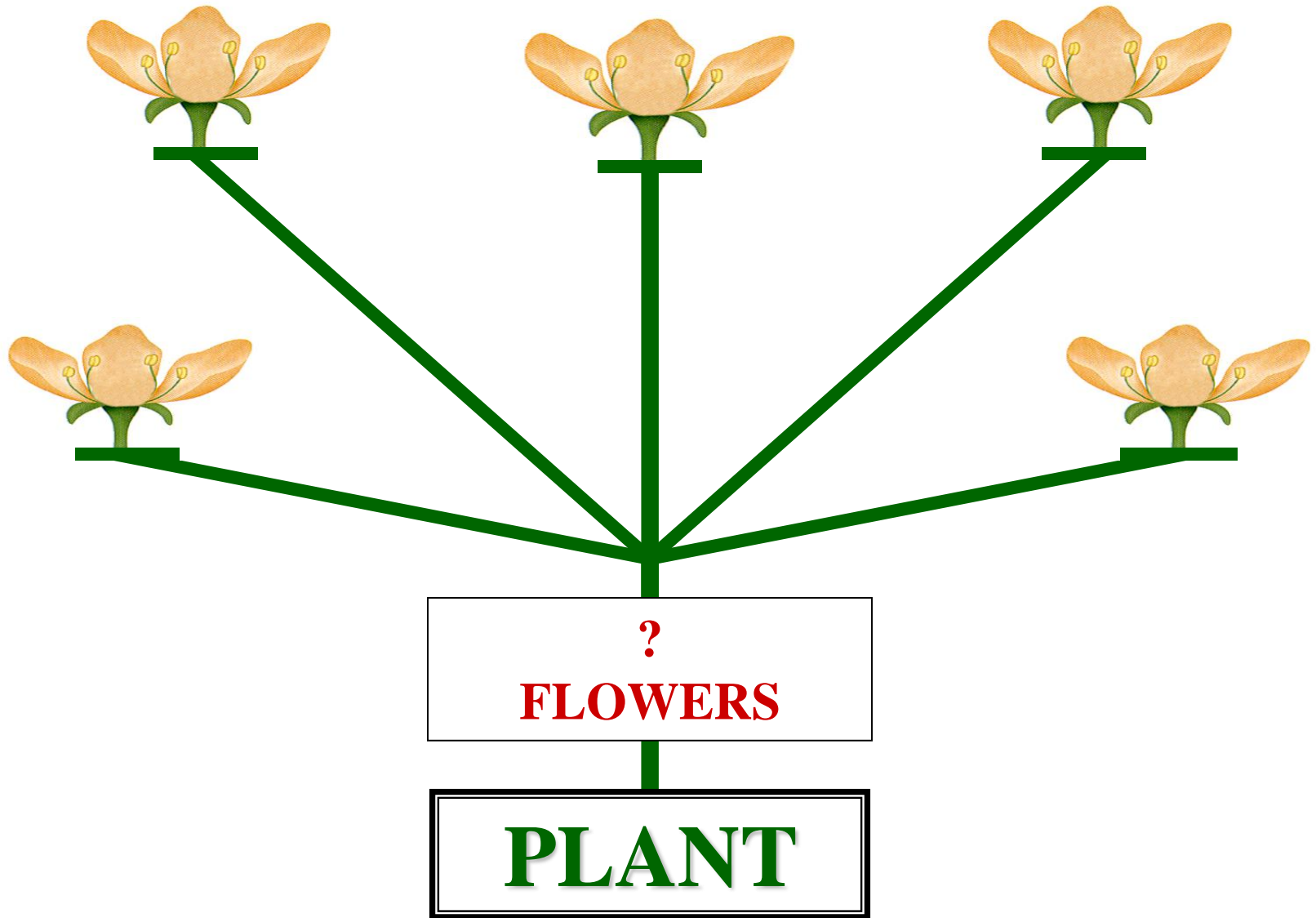


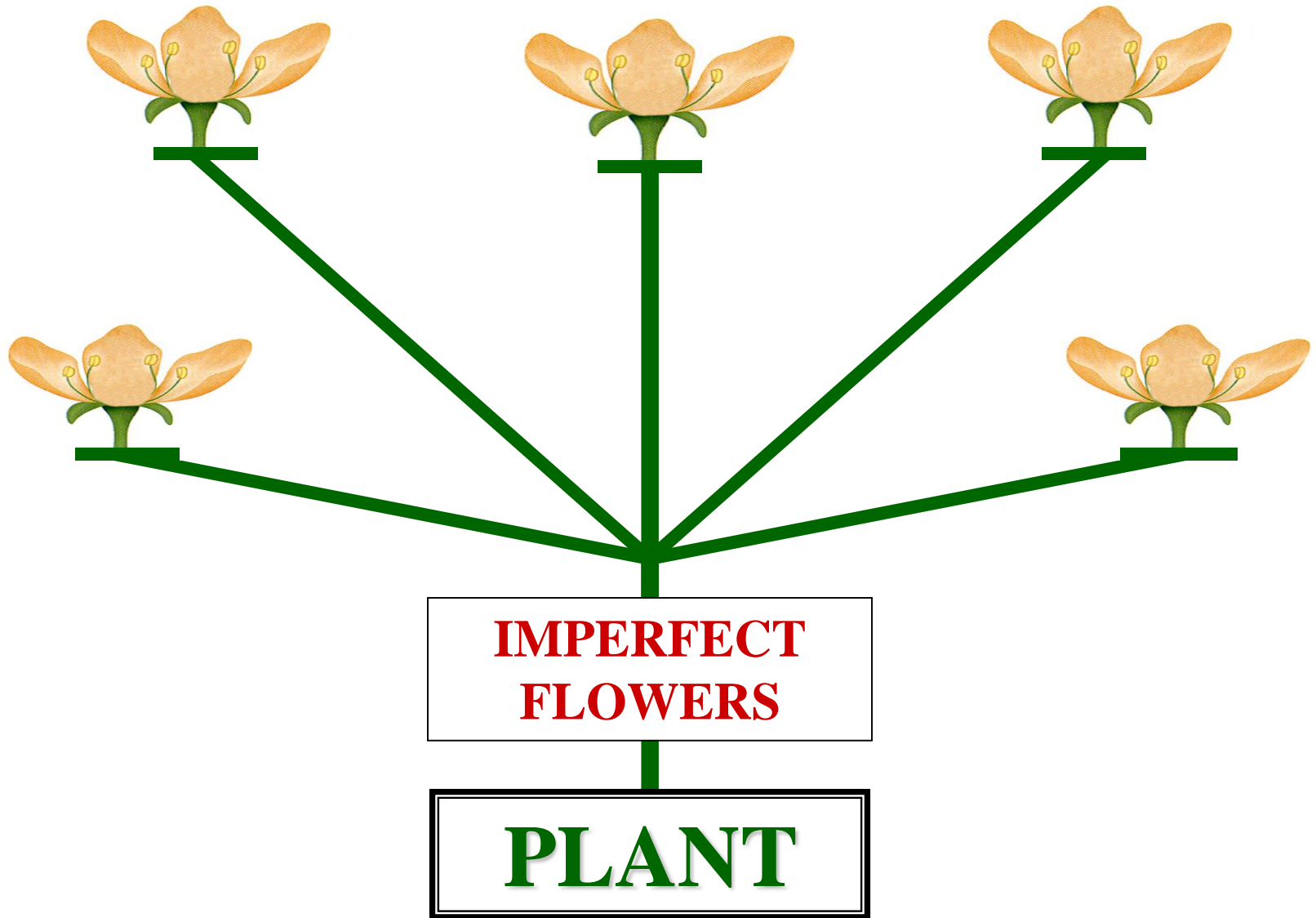
MONOECIOUS

DIOECIOUS

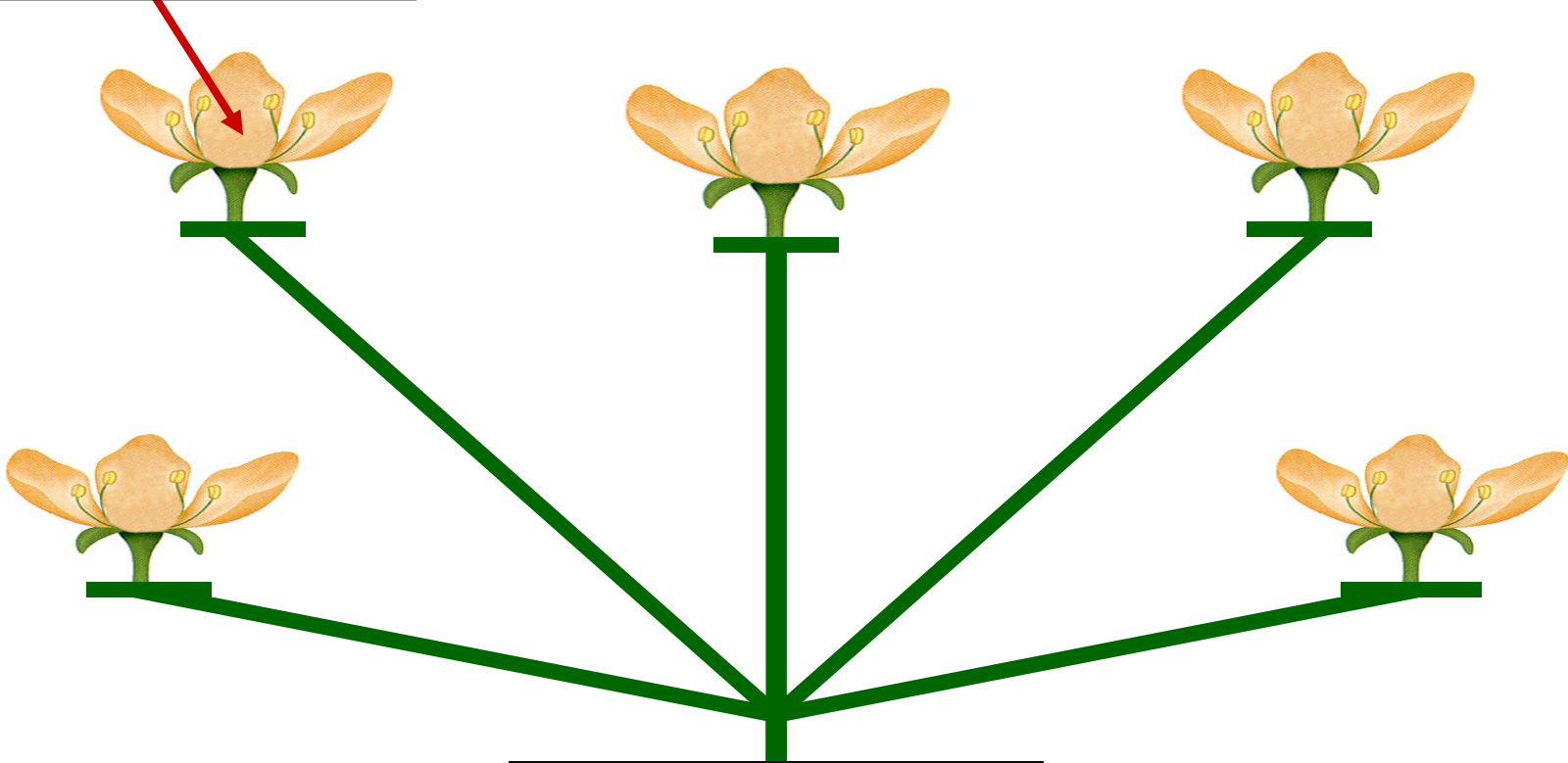
POLYGAMOUS

APPLIED





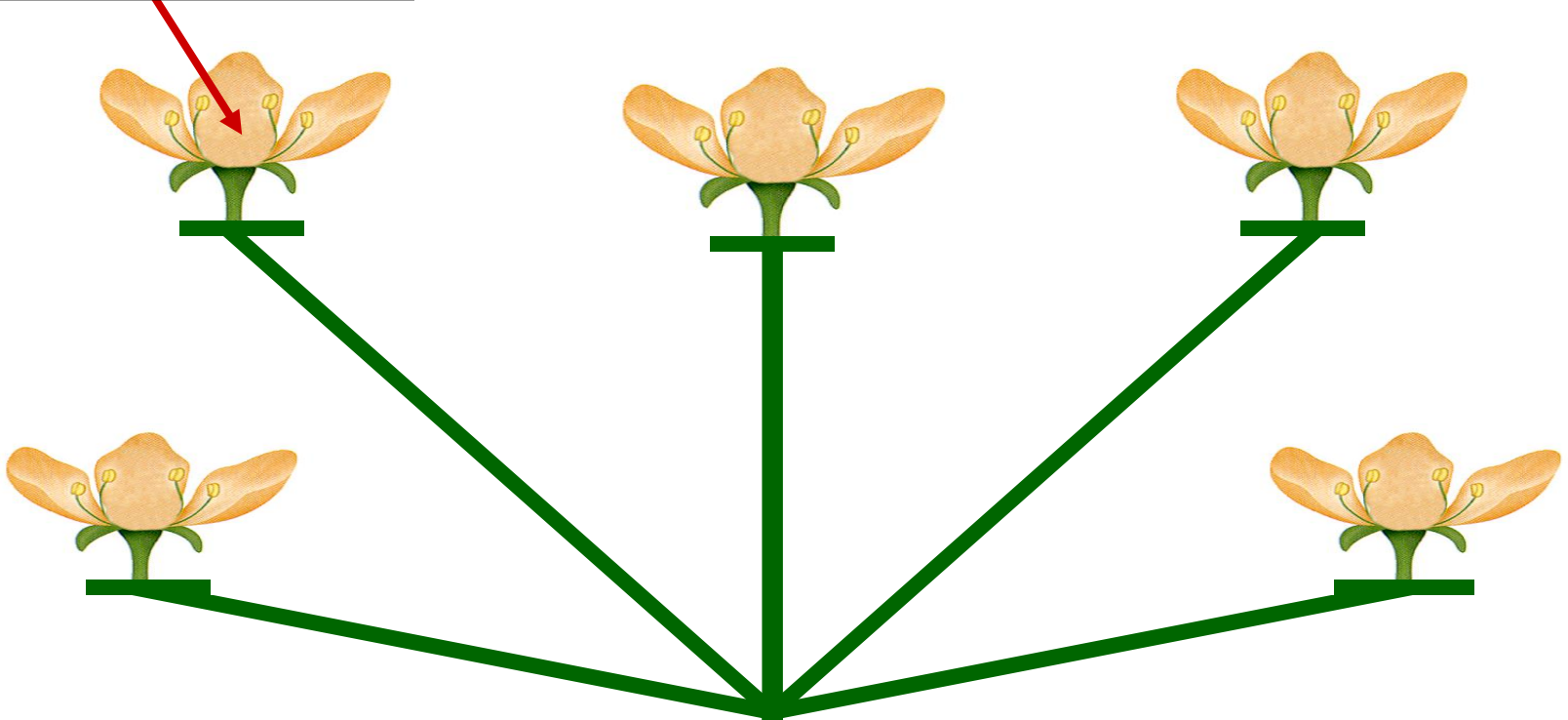
**STAMINATE
FLOWER**



**IMPERFECT
FLOWERS**

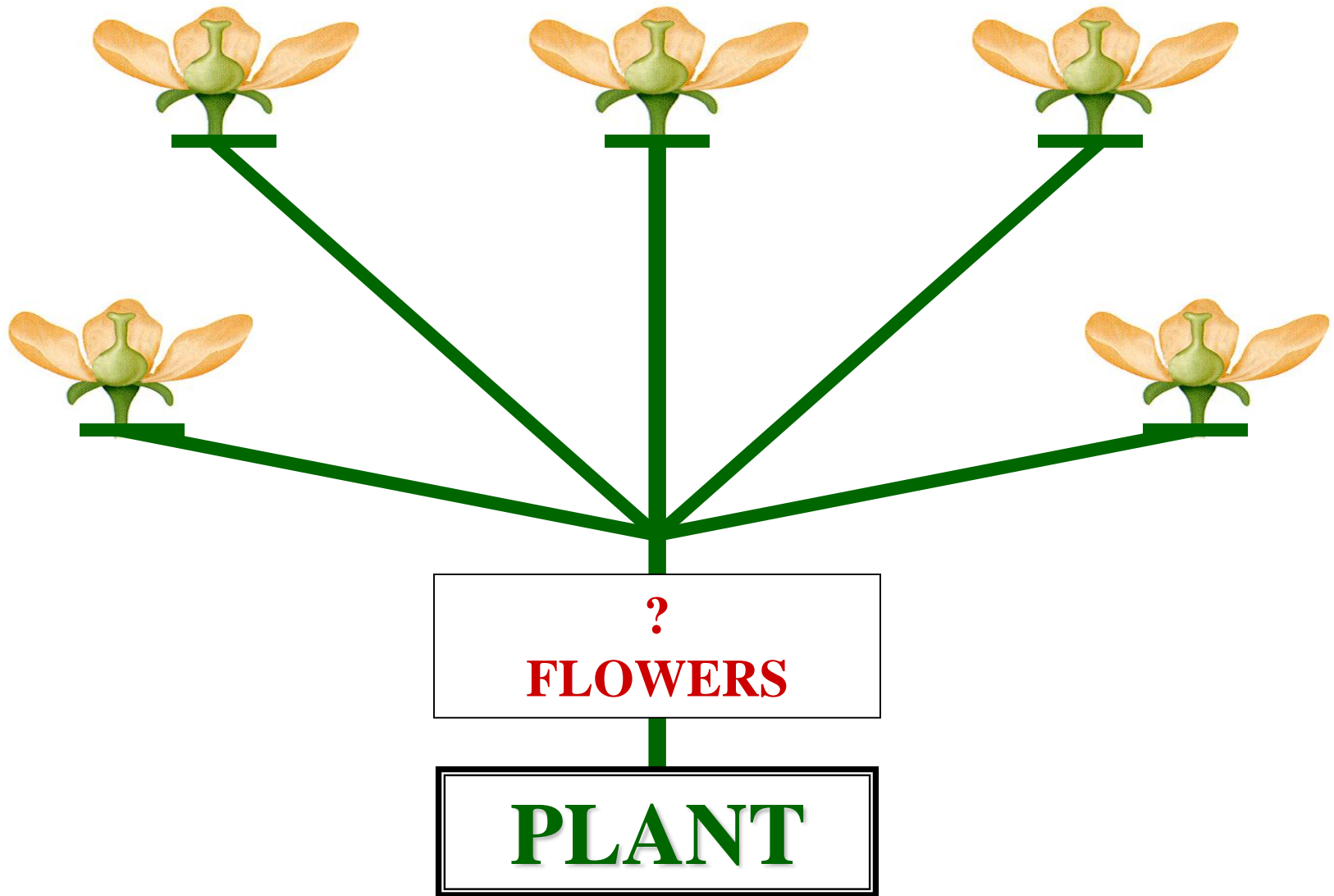
PLANT

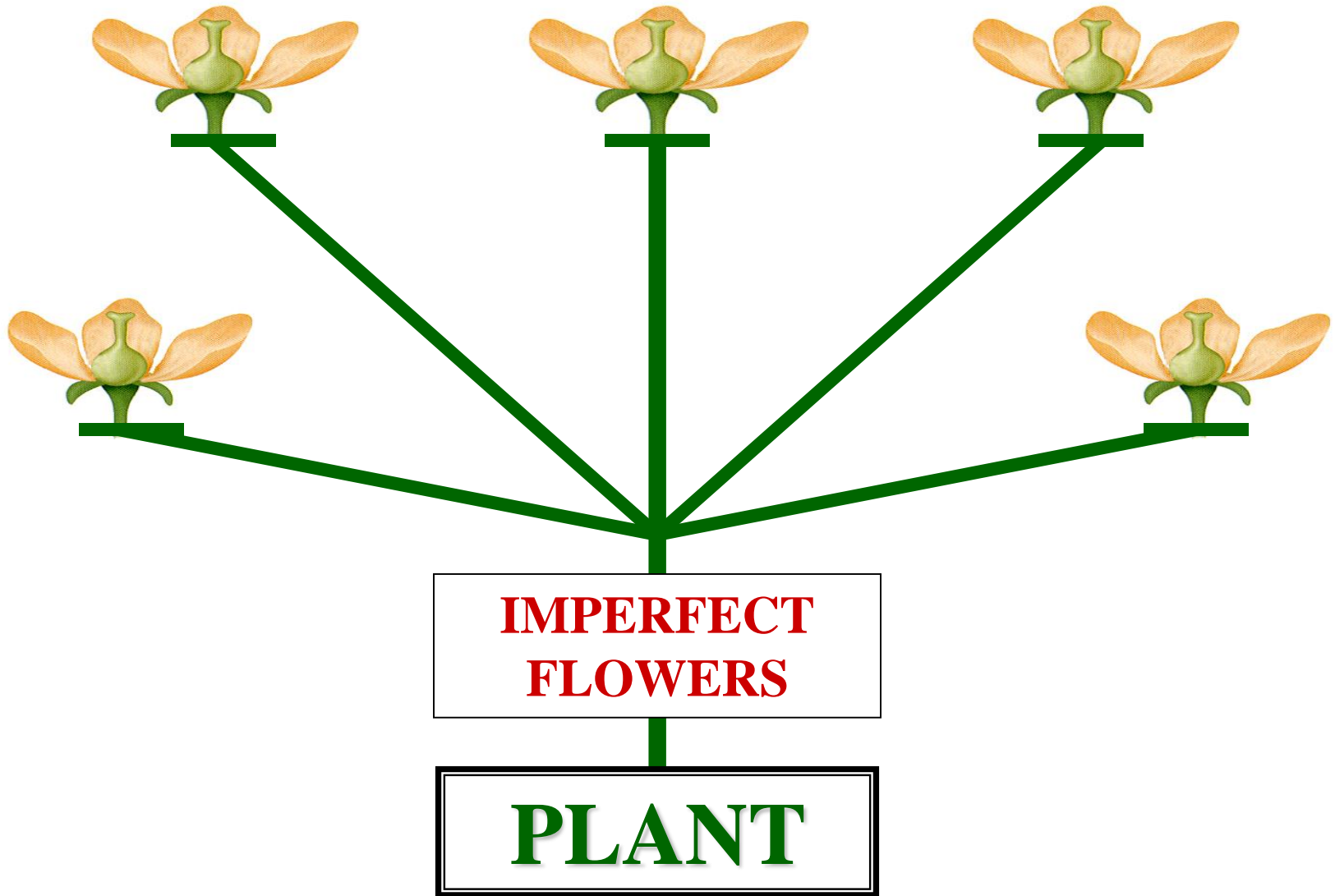
**STAMINATE
FLOWER**



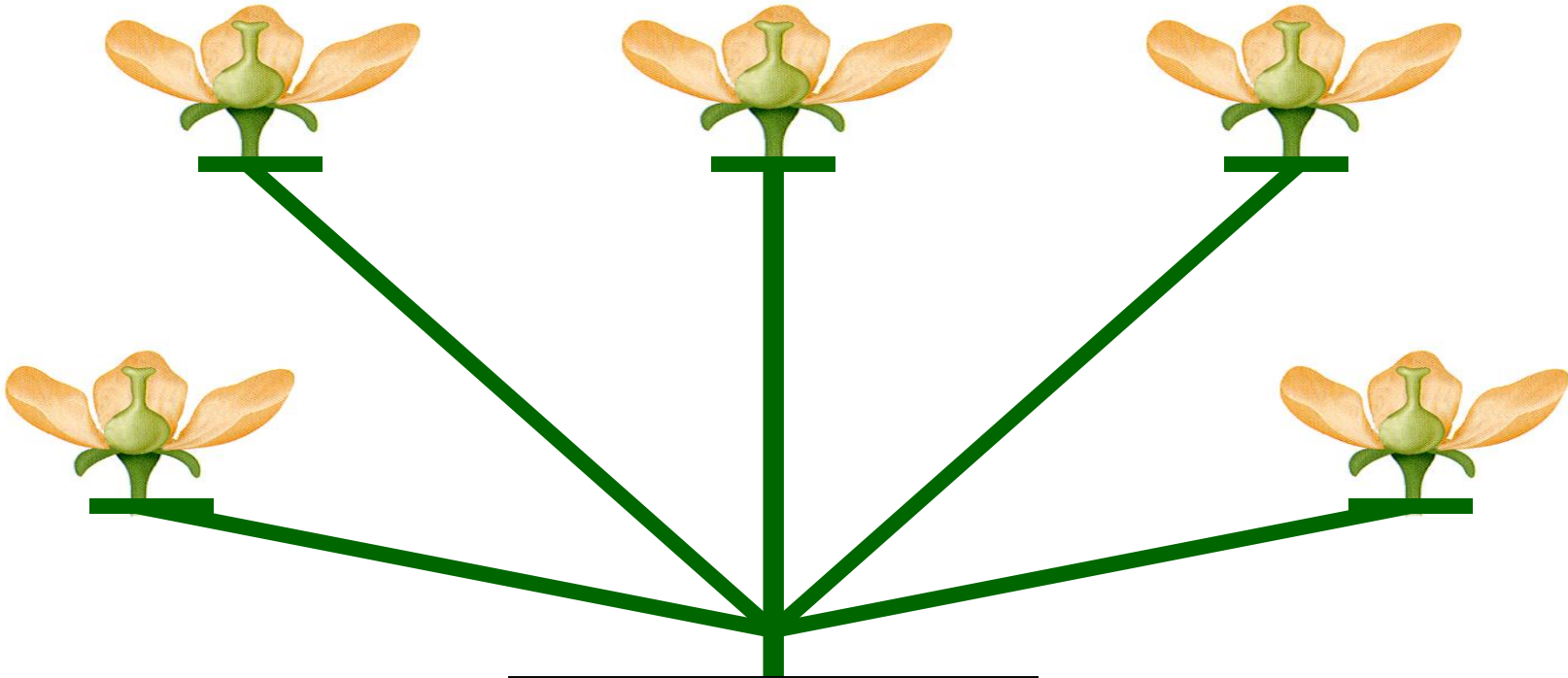
STAMINATE PLANT

PLANT





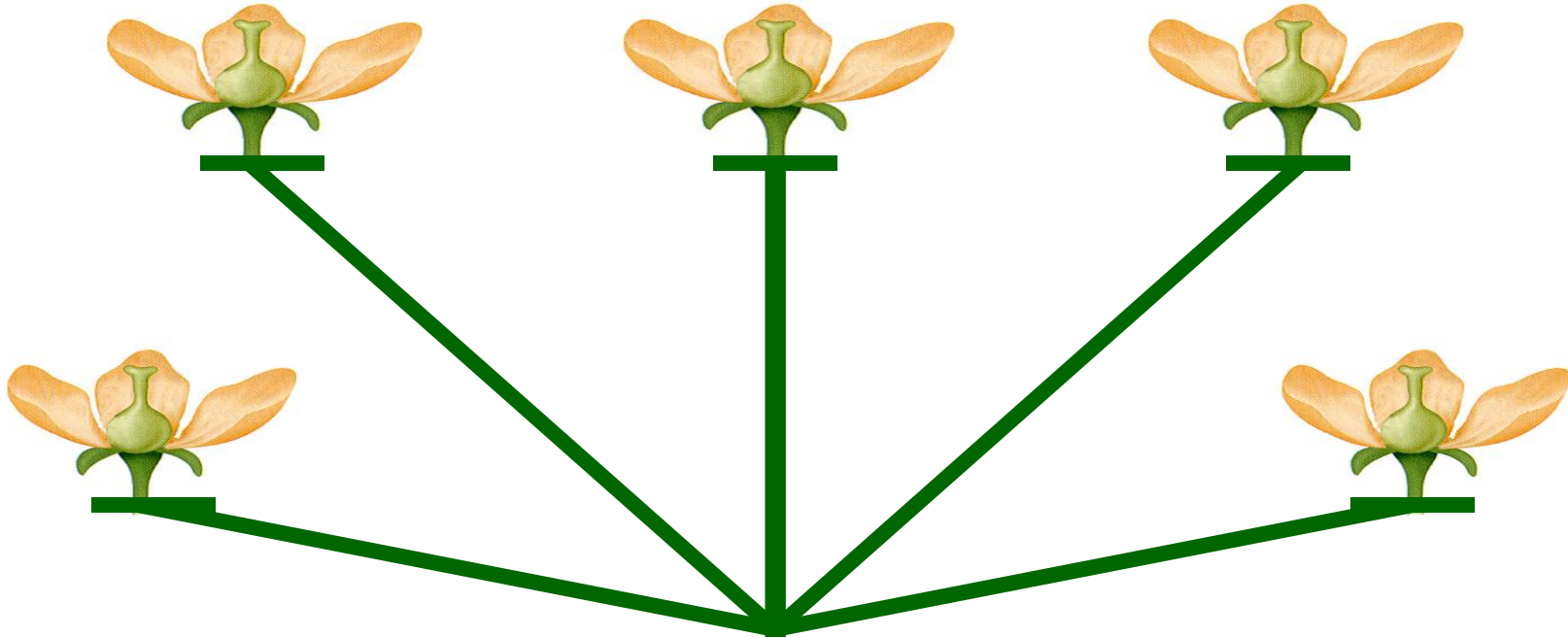
**PISTILATE
FLOWER**



**IMPERFECT
FLOWERS**

PLANT

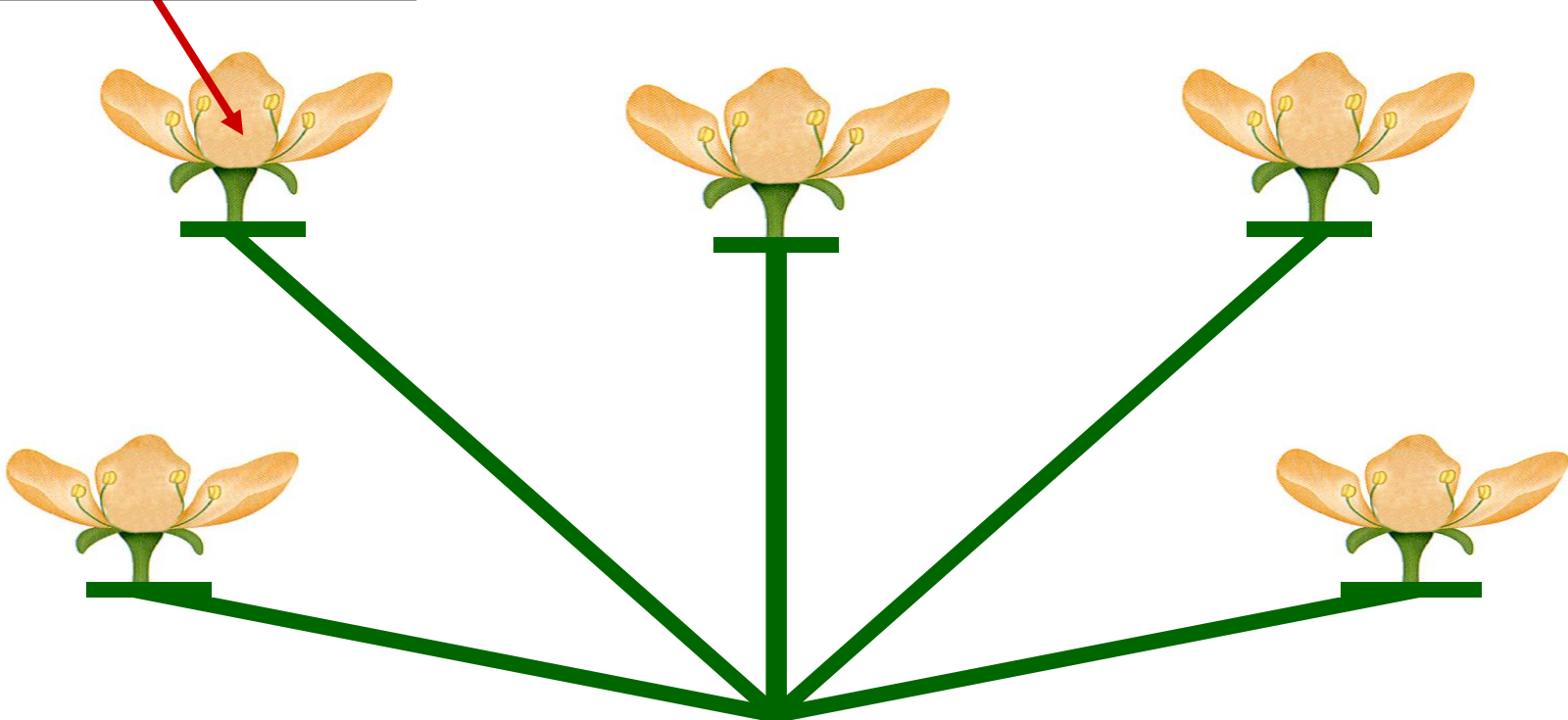
**PISTILATE
FLOWER**



PISTILATE PLANT

PLANT

