

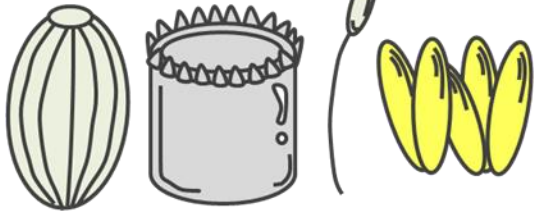
Key to immature insects found in a Monarch Waystation



DAVEY 
Institute

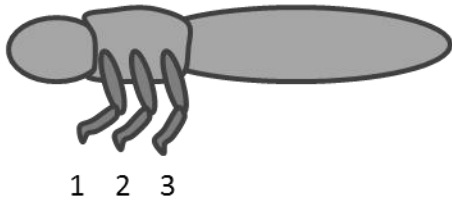
What are you looking at?

Egg (KEY A)

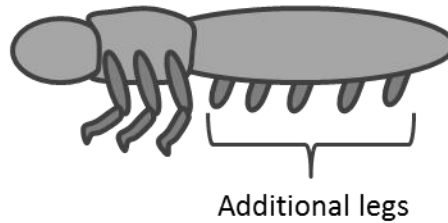


Has a long body

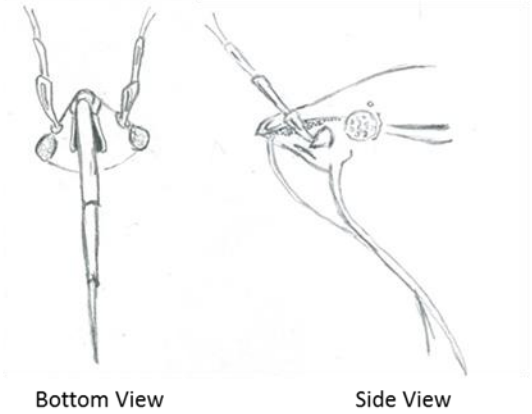
Has 0-3 pairs of legs (KEY C)



Has 3 pairs of legs plus additional fleshy prolegs (KEY D)



Has sucking mouthparts (KEY B)



Monarch parasitoid (KEY E)



KEY A: Eggs found on the milkweed plant

1a. A single egg or loosely grouped eggs **3a.**

2a. A tight cluster of eggs **5a.**

3a. Oval-shaped white (opaque) egg with distinct ridges standing on end **Monarch**



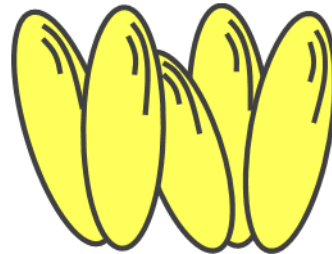
4a. White, oblong egg at the end of a hair-like stalk **Lacewing**



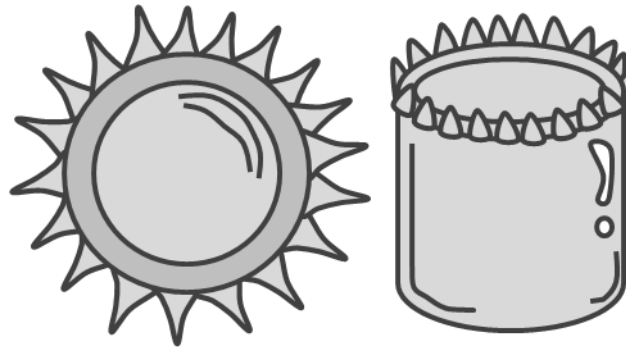
5a. Cluster of upright eggs (vertical) 7a.

6a. Cluster of eggs lying down (horizontal) 11a.

7a. Yellow, oval or football-shaped (15-25) **Lady Beetle**



8b. Barrel-shaped eggs with little spikes around rim 9a.



Top View

Side View

9a. Metallic, silver-colored eggs (10-20) **Spiny Shouldered Stink Bug**

10a. Gray to black eggs (10-20) **Anchor Bug**

11a. Oval-shaped **13a.**

12a. Round or woolly **14a.**

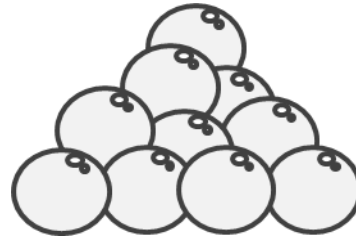
13a. *Orange/red oval-shaped eggs that are randomly placed
..... **Large Milkweed Bug or Swamp Milkweed Leaf Beetle**



* These two egg masses look very similar. Take into the classroom and hatch them out to be sure!

