SESSION I

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TEXAS A&M AGRILIFE EXTENSION
Big Country

INSECT LIFE CYCLES

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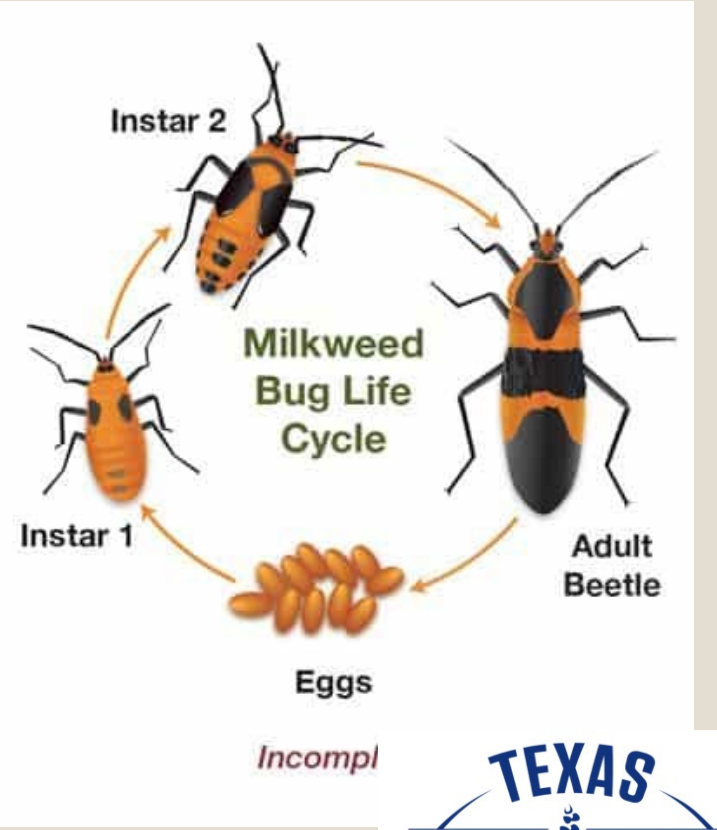
Incomplete Life Cycle
3-Stages of Life

- Egg - Insects with an incomplete life cycle hatch from eggs into tiny nymphs that resemble the adult stage.

- Nymphs - They stay in the nymphal stage for several weeks, while growing and molting into larger insects until they reach adulthood called instars. Nymphs either do not have wings or have wings that cannot be used for flight.

- Adults - They have fully developed wings and can fly great distances. Insects with an incomplete life cycle can be controlled at any stage, but are easier to control in the nymphal stage just after they hatch from the eggs.



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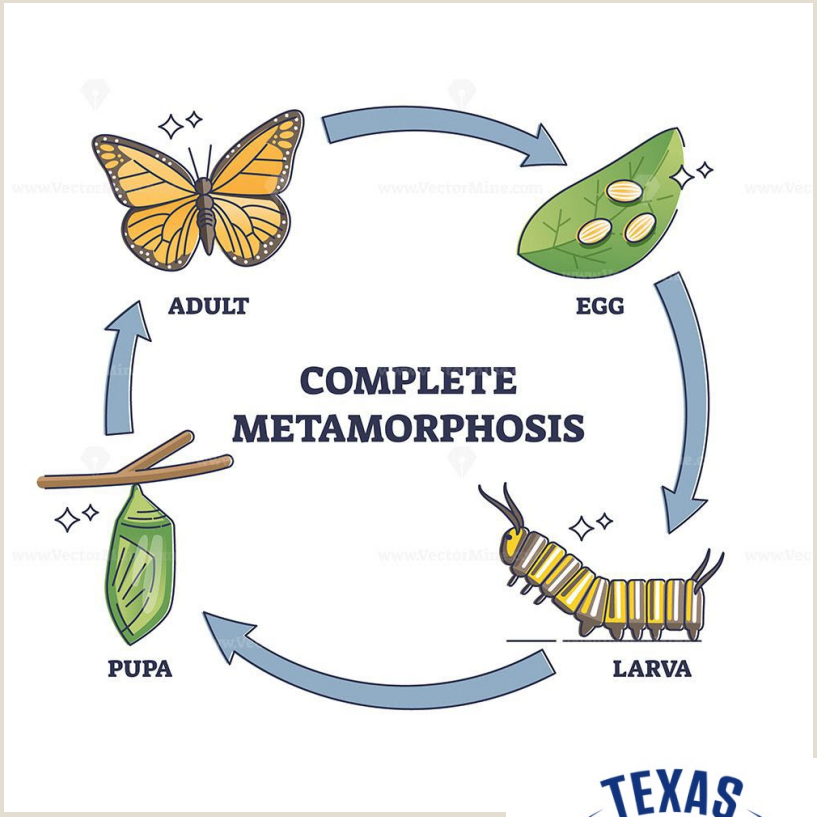
Complete Life Cycle
4-Stages of Life