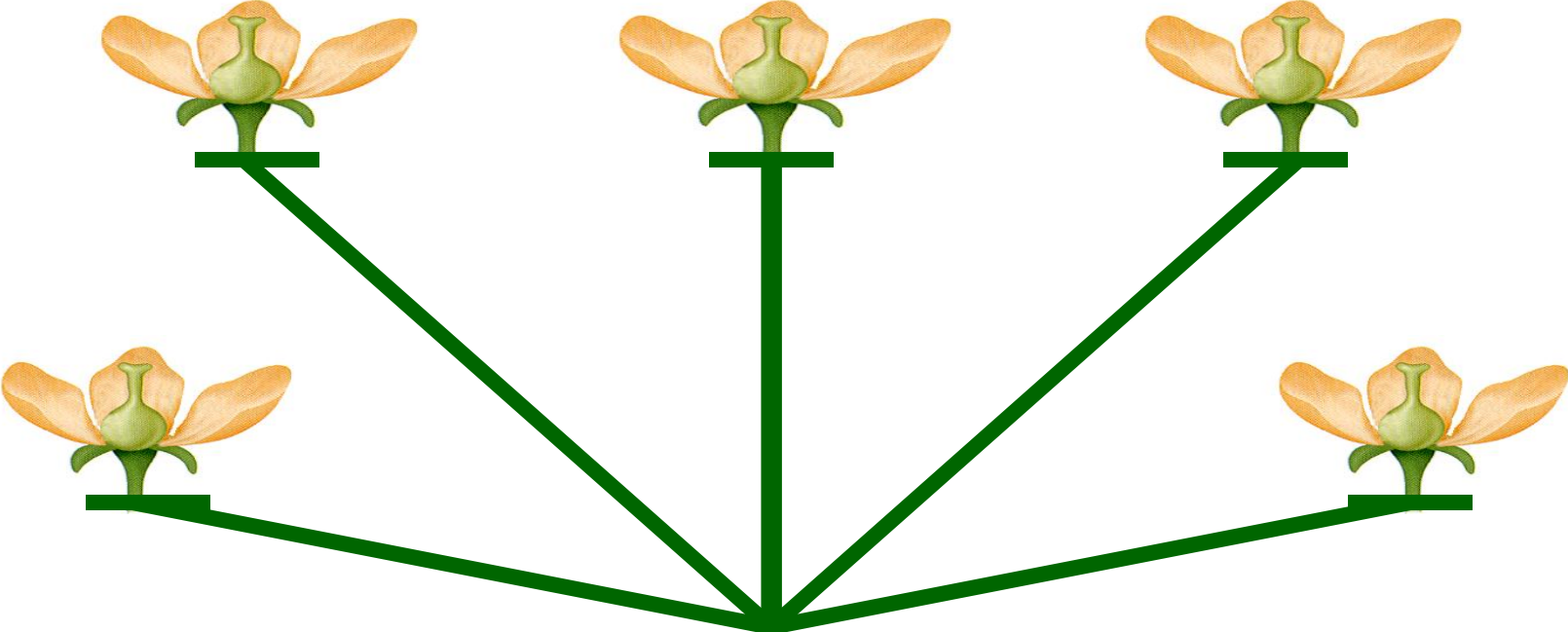
**STAMINATE
FLOWER**



STAMINATE PLANT

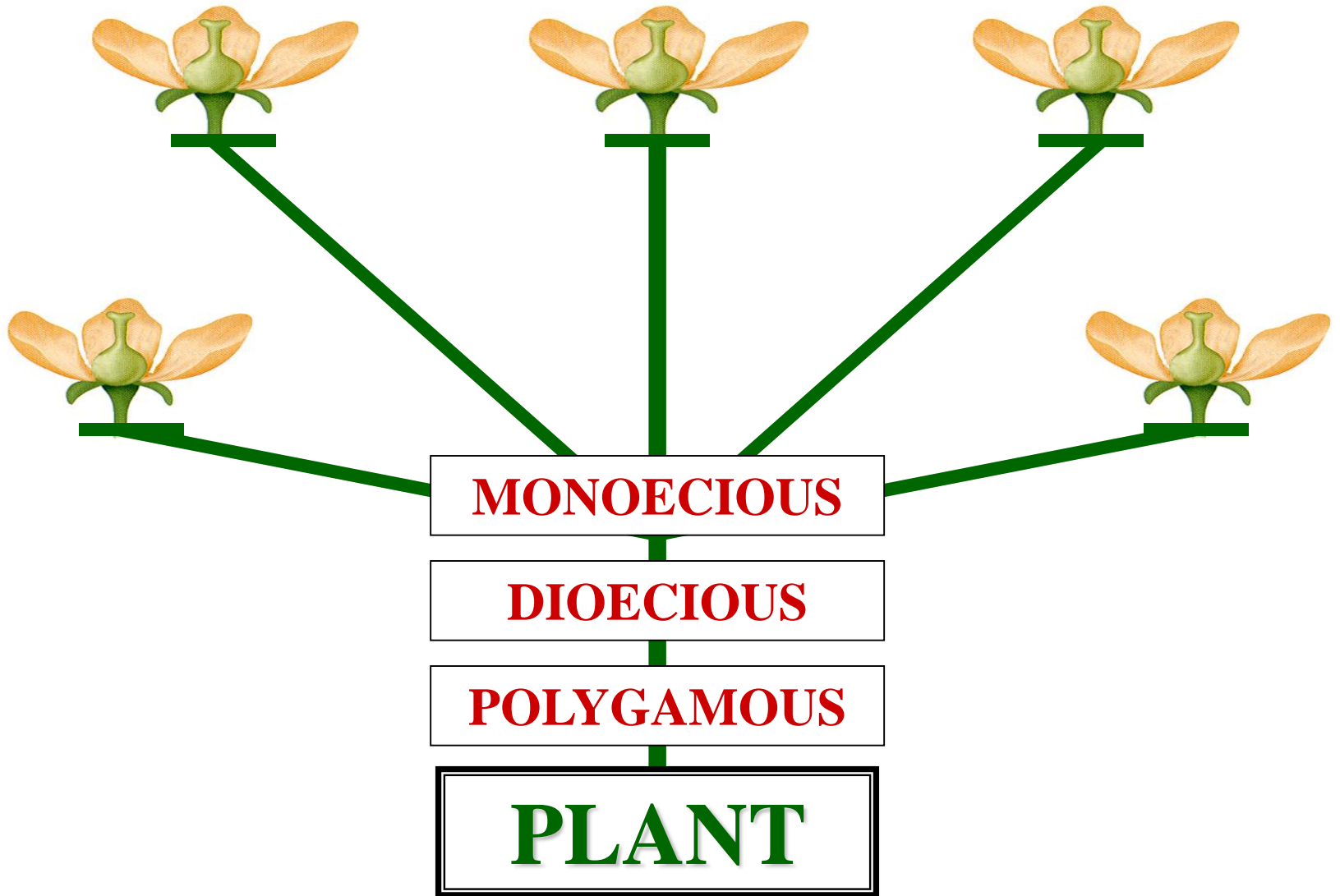
PLANT

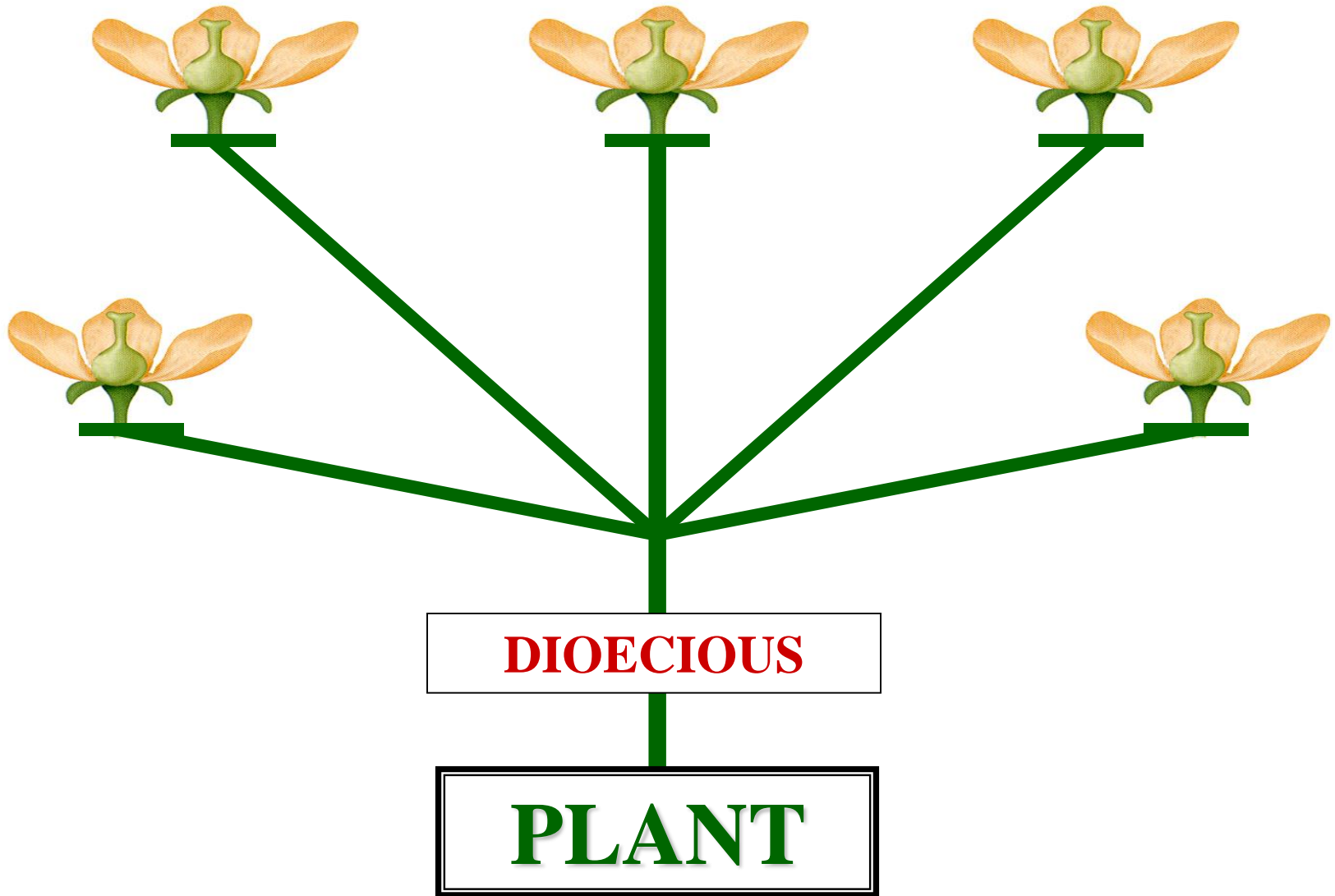
**PISTILATE
FLOWER**



PISTILATE PLANT

PLANT





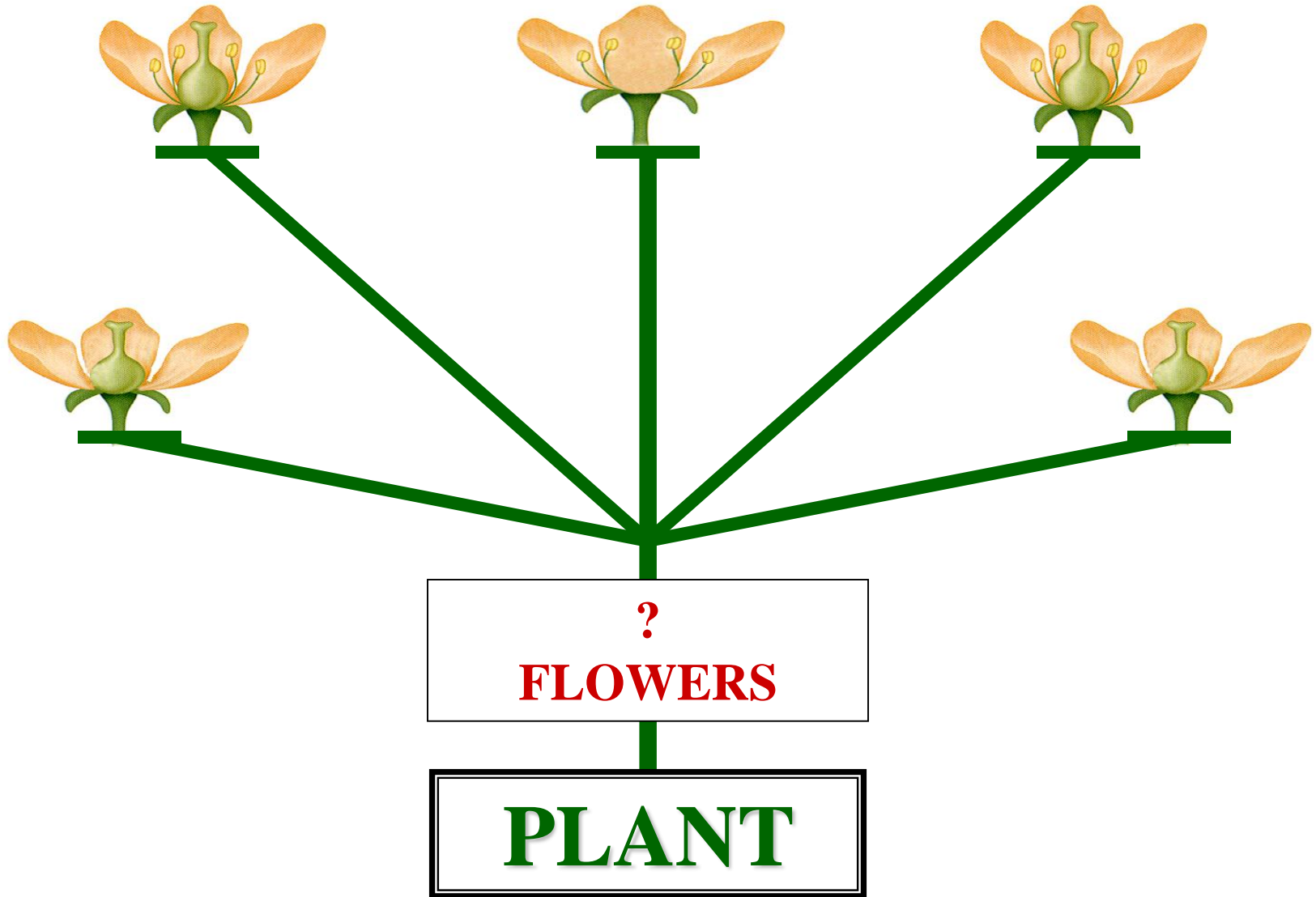


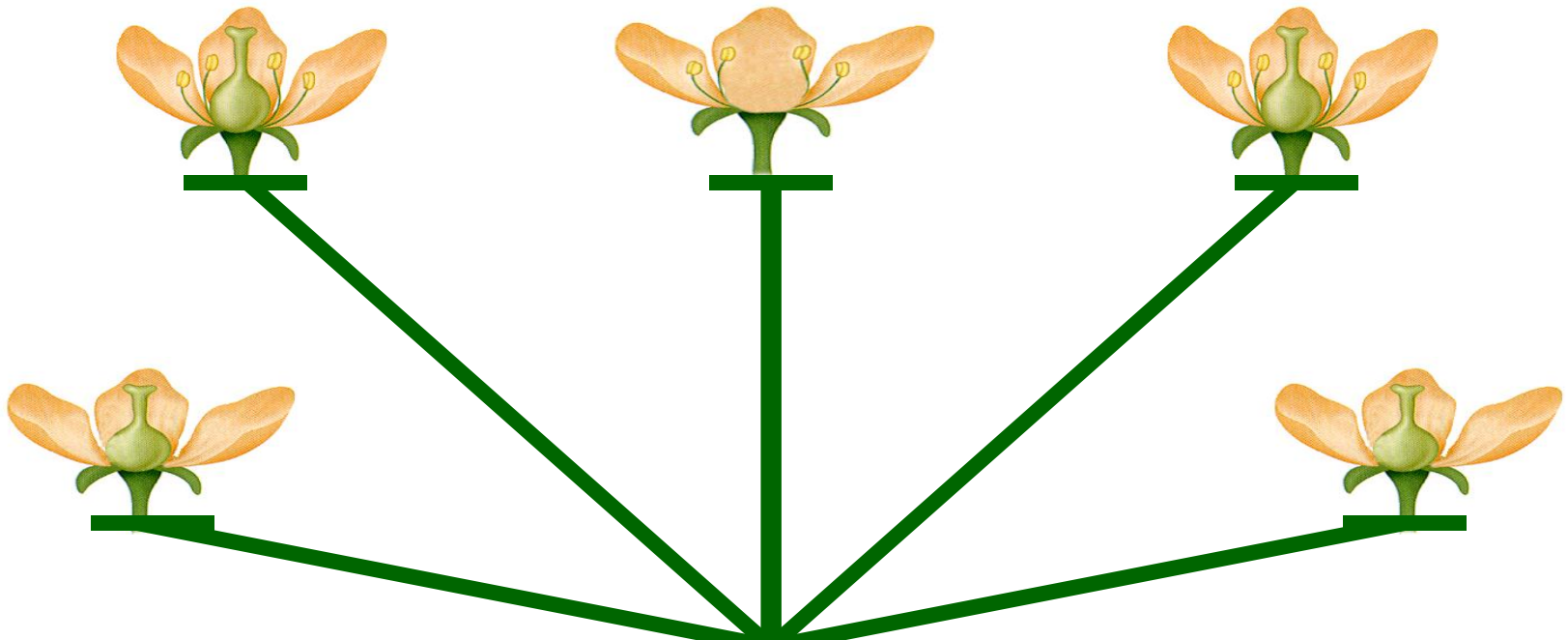
MONOECIOUS

DIOECIOUS

POLYGAMOUS

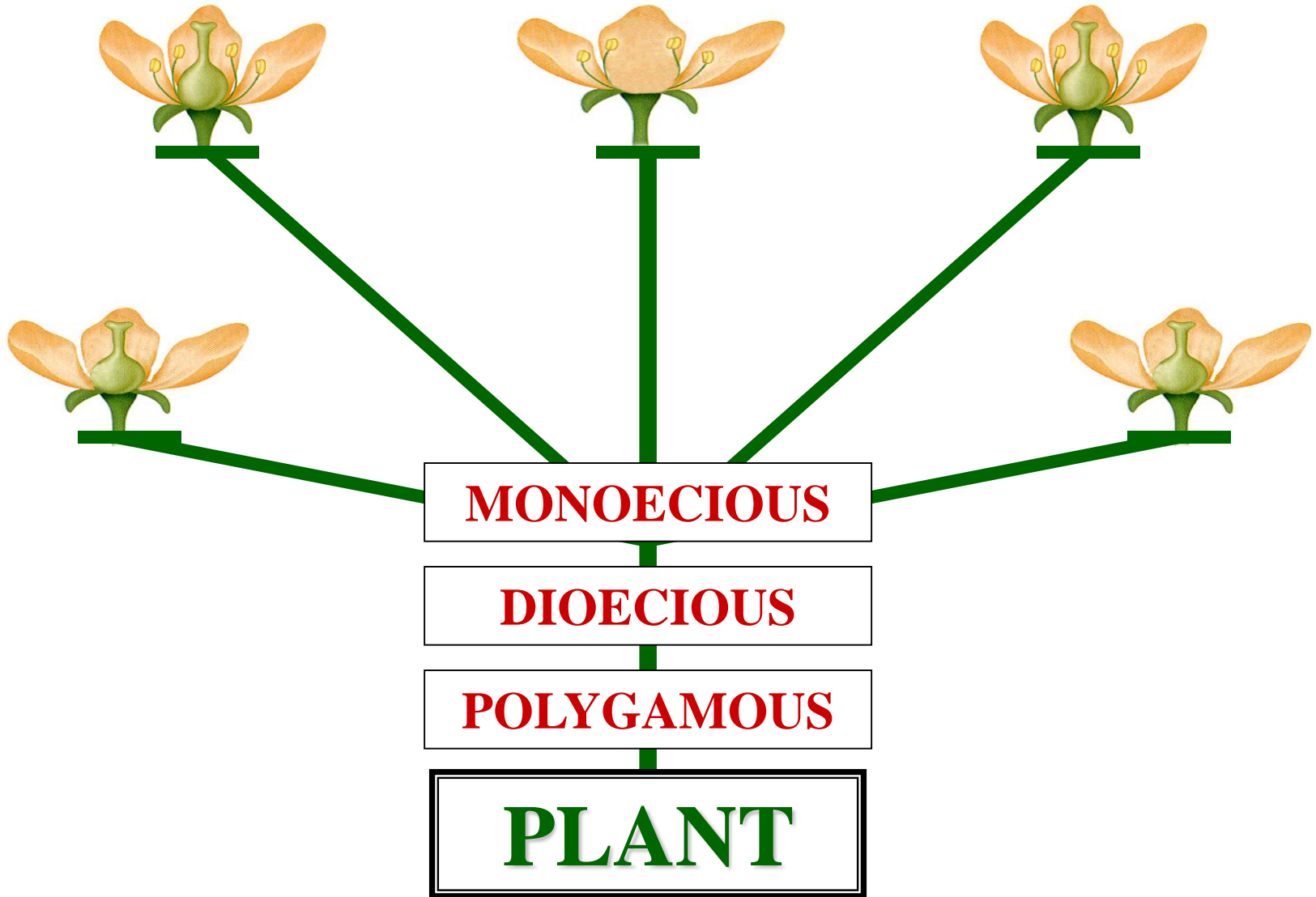
APPLIED

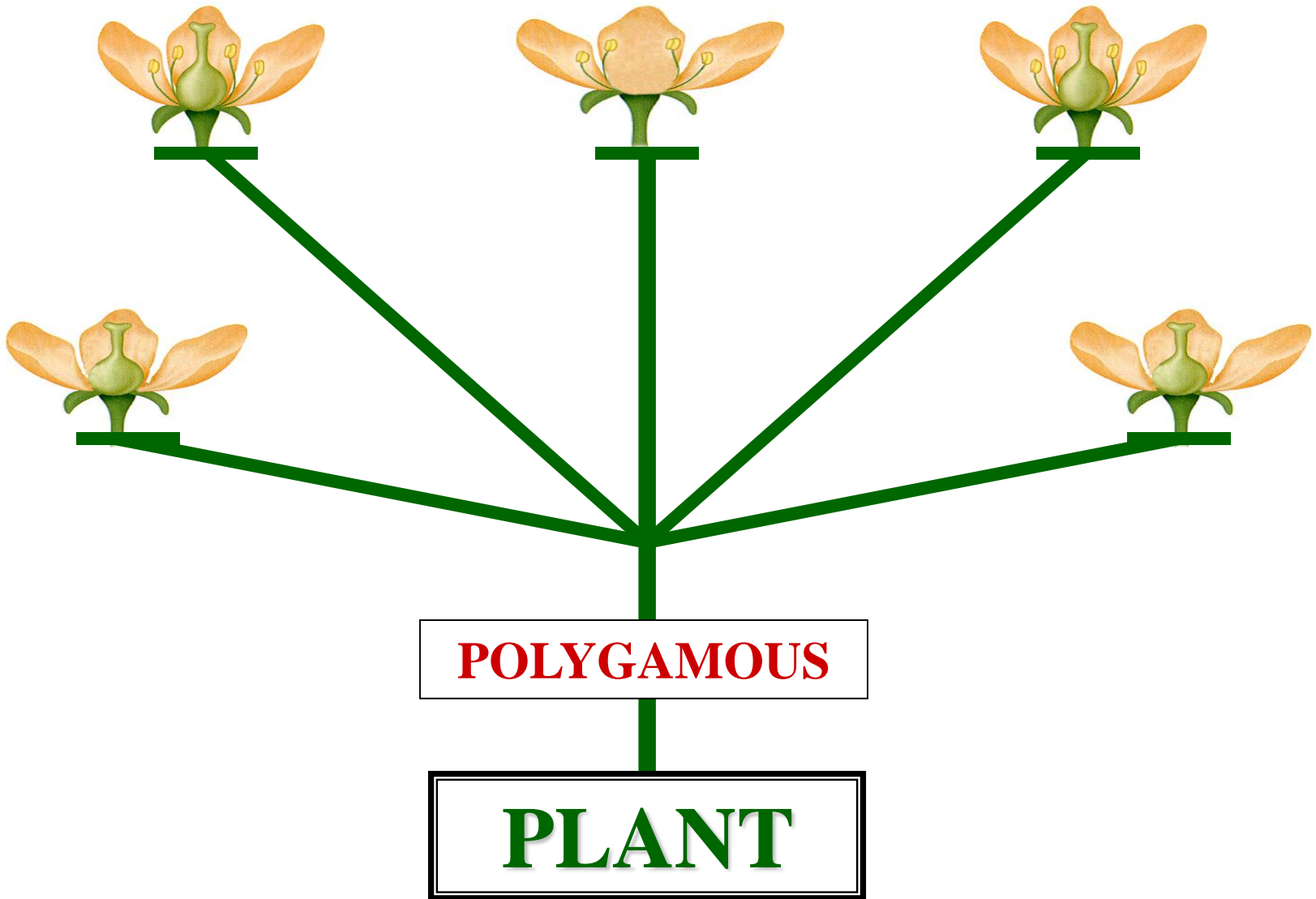




**PERFECT FLOWERS
&
IMPERFECT FLOWERS**

PLANT



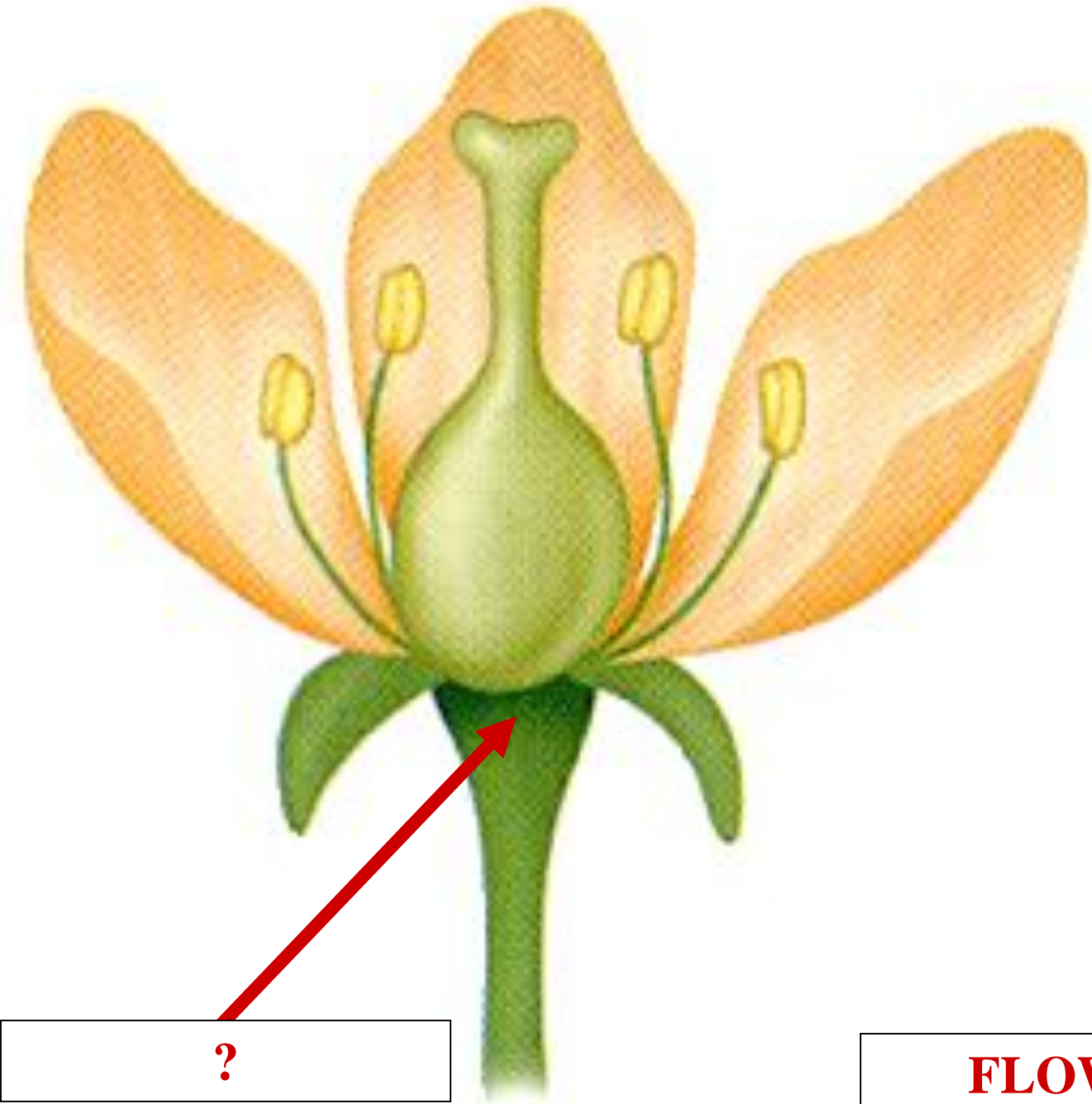


POLYGAMOUS

PLANT

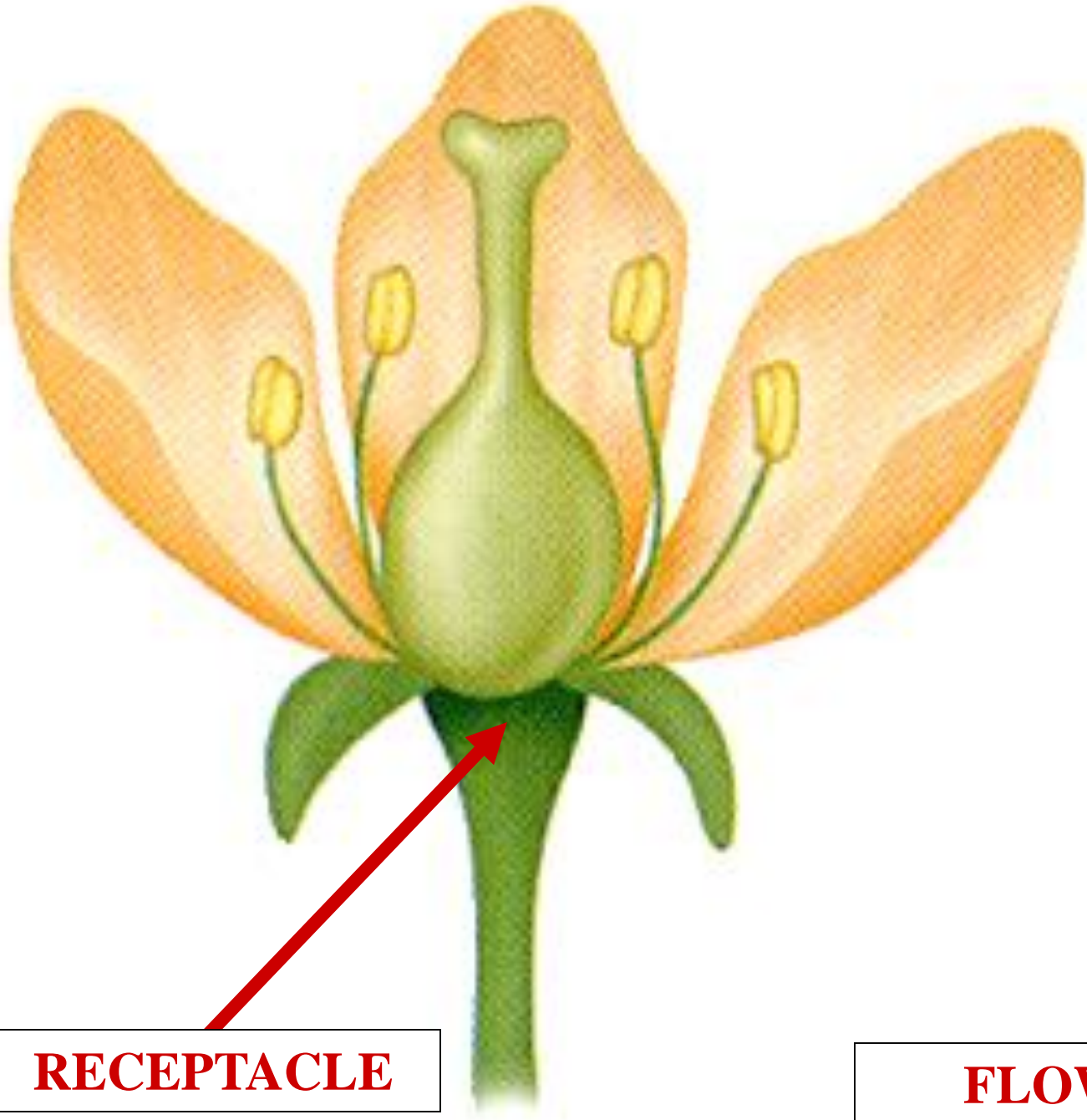


FLOWER MORPHOLOGY REVIEW



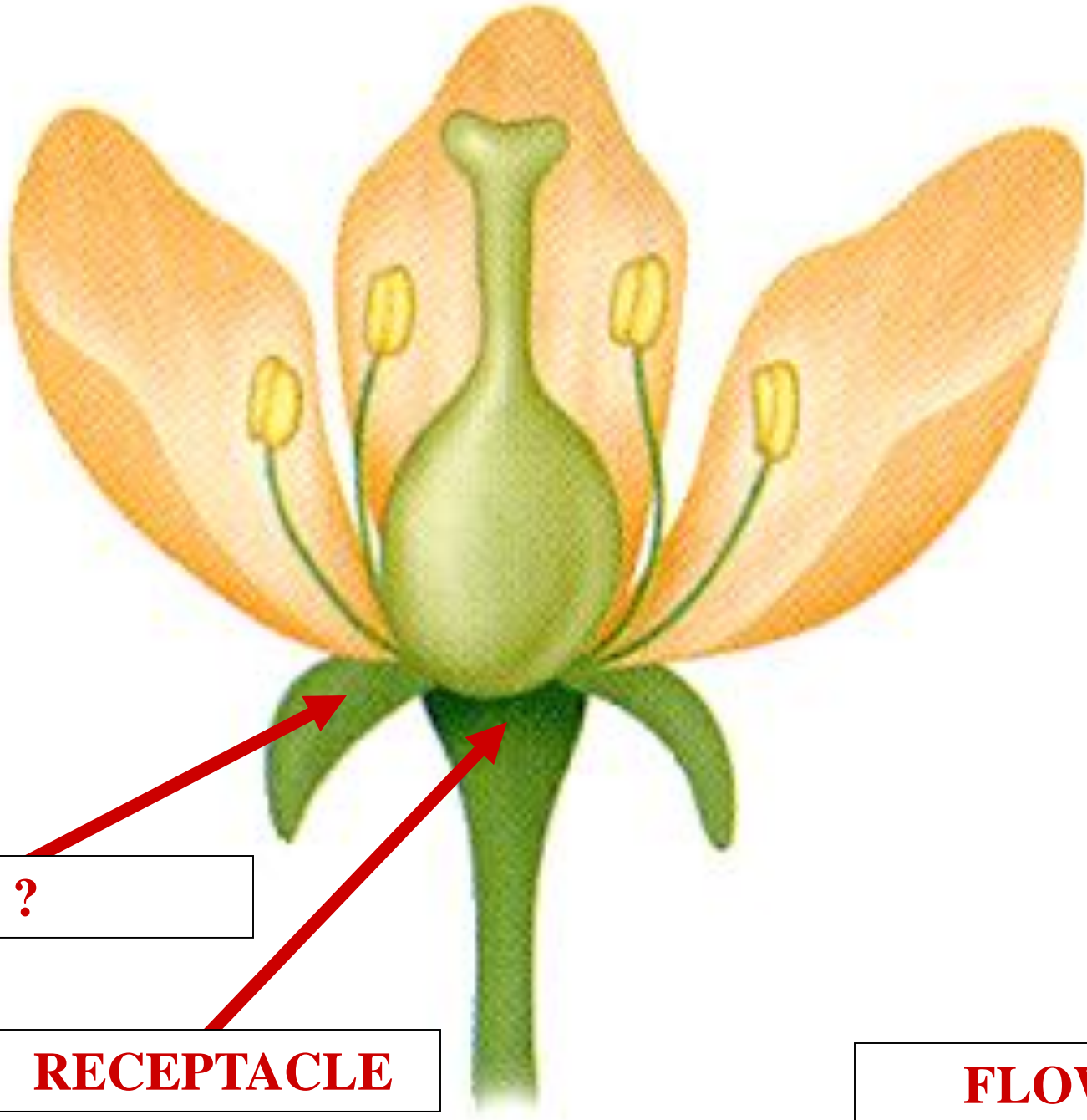
?

