

Part F: Section 3.18 – Insects

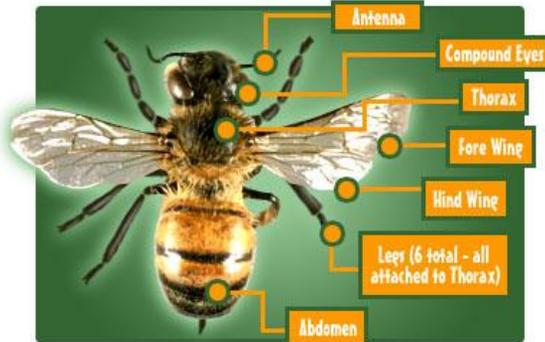
1. Complete each statement about the characteristics of insects:

-Insects have **SEGMENTED** bodies with an exoskeleton. The outer layer of the exoskeleton is called the **CUTICLE**, which is made up of **2** layers.

-What are an insect's three body segments?

HEAD, THORAX, & ABDOMEN

- On which segment are the antennae found? **HEAD**



- Which segments contains most of the insect's organs? **ABDOMEN**

- To which segment are wings and legs attached? **THORAX**

-What are spiracles?

BREATHING HOLES ON ABDOMEN USED TO TAKE IN AIR



<http://noticing.co/wp-content/uploads/2015/10/indian-moon-moth-spiracles.jpg>

-How many pairs of legs do most adult insects have?

**3 PAIRS
(6 LEGS)**

★List the function of each part of an insect's anatomy:

Antenna **Used as sense organs (such as “noses” for moths)**

Ocelli (Ocellus) **Simple eye used to detect light/dark**

Tympanum **Used for hearing
(similar to an eardrum)**

Ovipositor
Egg-laying structure in females

Cerci
**Used as sense organs or defense
(weapons)**



★What type of circulatory system do insects have? **OPEN**

*Vertebrates – Closed circulatory system
(with vessels to carry blood)*

Think About It:

What term refers to an arthropod's blood? **HEMOLYMPH**

What color is an insect's blood? Why?

**GREEN or YELLOW – Not red since it
doesn't have the iron like vertebrates**



Mosquito

What could you infer from the mosquito picture?

**Blood is from a vertebrate – not the mosquito!
Female mosquito – needs the blood for viable eggs**

2. What are pheromones?

Chemicals that influence the behavior of others within the same species



3. How is bioluminescence used in fireflies?

Reproduction and predation – produce flashes to attract mates or prey

4. How do moths detect pheromones? **They use their feathery antennae**

5. Why are bees and wasps called “social insects”?

They live in groups or colonies and work together for food, defense, & raising the young.



6. What does homing mean?

An insect can return to a single hole (nest, location, etc.) among many other apparently identical places, even after a long trip or after a long time.

Part G: Section 3.19 – Insect Foods

Read pages 119-121 to answer these questions.

1. What is a proboscis used? How is it used?

This long mouth-tube that butterflies & moths use to suck up the nectar of the flower

2. What is sponging?

Sponging means that the mouthpart can absorb liquid food and send it to the esophagus. The housefly releases saliva by dabbing the food. As the saliva dissolves the food, its sponging mouthpart absorbs the liquid food.

3. How is siphoning used?

Bees use siphoning to suck liquids (nectar).

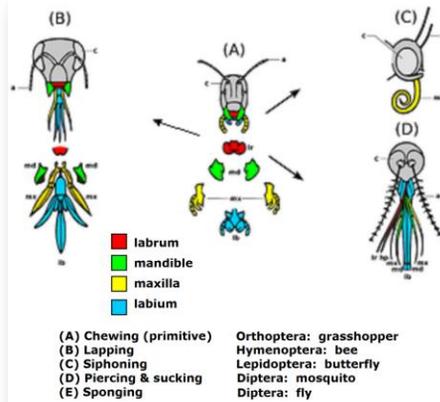
★4. Describe the type of mouthparts each insect would likely have.

