
THE PLANT KINGDOM

The Plant Kingdom

- This kingdom has organisms that are multi-cellular, have cell walls and chlorophyll, produce their own food, and don’t physically move from one place to another.

The Plant Kingdom

- *Vascular*
- *Non-Vascular*
- *Photosynthesis*
- *Plant Cell*
- *Parts of a Flower*
- *SOL Released Test Items*

Non-Vascular

- plants that *do not have tubes* to carry water up the plant or tubes to carry food made in the leaves down the plant
- Examples:
  - mosses
  - liverworts
  - ferns
  - hornworts

Non-Vascular

- Spore: the reproductive cell of a nonvascular plant

This fern plant has rows of little black dots on the back of the leaves. These little dots are not harmful. They hold millions of tiny reproductive cells called —

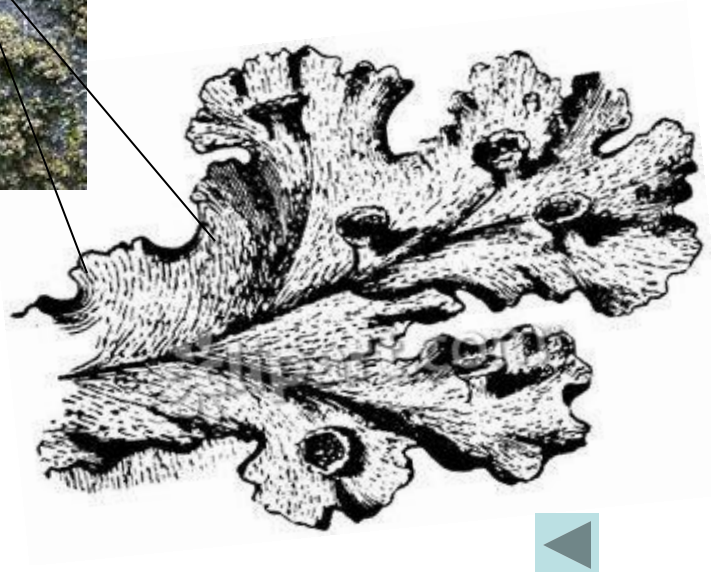
SPORES!

Non-Vascular

- Moss

Non-Vascular

- Liverwort



Non-Vascular

- Fern

Non-Vascular

- Hornwort

Vascular

- Plants that have tubes to carry water up and food down the plant
- Examples:
  - American dogwood tree
  - roses
  - grass

Vascular

- American dogwood tree

Vascular

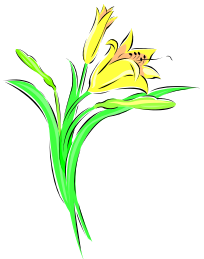
- Roses

Vascular

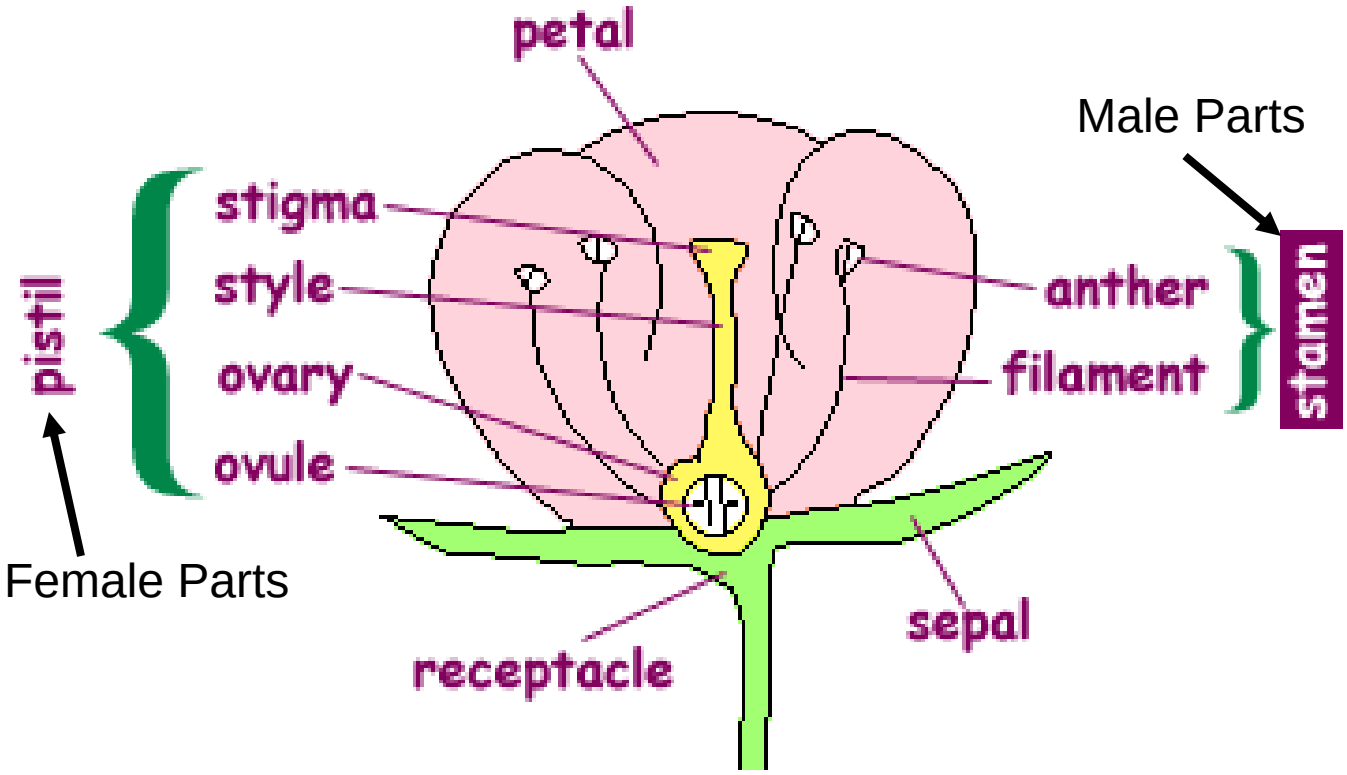
- Grass

Photosynthesis

- Plant cells produce their own food through a process called photosynthesis.
- Photosynthesis allows plants to convert light energy into food energy.



