

Session Plan

Subject: BIOLOGY

Class: Chapter Serial Number Name of the Chapter: Title of Learning Unit / Session Time Required	XI 07 Structural Organisation in Animals Morphology, Anatomy of Cockroach-I 50 min
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Learning Objective / Outcome (1 min)	After completion of lecture you will be able to : ✓ Explain the morphological Structure of Cockroach. ✓ Differentiate between Male and Female Cockroach on the basis of Morphology. ✓ Draw diagram of Digestive system of Cockroach ✓ Explain the circulatory System in cockroach.
Previous Knowledge (1 min)	The Learners are expected to Know about the following: ✓ Definition of Tissue ✓ Basic understanding of digestion in animals. ✓ Basic features of Members of Phylum Arthropod.
Gist of the Lesson for discussion (20-22 min)	<i>Cockroach – Periplaneta americana</i> ✓ It is a terrestrial, nocturnal, omnivorous, unisexual, oviparous insect. Body covered by a chitinous, hard exoskeleton of hard plates called sclerites. ✓ Head : Triangular, formed by fusion of 6 segments. Bears a pair of antennae, compound eyes. Mouth parts consists of labrum (upper lip), a pair of mandibles, a pair of maxillae, labium (lower lip), hypopharynx (acts as tongue). ✓ Thorax: 3 segments; prothorax, mesothorax and metathorax. Bears 2 pairs of wings : ✓ Forewings: tegmina (mesothoracic). ✓ Hind wings : transparent, membranous (metathoracic) and 3 pairs of legs in thoracic segments. ✓ Abdomen: 10 segments. Bears a pair of long, segmented anal cerci in both sexes and a pair of short, unjoined anal styles in males only. ✓ Also has anus and genital aperture at the hind end. Genital aperture surrounded by external genitalia called gonapophysis or phallomere. Anatomy: Study of the morphology of internal organs. ✓ Alimentary canal: Divided into foregut, midgut and hindgut. ✓ Mouth → Pharynx → Oesophagus → Crop (stores food) → Gizzard (grinding of food) → Hepatic caeca (at junction of fore and midgut; secretes digestive juice) → Hindgut (ileum, colon, rectum) → Anus. ✓ Blood vascular system : Open type, visceral organs bathed in haemolymph ✓ (colorless plasma and haemocytes). ✓ Heart consists of enlongated muscular tube and differentiated into funnel shaped

	✓ chambers with ostia on either side. Blood from sinuses enters heart through ✓ ostia and is pumped anteriorly to sinuses again. Blood colorless (haemolymph).																				
Diagram / Link (5 min)	Figure 7.14 External features of cockroach (Page no 111 of NCERT) Figure 7.15 Head region of cockroach : (a) parts of head region (b) mouth parts(Page no 112) Figure 7.16 Alimentary canal of cockroach (Page no 113) Figure 7.17 Open circulatory system of cockroach(Page no 113)																				
Activity / TLO / Link to video / animation/ etc (8 min)	Website Links: https://www.youtube.com/watch?v=1MUej4BFVz4 Animation / Video Links: (Cockroach Morphology) https://www.youtube.com/watch?v=-nLUuYf4eYs (Anatomy of Cockroach) https://www.youtube.com/watch?v=YnKcri4ghyA																				
Recapitulation of the lesson (5 min)	Cockroach – <i>Periplaneta americana</i> 👉 It is a terrestrial, nocturnal, omnivorous, unisexual, oviparous insect. Body covered by a chitinous, hard exoskeleton of hard plates called sclerites. 👉 Body has Head ,Thorax: 3 segments; prothorax, mesothorax and metathorax.),Abdomen: 10 segments Anatomy: Study of the morphology of internal organs. 👉 Alimentary canal: Divided into foregut, midgut and hindgut. 👉 Mouth → Pharynx → Oesophagus → Crop (stores food) → Gizzard (grinding of food) → Hepatic caeca (at junction of fore and midgut; secretes digestive juice) → Hindgut (ileum, colon, rectum) → Anus. 👉 Blood vascular system : Open type, visceral organs bathed in haemolymph 👉 (colorless plasma and haemocytes). 👉 Heart consists of enlongated muscular tube and differentiated into funnel shaped																				
Instant test (Objective type- 5 questions (5 min)	MCQ - The mouth parts in cockroach is of <table border="0" style="width: 100%;"> <tr> <td>(a) Siphoning Type</td> <td>(b) Biting and Chewing Type</td> </tr> <tr> <td>(c) Lapping Type</td> <td>(d) Piercing and sucking type</td> </tr> </table> - The hardened plate on dorsal side of cockroach is called : <table border="0" style="width: 100%;"> <tr> <td>(a) Tergite</td> <td>(b) Hemite</td> </tr> <tr> <td>(c) Sternite</td> <td>(d) Slerite.</td> </tr> </table> - Which of following part acts as tongue in Cockroach <table border="0" style="width: 100%;"> <tr> <td>(a) Mandible</td> <td>(b) Maxilla</td> </tr> <tr> <td>(c) hypopharynx</td> <td>(d) Labium</td> </tr> </table> - Anal Styles are present in <table border="0" style="width: 100%;"> <tr> <td>(a) Male Cockroach</td> <td>(b) Female Cockroach</td> </tr> <tr> <td>(c) Both of Them</td> <td>(d) none of them</td> </tr> </table> - The function of Crop in Cockroach is to <table border="0" style="width: 100%;"> <tr> <td>(a) Store the food</td> <td>(b) churn the food</td> </tr> <tr> <td>(c) Release digestive juices</td> <td>(d) All of the above</td> </tr> </table>	(a) Siphoning Type	(b) Biting and Chewing Type	(c) Lapping Type	(d) Piercing and sucking type	(a) Tergite	(b) Hemite	(c) Sternite	(d) Slerite.	(a) Mandible	(b) Maxilla	(c) hypopharynx	(d) Labium	(a) Male Cockroach	(b) Female Cockroach	(c) Both of Them	(d) none of them	(a) Store the food	(b) churn the food	(c) Release digestive juices	(d) All of the above
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	Correct Responses 1. (b) Biting and Chewing Type 2. (a) Tergite 3. (c) hypopharynx 4. (a) Male Cockroach 5. (a) Store the food
Home Assignments (Written work) 3 min	Answer the following Questions: 1. Name the locomotory appendages of cockroach on the basis of external morphology. 2. Differentiate between male and female cockroach on the basis of external morphology. 3. Give the location of hepatic caecae in cockroach? What is their function ? 4. Draw labelled diagram of Digestive System of Cockroach 5. What type of Mouth part does cockroach have ? Briefly explain.
Video Lesson for Home viewing	Link:

Submitted by:

Name: Mr Rajeev Ranjan Singh

Designation: PGT (Biology)

KV: AFS Kumbhirgram

Region: Silchar