

Lab: Crayfish Dissection – Phylum Arthropoda

Purpose: To examine and compare the external and internal structures of the crayfish to that of the grasshopper.

Procedure / Observations:

Part 1:

1. Examine the preserved specimen of the crayfish. **Draw** a diagram of its external features and **label** the following parts:
 - Cephalothorax
 - Abdomen
 - Eye
 - Mouth
 - Antenna
 - Antennules
 - Cheliped
 - Telson
 - Uropod
 - Maxillipeds
 - Swimmerets
 - Walking legs
 - Claw

⇒ The crayfish has a number of appendages. **Name** the different types of appendages and state their **functions** (Miller & Levine Textbook p. 620 – 621).

2. Examine the internal features of the crayfish. Put the crayfish in the dissection tray dorsal side up. Using scissors, make a cut down the centre of the crayfish from just behind the eyes to the tip of the abdomen. **Be careful not to cut too deep.** Gently pull away the exoskeleton.

➤ **Draw** a diagram and **label** the following parts:

- Eye
- Brain
- Gonad
- Gills
- Digestive gland
- Stomach
- Intestine
- Muscles in the abdomen.

What are the muscles in the abdomen used for by the crayfish?

Part 2:

3. Obtain a preserved specimen of a grasshopper. Examine the external structures.

➤ **Draw** a **labelled** diagram of the:

- Head
- Thorax
- Abdomen
- Antenna
- Spiracles
- Tympanum
- **Mouth parts:** labrum, labium, mandible and maxillae.
- Forewing
- Hindwing
- Ovipositor
- Compound eye
- Simple eye

- What is the function of the spiracles, antennae & tympanum?
- What do you suppose is the function of the mouth parts?
- How do the simple & compound eyes differ?
- What is the compound eye good at detecting?

4. Internal structures of the grasshopper (use the poster or textbook for the diagram).

➤ **Draw** a **labelled** diagram of the:

- Mouth
- Crop
- Gastric caeca
- Ovary (female)
- Intestine
- Rectum
- Anus
- Malpighian tubules

What is the function of Malpighian tubules?

Conclusion: Compare and contrast the external & internal structures of the crayfish & the grasshopper. Using a t-chart, give at least 8 similarities & 8 differences.