Parts of a Flower



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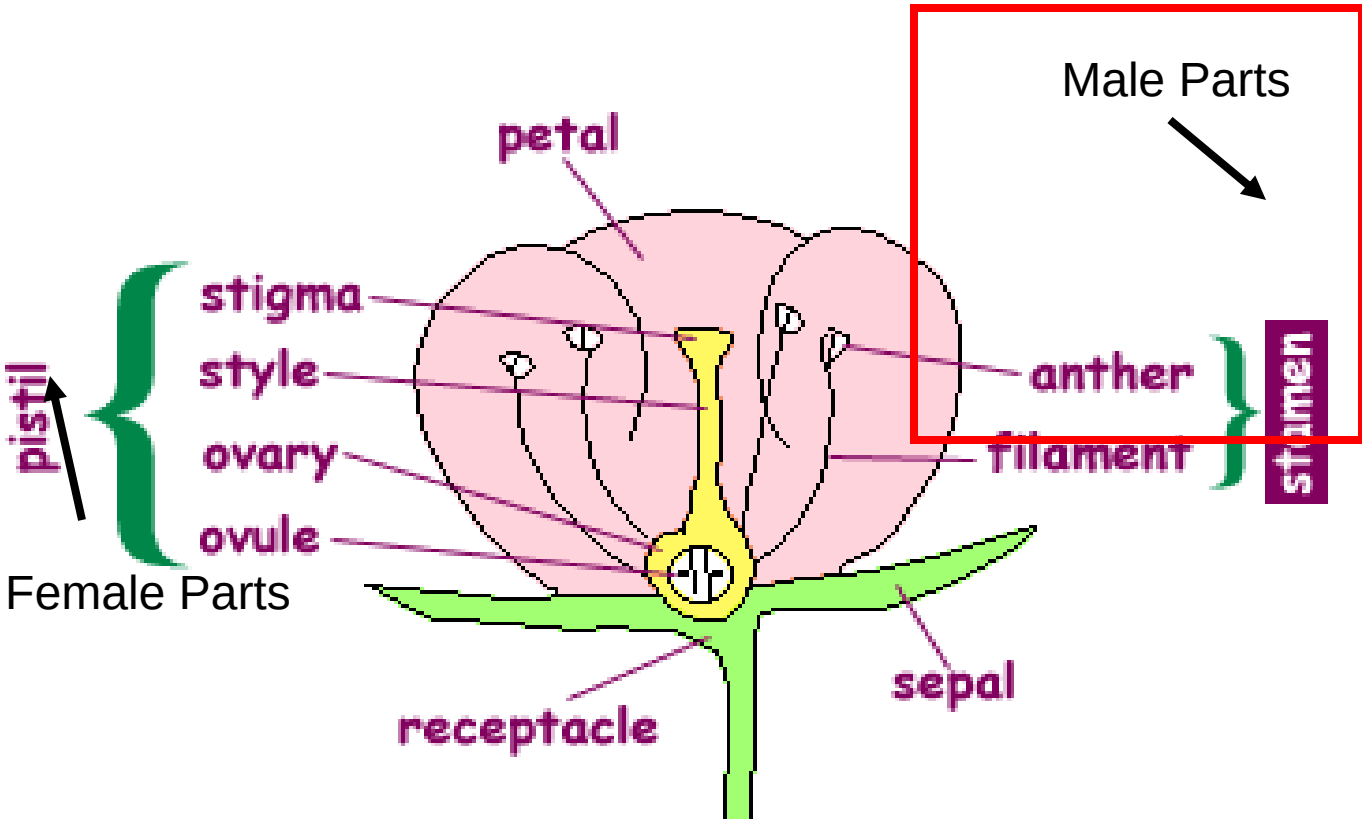
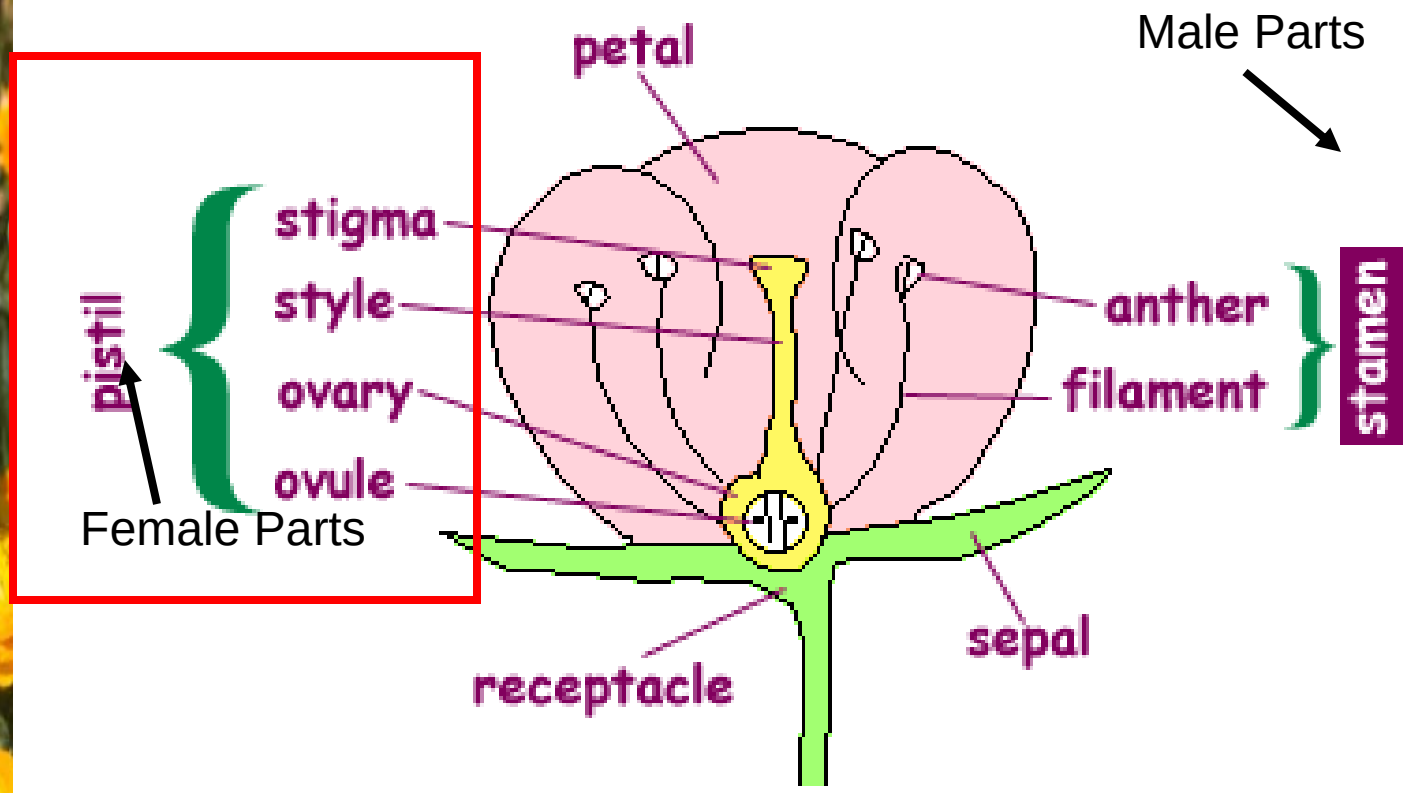


