Plant Dissection Handout

Initial Model of Flowering Plant Parts. Include all parts and processes that you know.

Recreate in large scale on butcher paper to organize plant parts then draw the parts below.

Male Parts	**Female Parts**
Anther Function:	Stigma Function:
Filament Function:	Style Function:

Petals (not a male part) Function:	Ovary Function:

Revise your model: Draw and label all the parts of a flowering plant

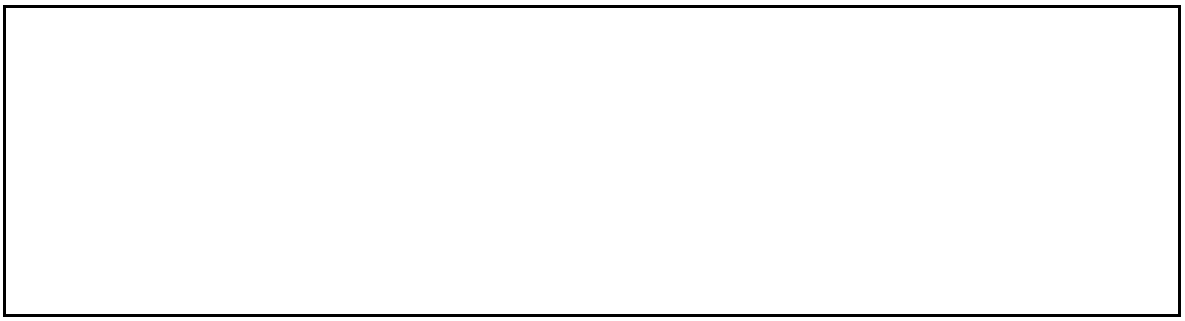
Now that we know the basic parts of a flowering plant, are we closer to understanding why flowering plants rule the world! Describe below why you think flowering plants have so much biodiversity.

_____

_____

_____

Cut open the ovary and try to identify the ovules. You will need a hand lens. Draw what you observe.



Correctly Draw the process of **Pollination** (pollen to stigma) and **Fertilization** (sperm to egg)**.** Make sure you label all the plant parts in your diagram. Don't forget to draw a pollinator! Use arrows to follow the path of the pollen grain.

Now that we know the basics of plant parts, pollination, and fertilization, are we closer to understanding why flowering plants rule the world? Describe below why you think flowering plants have so much biodiversity.

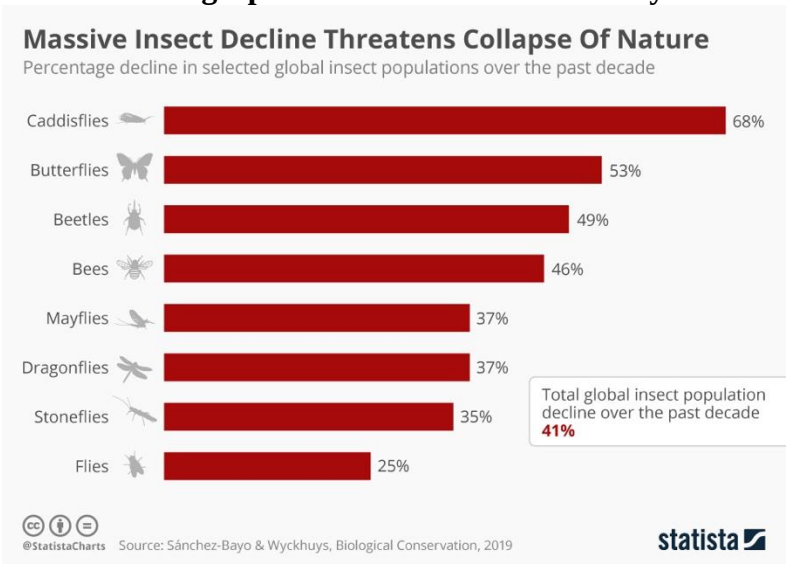
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_____

Question: **What would happen if HALF the flowering plants no longer existed on Earth?**

Data: Use this graph and all the information in your handout to present your argument.



Claim: (answer the question)	
Evidence: Use at least 3 The data shows… The evidence I use to support…is... Based on …I think…	
Reasoning: Based on the evidence, I conclude (restate claim) because (your analysis) … The most logical conclusion we can draw from the evidence is that…because….	

