

CLASS 7

SCIENCE

NCERT SOLUTIONS

NCERT Solutions for Class 7 Science Chapter 9: Life Processes in Animals – Curiosity

Complete NCERT Solutions for Class 7 Science Chapter 9 "Life Processes in Animals" from the Curiosity textbook, covering digestion, respiration, and related life processes.

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In-Text Questions

Q1. Why do cows keep chewing food even when not actively grazing?

Answer: Cows are **ruminating** (chewing cud) — bringing partially digested food back up from a special stomach chamber to chew again, which helps them extract nutrients more effectively from tough, fibrous plant material.

Q2. Is the process of respiration the same in all animals?

Answer: No. Respiration differs across animals depending on their size, habitat, and body complexity (e.g., fish use gills, insects use tracheae, humans use lungs).

Exercise Questions

Q1. The journey of food through the alimentary canal (mouth → food pipe/oesophagus → stomach → small intestine → large intestine → rectum → anus) is based on a textbook diagram and cannot be reproduced without the figure.

Q2. Iodine test on chapati, chewed chapati, and boiled mashed potato:

Sample	Observation	Reason
Chapati (unchewed)	Blue-black colour	Starch is present and undigested
Chewed chapati	Slight or no colour change	Starch is partially broken down into sugars by salivary amylase
Boiled, mashed potato	Blue-black colour	Potato contains abundant starch that reacts strongly with iodine

Q3. What is the role of the diaphragm in breathing?

Answer: (iii) To help in inhalation and exhalation.

Q4. Match parts to functions:

Part	Function
Nostrils	Tiny hair and mucus trap dust and dirt from the air
Nasal passages	Fresh air from outside enters
Windpipe	Air we breathe reaches our lungs through this part
Alveoli	Exchange of gases occurs
Ribcage	Protects the lungs

Q5. Anil says respiration and breathing are the same. What questions could Sanvi ask to correct him?

Do plants breathe? How do they get oxygen?

Does the carbon dioxide we exhale come from respiration or from breathing?

Can we perform respiration without breathing for a short time?

Can you give an example of a process that involves breathing but not respiration?

Q6. Which is correct: “We inhale air”, “We inhale oxygen”, or “We inhale air rich in oxygen”?

Answer: “We inhale air rich in oxygen” is correct. Inhaled air contains about 21% oxygen, and exhaled air contains more carbon dioxide than the air we breathe in.

Q7. Why do we sneeze when inhaling dust-laden air?

Answer: Dust particles get trapped by the hair inside the nasal cavity, irritating its lining. Sneezing is a reflex that forcefully expels these trapped particles, keeping the air reaching our lungs cleaner.

Q8. Why might Anusha breathe faster than Paridhi after running?

Answer: Possible reasons: (1) Anusha may be less physically fit, so her lungs work less efficiently and need more breaths to supply enough oxygen. (2) She might have a condition like asthma or a cold, making it harder to get sufficient oxygen with each breath.

Q9. Yadu’s starch experiment (rice flour + water, one tube with saliva added, both tested with iodine after 35-45 min) — what is he testing?

Answer: Yadu is testing for the **presence of starch** in both test tubes, to see whether saliva breaks down starch into sugars over time (the tube with saliva would show little or no blue-black colour, confirming starch digestion).

Q10. Rakshita’s lime water experiment (inhaled air into tube A, exhaled air into tube B) — what is she investigating?

Answer: She is investigating the **gases present in inhaled versus exhaled air**. Tube B (exhaled air) turns milky because lime water reacts with carbon dioxide to form calcium carbonate, while Tube A (inhaled air) shows no such change. This confirms exhaled air contains more carbon dioxide than inhaled air.

Chapter Activities

Activity 9.1: Action of saliva on starch

Test tube	Result after iodine	Reason
A: Boiled rice	Blue-black	Contains starch, which reacts with iodine
B: Chewed boiled rice	No change or faint colour	Saliva’s digestive enzyme (amylase) breaks starch into sugars, reducing starch content

Activity 9.2: Model of breathing mechanics

A bottle-and-balloon model demonstrates breathing: pulling the rubber sheet (diaphragm) at the base downward increases space inside the bottle (chest cavity), drawing air into the balloon (lung) — simulating **inhalation**. Pushing the sheet back up decreases the space, forcing air out of the balloon — simulating **exhalation**.

Activity 9.3: Testing inhaled vs exhaled air with lime water

Lime water in the tube receiving exhaled air turns milky, while lime water receiving directly-passed (inhaled/surrounding) air does not. **Conclusion:** exhaled air contains more carbon dioxide than inhaled air; lime water reacts with CO₂ to form calcium carbonate, causing the milky appearance.

Practice more: [Extra Questions for Class 7 Science Chapter 9](#)

Quick revision: [Revision Notes for Class 7 Science Chapter 9](#)