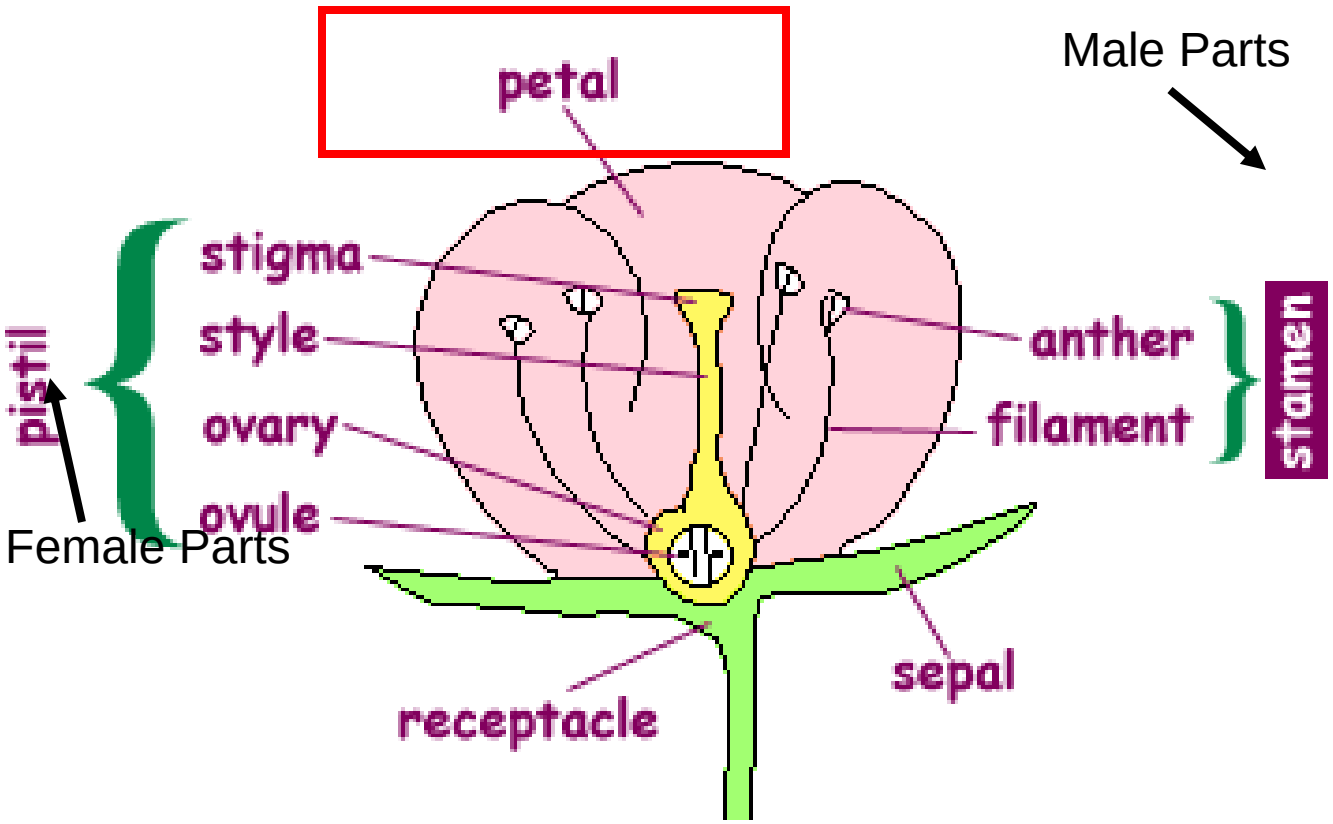
The stamen consists of two parts: the anther and the filament.
The filament holds the anther.
The anther produces and carries the pollen.

Parts of a Flower



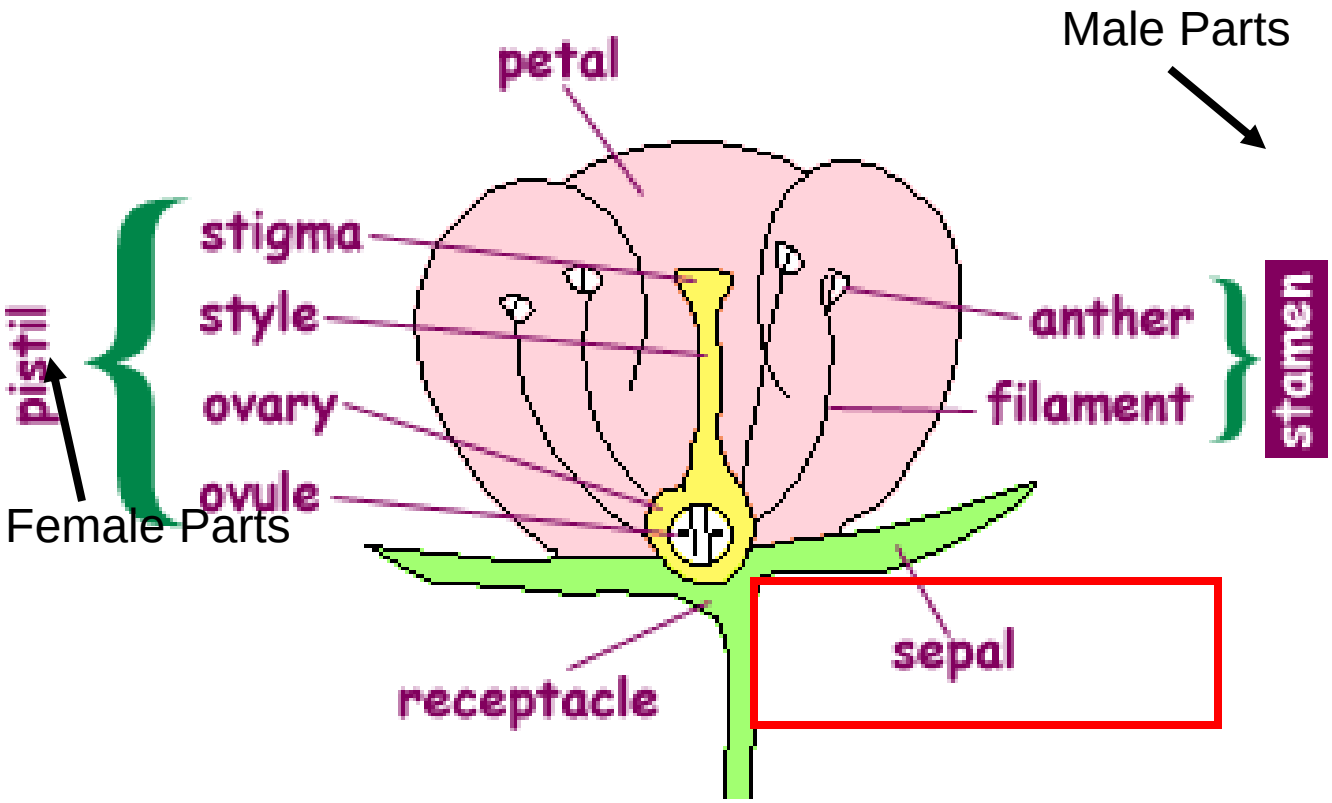
The pistil consists of three parts: the stigma, style, and ovary.
The stigma is the sticky part that traps and holds the pollen.
The style is the tube-like structure that holds up the stigma.
The ovary and the ovule are at the bottom of the style.