14a. Woolly mass of eggs **Milkweed Tussock Moth**

15a. Round, pearl-like eggs **Yellow-Striped Armyworm**

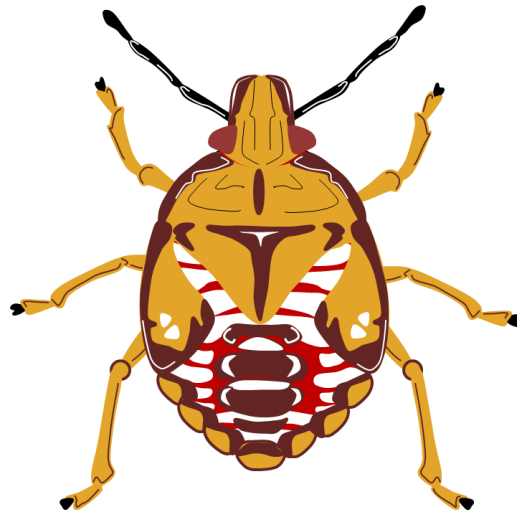


KEY B: Insects with straw-like sucking mouthparts. Most of these are plant feeding insects (herbivores), but a few are predators (carnivores) and some even feed on monarch caterpillars. Insects with straw-like mouthparts use them to feed on juices directly from plants or another insect. These insects are hemimetabolous, meaning they don't undergo full metamorphosis. Immature insects from this group are called nymphs. Nymphs look a lot like the adult insects, but don't have fully developed wings.

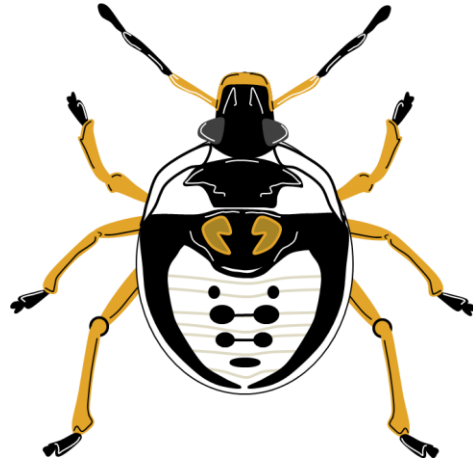
1b. Round or shield-shaped **3b.**

2b. Elongate or teardrop-shaped **5b.**

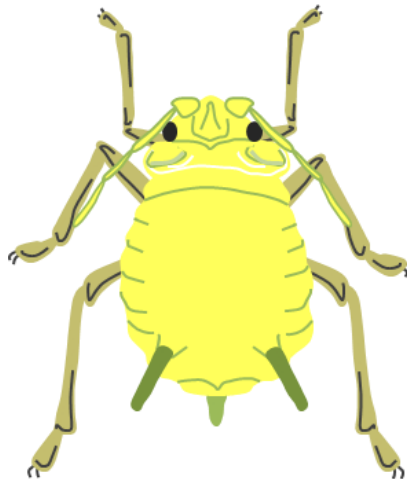
3b. Brown/orange with red and white bands **Spiny Shouldered Stink Bug**



4b. Black and white with 7 dots on body **Anchor Bug**

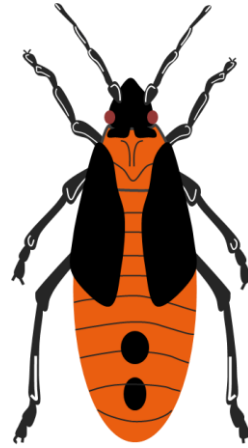


5b. Small, teardrop-shaped with 2 tailpipe-like appendages (cornicles). Variable in color (yellow, green, red or gray) **Aphids**

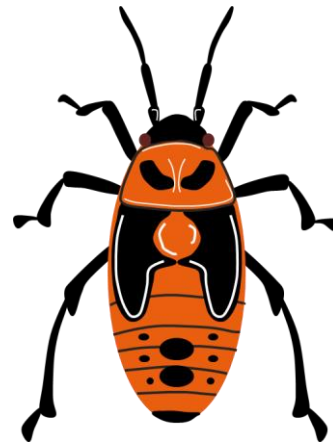


6b. Large and elongated. Oval-shaped body 7b.

7b. Orange and black with 2 dots on body **Large Milkweed Bug**



8b. Red/orange with 8 dots on body **Small Milkweed Bug**



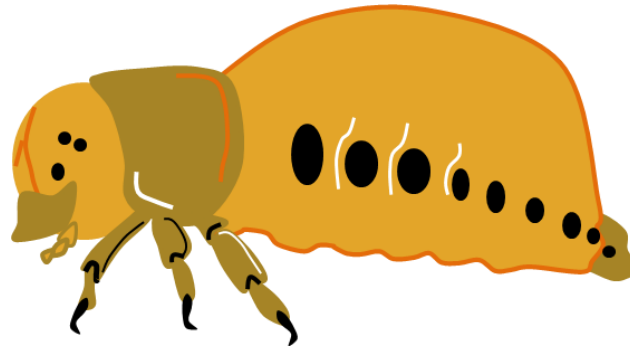
KEY C: These insects have variable mouthpart types. Some are feeding on the milkweed plant (herbivores), while others feed on other insects (carnivores). These insects are holometabolous, meaning they undergo full metamorphosis (e.g. a caterpillar turns into a butterfly). Immature insects in this group are called larvae. Larvae don't look like the adult insects.

