

Name: _____

Period: _____ Date: _____

Grasshopper Pre-Lab



Read the Guide and watch the dissection before lab. Answer in your own words. Use the Guide for corrected anatomy; use the video for observations and technique. Video cues identify sections, not verified times.

1 Meet the grasshopper

1. Give the Kingdom, Phylum, Class, and Order of a grasshopper.

2. List the three body regions, number of leg pairs, and number of antenna pairs. (Video: opening identification)

3. Why must a growing grasshopper molt?

4. Describe a typical grasshopper habitat and diet.

5. Name the three stages of incomplete metamorphosis.

2 Prepare for the dissection

6. List the protective equipment and the three main dissecting tools.

7. Define anterior, posterior, dorsal, and ventral for this specimen.

8. Why must the body wall be lifted while you make shallow cuts? (Video: beginning the incision)

3 External examination

9. What is the external landmark? Where is it located?

10. Name the five leg regions in order from the body outward. (Guide; video: hind leg)

11. How is the hind femur adapted for jumping?

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12. Where do legs and wings attach? How do forewings and hindwings differ in a typical winged adult?

13. Where is the tympanum, and what does it do? (Video: lifting the wing; confirm location in Guide)

14. What are spiracles? On which body regions are they found?

4 Head and sex determination

15. How do compound eyes and ocelli differ? How many ocelli are typical?

16. Give one function of the antennae and one function of the palps. (Video: head examination)

17. Explain the jobs of the mandibles, labrum, maxillae, and labium.

18. Compare the abdominal tips of an adult female and male. Why are cerci alone insufficient to determine sex? (Video: comparing specimens; Guide)

19. What does the ovipositor do, and where are eggs usually placed?

5 Open the body wall

20. What observations and drawings must you finish before making cuts?

21. Describe the side panel to be opened and how you will protect the head and abdominal tip.

22. How should attached tissues be separated as the panel is lifted? (Video: removing the body wall)

23. What is the internal landmark? Describe its appearance and location. (Video: fingerlike structures)

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6 Digestive system

24. Trace food from the mouth to the anus, including the gizzard. Use the corrected Guide.

25. Compare the functions of the crop, gizzard, and stomach (midgut).

26. What do gastric caeca do? How do they differ in appearance and location from Malpighian tubules?

27. What are the main functions of the hindgut and rectum?

7 Other organ systems

28. Why is circulation called “open,” and what is the function of ostia?

29. Trace the route of oxygen-containing air from outside the body to the tissues.

30. What do Malpighian tubules remove, and where do they empty? (Video: threadlike tubes; Guide)

31. Where are the brain and main nerve cord? What are ganglia?

32. Which organs produce eggs and sperm?

8 Finish and check your understanding

33. List the three main cleanup responsibilities.