Parts of a Flower



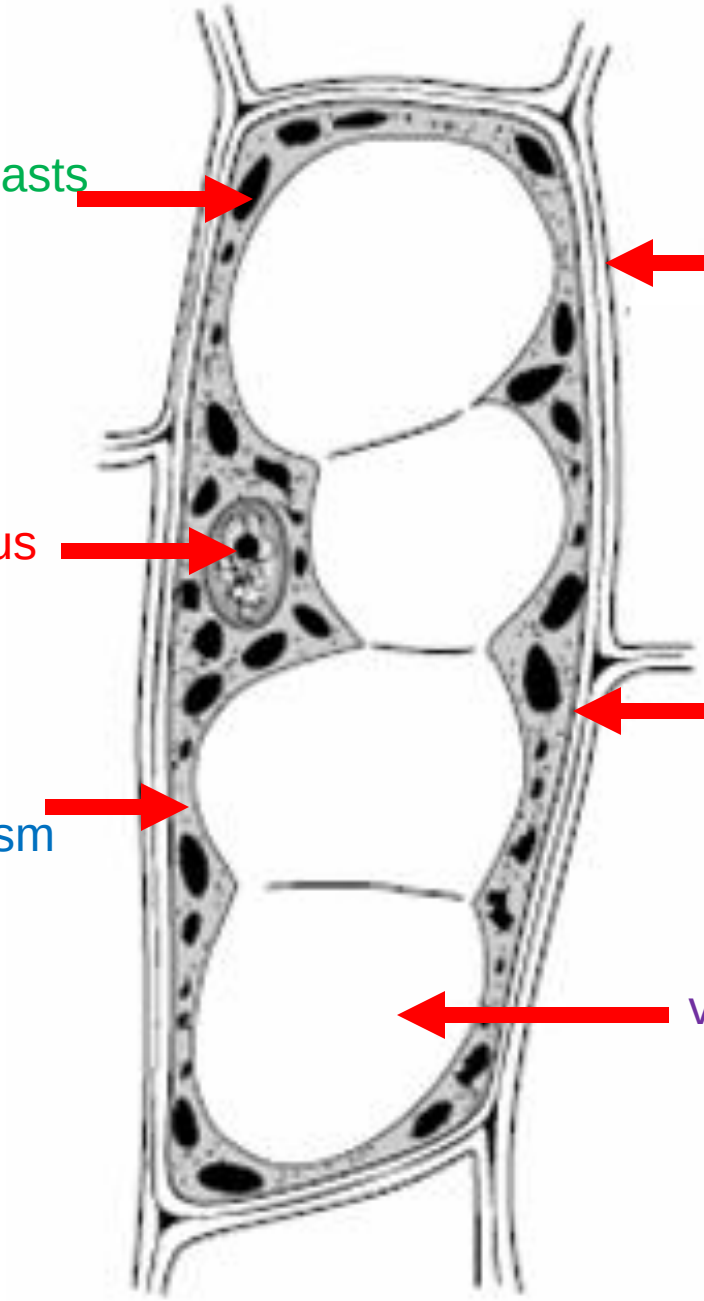
The petals attract pollinators.
(bees, hummingbirds, butterflies, for example)

Parts of a Flower



The sepals are the green petal-like parts at the base of the flower. Sepals help protect the developing bud.

Plant Cell



chloroplasts

cell wall

nucleus

cell membrane

cytoplasm

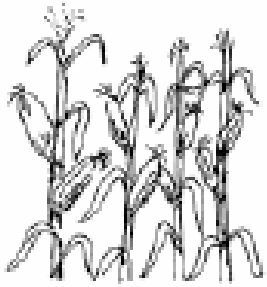
vacuoles

SOL Released Test Items

Which of these is *not* a plant?

F 

G 

H 

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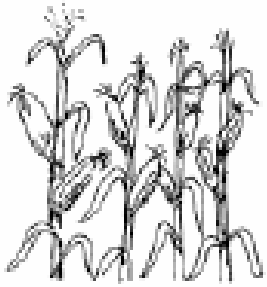
H 

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Trees, wild flowers, and grasses are all considered to be —

F vascular plants

G nonvascular plants

H woody plants

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What do ferns have that apple trees do not have?

A Stems

B Roots

C Flowers

D Spores

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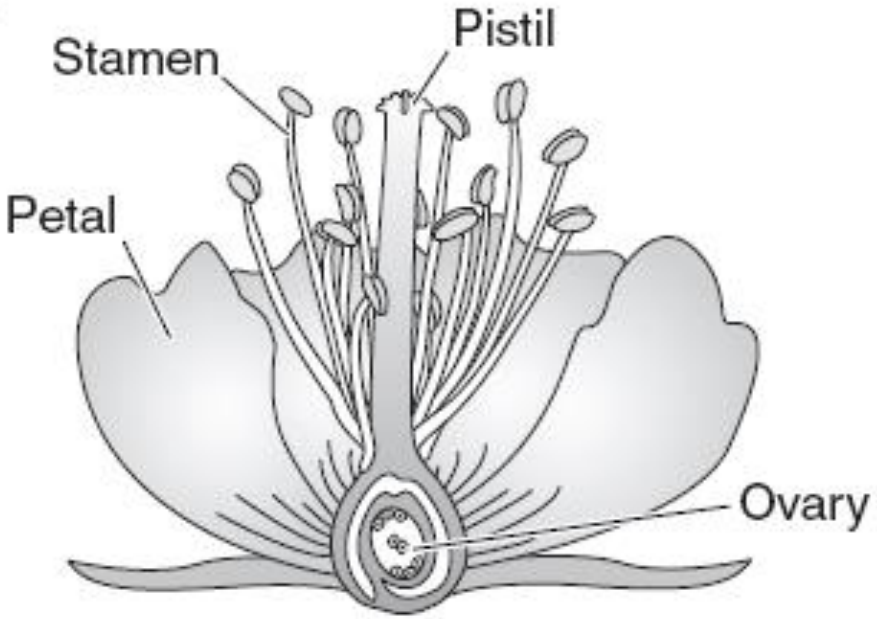
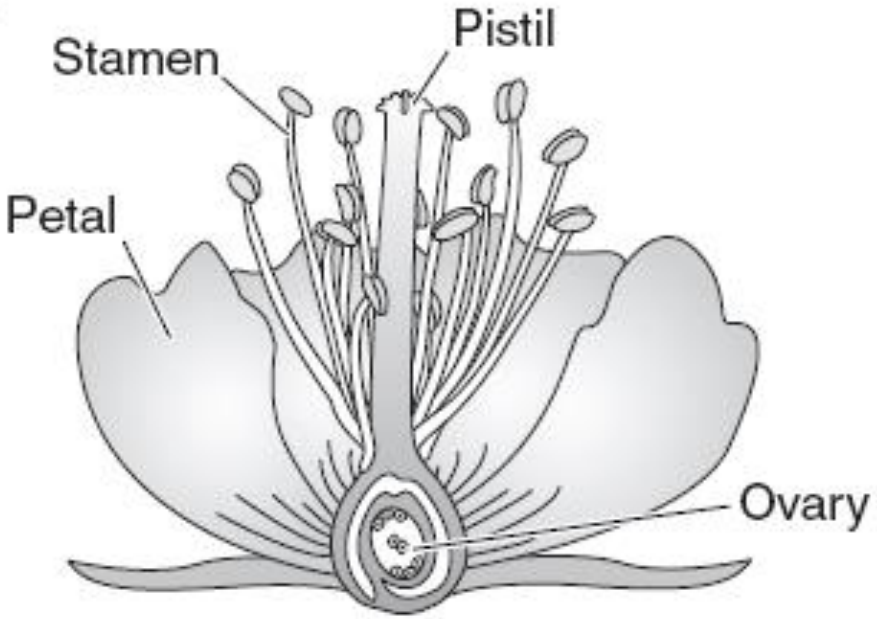