1c. Has legs 3c.

2c. Does NOT have legs 9c.

3c. Has an elongated body 5c.

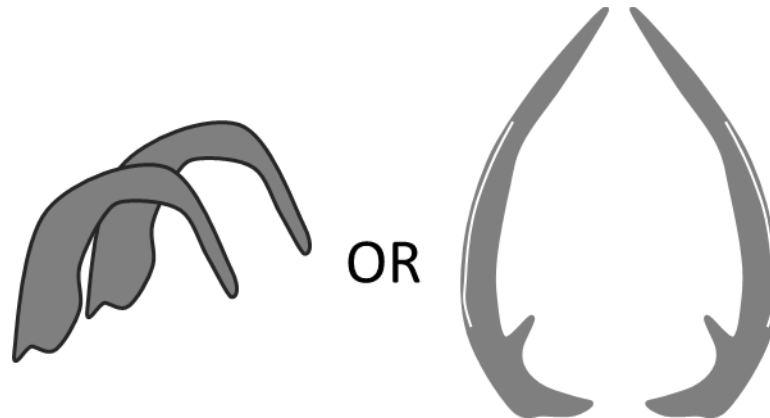
4c. Has a short round body **Swamp Milkweed Leaf Beetle**



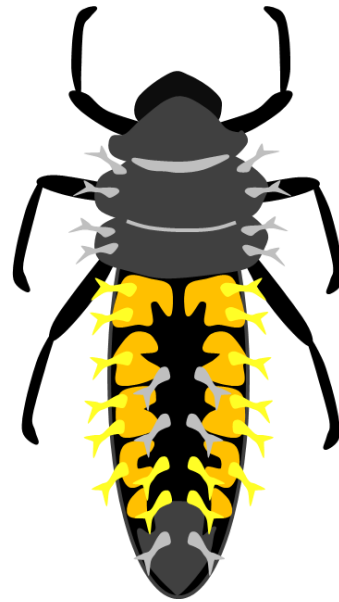
5c. Has chewing-type mouthparts **7c.**



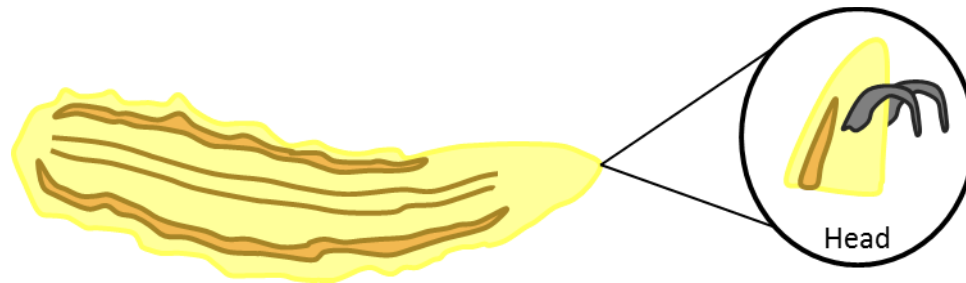
6c. Has variable mouthparts (either small and hook-like or sickle-shaped) **8c.**



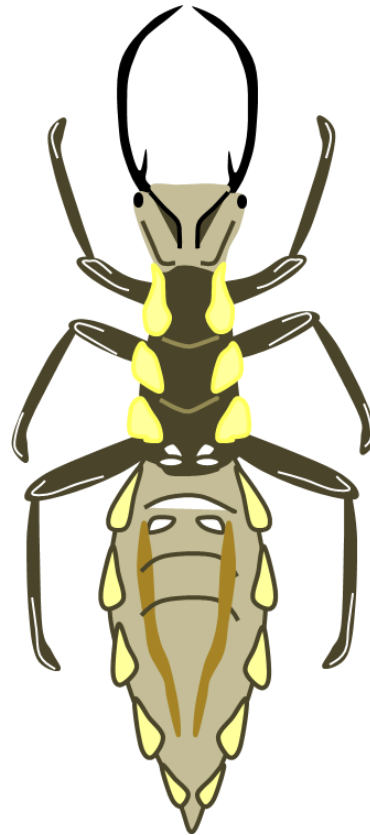
7c. Body with many spike-like projections **Lady beetle**