FLOWER



RECEPTACLE

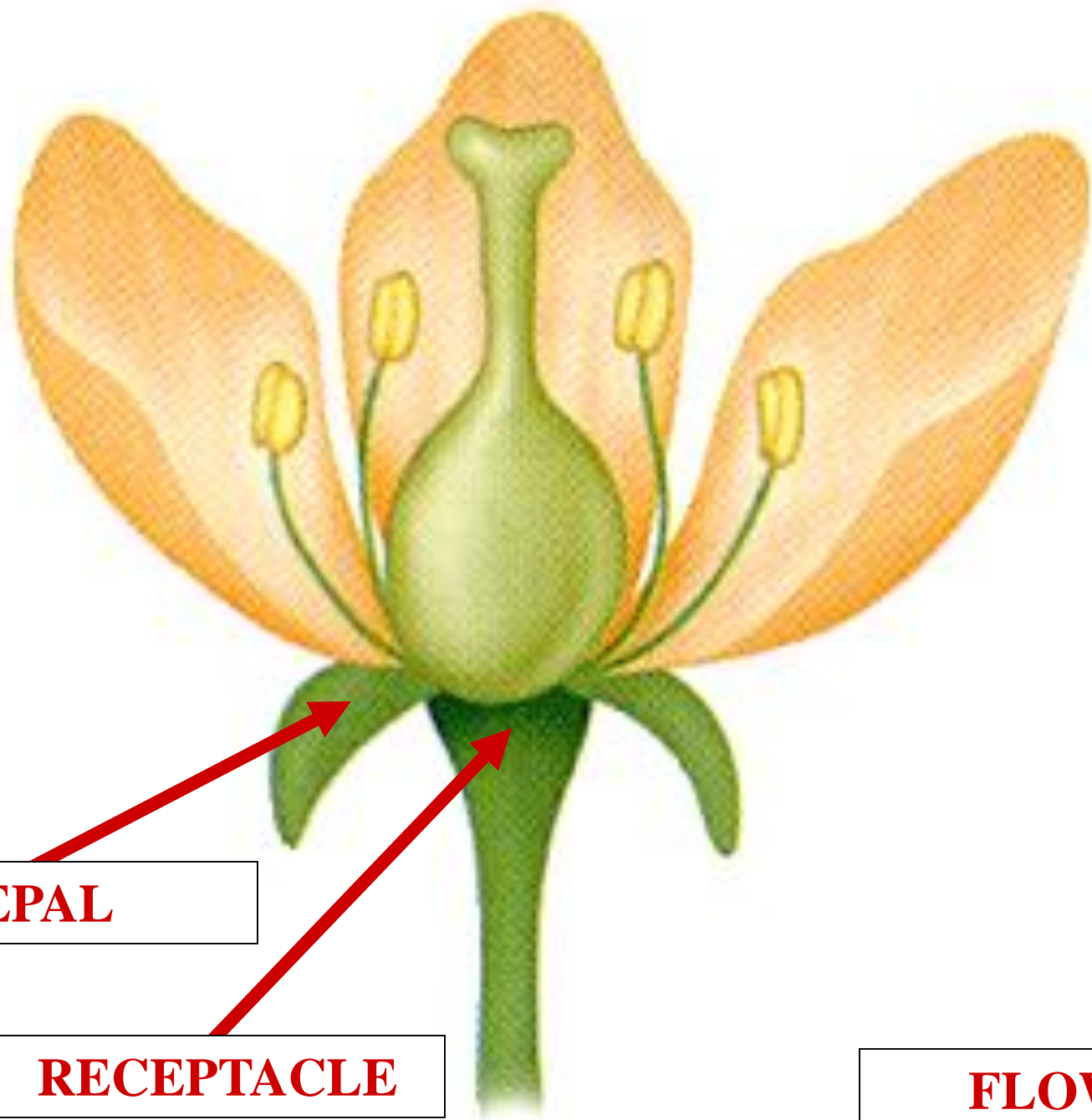
FLOWER



?

RECEPTACLE

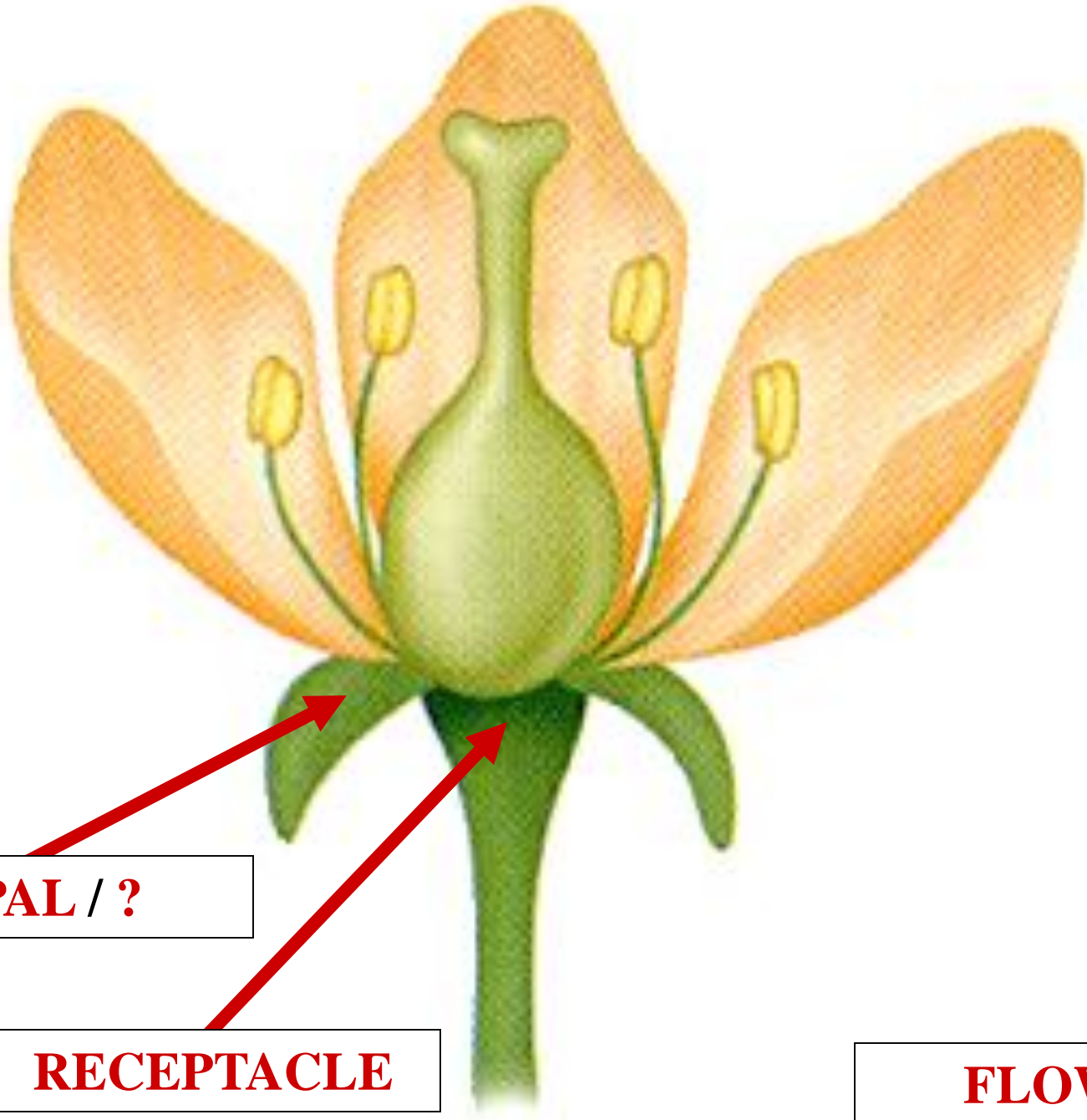
FLOWER



SEPAL

RECEPTACLE

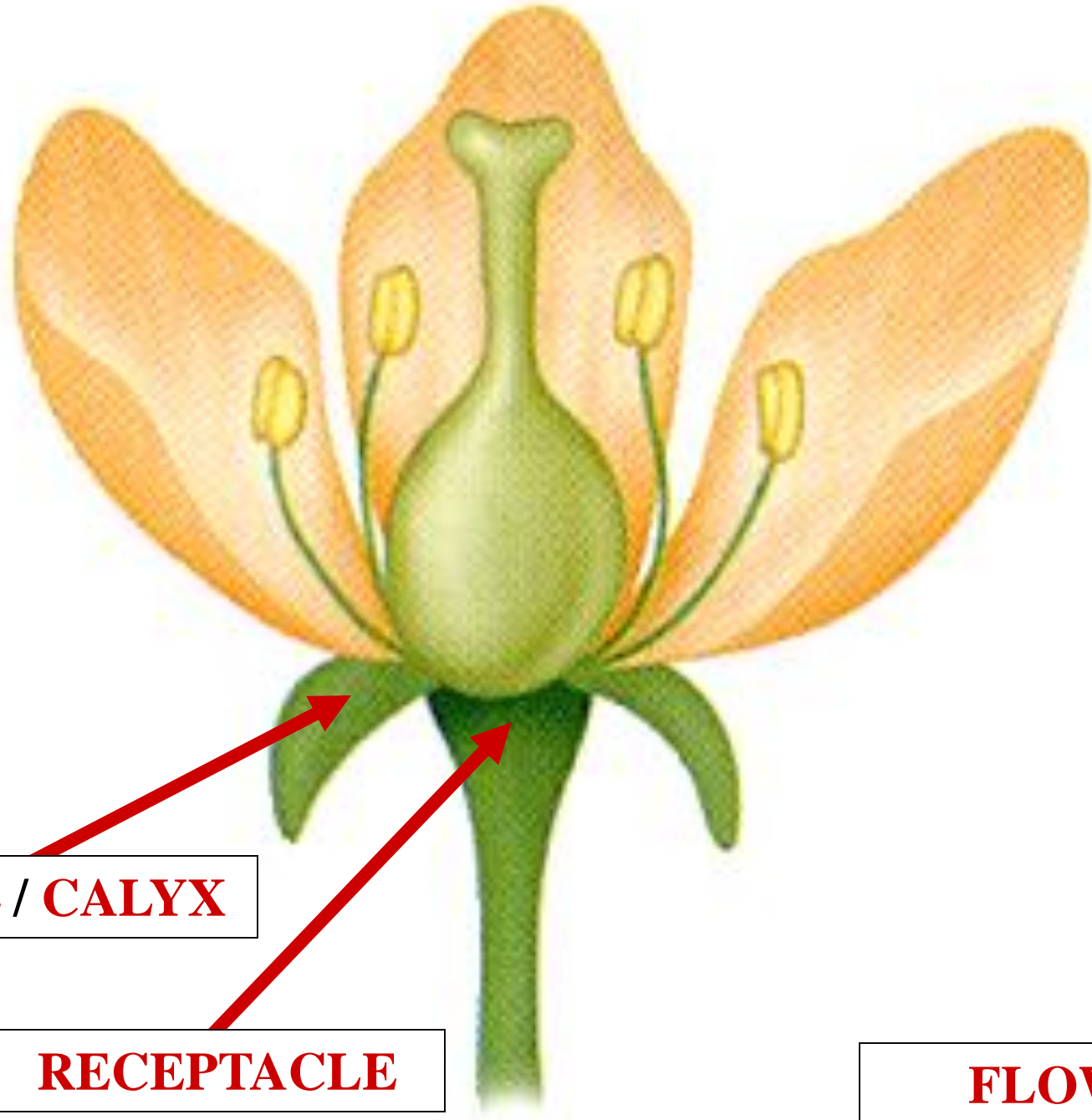
FLOWER



SEPAL / ?

RECEPTACLE

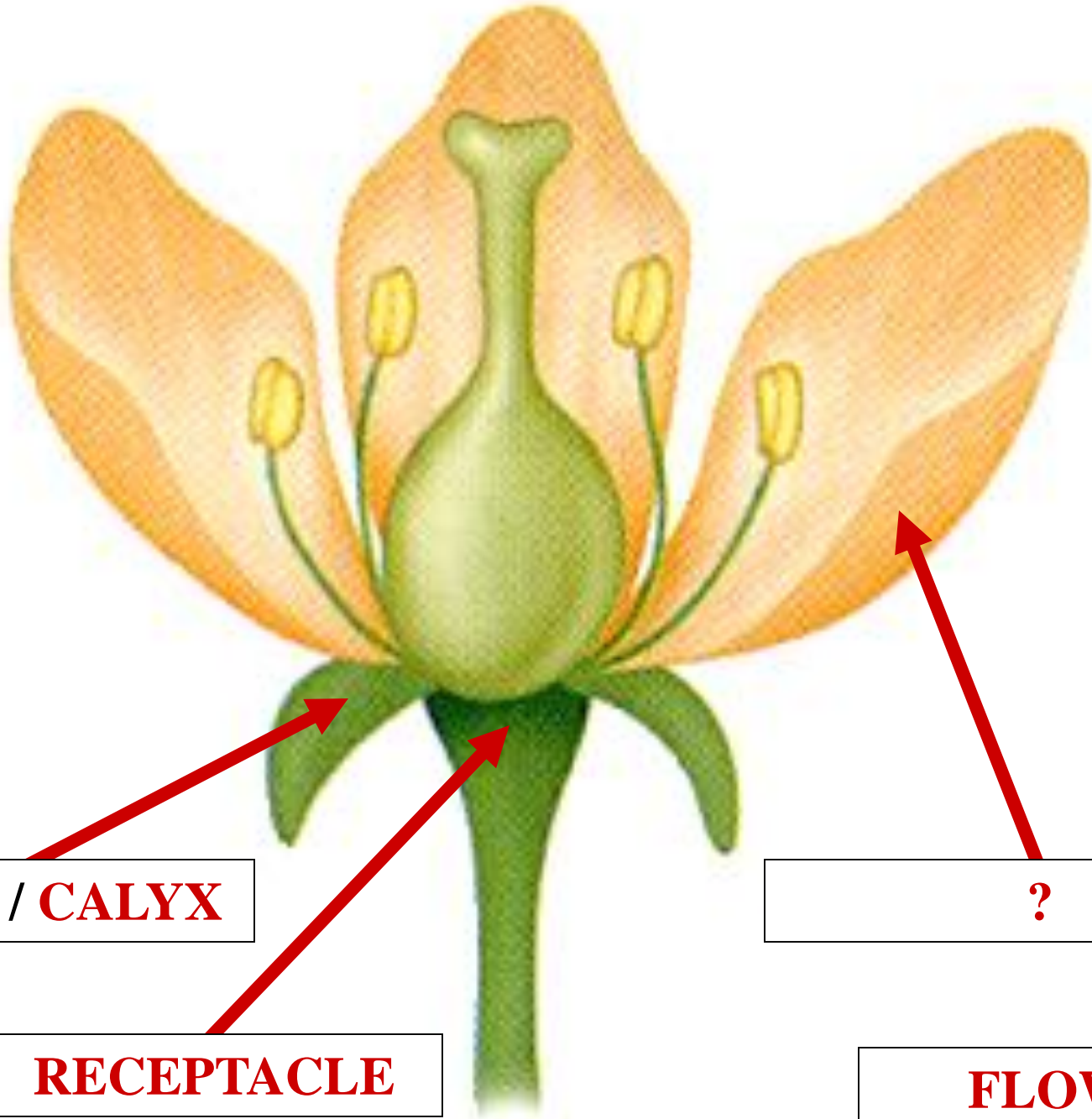
FLOWER



SEPAL / CALYX

RECEPTACLE

FLOWER

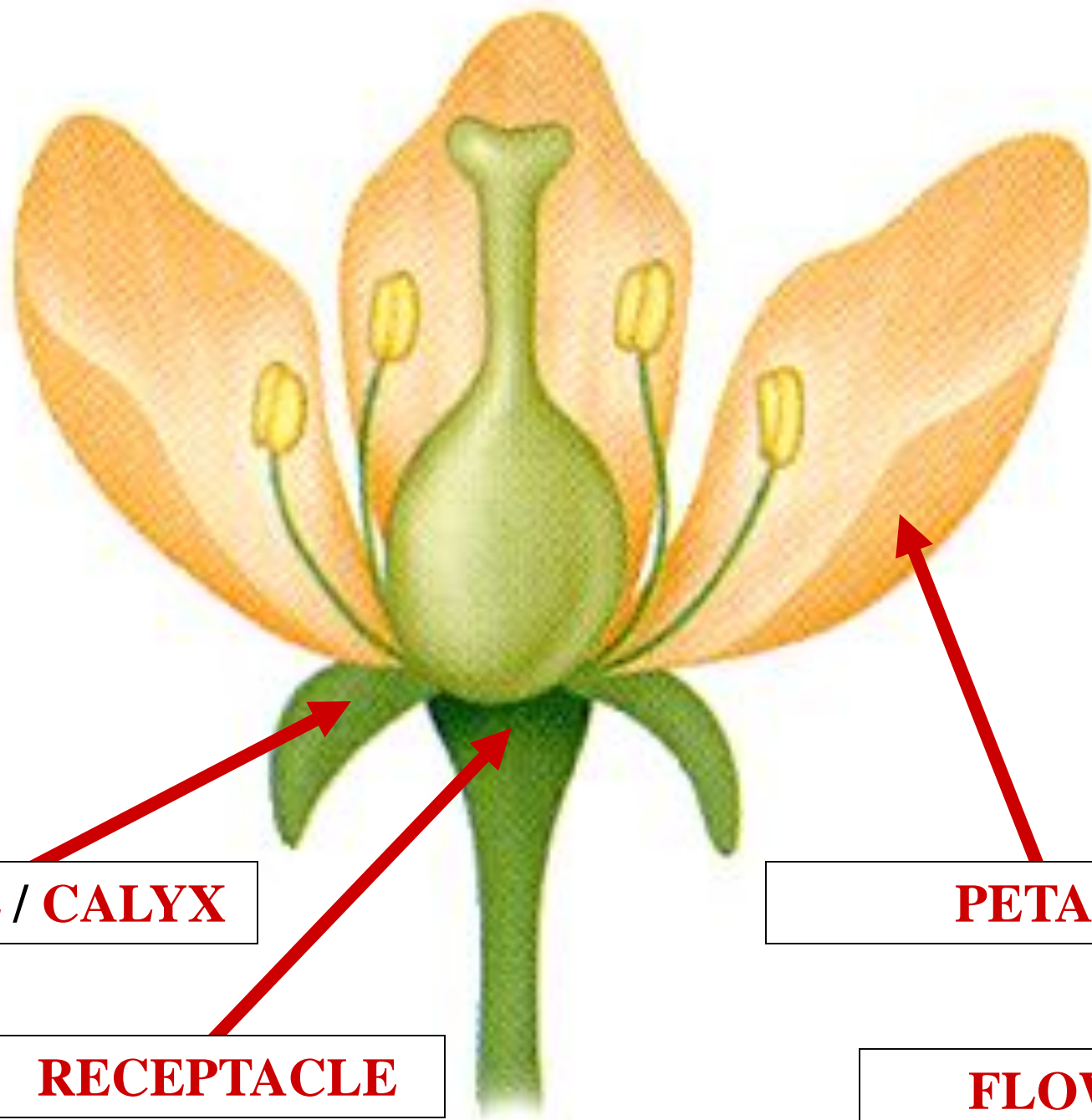


SEPAL / CALYX

RECEPTACLE

?

FLOWER

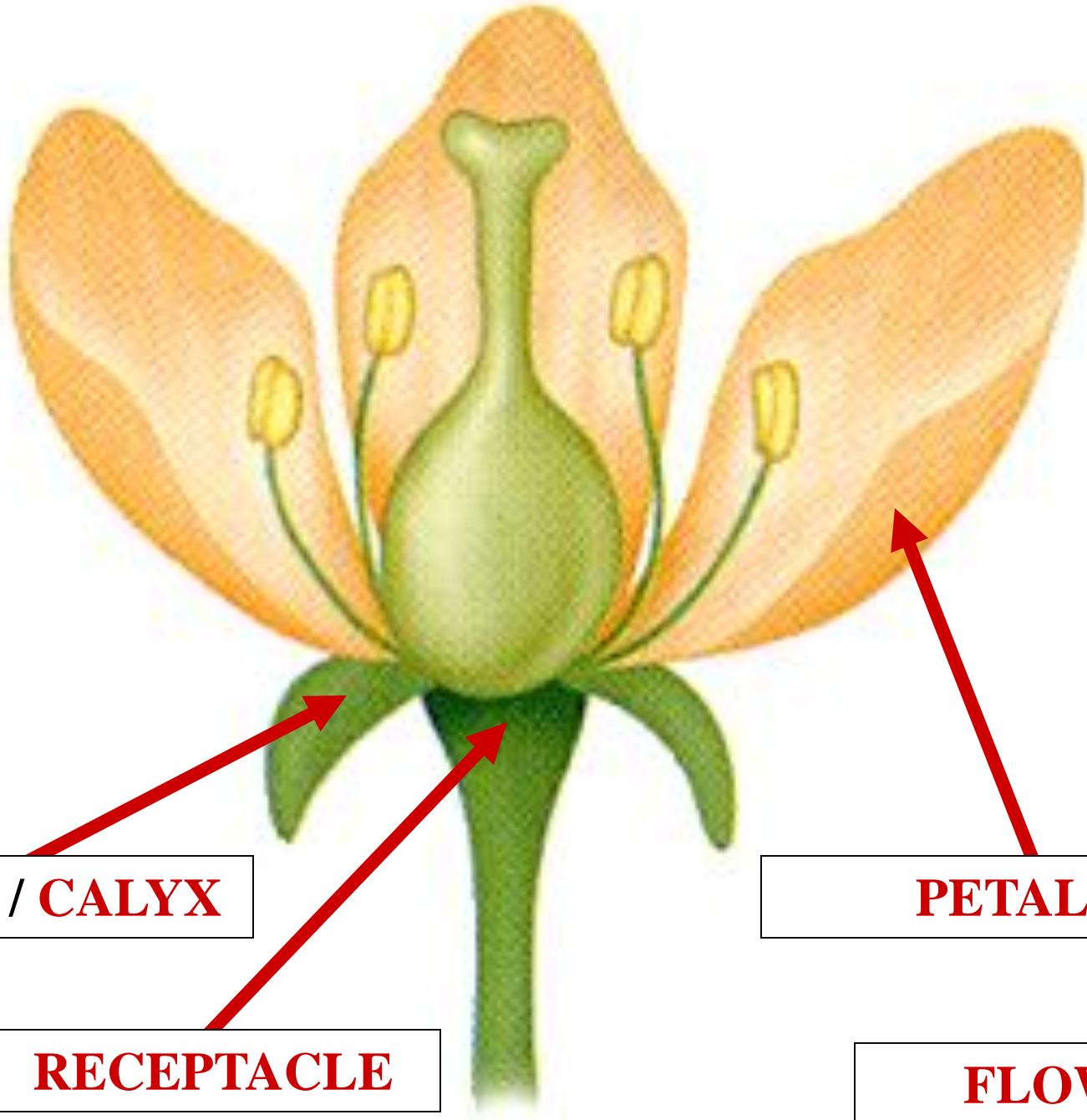


SEPAL / CALYX

PETAL

RECEPTACLE

FLOWER

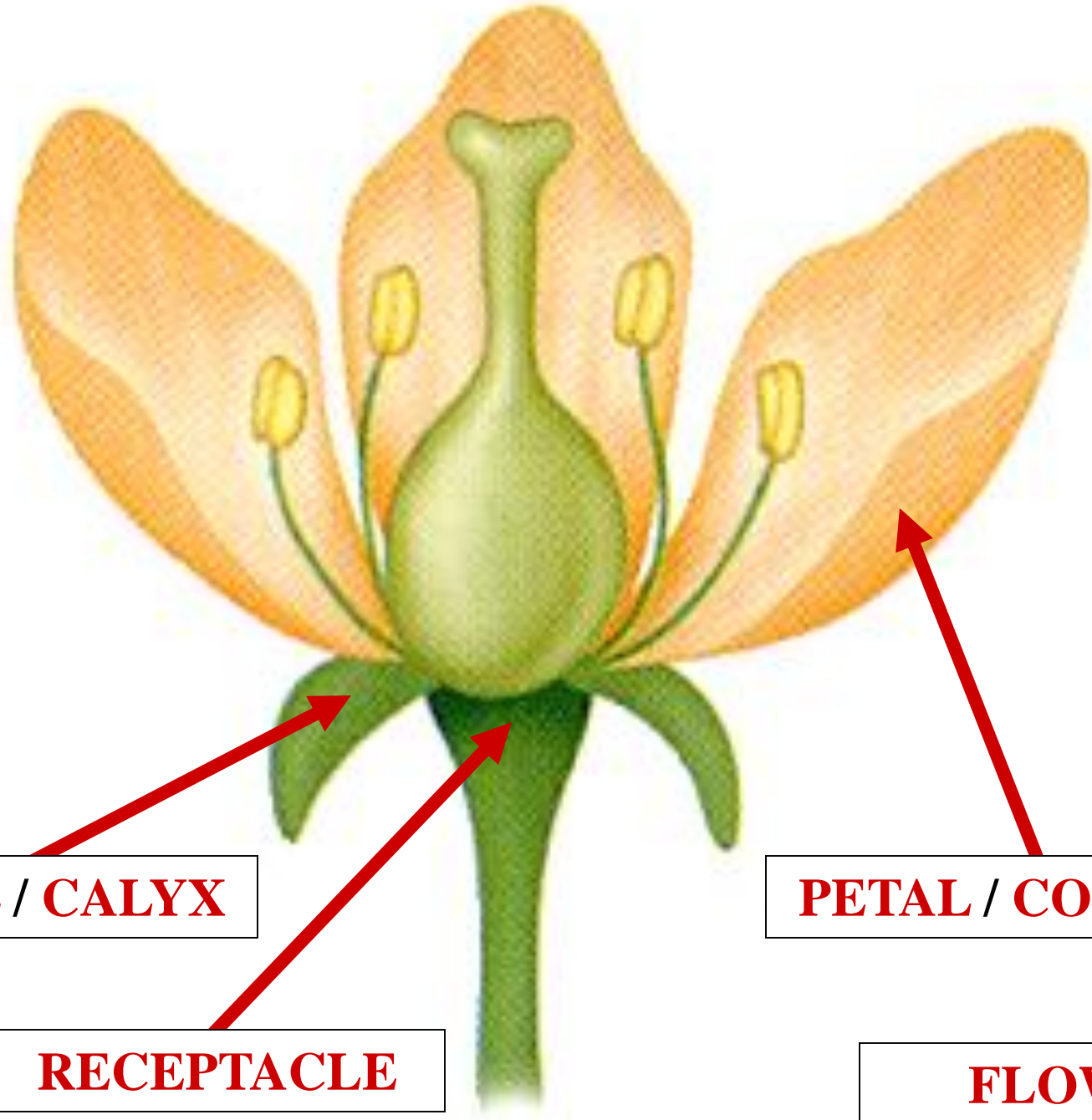


SEPAL / CALYX

RECEPTACLE

PETAL / ?

FLOWER

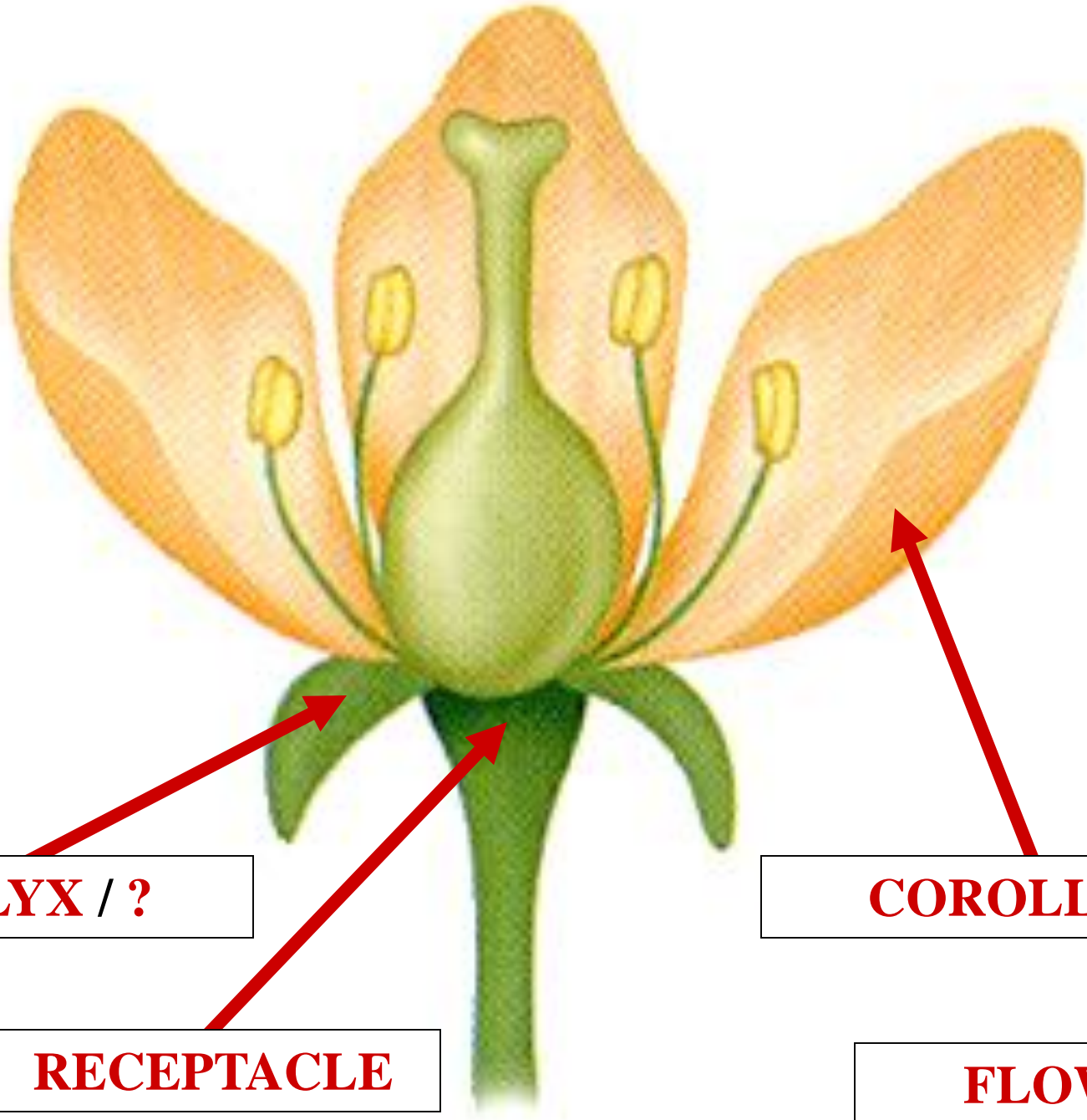


SEPAL / CALYX

RECEPTACLE

PETAL / COROLLA

FLOWER

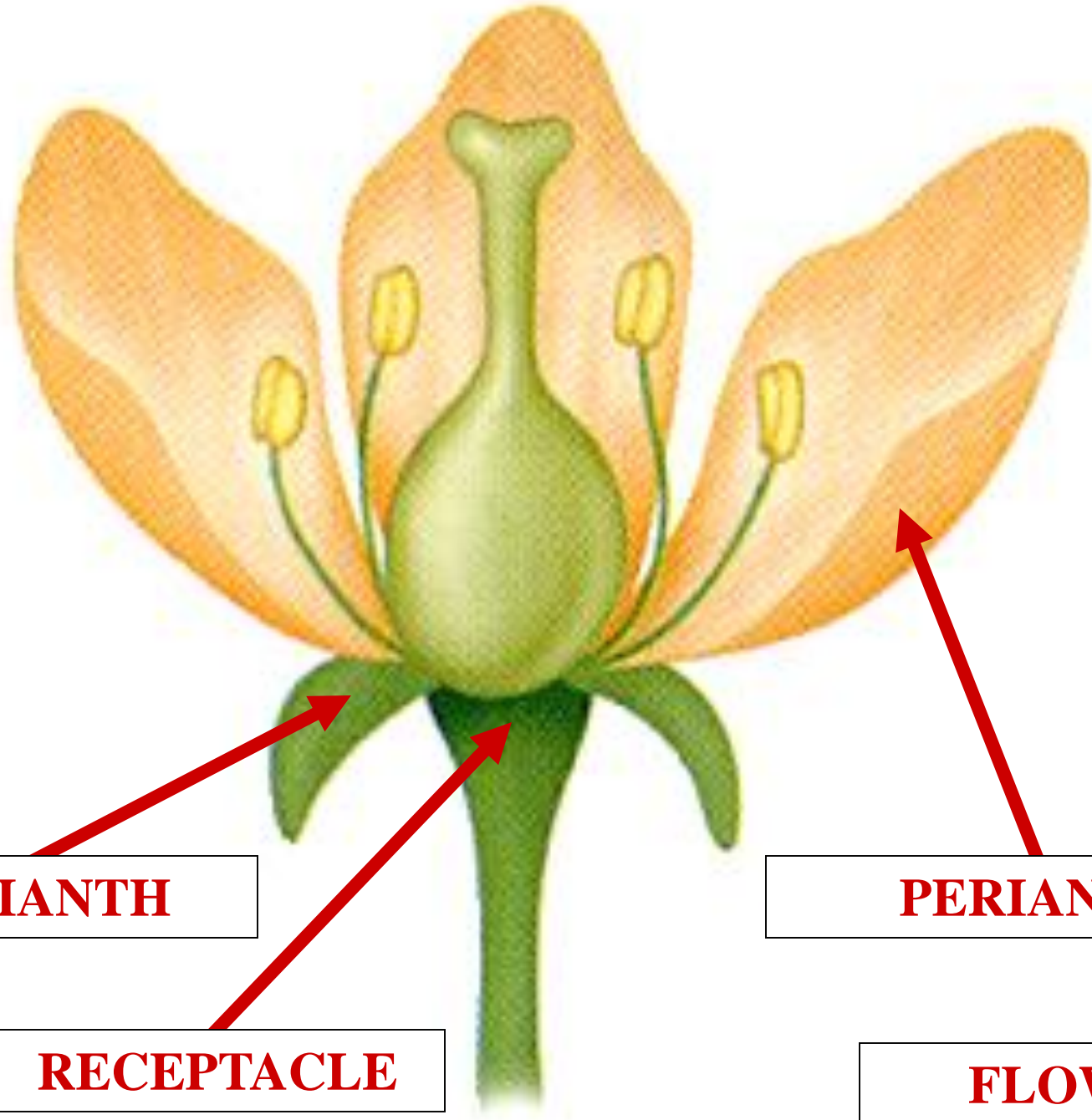


CALYX / ?