Pollen is produced in the —

A ovary
B pistil
C petal
D stamen

9



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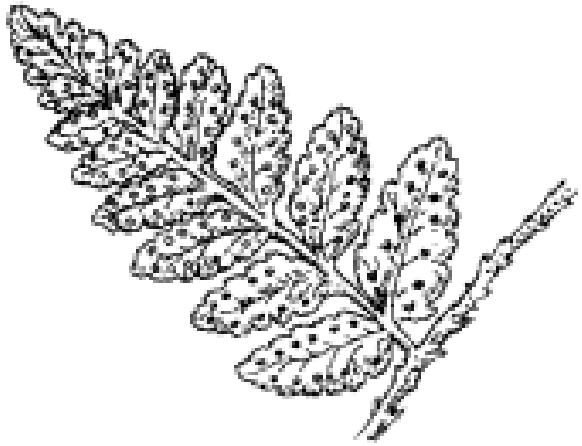

This fern plant has rows of little black dots on the back of the leaves. These little dots are not harmful. They hold millions of tiny reproductive cells called —

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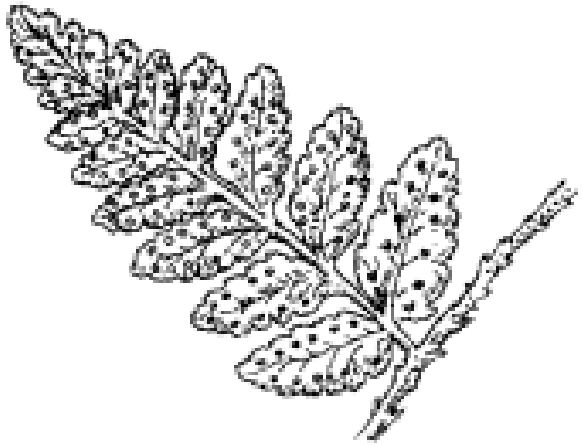
B anthers

C spores

D chloroplasts



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Which of these plants does *not* have special tissues to deliver food and water to its cells?

F Maple

G Dogwood

H Tomato

J Liverwort

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Why is photosynthesis important for plants?

F It collects sunlight which is used to make food for plants.

G It gets rid of plant waste products.

H It changes plant sugar into stronger chemicals.

J It helps attract insects to plant flowers.

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Experimental Results

Student	Numbers of Seeds Sprouted
1	25
2	19
3	27
4	5

Some students recorded the number of bean seeds that sprouted in their experimental plots. Each student began with the same number and type of seeds, the same type of soil plot, and the same amount of water and sunlight. Which of the following students *most likely* made an error in the experiment?

A 1

B 2

C 3

D 4

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Seeds can lie dormant for many years until —

A sunlight causes photosynthesis

B food webs are complete

C conditions are right for growth

D conduction of food occurs

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One way that mosses and ferns are similar is they *both* —

A are flowering plants

B produce spores

C grow in areas with little rainfall

D are dormant during the winter

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The part of a plant cell that gives the cell its green color is the —

A nucleus

B cytoplasm

C vacuole

D chloroplast

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Which of the following is a common plant that grows wild in Virginia?

A Orange tree

B Cactus tree

C Lemon tree

D Dogwood tree

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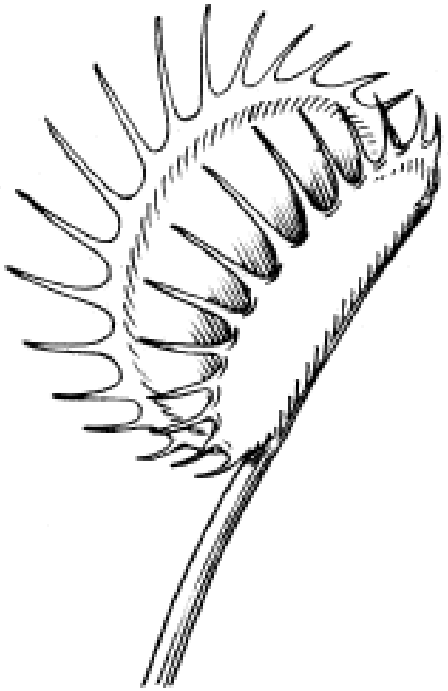
Venus's Flytrap



The picture shows a Venus's flytrap. This unusual organism can trap flies with its leaves, but it gets most of its food from photosynthesis. To what kingdom does this organism belong?

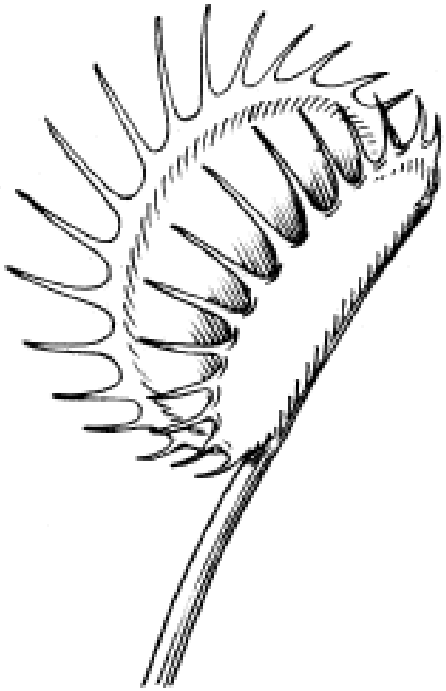
F Monera

G Protista

H Fungi

J Plantae

Venus's Flytrap



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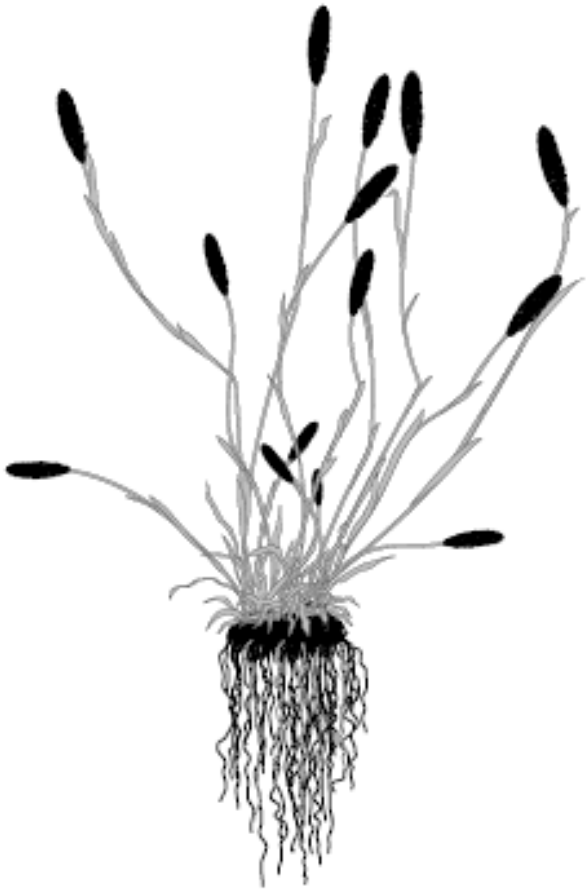