Herbivores:

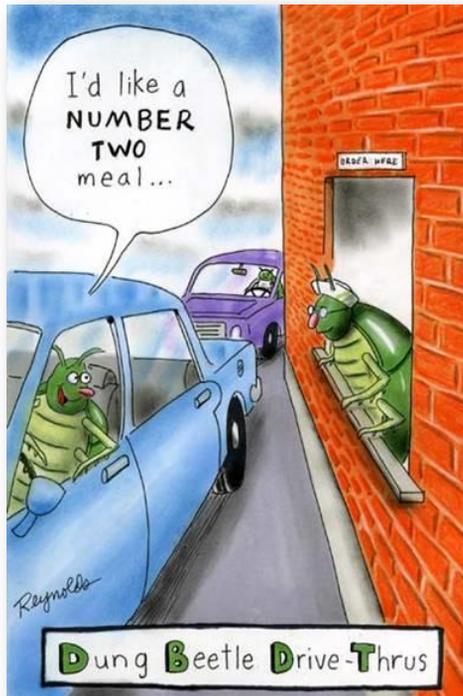
- Chewing (leaves)**
- Sucking (sap/nectar)**

Carnivores:

- Chewing (other insects/invertebrates)**
- Piercing, Siphoning or Sucking (blood or insect guts)**
- Sponging (dissolve/absorb food)**



More bug humor ...



Part E: How do they compare?

Flip to page 12 - Grasshopper Lab

	Lubber Grasshopper	Hermit Crab
HOW DO THEY COMPARE?		
Arthropod Class	Insect	
Body Segments - How many? Describe them.	3 ^{shorter} longer H → T → A	
Legs - How many? How big? Describe them.	4-walking > 6 2-jumping - biggest	
Mouthparts - What type and how are they used?	Chewing to eat plants	
Locomotion - How does it move?	Jump Run/Walk	
Defenses? Cool appendages?	Spikes on legs Carapace-Shield	

Arachnids
Crustaceans
Chilopoda
Diplopoda
Insects

Part G on notes

You may use Google if you need information.

Make the corrections for the titles of each section.

Top – Section H

Middle – Section I

Bottom – Section J

Use the Ch 3 textbook to help you complete the back of the worksheet.

MUST BE DONE BY THE START OF CLASS TOMORROW!

Part H: Section 3.20 - Reproduction/Life Cycle - Read pages 33-35 to answer these questions

1. What do we call the physical transformation an insect makes during its life cycle? _____
2. What type of insects use asexual reproduction? _____
3. List the stages in incomplete metamorphosis. _____ → _____ → _____
4. List the stages in complete metamorphosis. _____ → _____ → _____ → _____
- ★ 5. What other names are used for these stages?
Larva = _____
Pupa = _____
- ★ 6. Identify the type of metamorphosis for each insect using I for incomplete and C for complete.
 _____ Grasshopper _____ Butterfly _____ House fly _____ Praying Mantis
 _____ Damselfly _____ Dung beetle _____ Dragonfly _____ Bumble Bee
 _____ Milkweed Bug _____ Mosquito _____ Cricket _____ Black Ant

Part I: Section 3.21 - Importance of Insects - Read pages 36-38 to answer these questions.

1. Insects help the environment as they _____ the soil, _____ blossoms, and _____ insect and plant pests.
2. Insects also act as _____ by breaking down dead plants and animals and _____ the soil with the nutrients from their droppings.
3. Some insects produce useful substances, such as _____, wax, lacquer, and _____. Adult _____ and their _____ are used as fishing bait.
4. Insects have an important role in food _____ and food _____. They are also a rich source of _____, vitamins, and _____.
5. Insects, such as fly larvae or _____, are used to clean wounds and prevent infections.

Part J: Section 3.22 - Control of Insects - Read pages 39-41 to answer these questions.

1. Biological control is a method of controlling _____ by using other _____ or other natural predators. Some examples are ladybugs and lacewings help to keep _____ under control and dragonflies are predators of _____.
2. Parasitic insects, such as _____ and flies, lay their eggs on an insect _____.
3. _____ (or pesticides) are chemicals that kill insects.
4. What is one disadvantage to using chemicals? _____