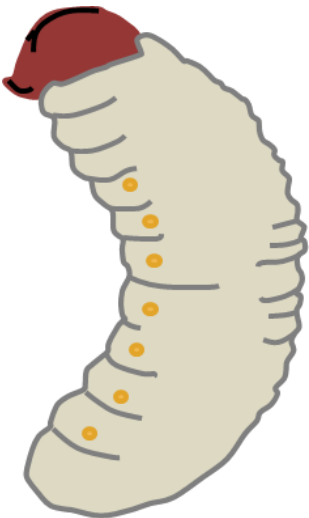
8c. Cone-shaped with 2 hook-like mouthparts **Bee Fly**



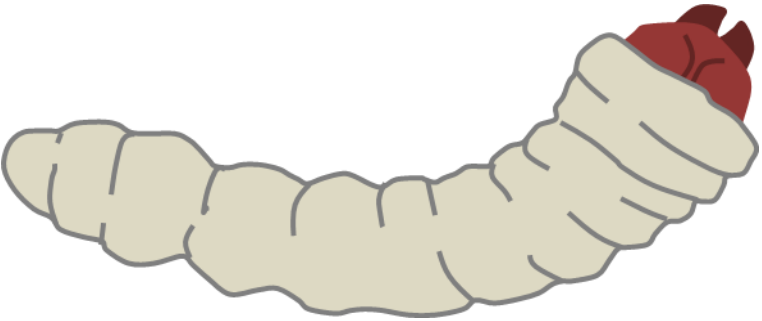
8c-2. Elongate body with 2 sickle-shaped mouthparts **Lacewing**



9c. Small and grub-like. Found inside the stem **Milkweed Weevil**

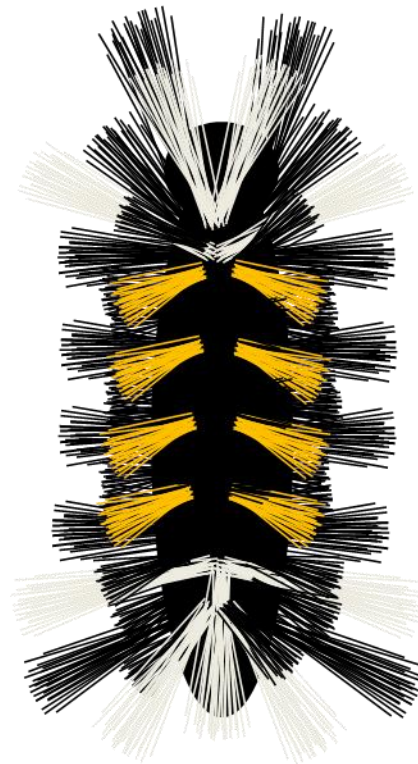


10c. Large white worm-like body. Found in the stem or roots of milkweed
..... **Milkweed Long Horned Beetle**



KEY D: This is the caterpillar group. Caterpillars have more than 3 pairs of legs. These extra legs are false legs called prolegs. Each proleg has a set of tiny claws called crochets that help them hold onto leaf surfaces. These insects are holometabolous, meaning they undergo full metamorphosis (e.g. a caterpillar turns into a butterfly). Immature insects in this group are called larvae. Larvae don't look like the adult insects.

1d. Has a hairy body **Milkweed Tussock Moth**

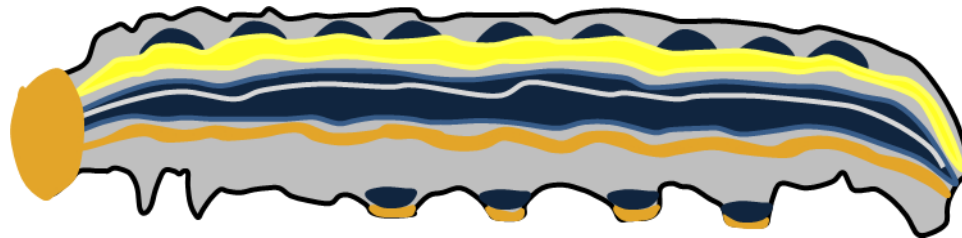


2d. Has a smooth body 3d.

3d. Black, yellow and white striped caterpillar with 4 tentacle like projections **Monarch**



4d. Has 2 distinct yellow stripes running along each side of the body (can be variable in color)
..... **Yellow-Striped Armyworm**



KEY E: Parasitoids of monarch caterpillars.

Parasitoid: Is a type of insect that lays its eggs in another type of insect (host). The young parasitoids (larvae) feed on the inside of the host (monarch caterpillar) and emerge when they are fully grown.

1e. Maggot that emerged from the monarch caterpillar **Tachinid fly**



2e. Maggot-like larvae (similar to above) or wasp-like adult that emerged from a monarch chrysalis **Chalcid wasp**