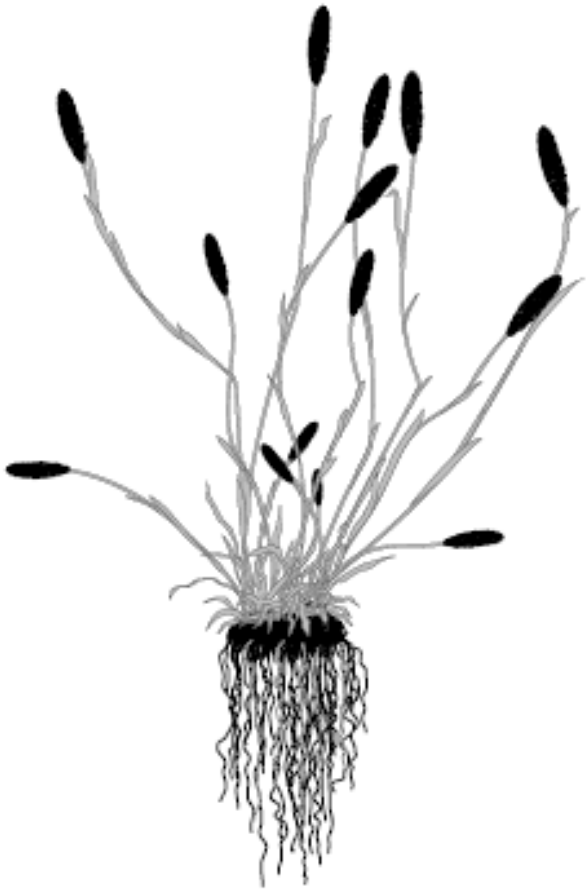
Which of these is a *main* function of this plant's roots?

F Making seeds

G Producing pollen

H Absorbing nutrients

J Storing chlorophyll



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In plant cells, chloroplasts —

A act as the cell's control center

B enable plant cells to produce their own food

C allow materials to move into and out of the cell

D support and protect the cell

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Bean Seed Growth

Temperature (°C)	Days to Germinate
25	5
20	7
15	9
10	11
5	?

The chart shows the time it took for bean seeds to germinate at different temperatures. If the trend continues, at a temperature of 5°C the seeds probably will germinate in —

F 5 days
G 8 days
H 13 days
J 16 days

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B deciduous

C nonvascular

D flowering

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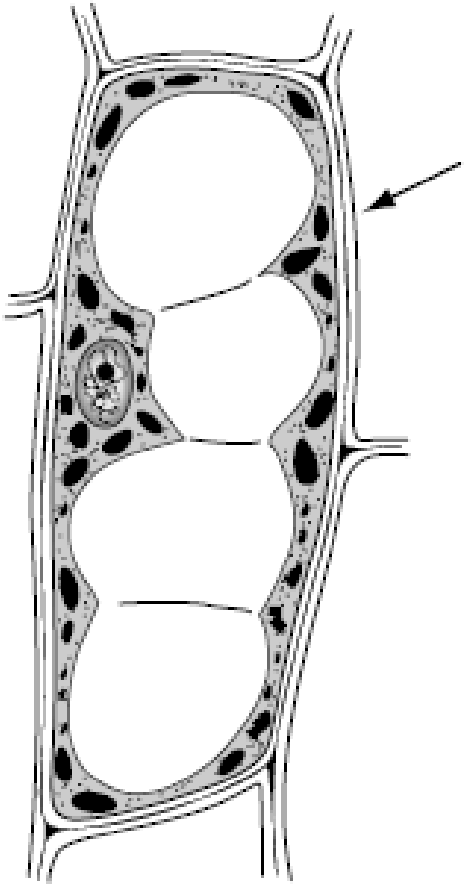


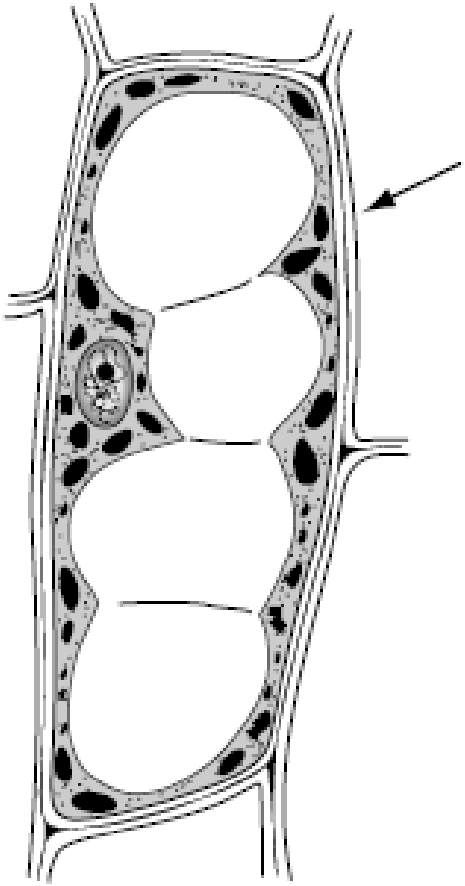
What part of the plant cell is shown at the arrow?

A Cell wall

B Cell membrane

C Vacuole

D Nucleus



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Which of the following plants is an example of a nonvascular plant?

F Dogwood

G Moss

H Ginkgo

J Pine tree

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The American dogwood is a member of which kingdom of living things?

F Monera

G Animal

H Protist

J Plant

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Which of these is a process that allows plants to convert light energy into food energy?

A Reproduction

B Excretion

C Digestion

D Photosynthesis

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Which of these belong to the kingdom Monera?

F Ferns

G Mosses

H Mushrooms

J Bacteria

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The internal parts of a cell are suspended in a jelly-like liquid called the —

A nucleus

B cell membrane

C cytoplasm

D chloroplasts

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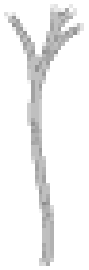
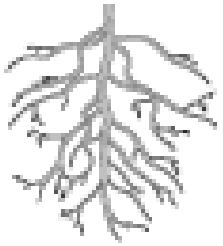
Which plant part will become a new plant?

A 

Seed

B 

Stem

C 

Root

D 

Leaf

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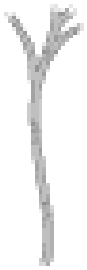
B 
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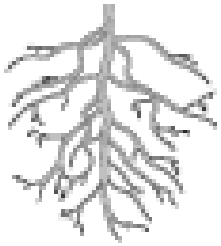
C 
Root

D 
Leaf

Which of these is the source of energy for photosynthesis?

A Electricity

B Magnetism

C Sunlight

D Gravity

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Which gas is used by plants during photosynthesis?

F Oxygen

G Nitrogen

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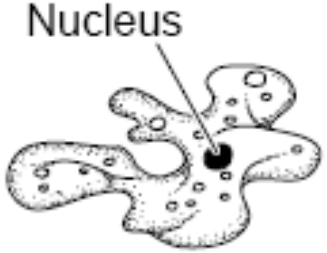
Which of these belongs to the kingdom Protista?