RECEPTACLE

COROLLA / ?

FLOWER

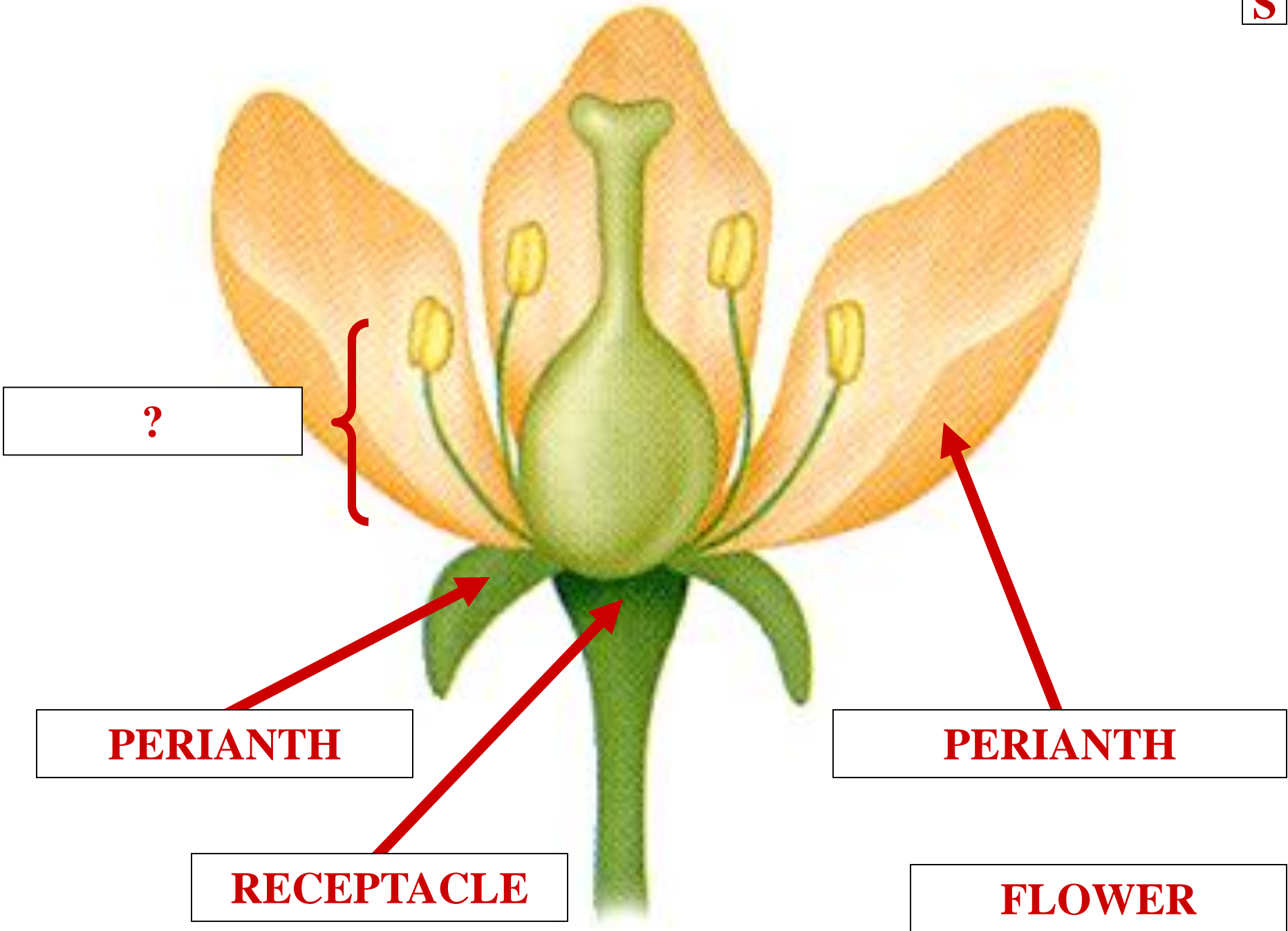


PERIANTH

RECEPTACLE

PERIANTH

FLOWER



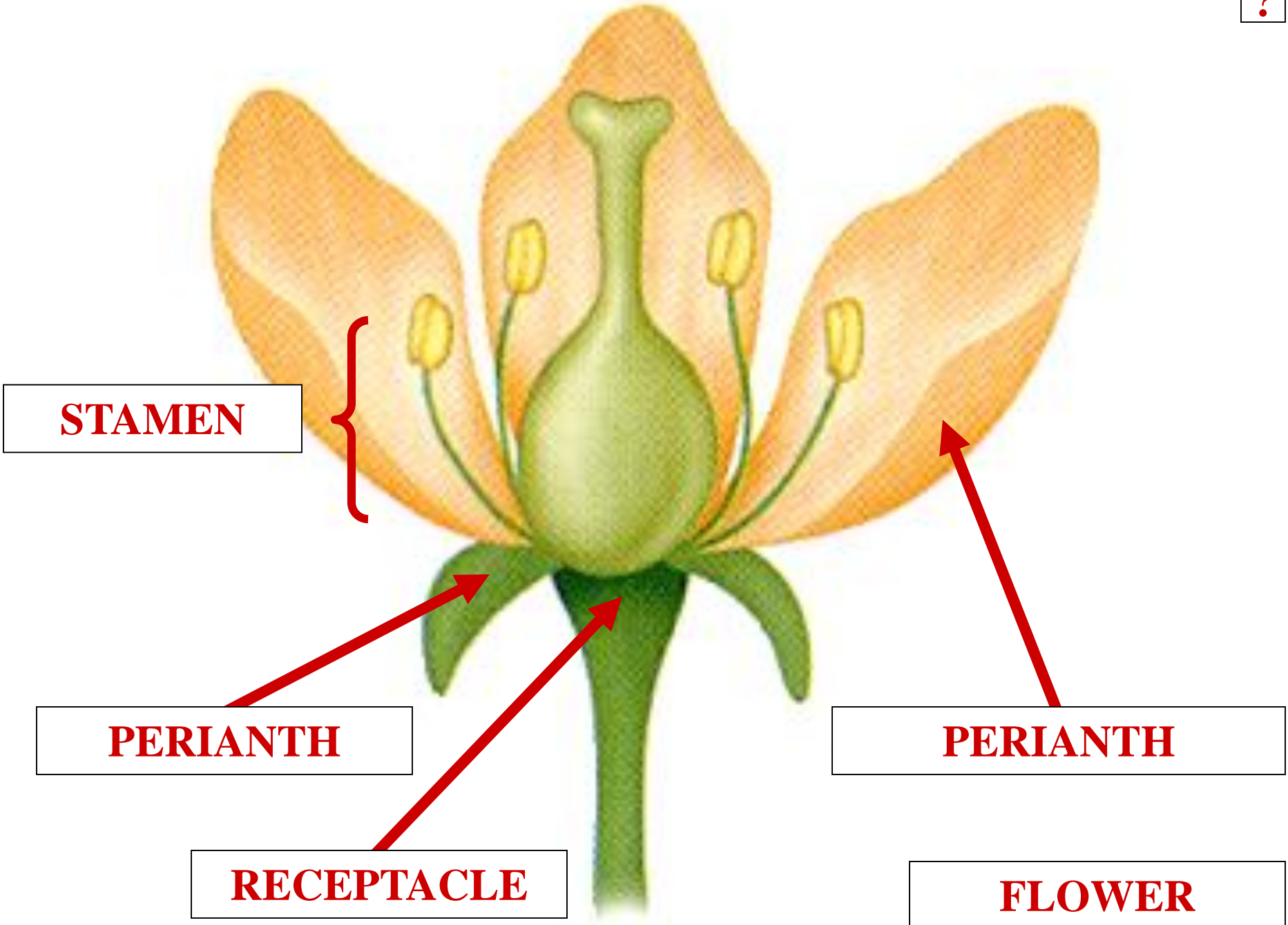
?

PERIANTH

RECEPTACLE

PERIANTH

FLOWER



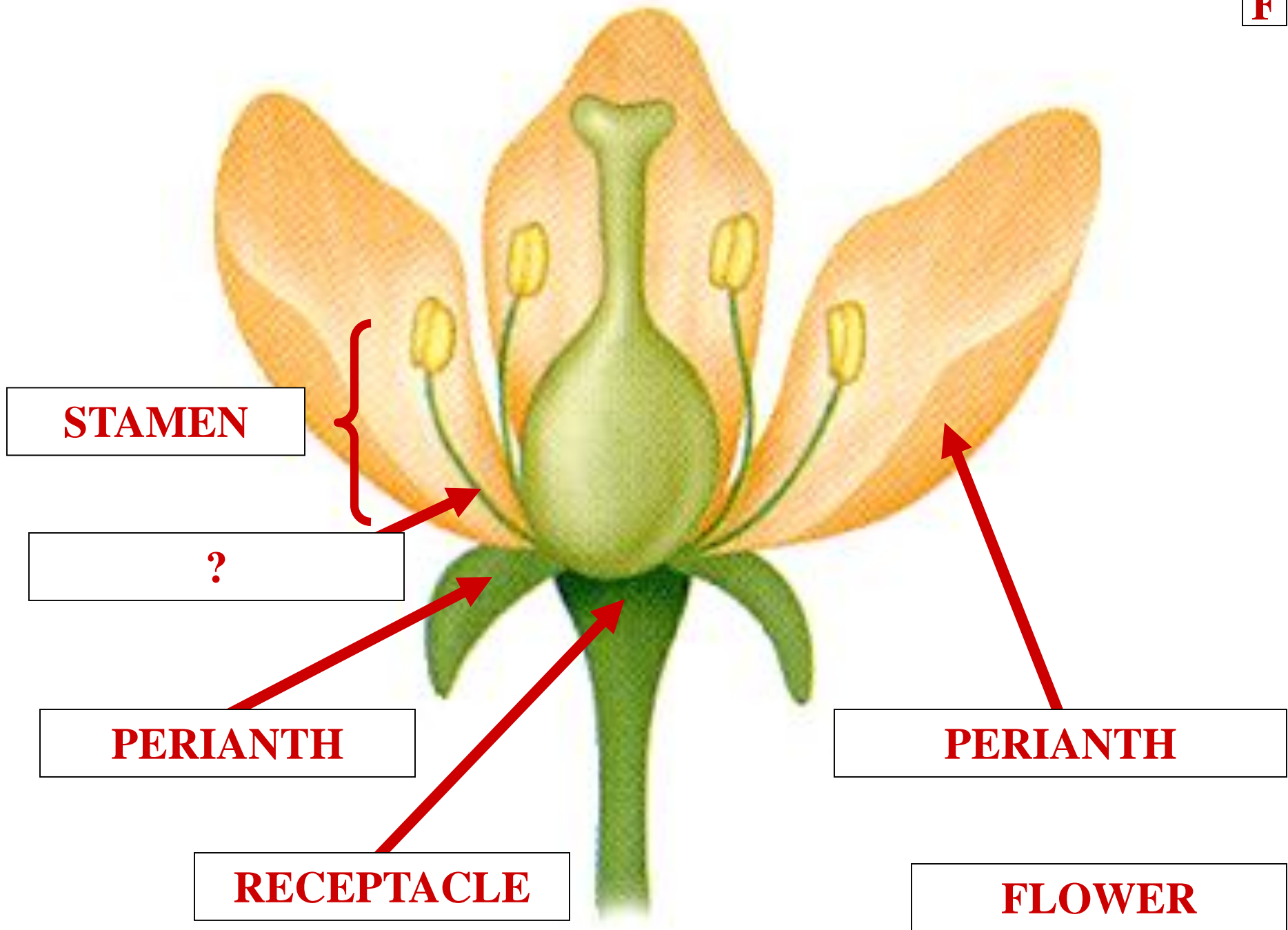
STAMEN

PERIANTH

RECEPTACLE

PERIANTH

FLOWER



STAMEN

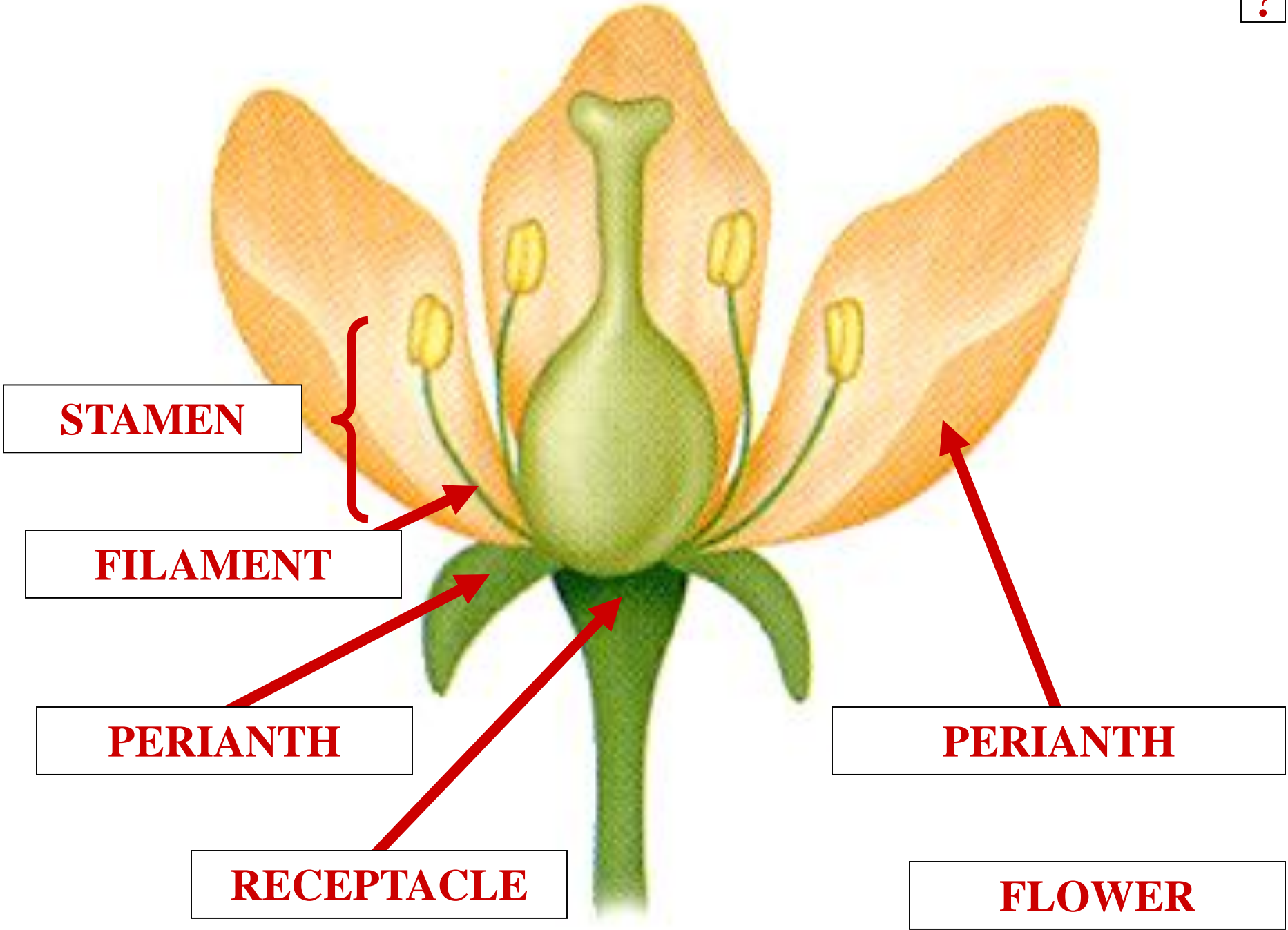
?

PERIANTH

RECEPTACLE

PERIANTH

FLOWER



STAMEN

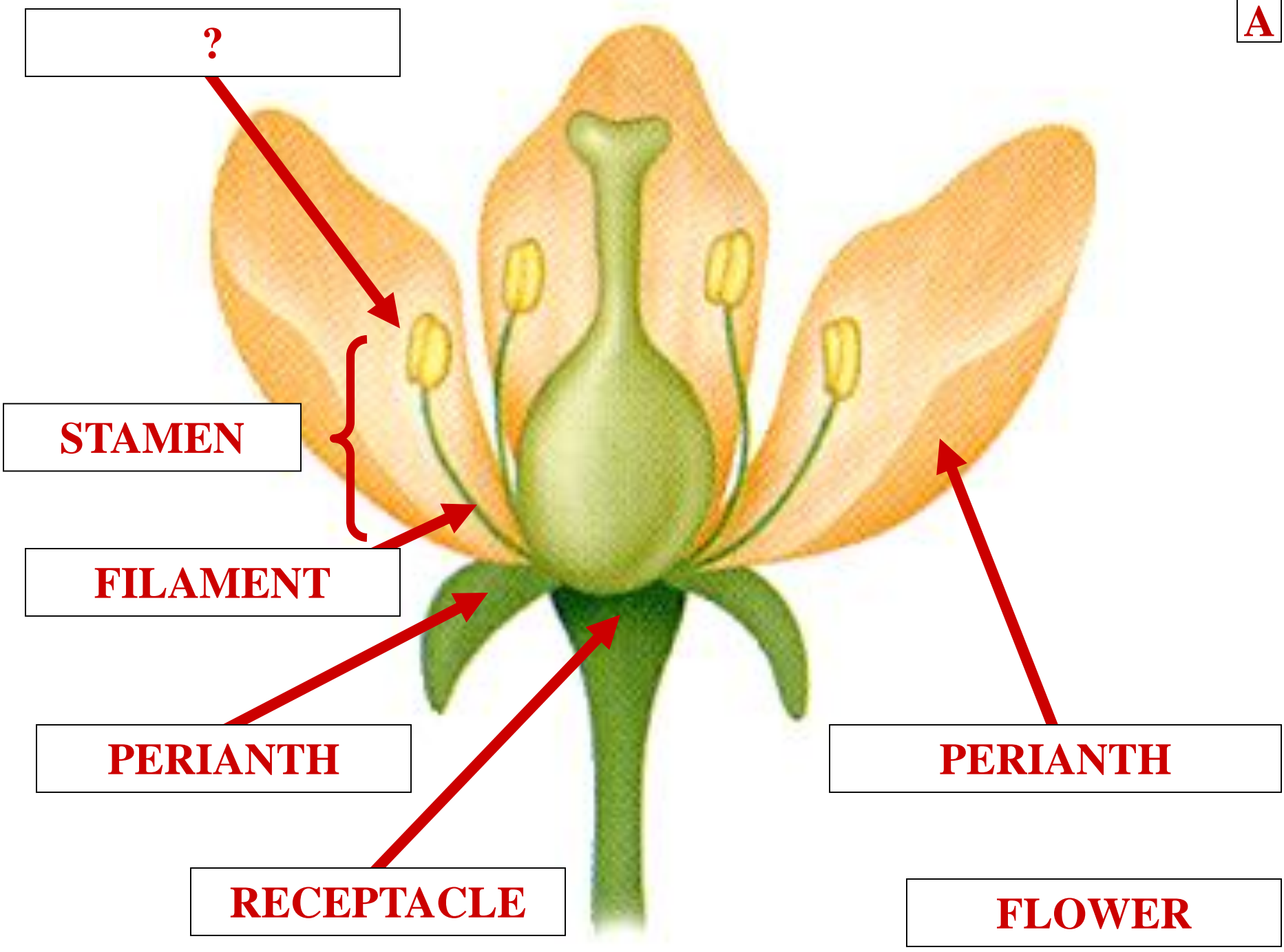
FILAMENT

PERIANTH

RECEPTACLE

PERIANTH

FLOWER



?

STAMEN

FILAMENT

PERIANTH

RECEPTACLE

PERIANTH

FLOWER

ANTHER

?

STAMEN

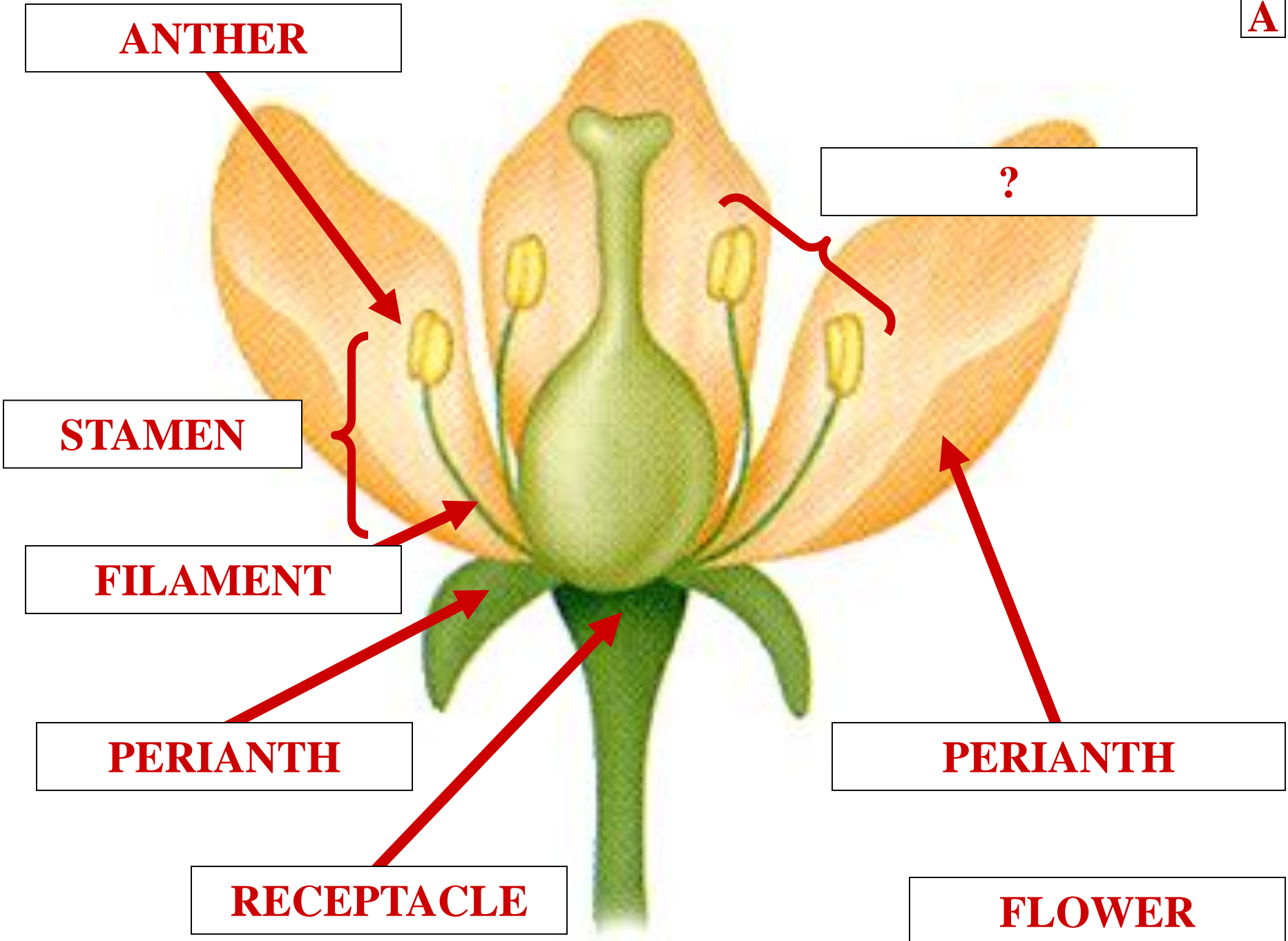
FILAMENT

PERIANTH

RECEPTACLE

PERIANTH

FLOWER



ANTHER

ANDROECIUM

STAMEN

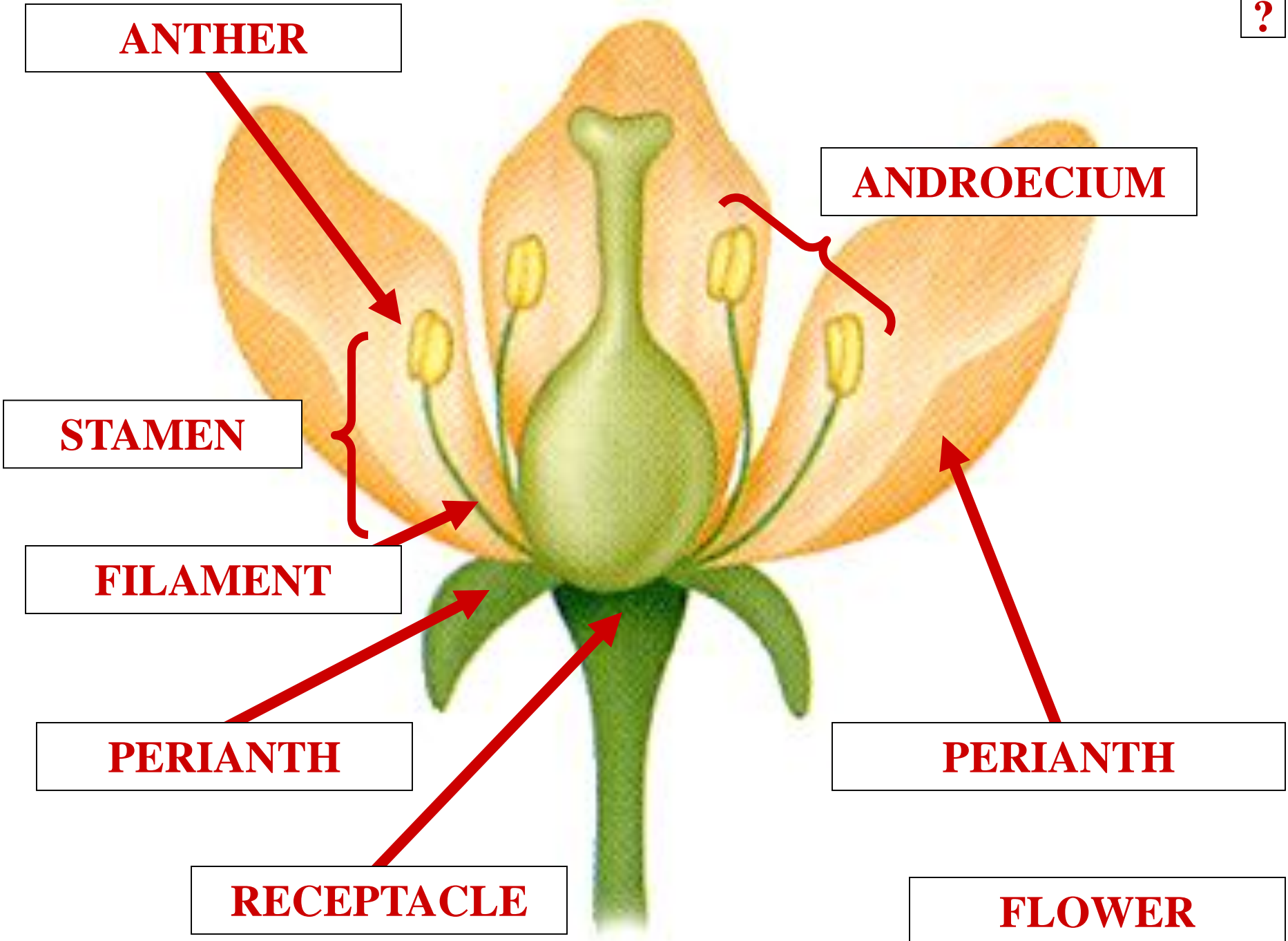
FILAMENT

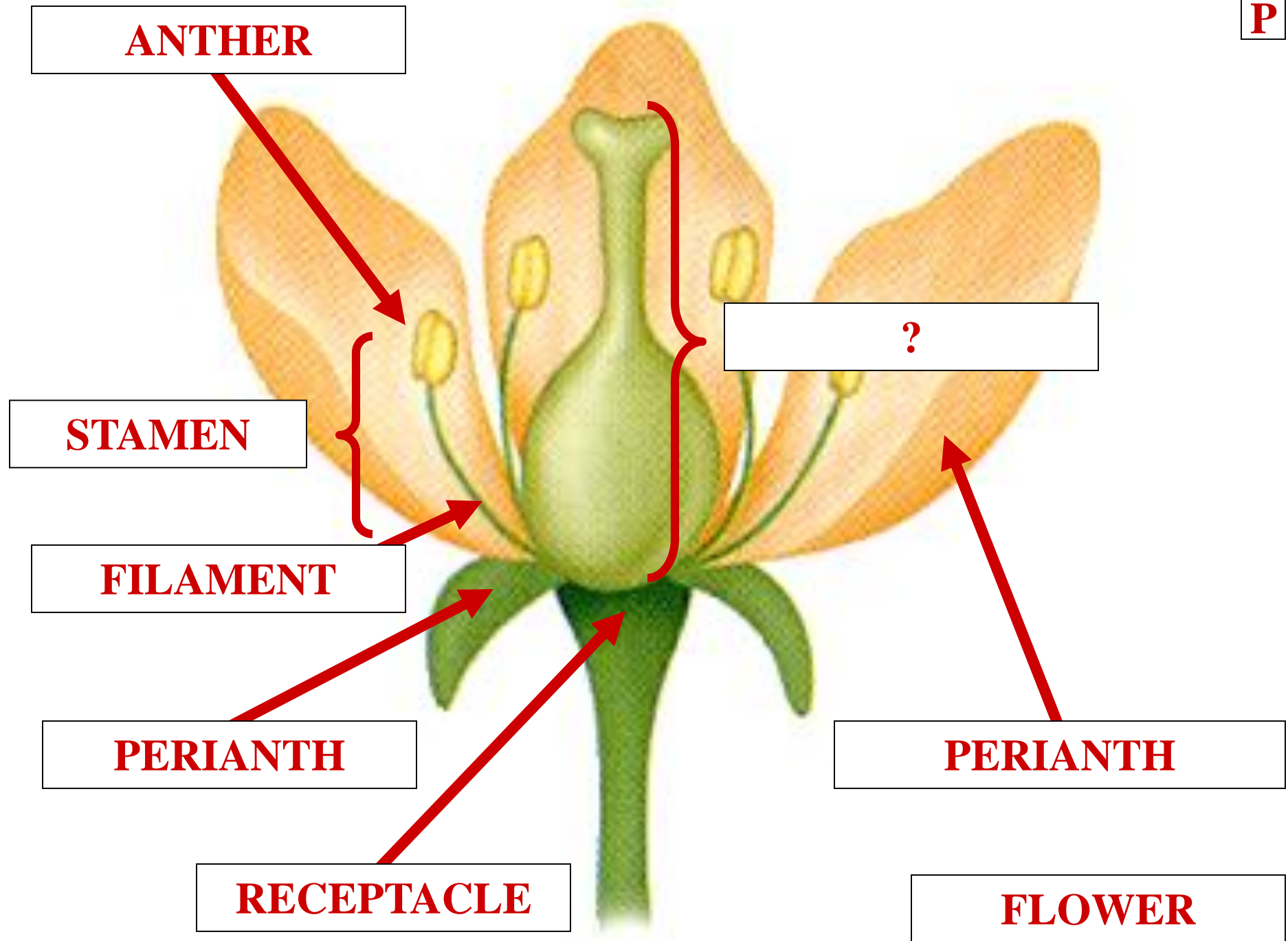
PERIANTH

RECEPTACLE

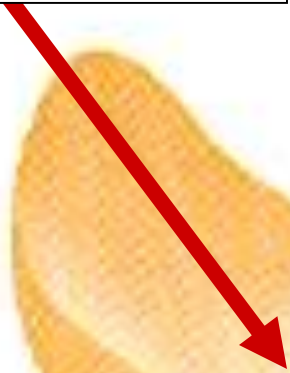
PERIANTH

FLOWER





ANTHER



STAMEN



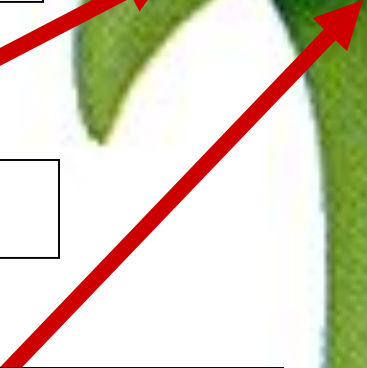
FILAMENT



PERIANTH



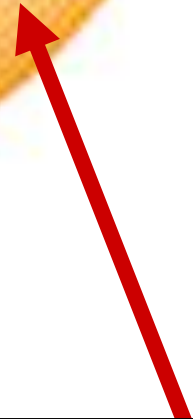
RECEPTACLE



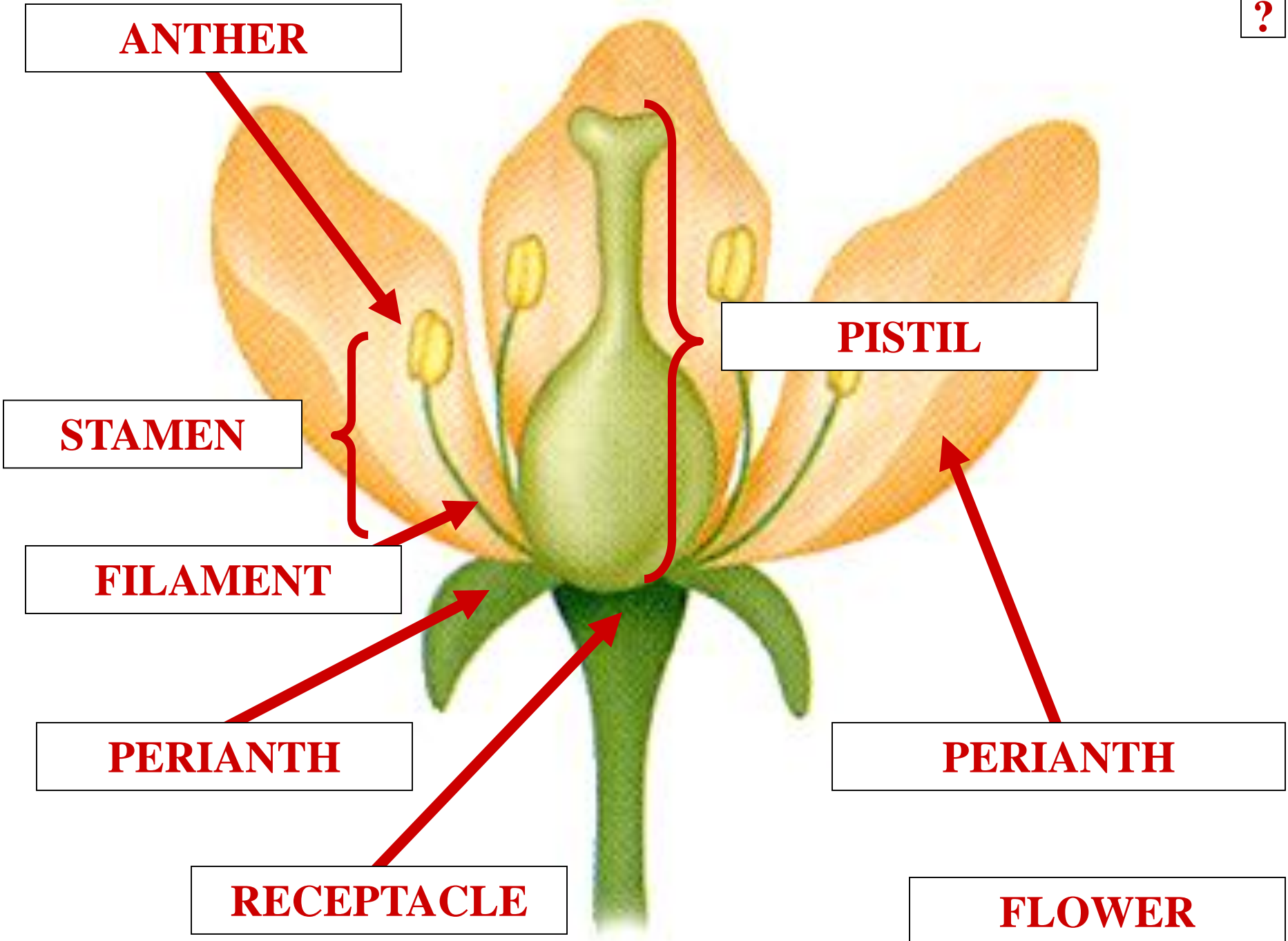
PISTIL



PERIANTH



FLOWER



ANTHER

?