- Egg – Insects can lay single eggs or in groups.
- Larvae – Larvae move about freely on the plant feeding on roots, tubers, leaves, or fruits.
- Pupa – After reaching maturity, they then pupate (the resting stage) and develop into adults.
- Adults – This is when the insect looks like what we expect it to look like. The easiest way to identify an insect is what



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Examples of Different Life Cycles

Incomplete

- Dragonfly
- Aphids
- Grasshoppers
- Squash Bugs
- Assassin Bugs

Complete

- Butterflies
- Moths
- Lady Bugs
- Beetles
- Flies

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INSECT MOUTH PARTS

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Chewing Insects

- Many chewing insects have a complete life cycle. Therefore, depending on species, there may be one or two damaging stages. Butterflies do not chew plants once they become adults. Chewing insects include all species of beetles, grasshoppers and moths and butterfly larvae (most often called worms).

- Chewing insects damage foliage, stems and fruit. They may become as numerous as to completely defoliate plants. Eggs of most insects are laid on the plant, and the larvae upon hatching begin to feed. Others may invade the crop by "marching in" or by flying into the field.

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Sucking Insects

- Sucking insects include aphids, stink bugs, squash bugs, and leafhoppers. Sucking insects have an incomplete life cycle. After hatching from the egg, they may begin to feed and move about on the plant.

- They are usually attracted to the most succulent part of the plant. Aphids usually are found in the terminal or on flowers. Stink bugs and squash bugs readily feed on the tender fruit. These insects damage the plant by reducing the vigor or by injecting a toxin or disease-causing organisms into the plant. Heavy feeding may cause flowers to abort or the leaves to turn yellow and fall off. Feeding on the fruit may cause hard spots or twisted and misshapen fruit.