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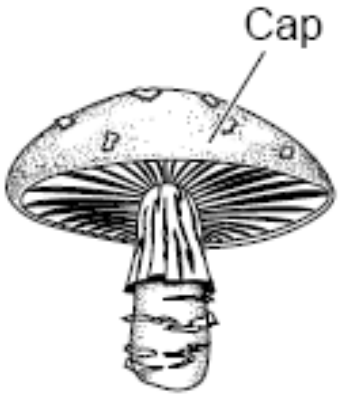
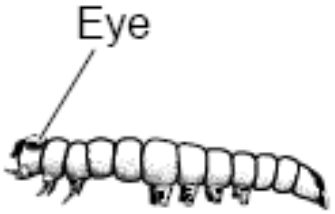


C

B



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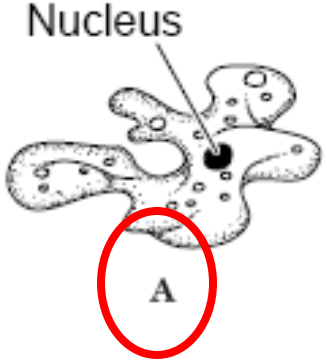

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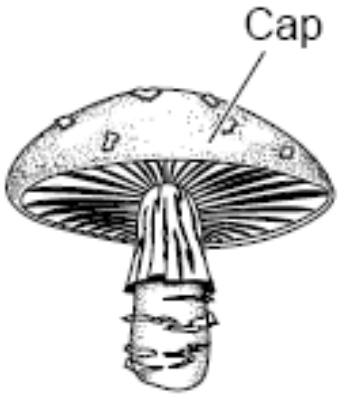

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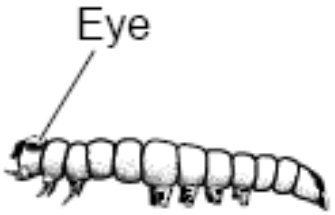
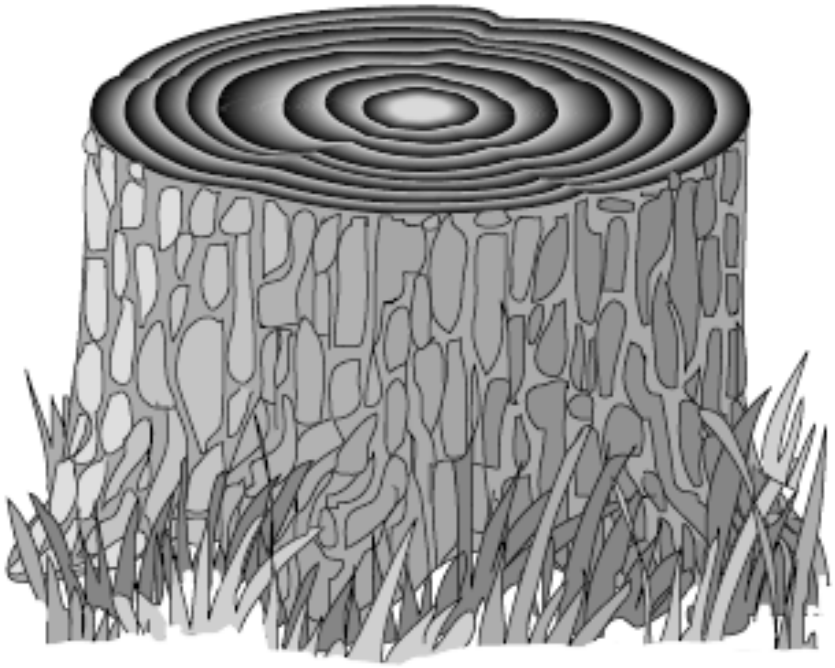


D



A tree has one light ring and one dark ring to make up one year's growth. How many years of growth are shown in the picture?

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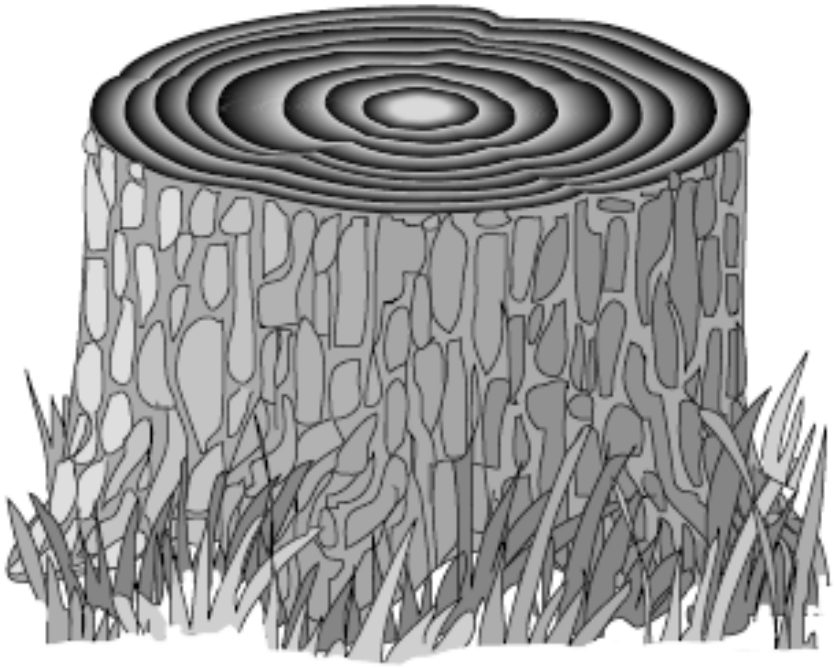
J 24



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F water

G calcium

H chlorophyll

J carbon dioxide

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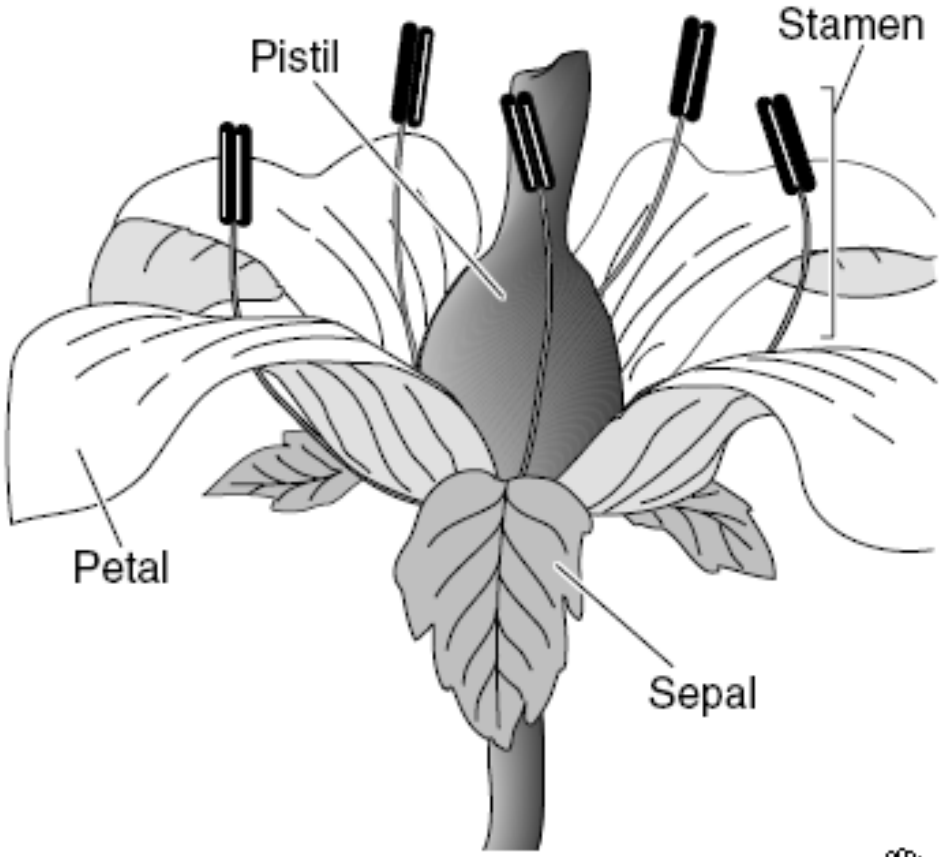

Which of these plant parts forms the seeds?