Scientific Argumentation Rubric
Student can demonstrate logical reasoning in explaining natural phenomena,

	3	**2**	**1**	**0**
Claim Statement that answers the original question	Makes accurate and complete claim.	Makes an accurate claim	Makes an inaccurate claim	Student does NOT make a claim
Evidence: 1) Angiosperms carry out sexual reproduction. They contain male and/or female parts. 2) The process of pollination depends on pollen being carried by pollinators from an anther to a stigma. 3) Flowers depend on pollinators for reproduction. 4) Pollinators depends on flowers for pollen (source of protein). 5) Species specific coevolution of flowers and angiosperms. 6) The graph indicates a 41% decline in pollinating insects.	Student includes 3 lines of evidence	Student includes 2 line of evidence	Student includes 1 line of evidence	Student does not include any evidence.
Reasoning Explains why or how evidence supports claim using observations and evidence obtained during the lesson.	Students makes argument to support claim using the reasoning of at least 3 lines of evidence.	Students makes argument to support claim using the reasoning of at least 2 line of evidence.	Students makes argument to support claim using the reasoning of at least 1 line of evidence.	Students makes no argument to support claim.

Total Points _____/9

Bee Game

Pollinator Descriptions

***Listed in the order they appear on the Pollinator Pictures document*. Format these to print on the back of the pollinator images.**

Bumble bee: *Bombus impatiens*
Favorite Flowers:

- Shape: medium to large tube-shaped flowers with deep nectar rewards and tongue-like landing platforms at the opening
- Colors: purple, blue, white

Butterfly: Common Buckeye, *Junonia coenia*
Favorite Flowers:

- Shape: Tube-shaped with very deep nectar reward
- Color: orange, red

Flesh Fly: *Sarcophaga carnaria*
Favorite Flowers:

- Shape: not too picky
- Color: Brown, dark red (the color of rotten meat!)
- Smell: like a dead animal

Honey bee: *Apis mellifera*
Favorite Flowers:

- Shape: not too picky
- Color: not too picky, but like most bees likes yellows and whites
- We just need **large amounts** of a single type of flower, all blooming at once!!

Ruby Throated Hummingbird: *Archilochus colubris*
Favorite Flowers:

- Shape: long tube-shaped flowers,
  preferably wide enough for their heads and long enough for their beaks and tongues
  Color: Orange, red

Hoverfly: *Eupeodes corollae*
Favorite Flowers:

- Shape: clusters of many tiny flowers, bowl-shaped compound flowers (flat in the middle with large petals on the outside)
- Color: white, yellow

Small native bees: Leafcutter bees, Sweat bees, Mason bees
Favorite Flowers:

- Shape: clusters of many tiny flowers, bowl-shaped compound flowers (flat in the middle with large petals on the outside)
- Color: yellow, orange, white

Moth: Giant Hawk Moth *Eumorpha typhon*
Favorite Flowers:

- Shape: tube-shaped with deep nectar rewards for their long tongues
- Color: white, so they can see them in the dark- they're nocturnal!

Soldier Beetle: *Chauliognathus pensylvanicus*
Favorite Flowers:

- Shape: Open flowers, clusters of many tiny flowers
- Color: green, white

Squash Bee: *Peponapis pruinosa*
Favorite Flowers:

- Shape: Large orange star or bell-shaped flowers
- Color: yellow, orange, white
- These bees are specialists on relatives of squash
  (gourds, zucchini, cucumber etc.)

Names for Sticky Tags

Bumble bee	Hoverfly
Bumble bee	Hoverfly
Butterfly	Small native bees
Butterfly	Small native bees
Flesh Fly	Moth
Flesh Fly	Moth
Honeybee	Soldier Beetle
Honeybee	Soldier Beetle
Hummingbird	Squash Bee
Hummingbird	Squash Bee

Bee Game Answers

Flower	Moths	Butterflies	Hummingbirds	Small Native Bees	Flesh flies	Hover Flies	Honeybees	Bumble bees	Beetles	Squash bees
Sunflower										
Queen Anne's Lace										
Trumpet Honeysuckle										
Green flower										
Salvia										
Tobacco										
Trumpet Vine										
White clover										
Wild Ginger										
Squash										

KEY
not a great answer
good answer
Excellent answer



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