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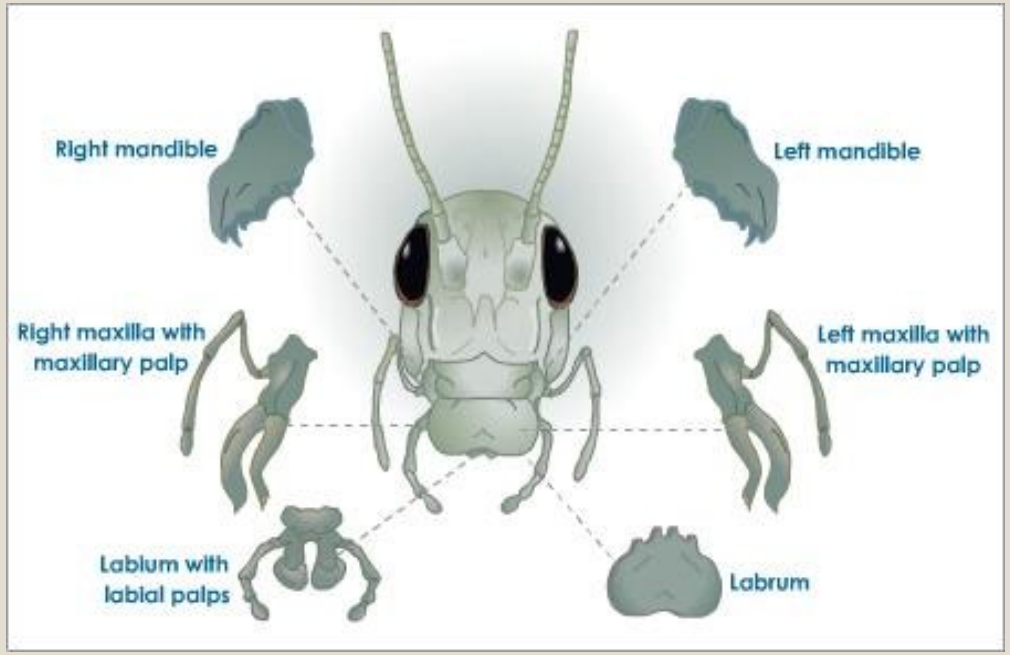
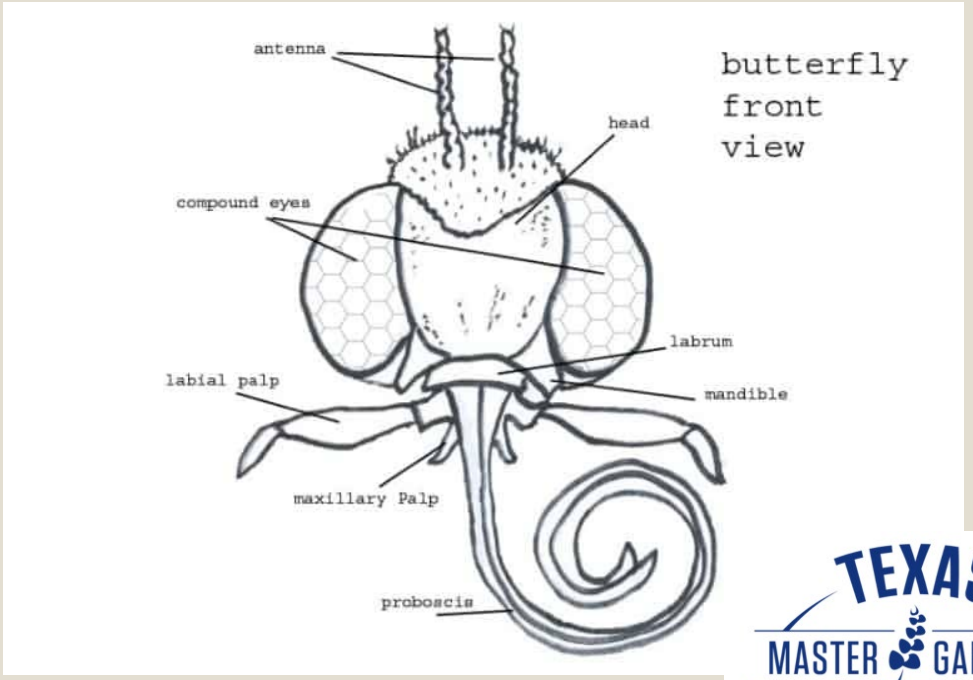
Mouth Parts of Insects

Chewing Mouthparts



Sucking Mouthparts



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WHY DO WE CARE?

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Monarch Butterfly

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Squash Bugs

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HOW TO IDENTIFY

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Inspect the Garden

- Start **BEFORE** any problems occur
- Get up close to your plants
- Look at the top, middle, and bottom of each plant
- Turn the leaves over and look underneath
- Look in the soil where the plant lives

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Useful Resources

- Field Guides
- iNaturalist App
- Rulers, coins – just something to give the insect an accurate size
- Google Lens
- Big Country Master Gardener Facebook Page
- Call the Extension Office

Caution: Many insects looks very similar so make sure that y
treating a pest not a beneficial bug

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MONITORING PESTS

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Tools for Monitoring:

- Sticky Traps – Date the Traps and Change them regularly
- Hand Lens with a light
- Collection Containers

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Where to Monitor:

- Near a water or food source
- Near shelter
- Look for evidence of where the insect is i.e. trails
- Along edges and walls

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We will probably not have a ZERO pest garden.

- Has all the damage been done by the bug in the larva stage and you are just now seeing it?
- Is it hurting anything?
- Many crops can tolerate a certain amount of damage from pests.
- Is it just aesthetic damage?

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15 MIN BREAK

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