A The stamen

B The pistil

C The sepals

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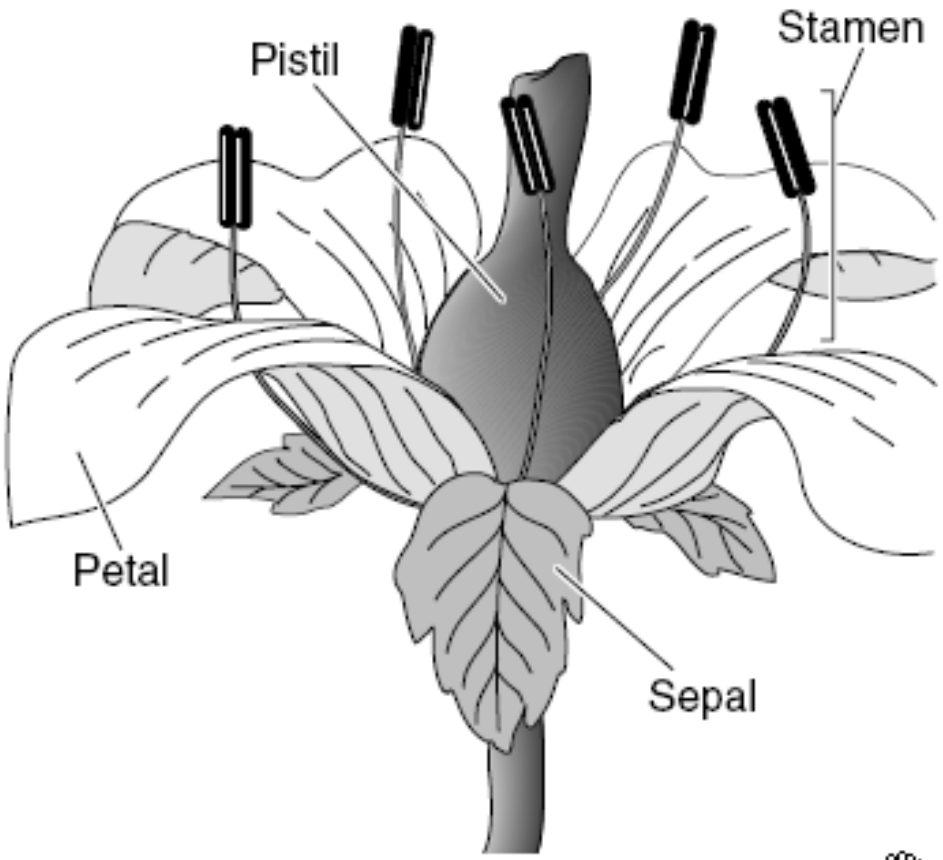

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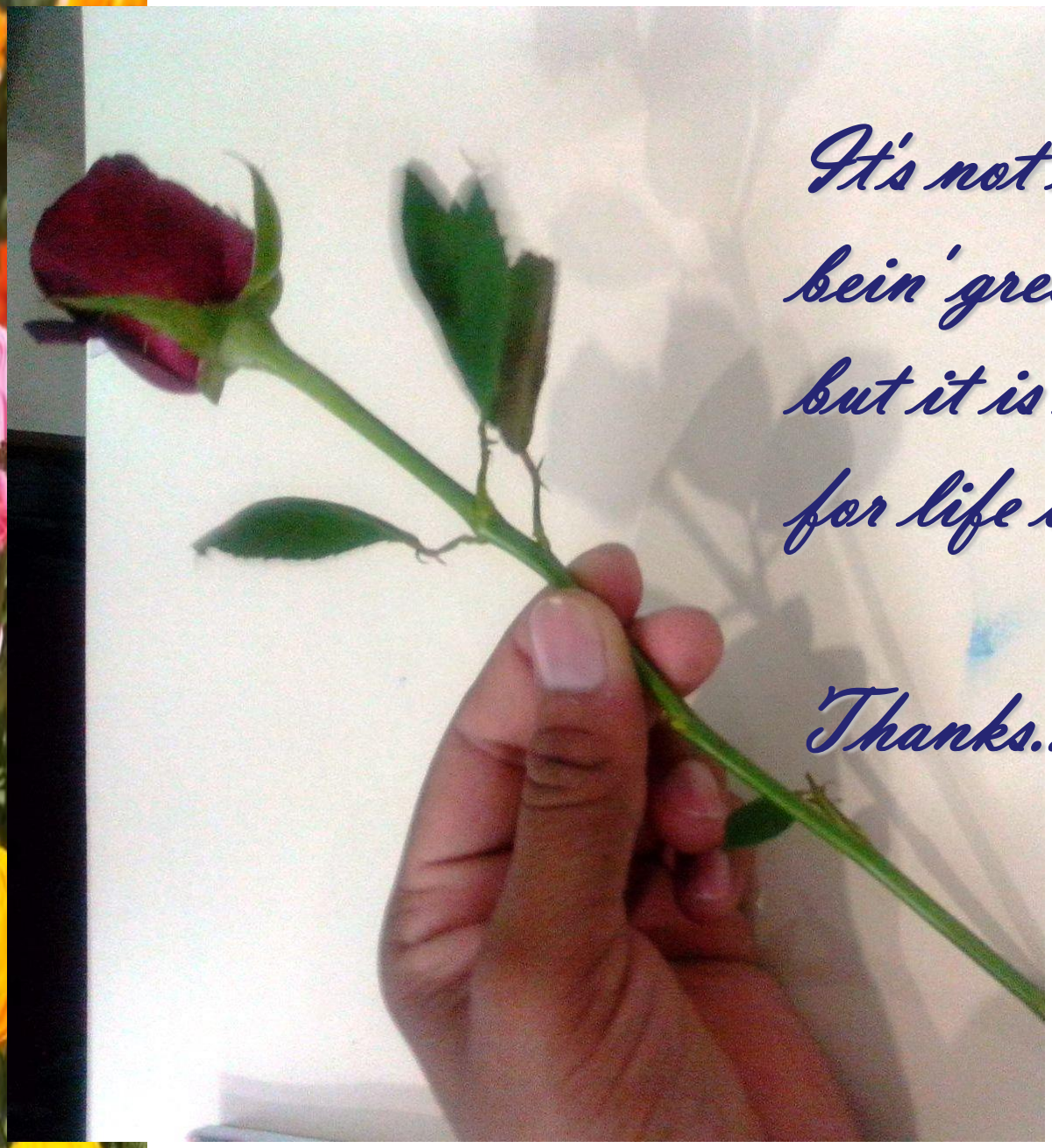

It's not that easy

bein' green.....

but it is essential

for life on earth !

Thanks.....End!