

Study Guide – Texas 4-H Entomology ID Contest Hemiptera

1. Review the Hemiptera YouTube video for your age level at the Bexar Entomology page.
2. Follow along with your 4-H Entomology Study Guide (<https://entomology.tamu.edu/extension/youth/4-h/4h-contest/>)
3. Review the definitions for the key words for Hemiptera.
4. Read the Hemiptera Facts
5. Answer the study guide questions
6. Quiz yourself to identify the species of Hemiptera and if they are a pest/beneficial/inconsequential and where they are found in nature and/or their host.

Key Words to Know for Hemiptera:

Hemelytra

Hemimetabolous

Haustellate

Piercing Sucking Mouthparts

Nymph

Hemiptera Facts:

- There are many species of Hemiptera to know, this is a large group of insects.
- All Hemipterans are hemimetabolous and have haustellate mouthparts.
- Hemipterans feed on plants, other insects, or blood. They are pests and beneficial.
- For Intermediates and Seniors: Hemipterans can be grouped into three suborders: Heteroptera, Sternorrhyncha, and Auchenorrhyncha.
 - Heteroptera have hemelytra. Half the wing is hard and half is soft/membranous. This means they form a triangle when they fold over the back of the body.
 - Sternorrhyncha are very small, usually immobile, and soft bodied.
 - Auchenorrhyncha are treehoppers, leafhoppers, cicadas and more. They have membranous wings and are all plant feeders.

Study Guide Questions:

Name 5 Hemipterans that are beneficial.

Name 5 Hemipterans that are pests.

What type of mouthparts do Hemipterans have?

What type of metamorphosis do Hemipterans have?

Name 3 aquatic Hemipterans.

Seniors: name 3 Heteroptera, name 3 Auchenorrhyncha, name 3 Sternorrhyncha

Study Guide – Texas 4-H Entomology ID Contest
Hemiptera Species to Know:

Junior Species (10):

- | | |
|--------------------|----------------|
| 1. backswimmer | 6. squash bug |
| 2. bed bug | 7. toad bug |
| 3. giant water bug | 8. cicadas |
| 4. green stink bug | 9. leafhoppers |
| 5. harlequin bug | 10. aphids |

Intermediate Species (19):

- | | |
|----------------------|--------------------|
| 1. backswimmer | 11. water striders |
| 2. bed bug | 12. kissing bug |
| 3. chinch bug | 13. cicadas |
| 4. cotton fleahopper | 14. leafhoppers |
| 5. giant water bug | 15. aphids |
| 6. green stink bug | 16. greenbug |
| 7. harlequin bug | 17. psyllids |
| 8. leaffotted bug | 18. armored scales |
| 9. squash bug | 19. soft scales |
| 10. toad bug | |

Senior Species (36):

- | | |
|-------------------------|----------------------|
| 1. ambush bug | 19. toad bug |
| 2. assassin bug | 20. water boatman |
| 3. backswimmer | 21. water scorpions |
| 4. bed bug | 22. water striders |
| 5. big-eyed bug | 23. wheel bug |
| 6. boxelder bug | 24. kissing bug |
| 7. burrower bug | 25. cicadas |
| 8. chinch bug | 26. leafhoppers |
| 9. cotton fleahopper | 27. planthoppers |
| 10. false chinch bug | 28. spittlebugs |
| 11. giant water bug | 29. treehoppers |
| 12. green stink bug | 30. aphids |
| 13. harlequin bug | 31. greenbug |
| 14. large milkweed bug | 32. pecan phylloxera |
| 15. leaffotted bug | 33. psyllids |
| 16. minute pirate bug | 34. armored scales |
| 17. squash bug | 35. soft scales |
| 18. tarnished plant bug | 36. whiteflies |

Study Guide – Texas 4-H Entomology ID Contest
Thysanoptera
Intermediates & Seniors Only

7. Review the Thysanoptera YouTube video for your age level at the Bexar Entomology page.
8. Follow along with your 4-H Entomology Study Guide
(<https://entomology.tamu.edu/extension/youth/4-h/4h-contest/>)
9. Review the definitions for the key words for Thysanoptera.
10. Read the Thysanoptera Facts
11. Answer the study guide questions
12. Quiz yourself to identify the species of Thysanoptera and if they are a pest/beneficial/inconsequential and where they are found in nature and/or their host.

Key Words to Know for Thysanoptera:

Hemimetabolous

Haustellate

Rasping Mouthparts

Thysanoptera Facts:

- Thysanoptera have are hemimetabolous.
- Thysanoptera are called thrips. Thrips is singular and plural.
- Thysanoptera have rasping mouthparts, which are most closely like haustellate.
- Many species of Thysanoptera are plant feeders and considered pests.
- Thysanoptera have fringed wings.

Study Guide Questions:

What type of mouthparts do thrips have?

What metamorphosis do thrips have?

Are thrips beneficial or pests?