STAMEN

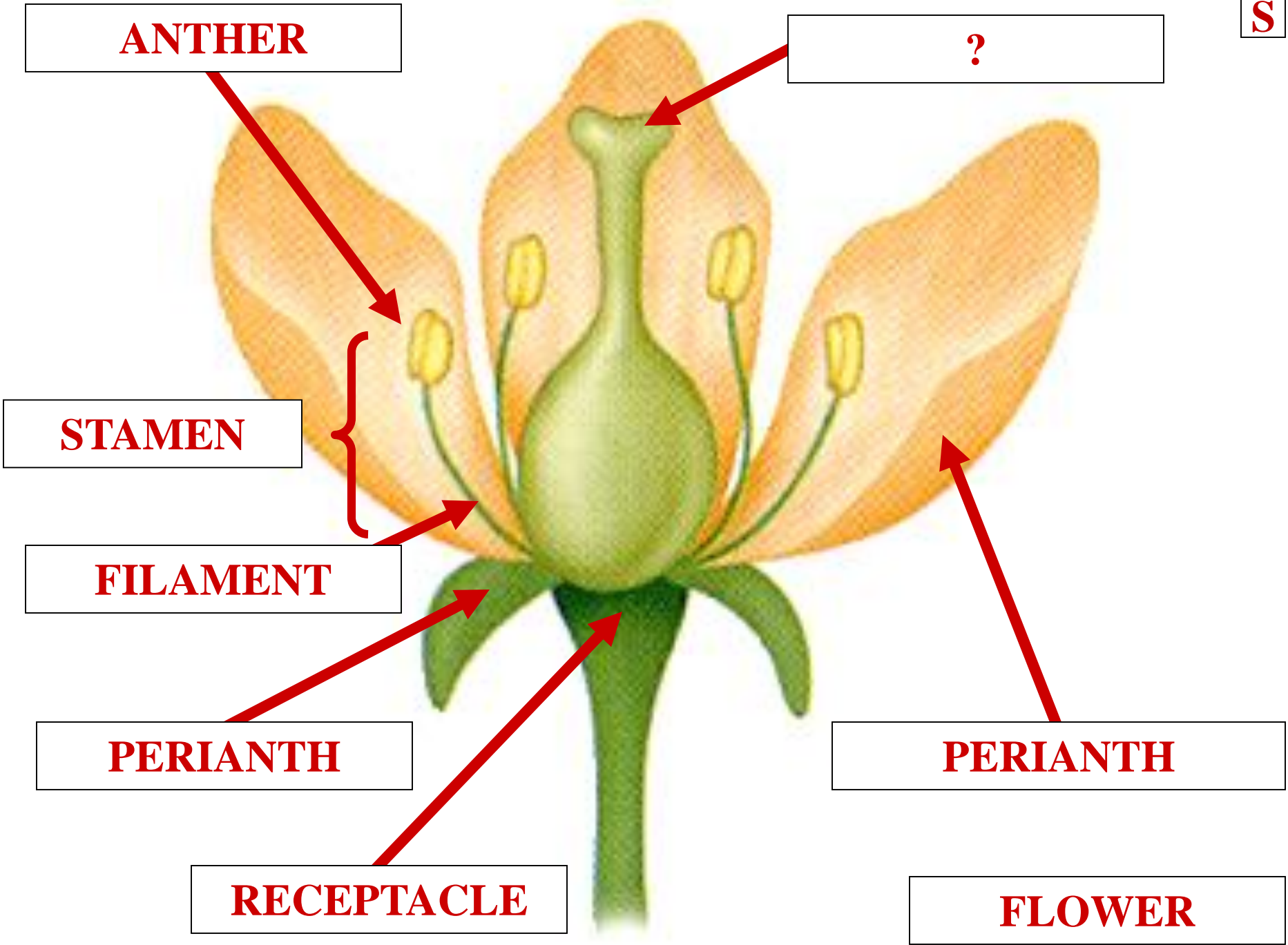
FILAMENT

PERIANTH

RECEPTACLE

PERIANTH

FLOWER



?

ANTHER

STIGMA

STAMEN

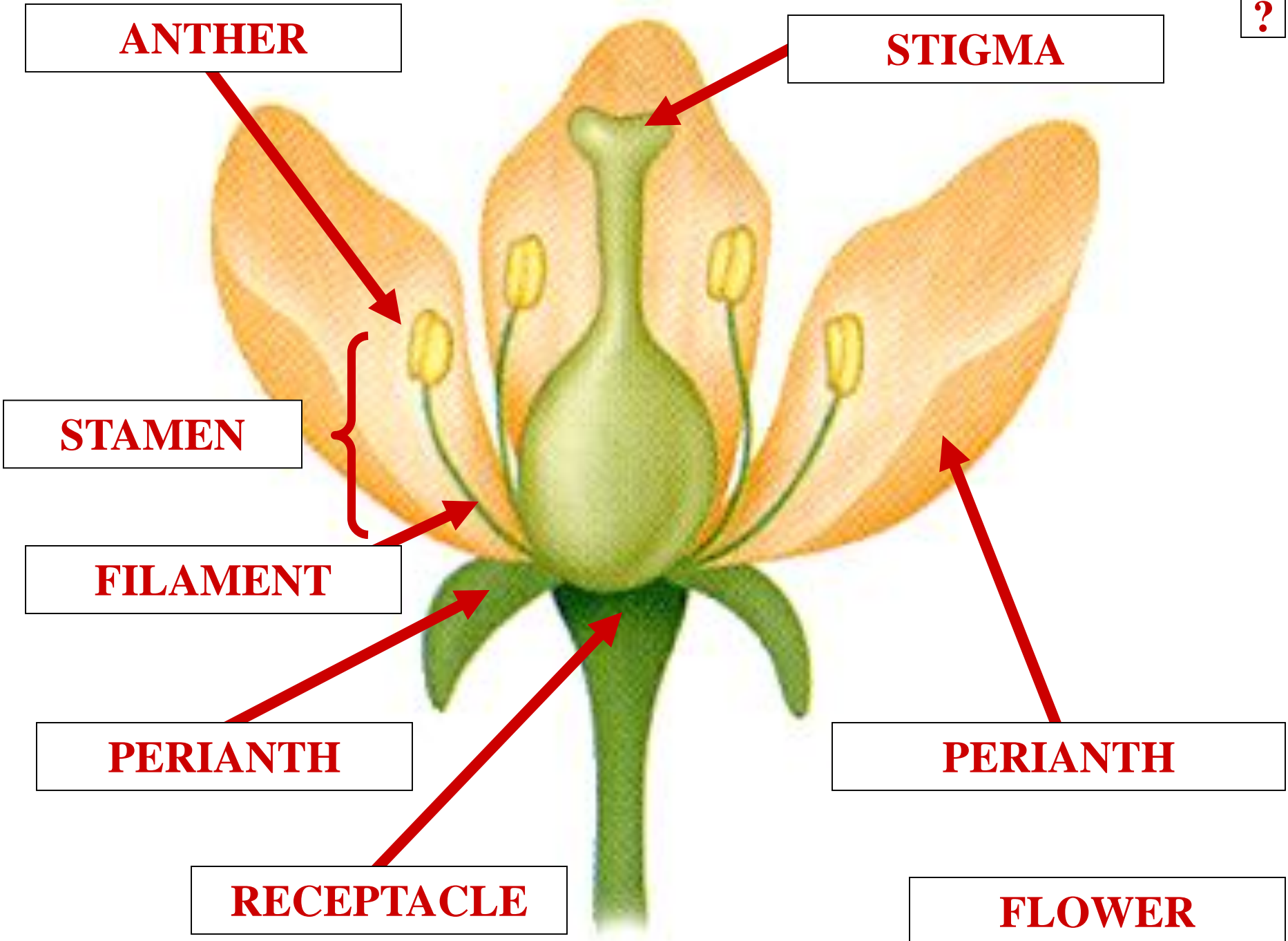
FILAMENT

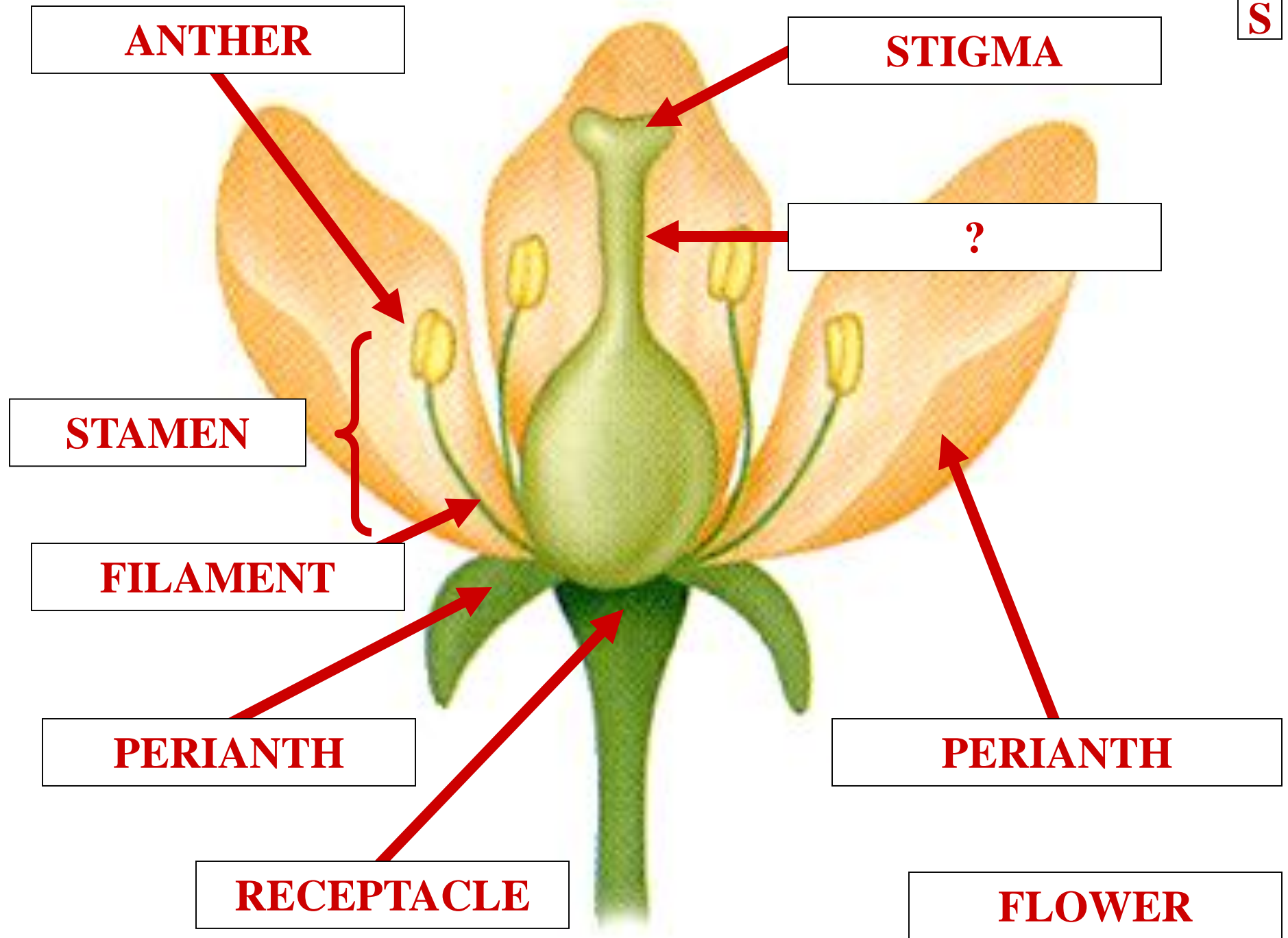
PERIANTH

RECEPTACLE

PERIANTH

FLOWER





?

ANTHER

STIGMA

STYLE

STAMEN

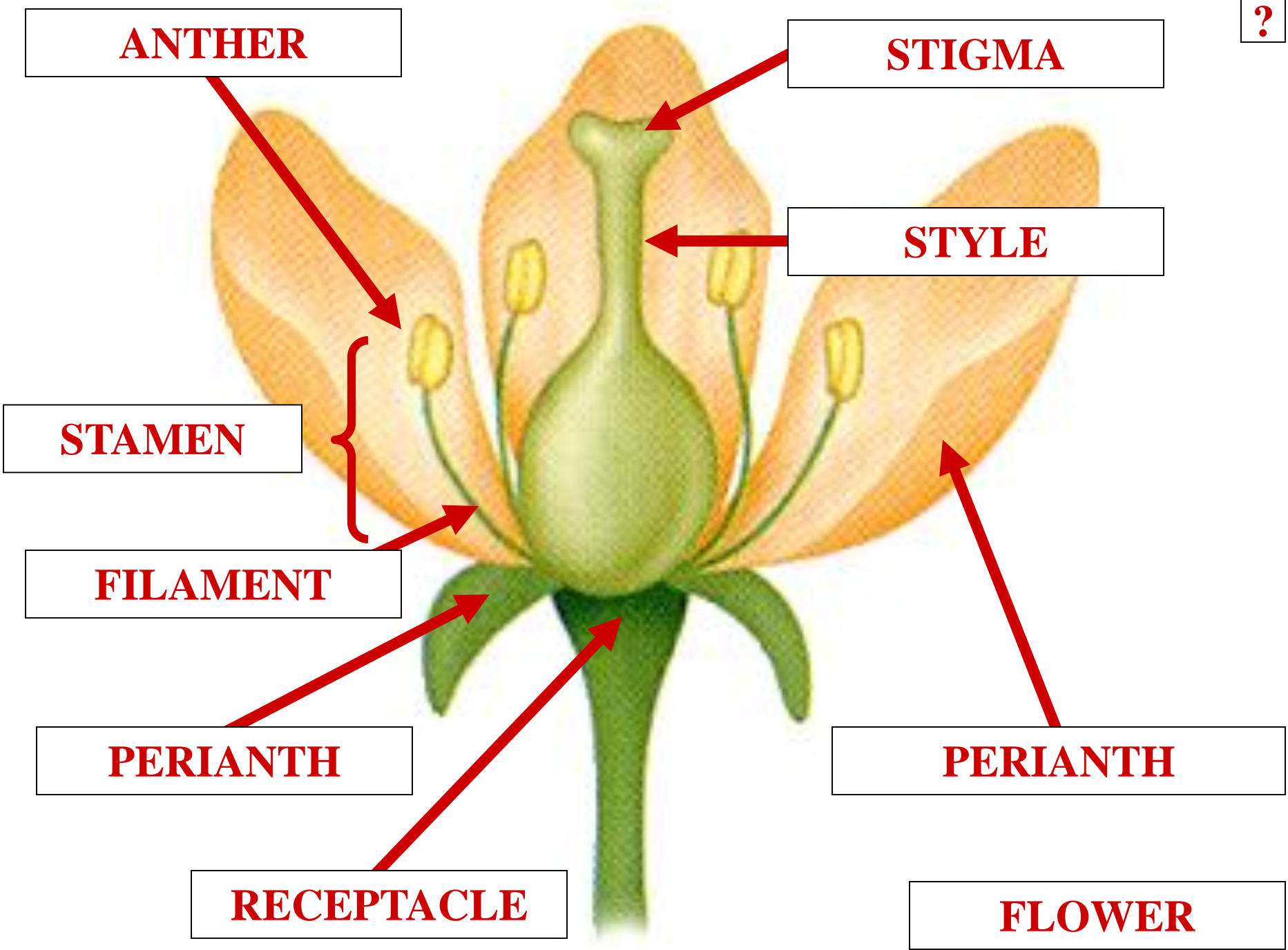
FILAMENT

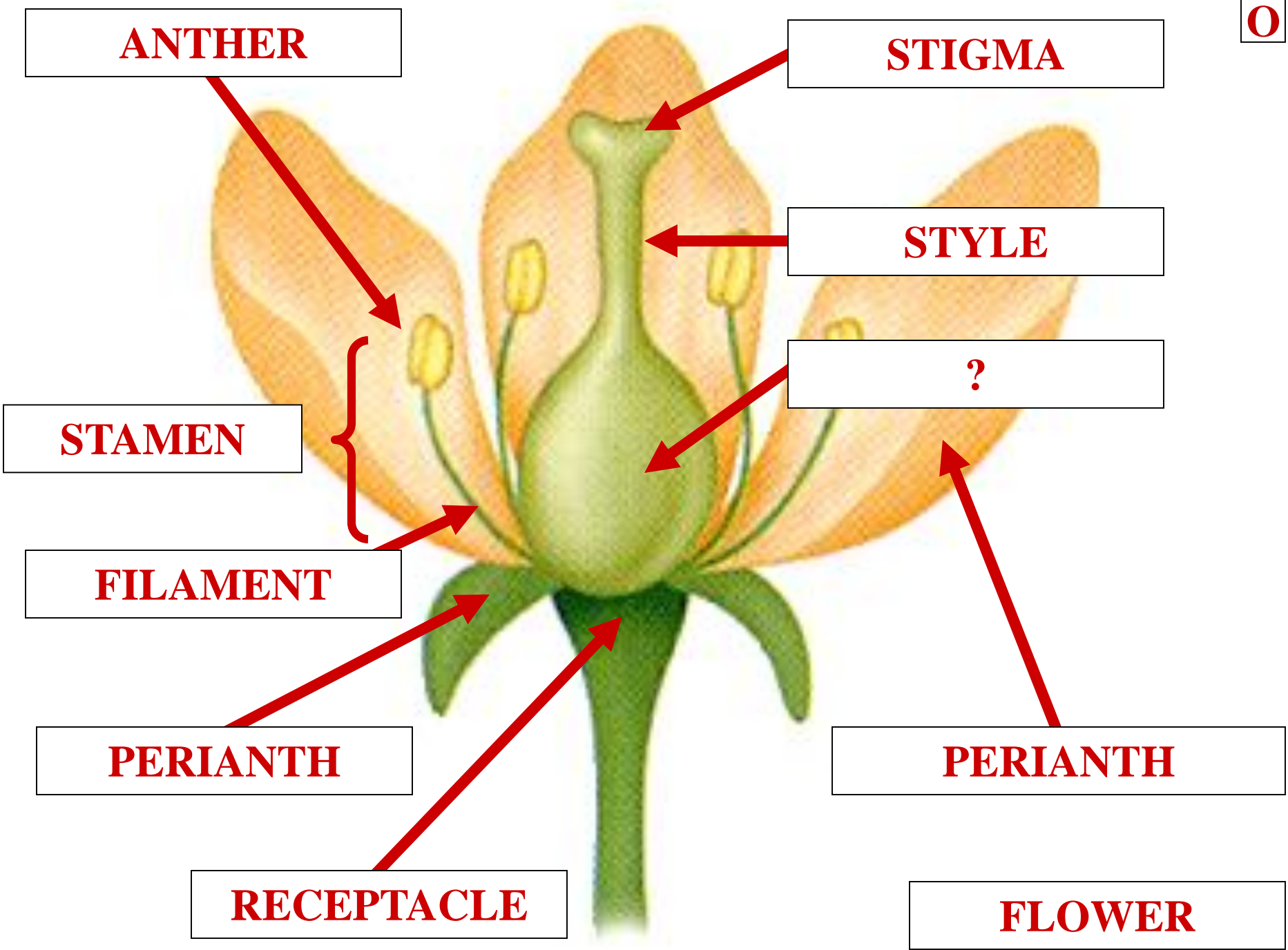
PERIANTH

RECEPTACLE

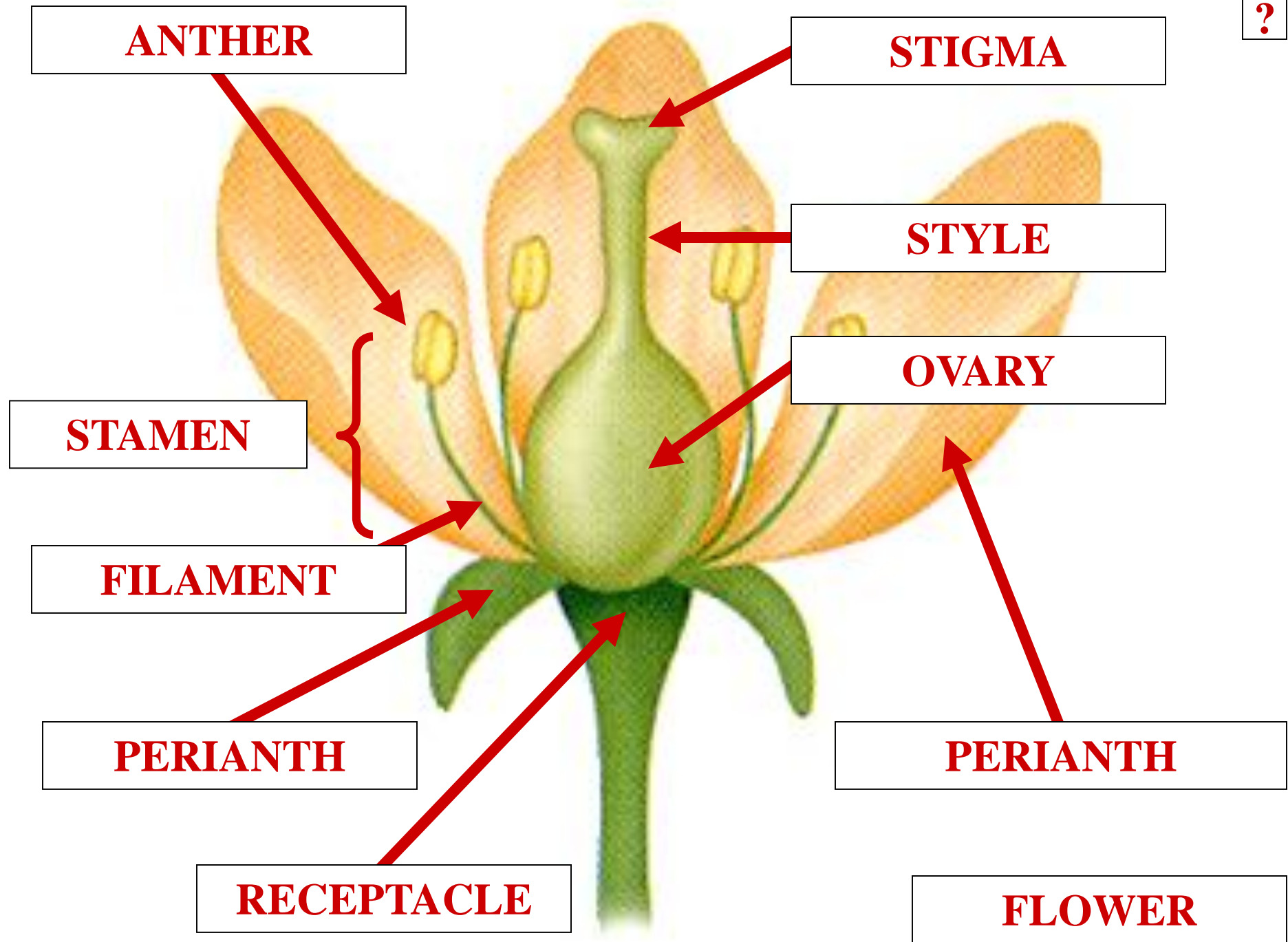
PERIANTH

FLOWER

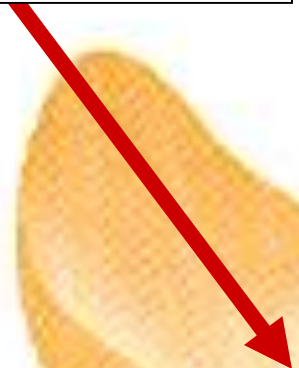




?



ANTHER



STAMEN



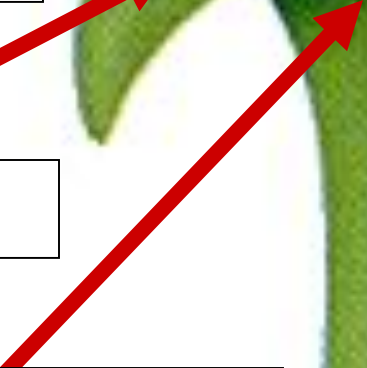
FILAMENT



PERIANTH



RECEPTACLE



?



