



Student Checklist

Frog Checklist: Identify the following structures/locations.



Frogs are vertebrates in a class called Amphibians. Frogs have similar body systems (like the digestive and circulatory systems) to other vertebrates like humans, making them a nice specimen for comparative anatomy. Along with toads, they make up the largest group of Amphibians.

Characteristics of Frogs

- Atypical Amphibian because they lack a tail; in a group called Anurans (without tail)
- Unlike other tetrapod (4 limbed) vertebrates, Amphibians have smooth, moist, scaleless skin which is used for respiration (also have lungs)
- Modified, extended back legs for jumping
- Ectothermic (cold-blooded)



Use lines provided for additional notes

External structures

Eyes – Paired

Tympanic membrane – Similar to our eardrum; vibrates in response to sound waves; lack external ear structure; frog is good at perceiving sounds and making them (mating calls, territorial advertisement)

Cloaca – Common cavity for the urogenital (urinary & genital/ reproductive systems) and digestive systems; found in both male and female frogs

Tongue – Specialized to catch prey; hinged at the front allowing the tip of the tongue (with sticky secretion) to project farther from the mouth



Dissection 101: Frog

Student Checklist (Continue page 2)

- Eustachian tubes (paired) - Internal openings to the ear; equalize pressure

- Internal nares – Openings to the nasal cavity; connect to the external nares (nostrils)

- Teeth (two rows) - Hold prey (maxillary and vomerine teeth)

- Glottis – Opening to the trachea, prevent food from entering the respiratory tract and lungs

- Internal Structures

- View multiple frogs to identify both male and female structures

- Fat bodies – Paired, fingerlike, fat tissue used for energy storage; attached to area above the kidneys, larger if specimen is in good health; energy for hibernation and reproduction

- **Female**** Ovaries (female gonads) – Paired egg producing reproductive organs; grainy appearance (due to rounded follicles and eggs); larger during mating season; external fertilization – releases many eggs into water and then fertilized by sperm of male frog; some frogs will show parental care, like guarding the fertilized eggs

- **Female**** Oviducts – Eggs released by the ovaries enter the paired oviducts; extensive, tube-like, coiled structures in which the eggs mature; produce jelly-like material that surrounds the eggs; eggs released to environment by way of the uteri (paired uterus), cloaca



Dissection 101: Frog

Student Checklist (Continue page 3)

- Liver – Large organ (3 main lobes) at the anterior end of the body cavity; the liver has many functions including detoxifying blood, storing of fats for energy, and the production of bile for fat digestion in the small intestine

- Gallbladder – Green in color, found within the lobes of the liver (liver lifted in photo); stores bile produced by liver for fat digestion; enters small intestine (Note: Not every gallbladder will have a greenish tint)

- Stomach – Large j-shaped structure; food storage and digestion; complete digestive system

- Small intestine – Long tube-like structure (increased surface area); digestion and nutrient absorption

- Large intestine (colon) - Water absorption; forms feces, excreted through cloaca

- Urinary bladder – Thin walled; urine storage

- Pancreas – Located at the start of the small intestine; enzyme producing structure for digestion (pancreatic juices); hormone production, like insulin used for blood sugar regulation

- Spleen – Immune (white blood cell production); filters and stores blood; found in mesentery; dark here, many times fleshy color



Dissection 101: Frog

Student Checklist (Continue page 4)

- **Male**** Testes - Paired male gonads (testis - singular) located at the cranial end of the kidneys; produce sperm (larger in mating male)

- Mesentery - Connective tissue; houses lymphatic tissue and blood vessels

- Kidneys - Excrete waste from the blood, produce urine; large, paired, dark organs found against the dorsal body wall

- Lungs (paired) - Deflated; not as complex as the human lung, have some compartmentalization but no alveoli; gas exchange for respiration, also gas exchange through skin/mouth

- Heart - Closed system; deoxygenated blood (from the body) and oxygenated blood (from the skin) enters the right atrium; oxygenated blood (from the lungs) enters the left atrium. Blood is then pumped from both atria to the ventricle. The ventricle then pumps the blood through the conus arteriosus. Oxygen-poor blood is pushed to the lungs; oxygen-rich blood is shunted to the rest of the body. The process then repeats.

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