PERIANTH

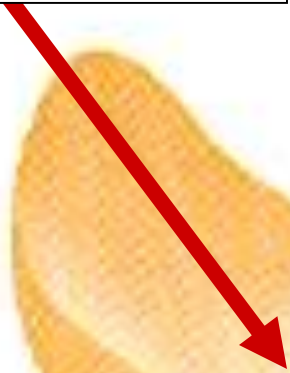


FLOWER





ANTHER



GYNOECIUM



STAMEN



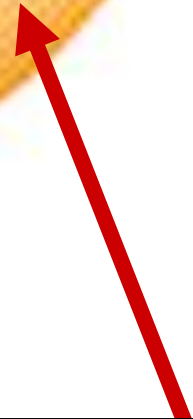
FILAMENT



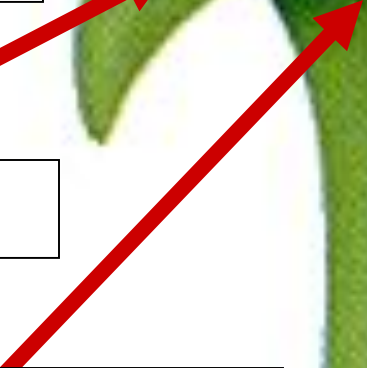
PERIANTH



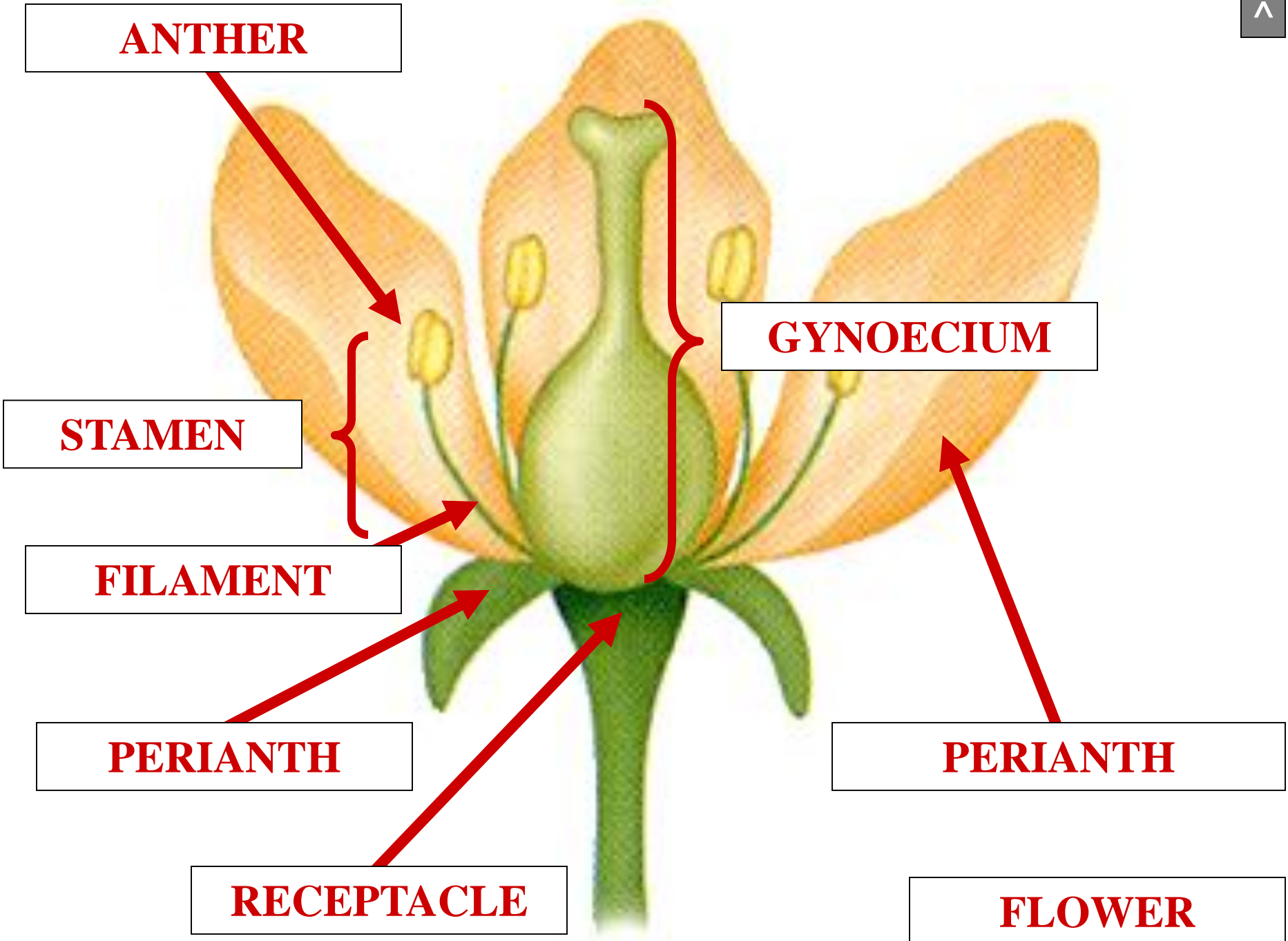
PERIANTH



RECEPTACLE

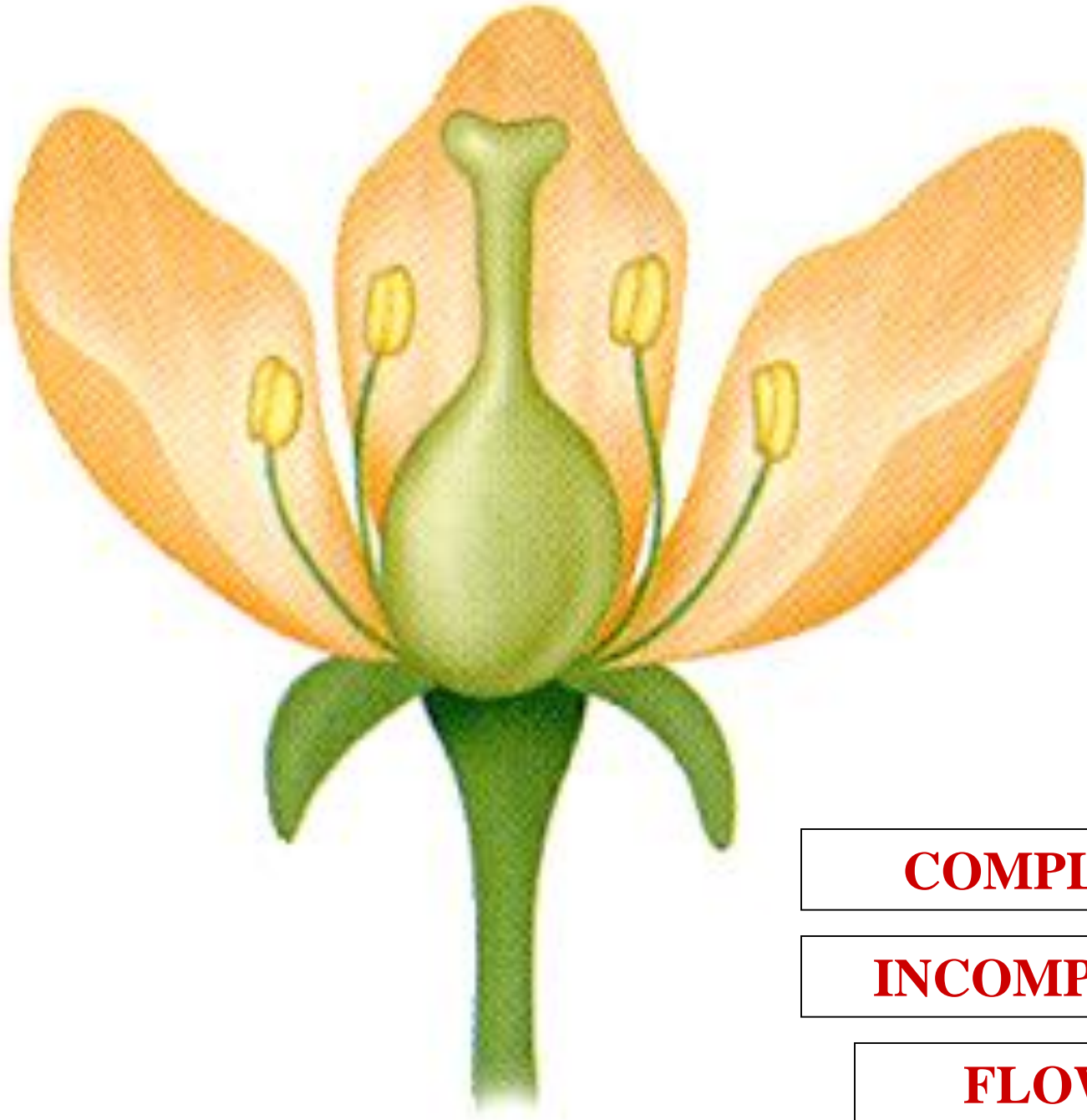


FLOWER





GENERAL FLOWER TERMS REVIEW



COMPLETE

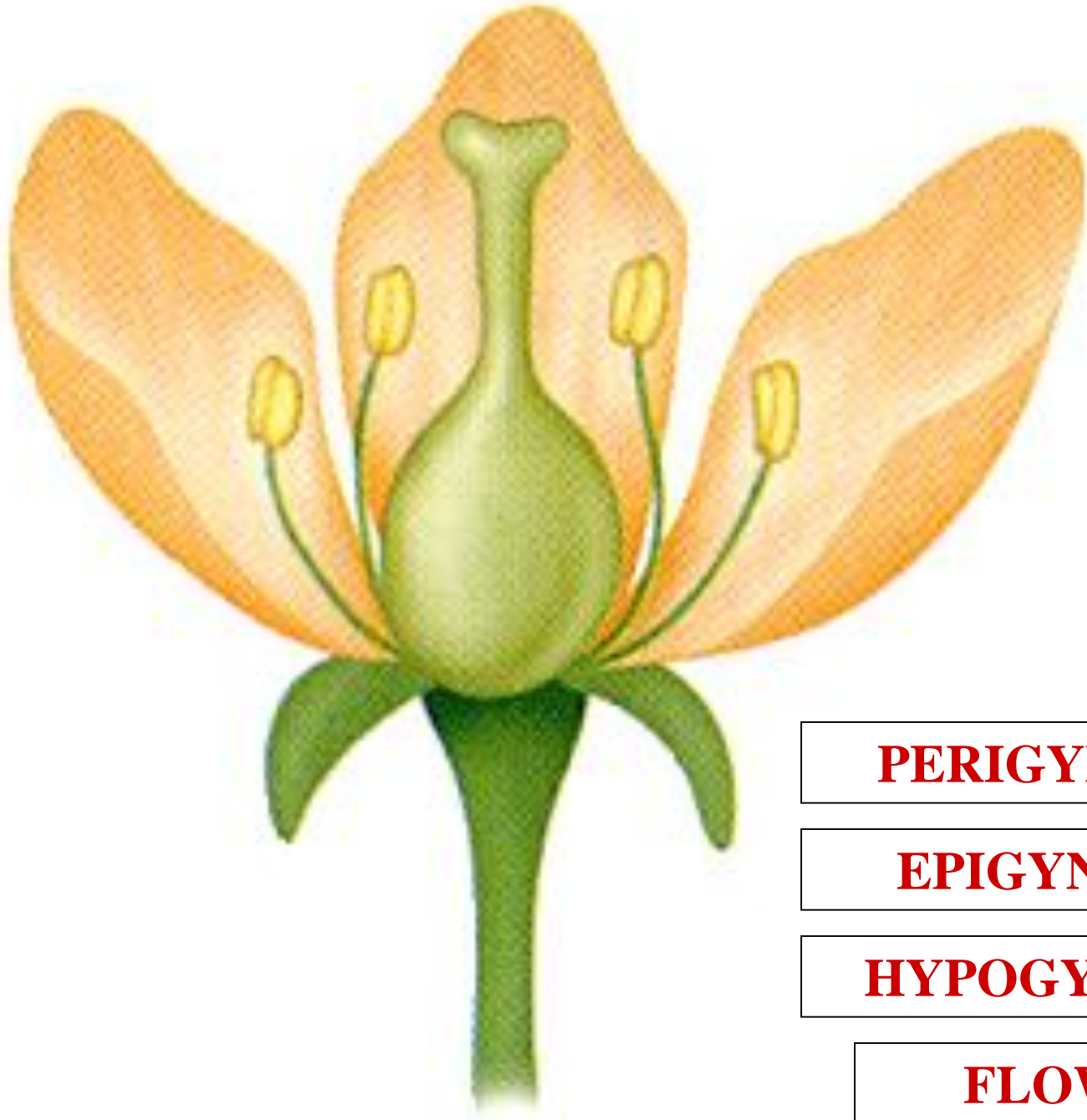
INCOMPLETE

FLOWER



COMPLETE

FLOWER



PERIGYNOUS

EPIGYNOUS

HYPOGYNOUS

FLOWER



HYPOGYNOUS

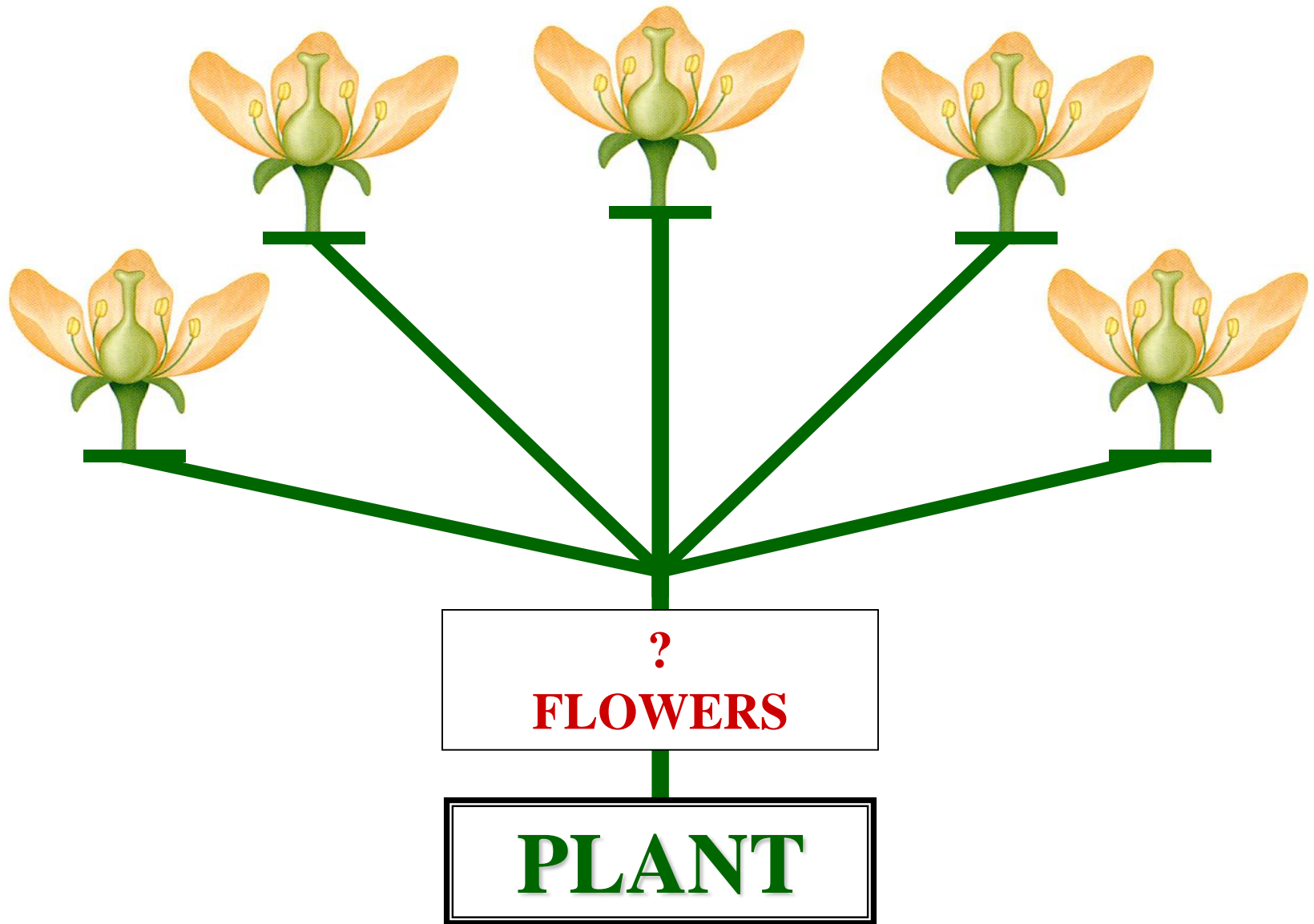
FLOWER

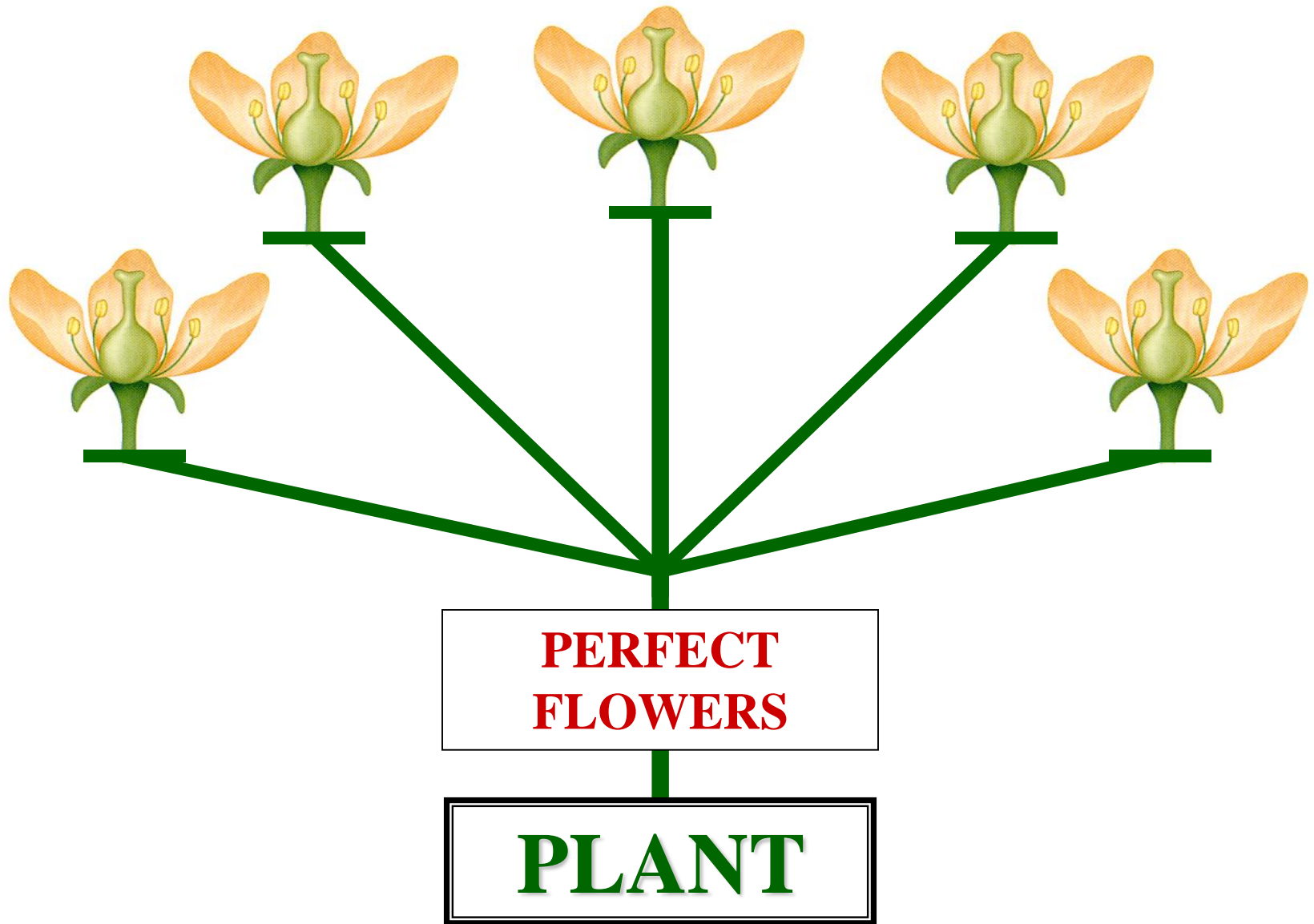


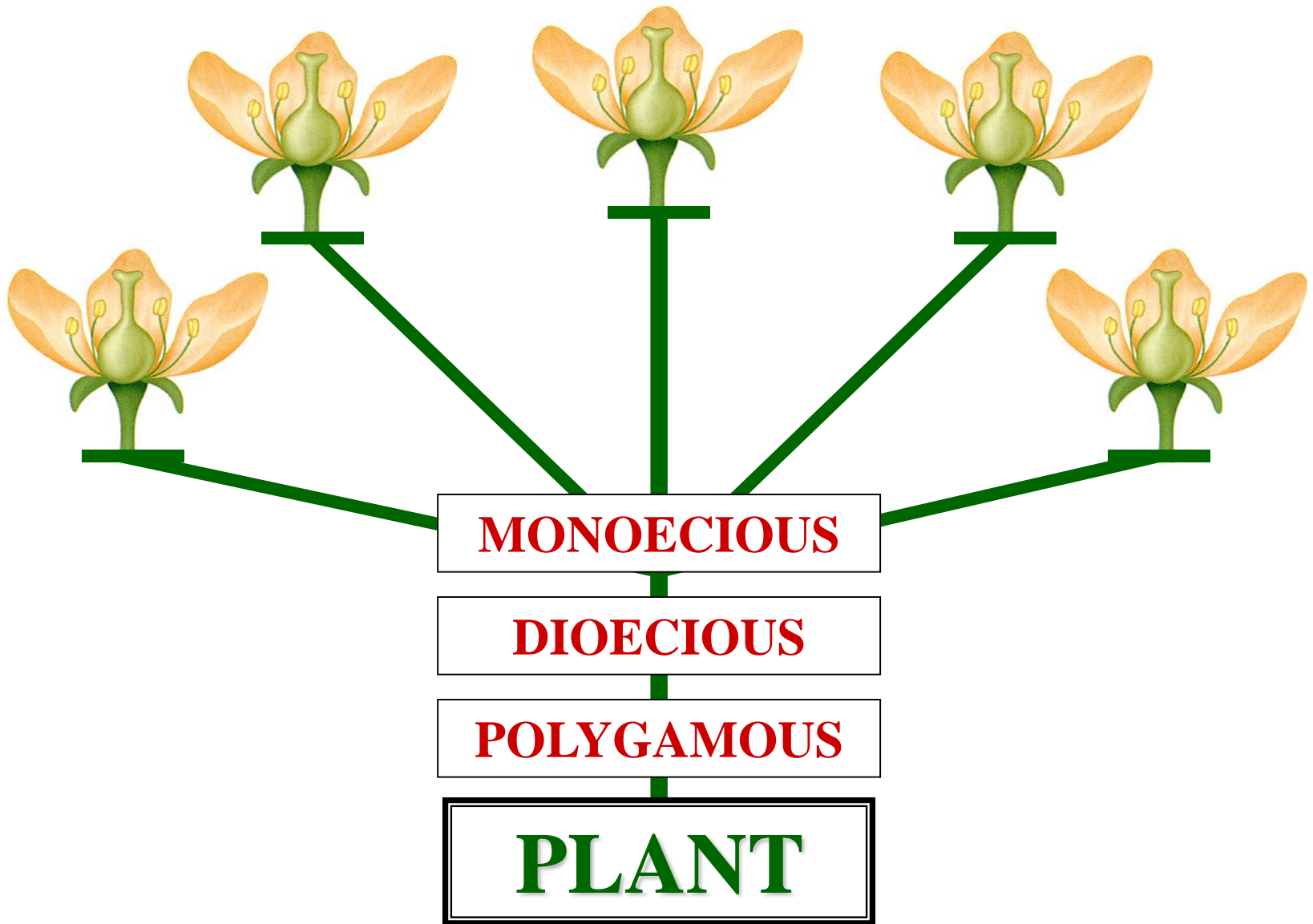
SEX CONDITION REVIEW

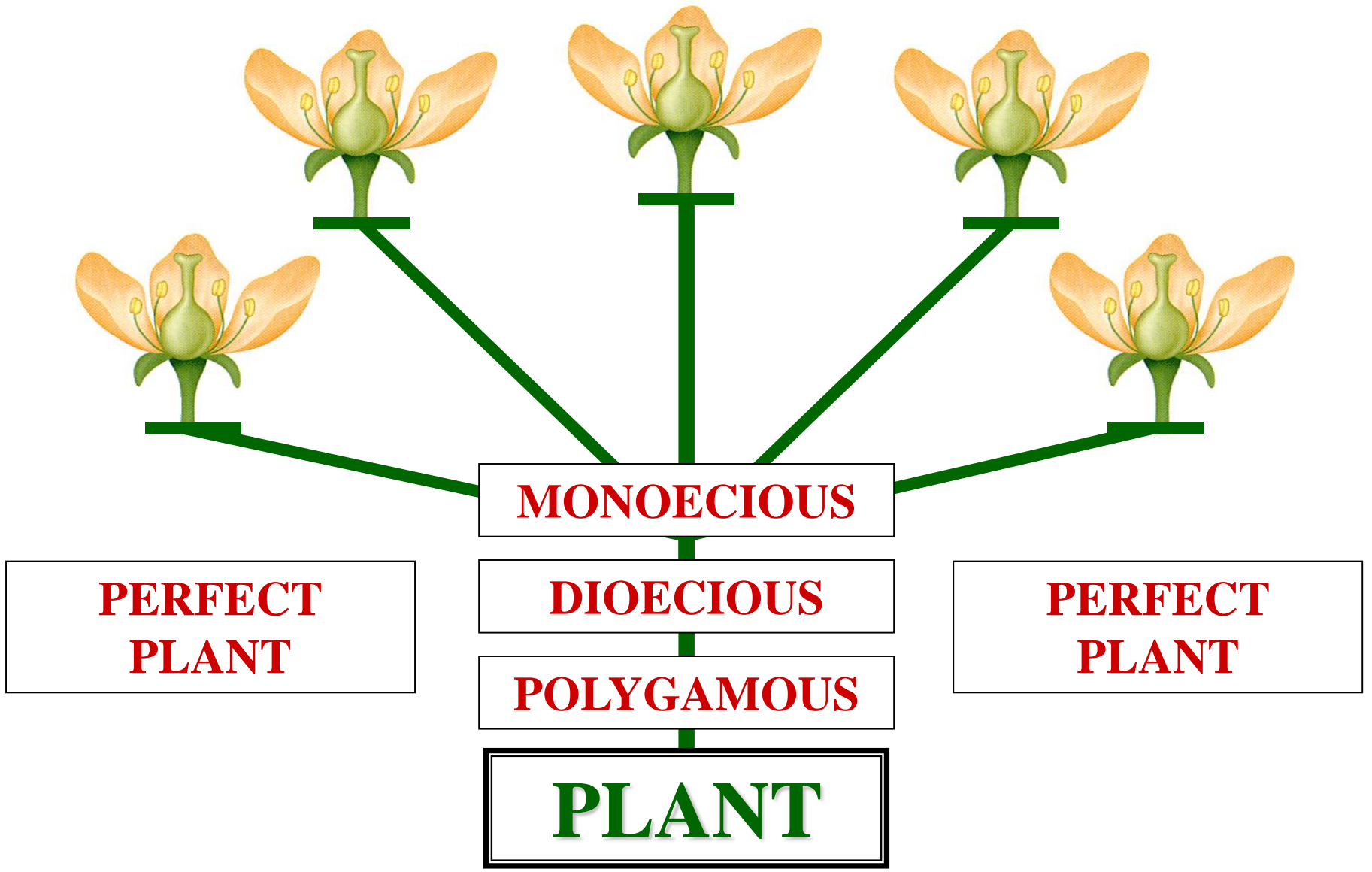


**PERFECT
FLOWER
VS
IMPERFECT
FLOWER**









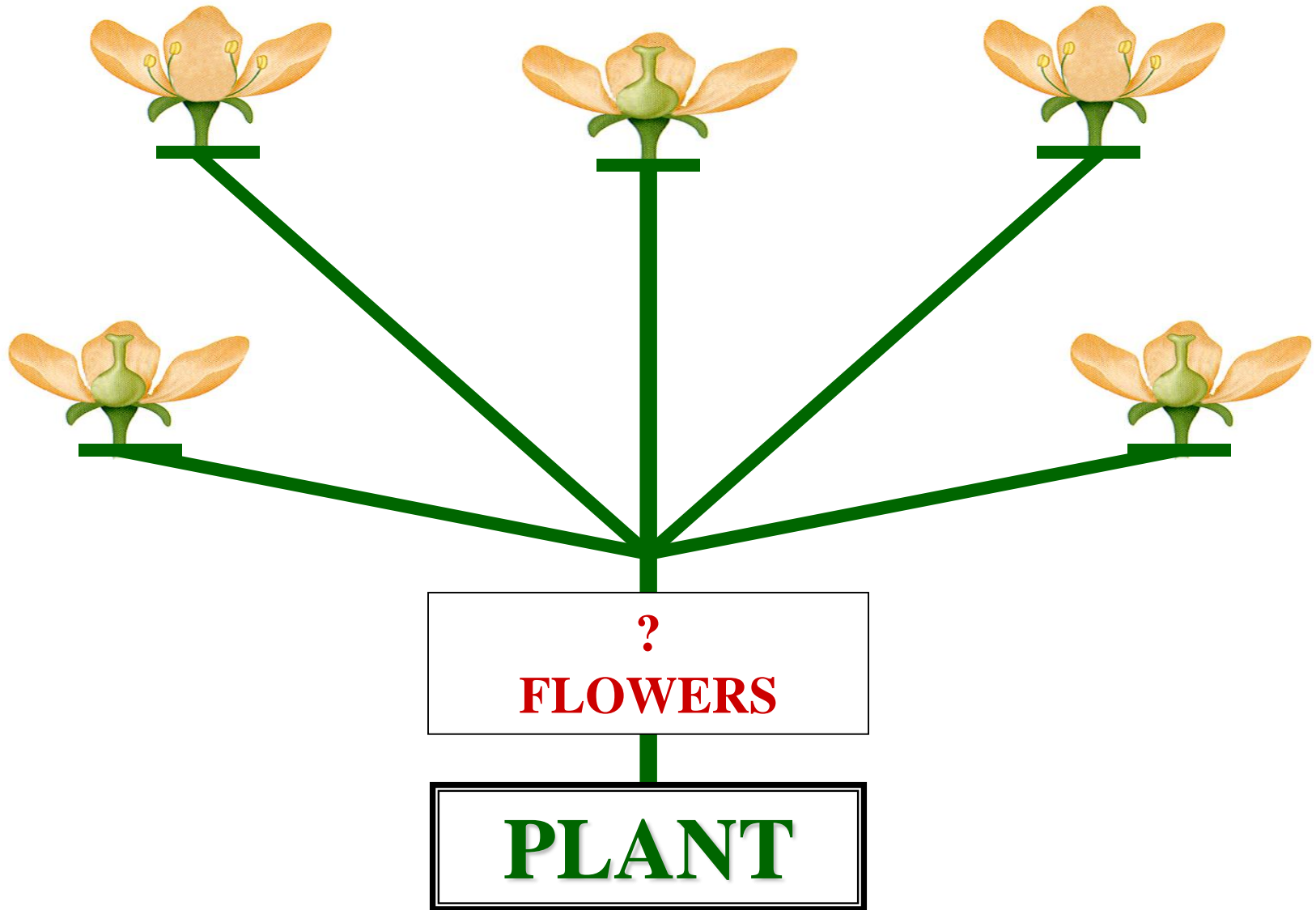


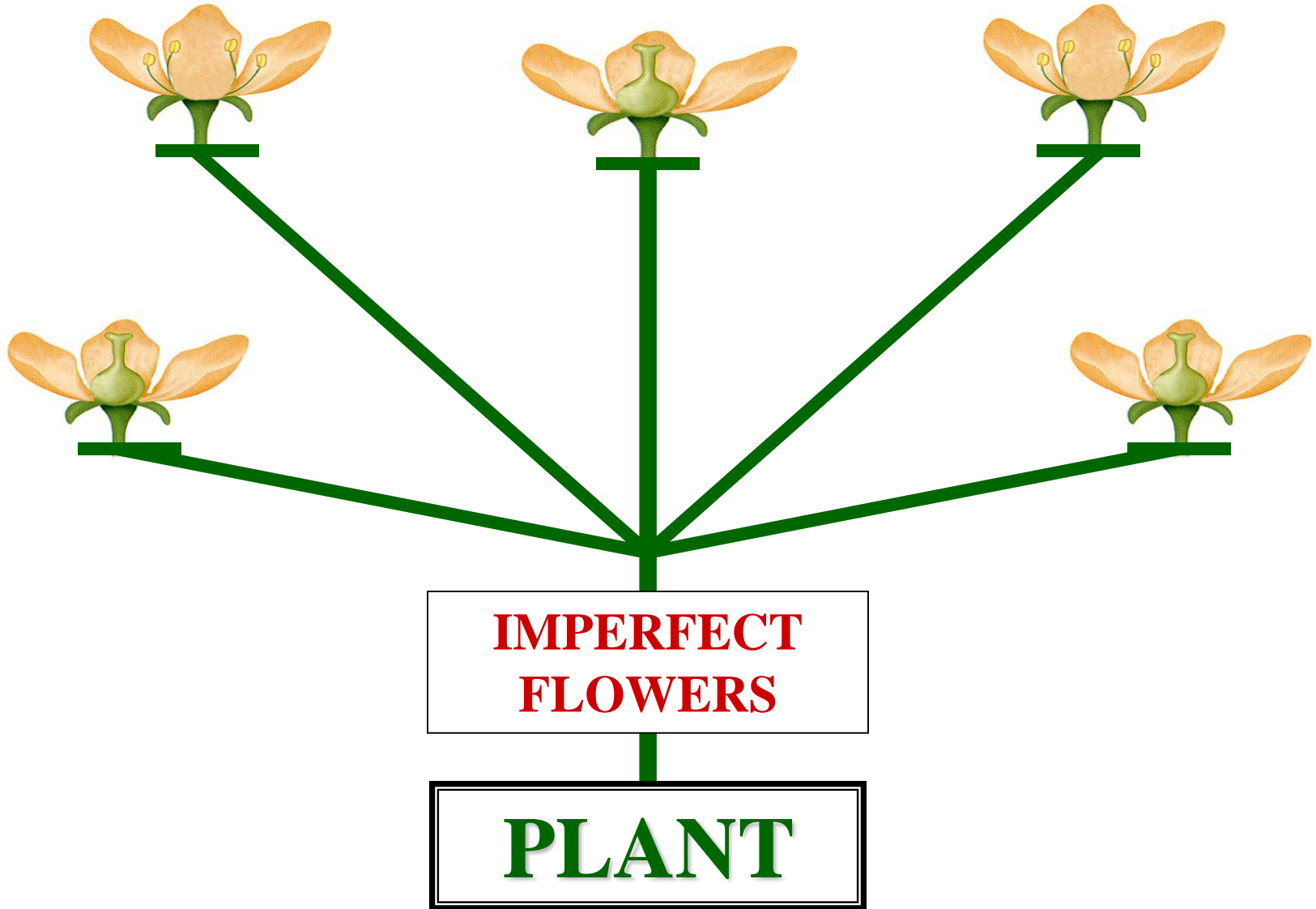
MONOECIOUS

DIOECIOUS

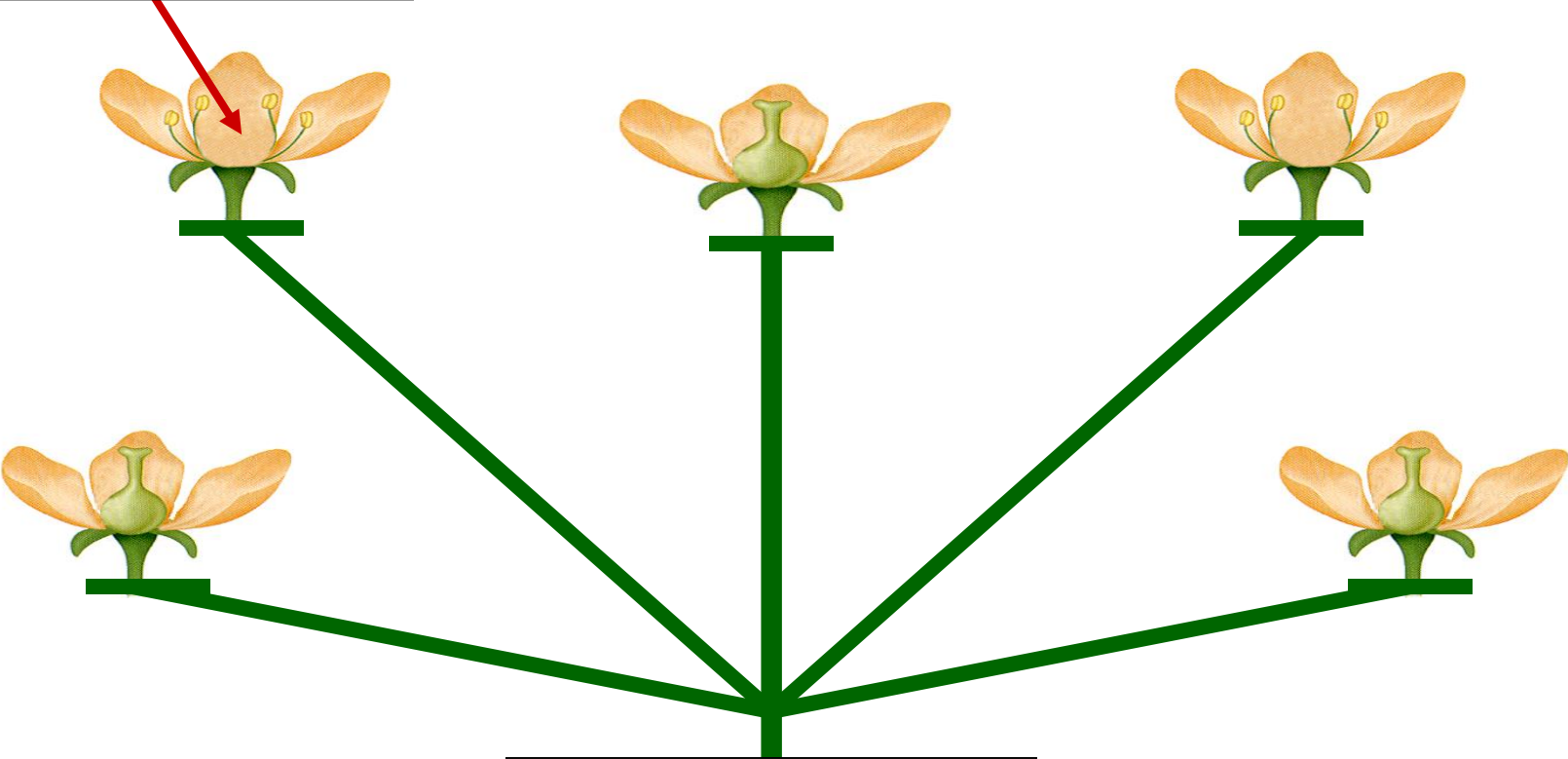
POLYGAMOUS

APPLIED





**STAMINATE
FLOWER**

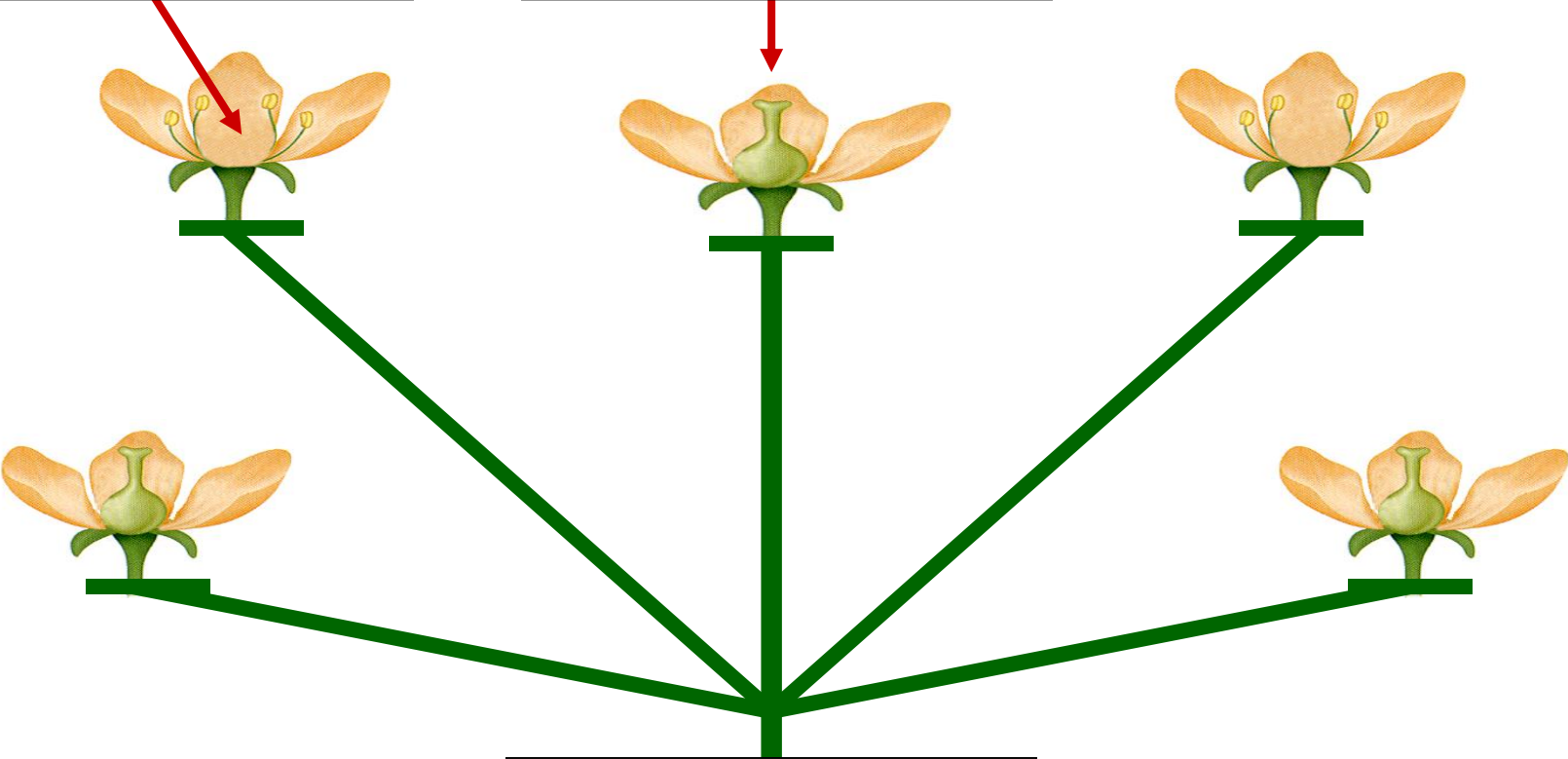


**IMPERFECT
FLOWERS**

PLANT

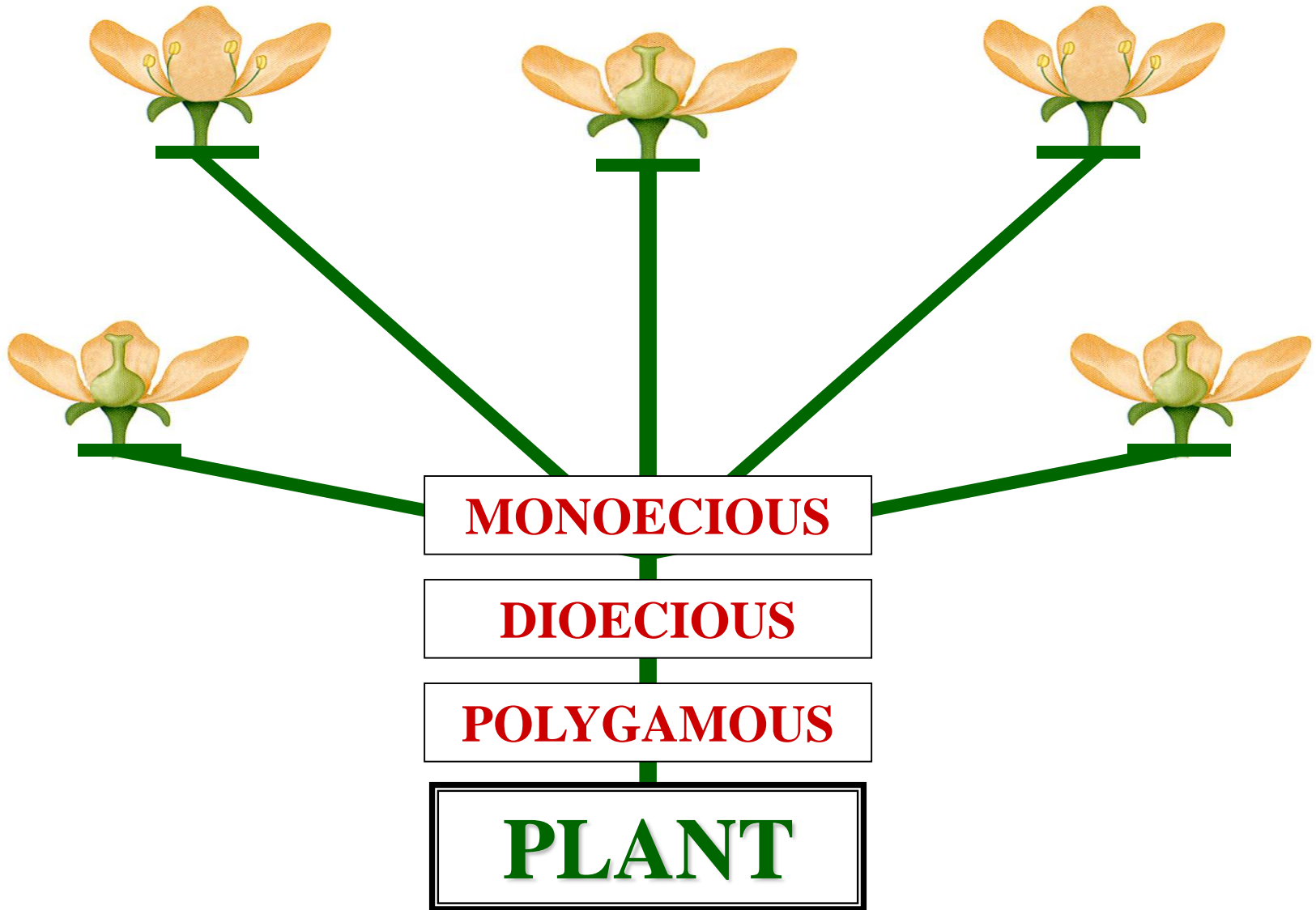
**STAMINATE
FLOWER**

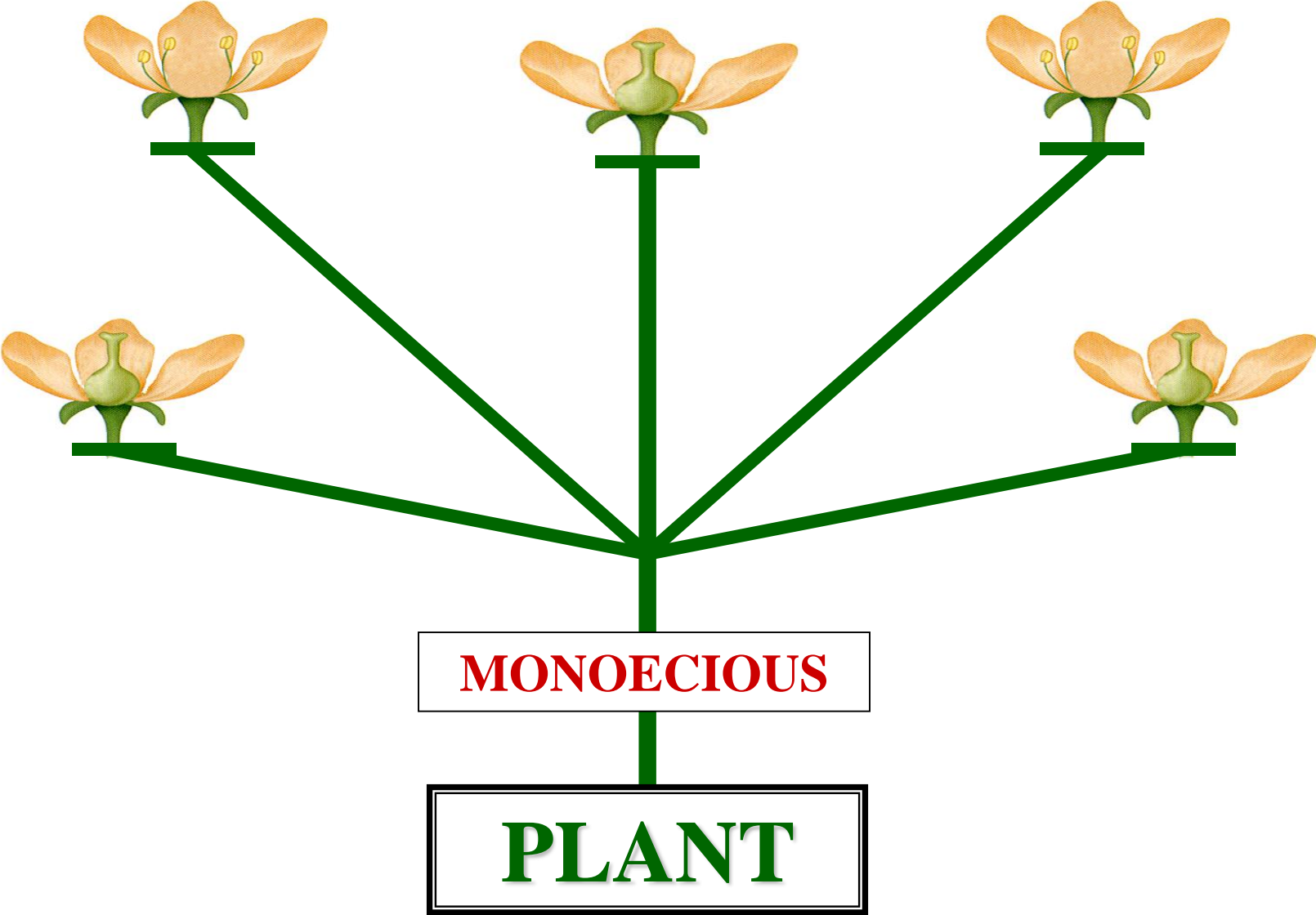
**PISTILATE
FLOWER**



**IMPERFECT
FLOWERS**

PLANT





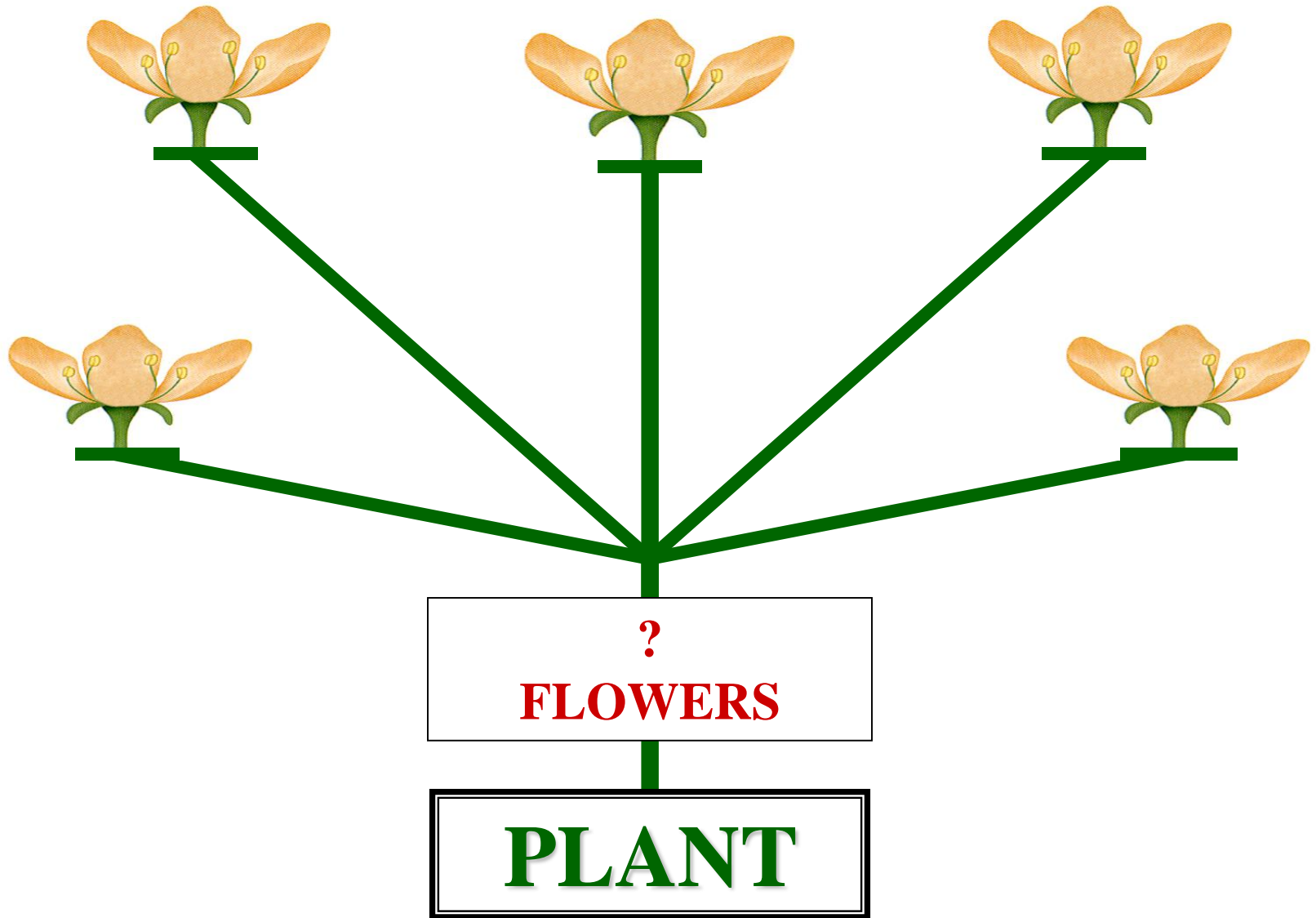


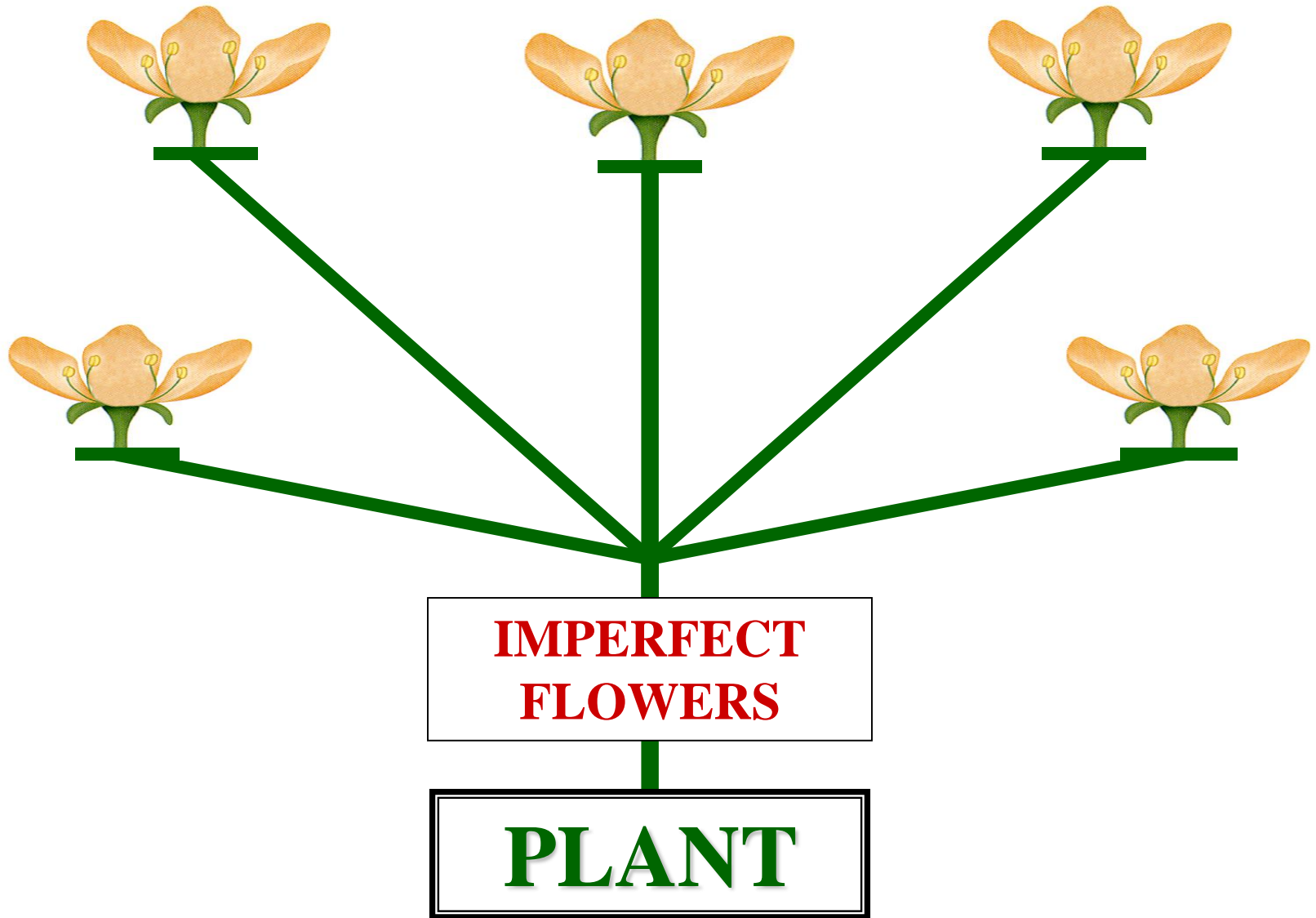
MONOECIOUS

DIOECIOUS

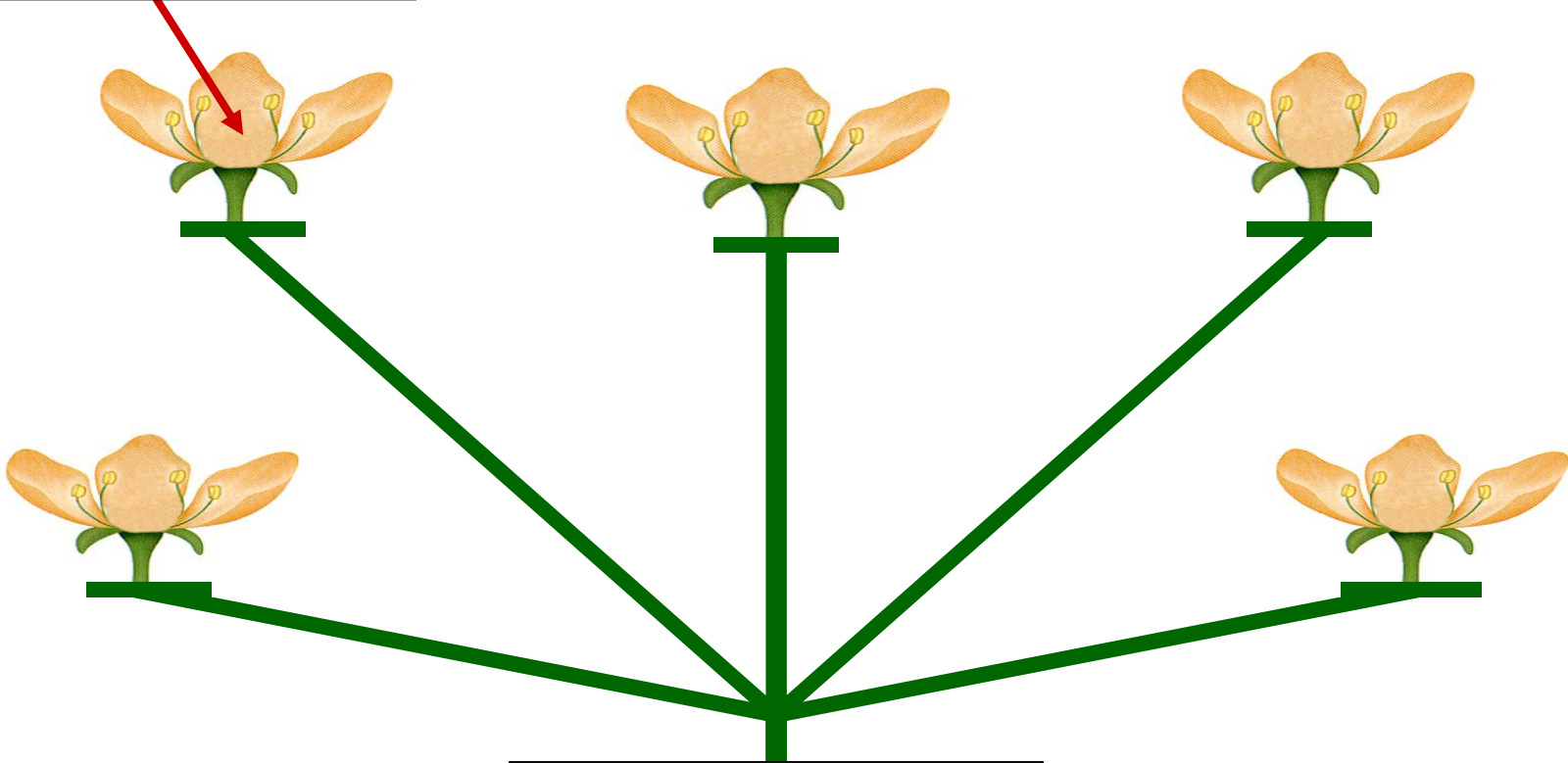
POLYGAMOUS

APPLIED





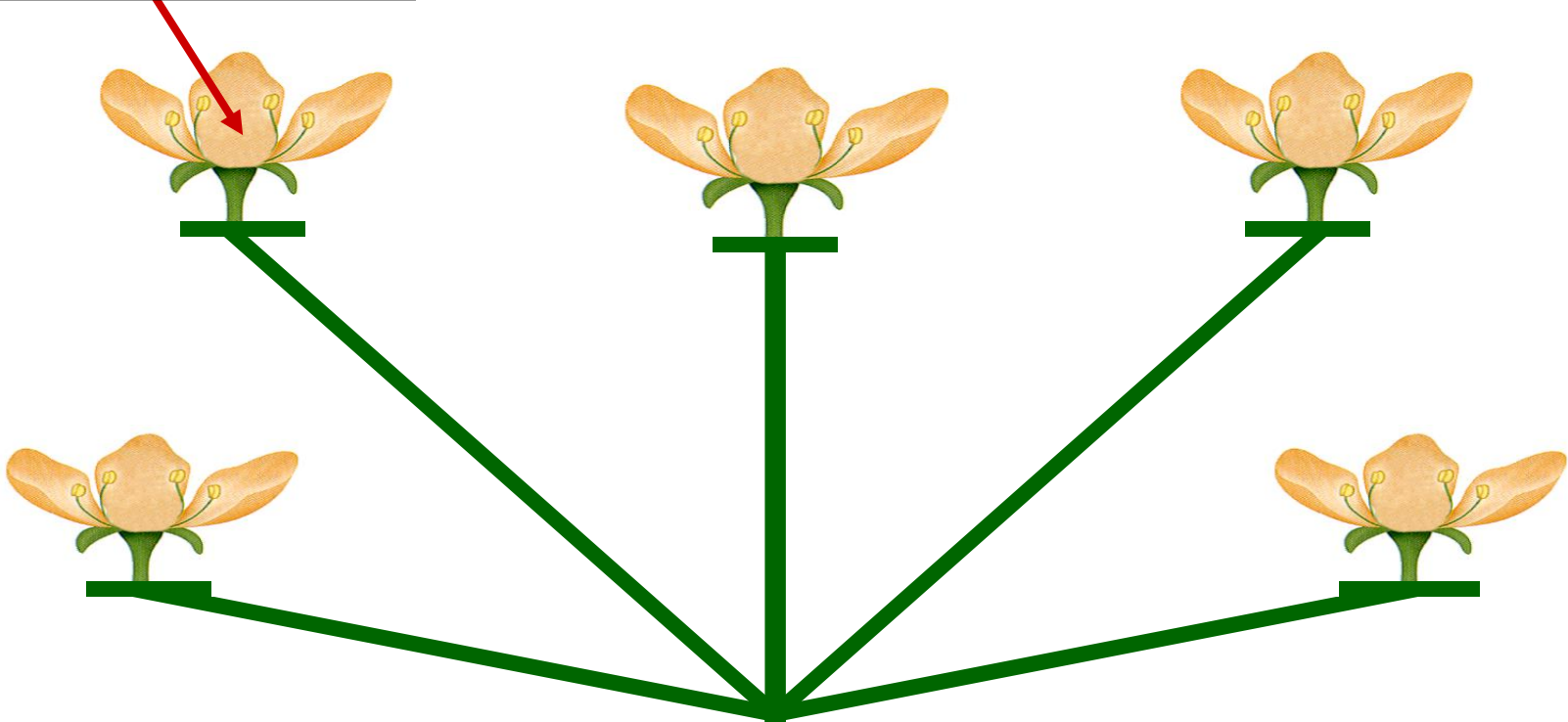
**STAMINATE
FLOWER**



**IMPERFECT
FLOWERS**

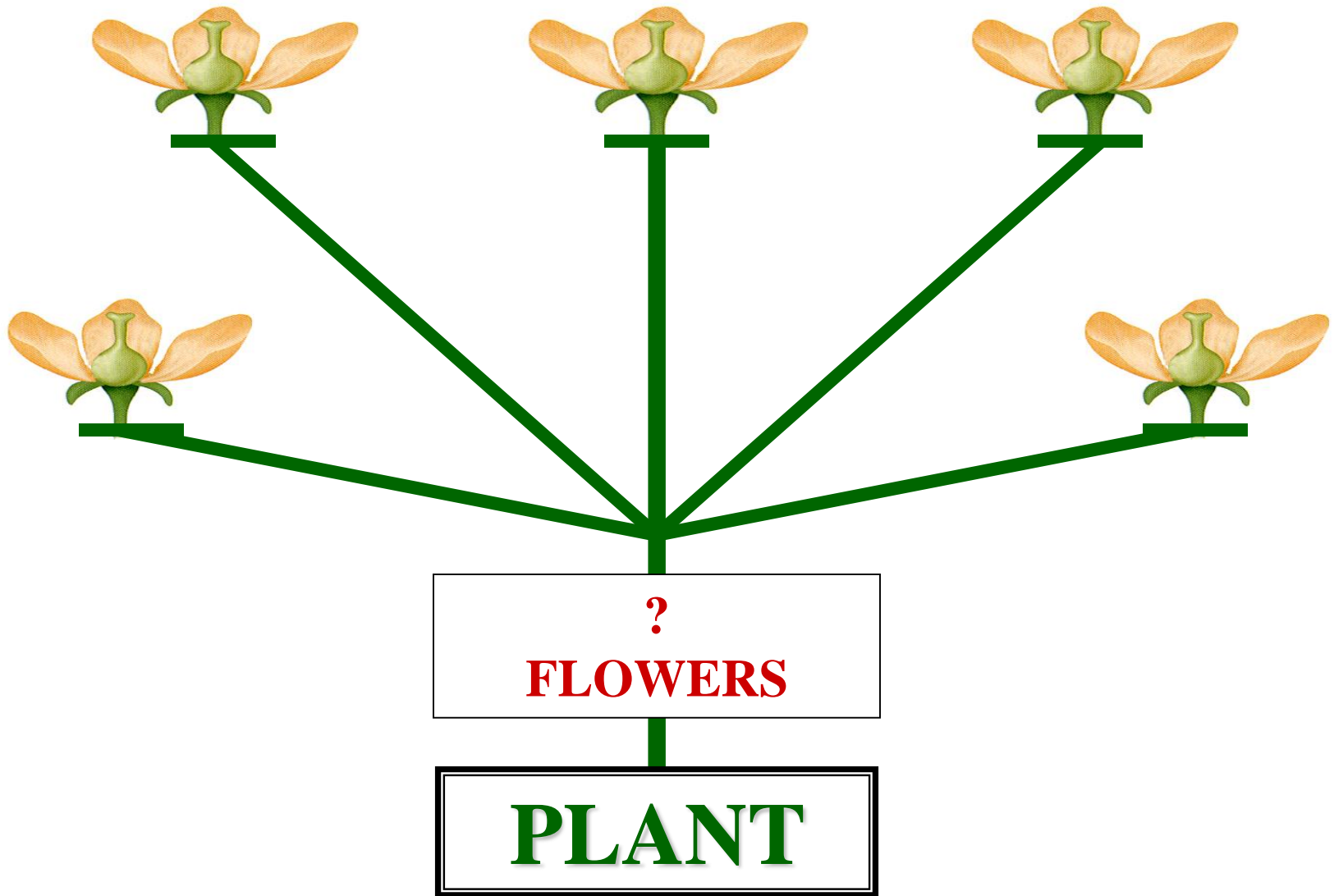
PLANT

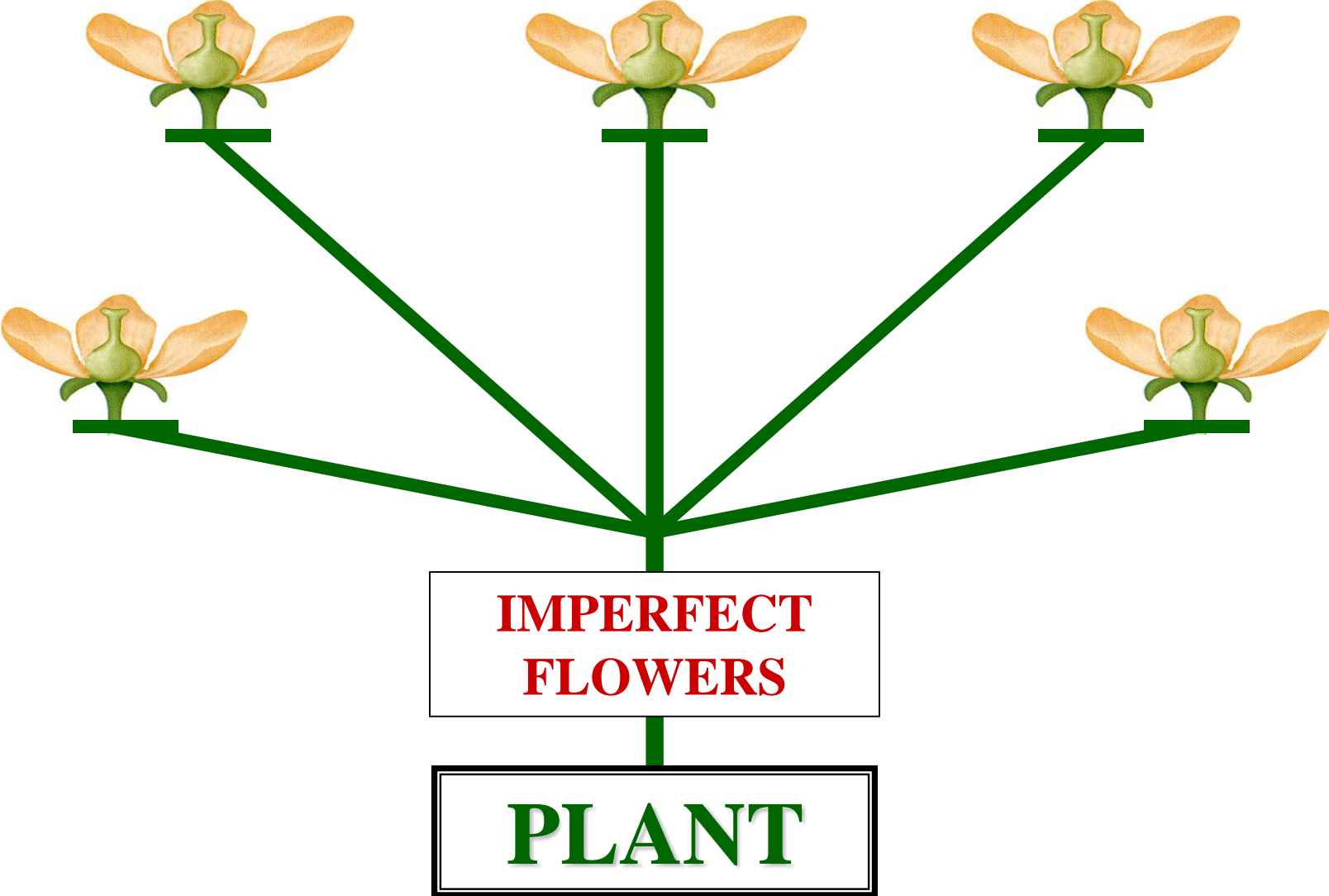
**STAMINATE
FLOWER**



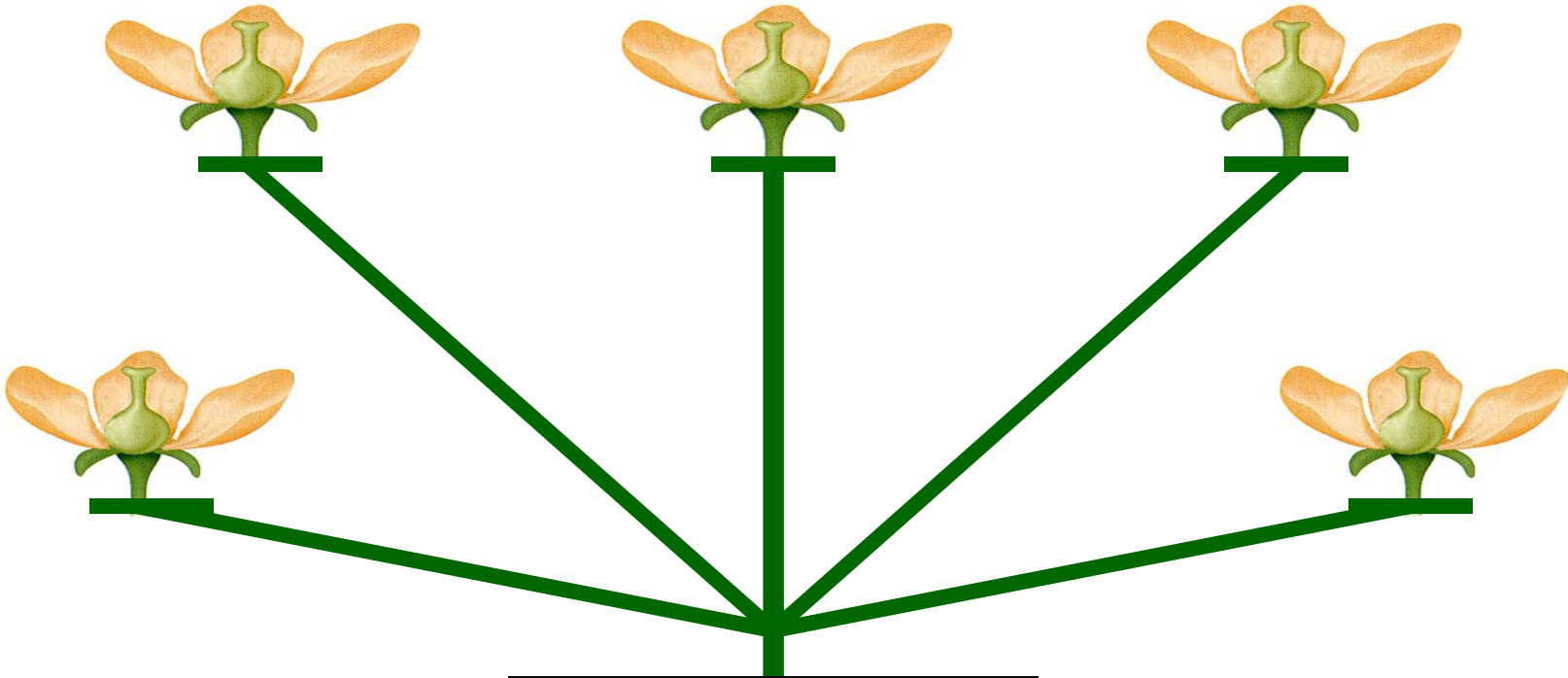
STAMINATE PLANT

PLANT





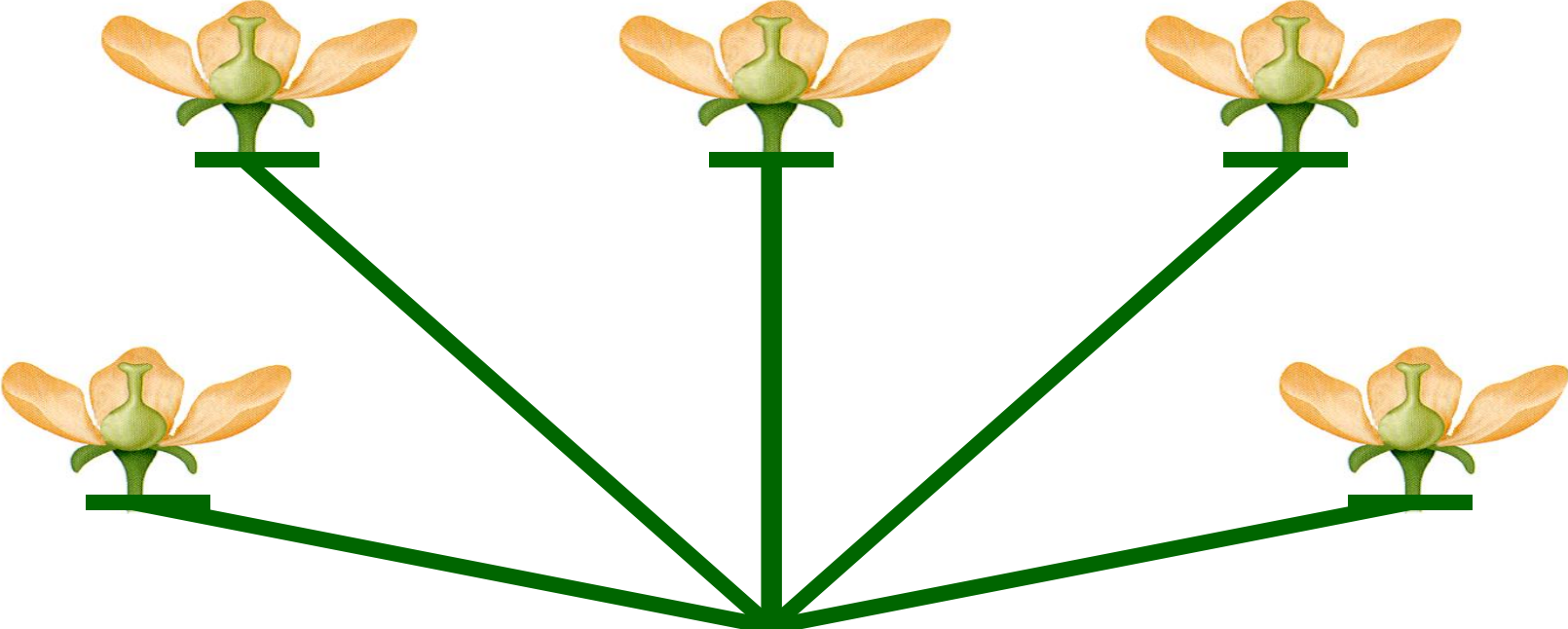
**PISTILATE
FLOWER**



**IMPERFECT
FLOWERS**

PLANT

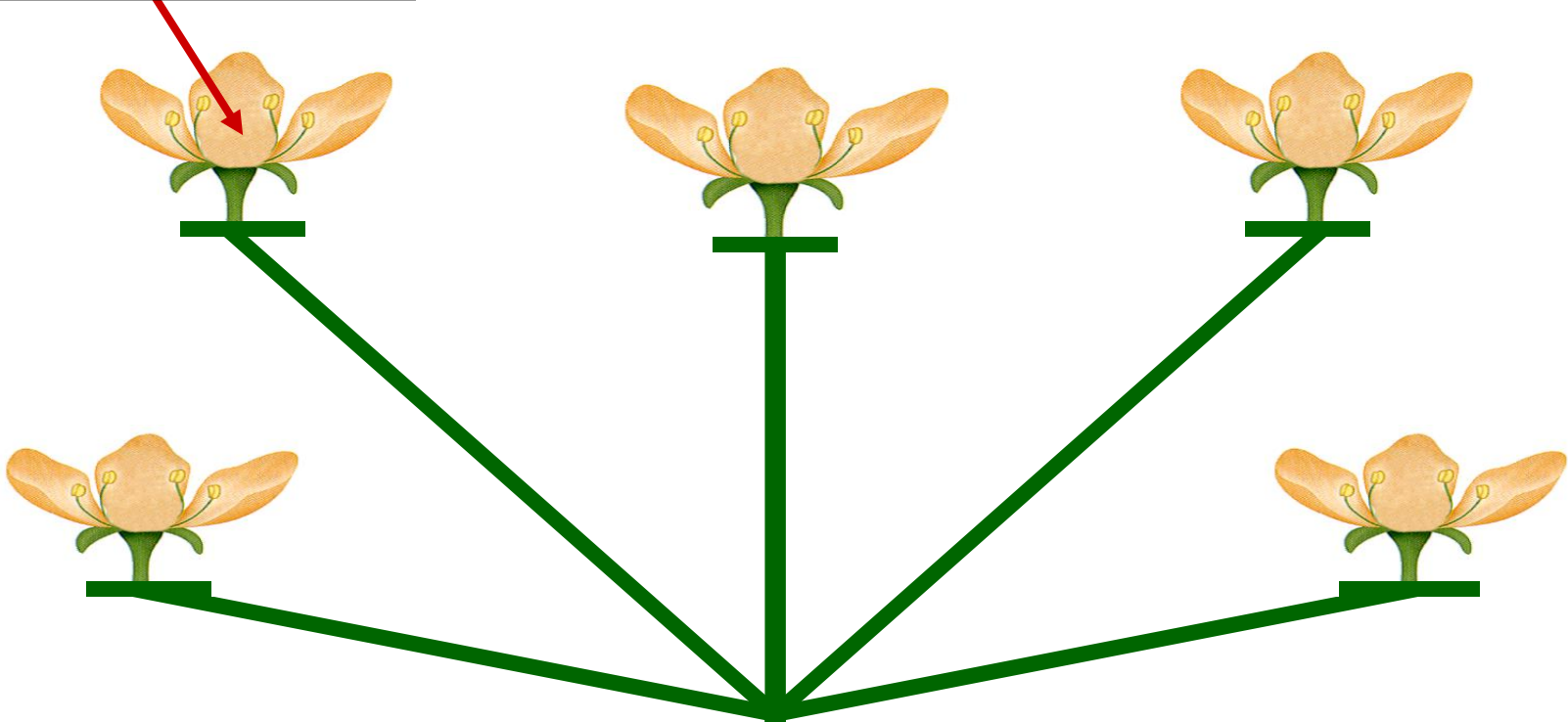
**PISTILATE
FLOWER**



PISTILATE PLANT

PLANT

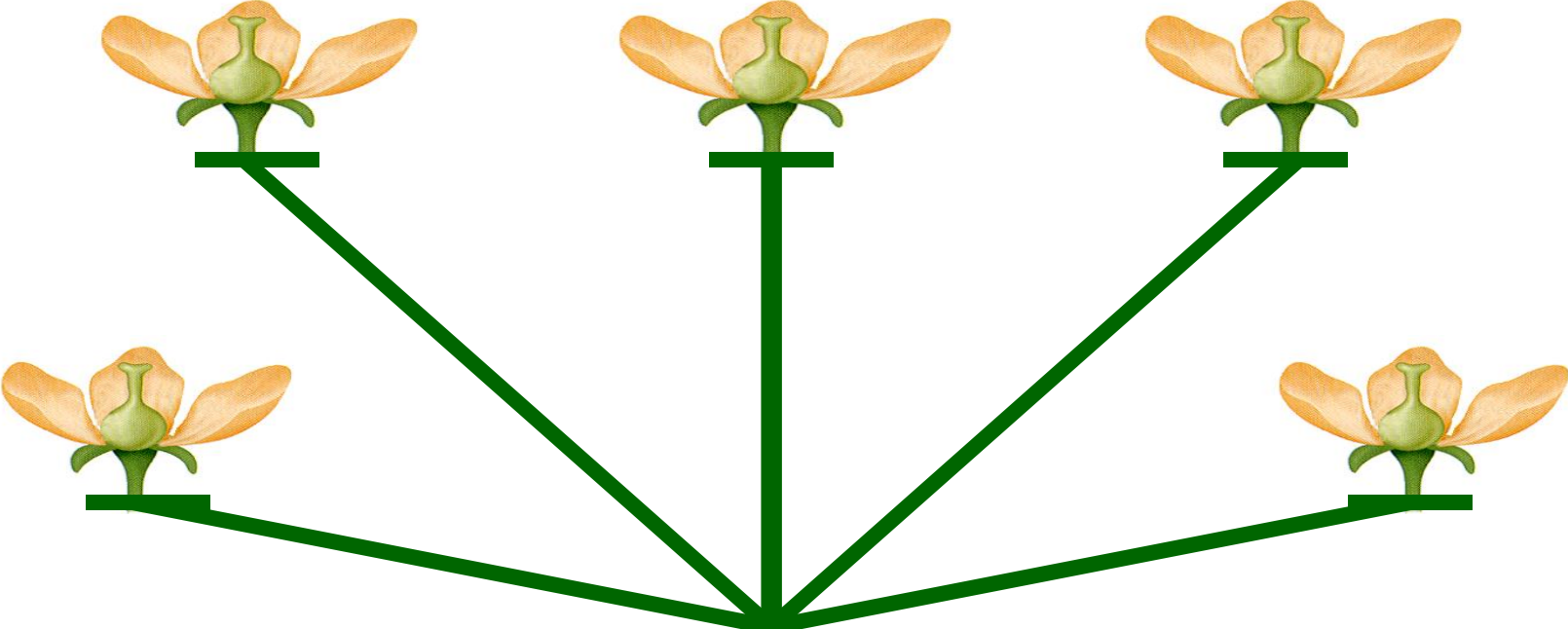
**STAMINATE
FLOWER**



STAMINATE PLANT

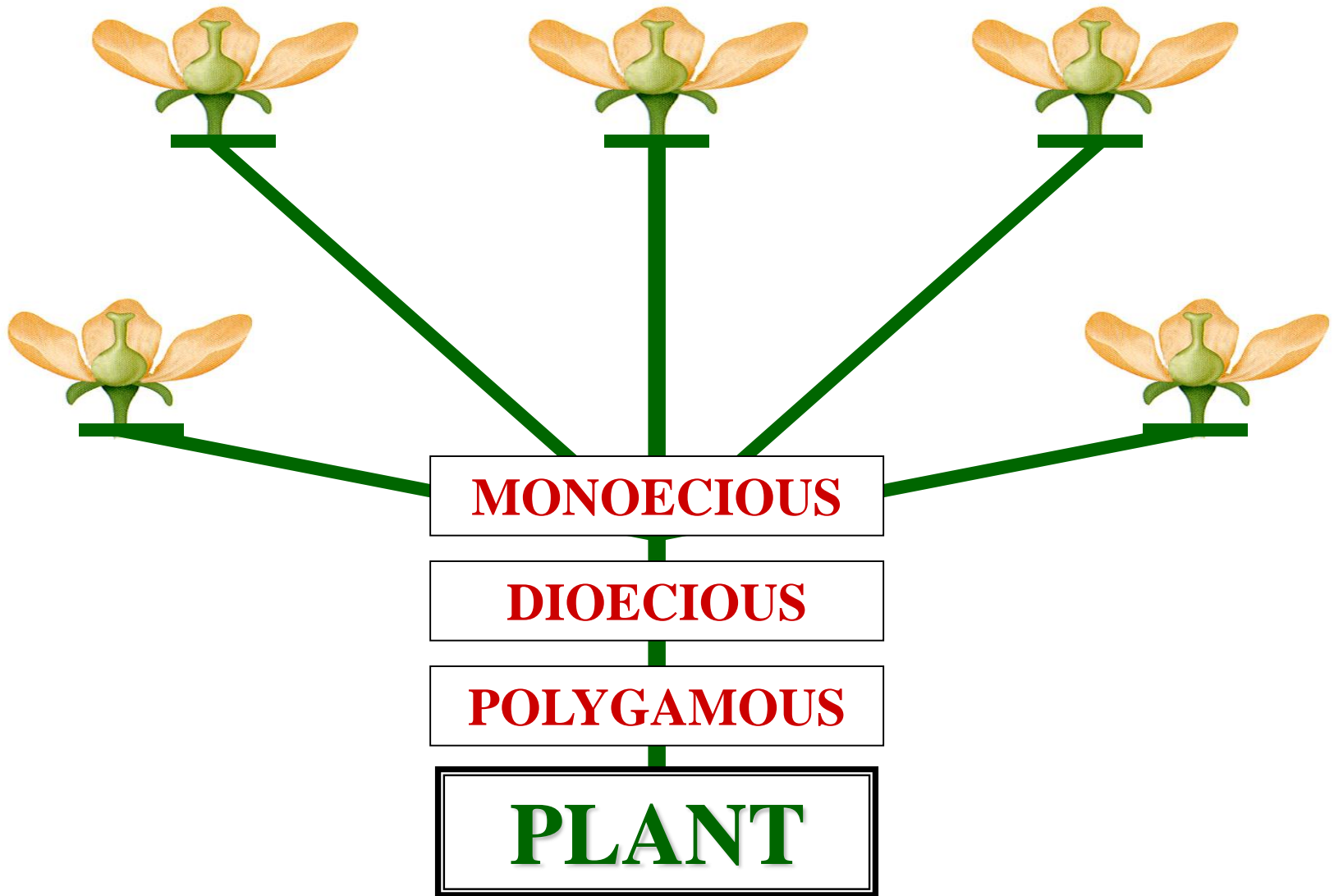
PLANT

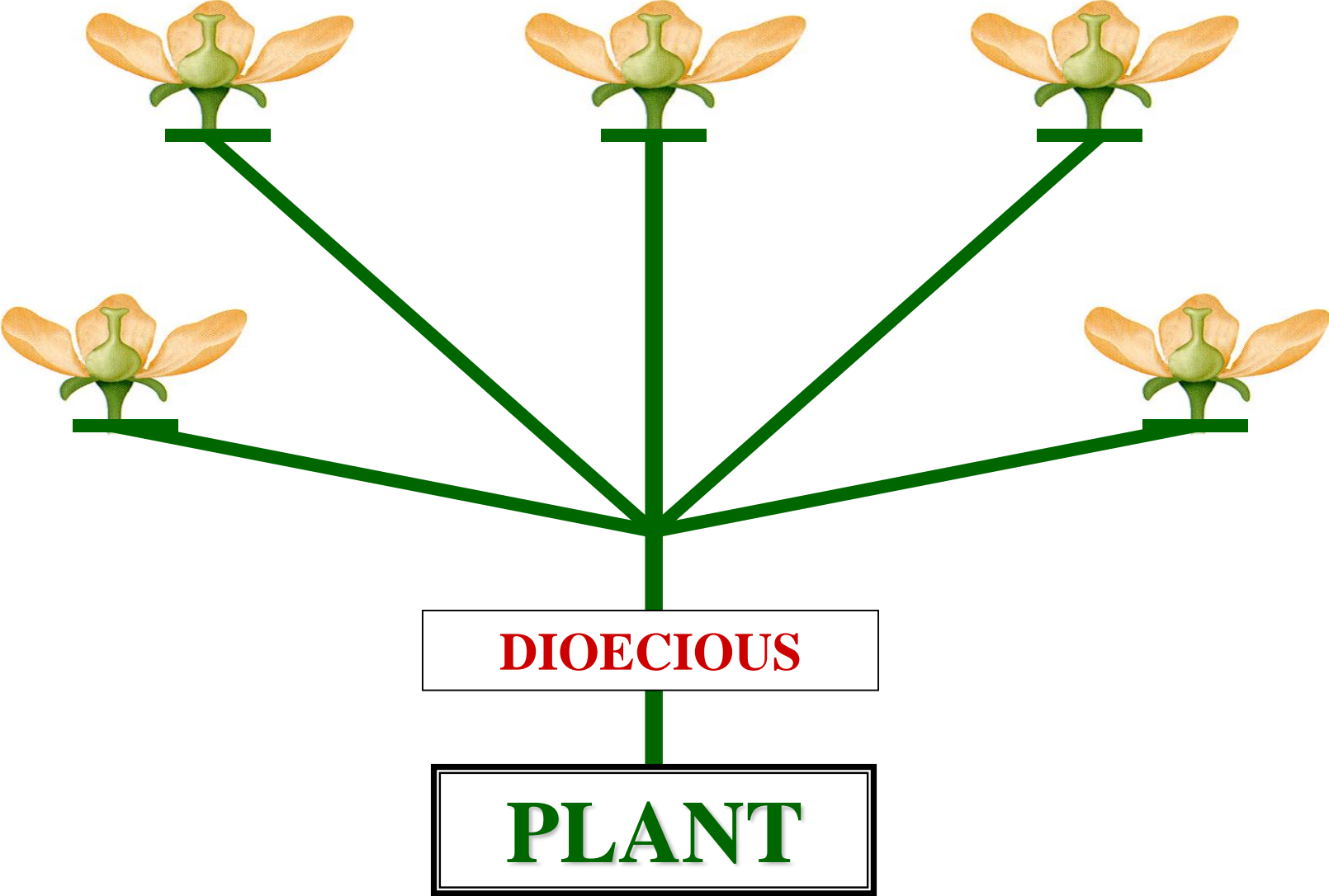
**PISTILATE
FLOWER**



PISTILATE PLANT

PLANT





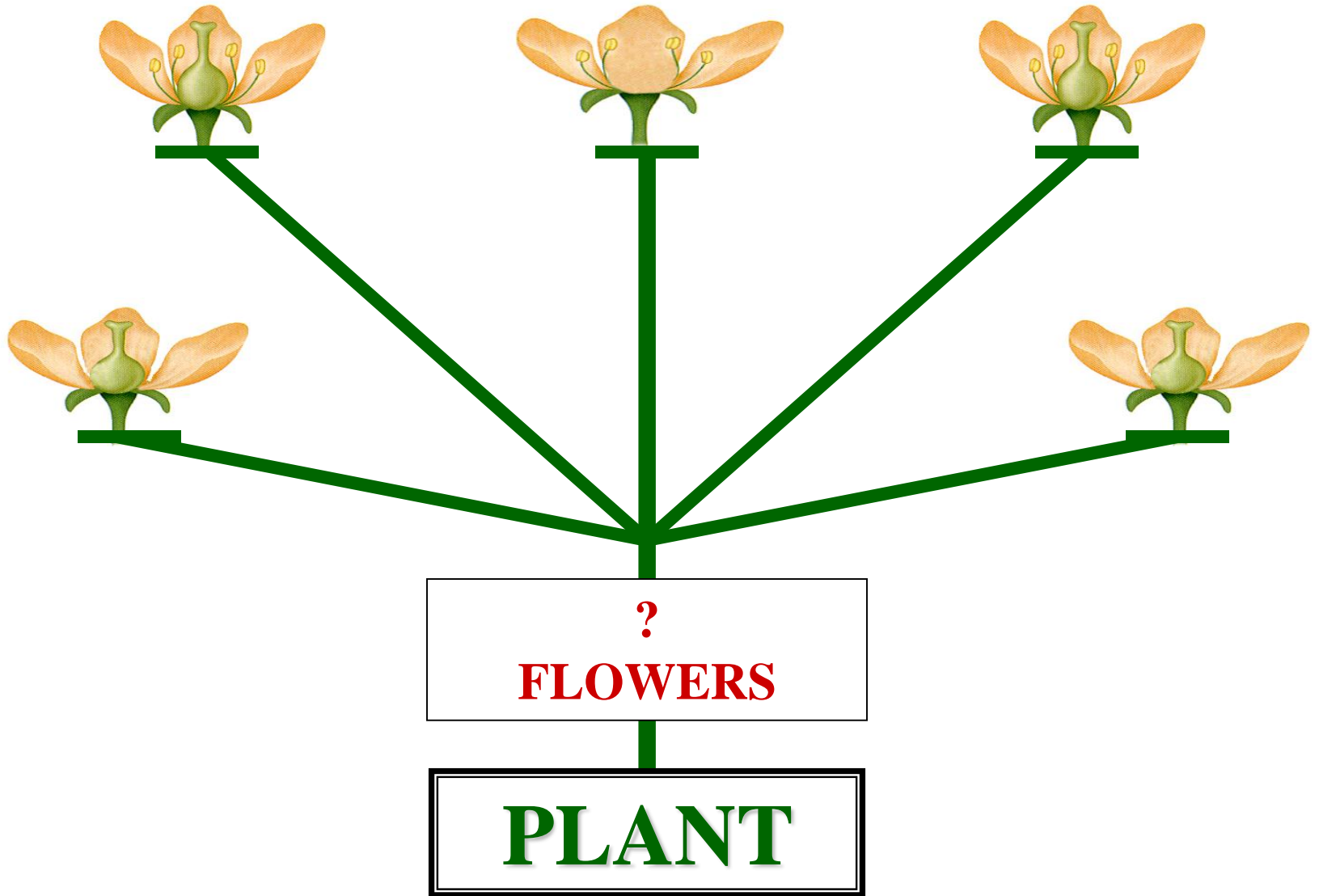


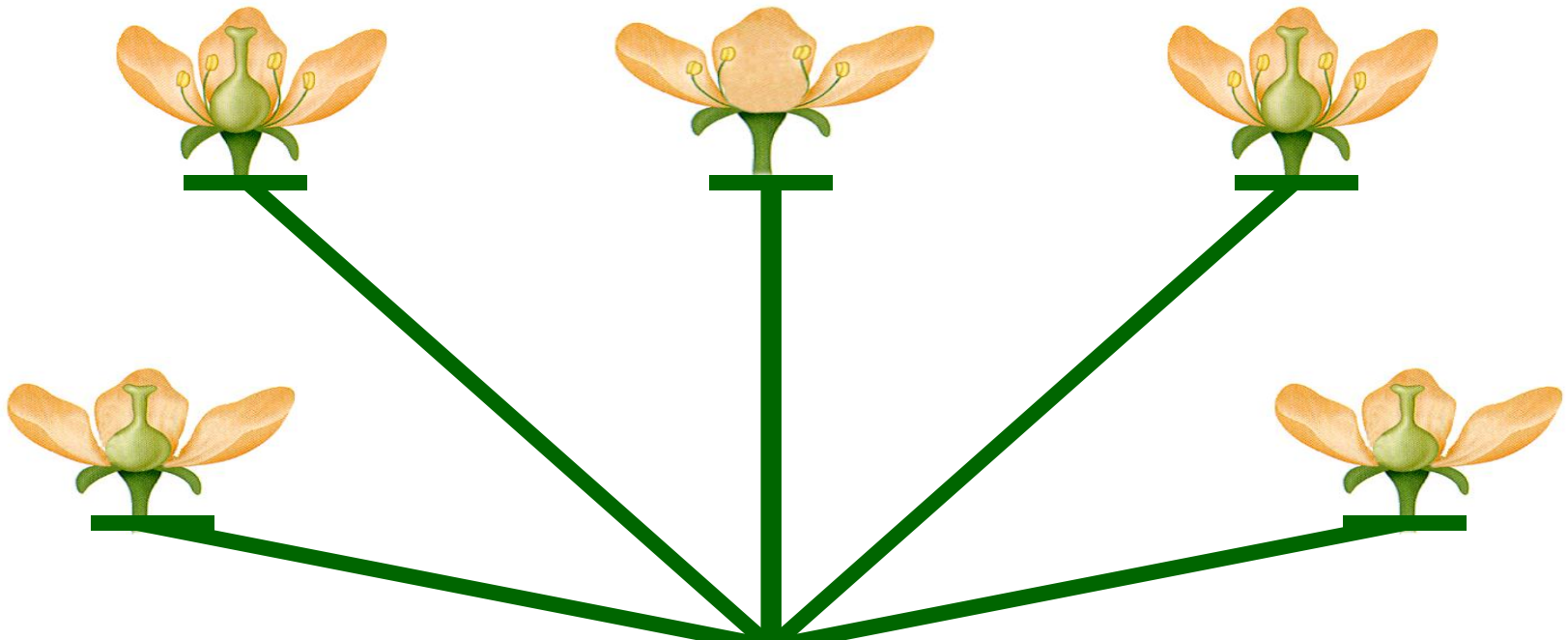
MONOECIOUS

DIOECIOUS

POLYGAMOUS

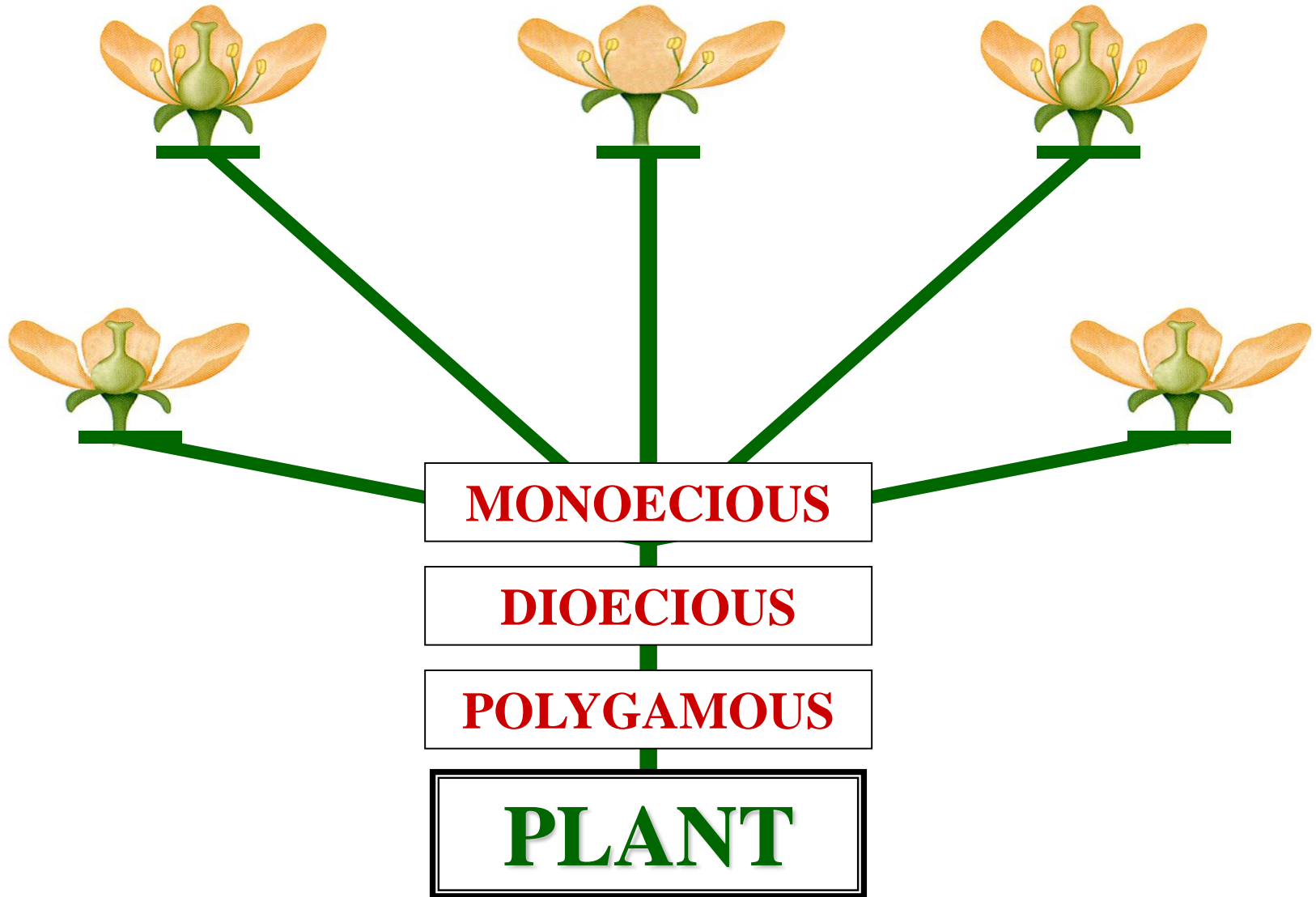
APPLIED

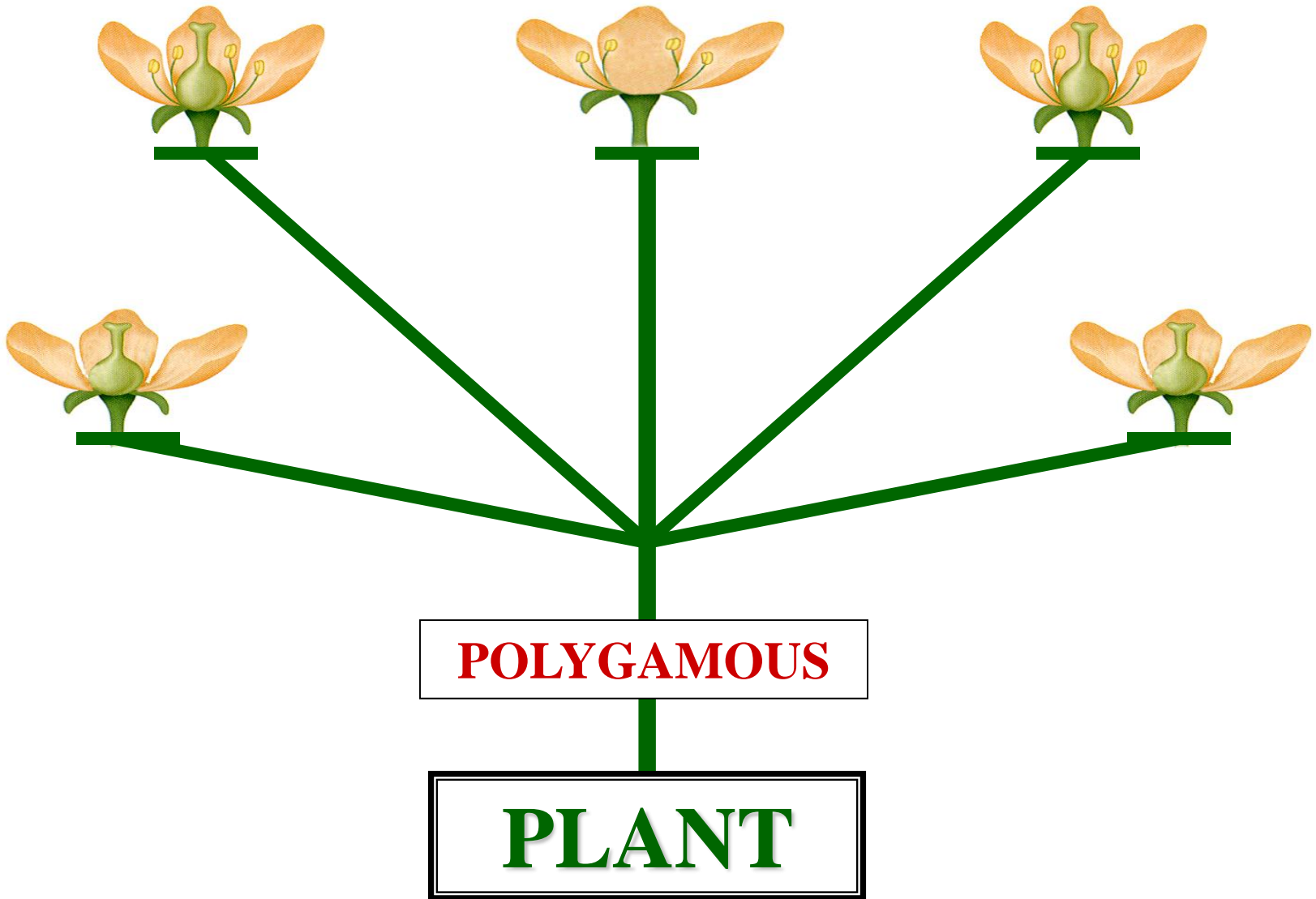




**PERFECT FLOWERS
&
IMPERFECT FLOWERS**

PLANT





POLYGAMOUS

PLANT



ATTENTION STUDENTS



REQUIRED MATERIAL

LAB EXAM #4

&

FINAL EXAM



ATTENTION STUDENTS



**POWERPOINT SLIDES
WILL BE POSTED
ASAP**