Name _____

- Brian
- Nate + Carp
- Arnie + Sabrina
- Fishing + Casting

The Fish Body (p. 746 – 757)

I. Key Characteristics Of Modern Fishes (24,000 species)

p. 746

1. **List three characteristics shared by all fish species.**

1. Possess gills 2. Single-Loop Circulation 3. Vertebral Column (Backbone + Spinal Cord)

II. Gills

1. **The main respiratory organ of a fish is the** gill.

2. **Differentiate between gill filaments and gill slits.**

Gill Filaments : Rows of finger-like projections (Gas enters + leaves blood)

Gill Slits : Opening at the rear of the cheek cavity (Water flow)

3. **Define the term countercurrent flow.**

p. 747

Countercurrent Flow – process of water passing over gills in one direction as blood flows in opposite direction through capillaries in gills

III. Circulation Of Blood

1. **What type of heart does a fish possess?** Chamber - Pump Heart

2. **Match each heart term with the correct definitions.**

p. 748

1. D.	Sinus Venosus	A. Large chamber with thin, muscular walls.
2. A.	Atrium	B. Thick-walled pump; sends blood to rest of body.
3. B.	Ventricle	C. Pump that smoothes pulsations & adds force.
4. C.	Conus Arteriosus	D. Collection chamber; reduces blood flow to heart.

3. **What type of circulation do fishes have?**

Circle One : Double-Loop Circulation **Single-Loop Circulation**

IV. Kidneys

1. **What is a key evolutionary challenge facing all vertebrates?**

- Minimizing dehydration (Water Loss)

2. **What does each type of fish need to do maintain a proper salt (ion) and water balance?**

(Lose water) → Saltwater Fish : Pump excess ions out of the body

(Gain water) → Freshwater Fish : Kidneys concentrate wastes (return water to water)

3. **What two organs play a major role in maintaining a salt / water balance.**

1. Gills 2. Kidneys (made up of nephrons)

4. **Define the term nephrons.**

Nephrons - tube-like units that regulate the body's salt + water balance (removes metabolic wastes from blood)

Name _____

Oviparous - salmon (eggs)
Ovoviviparous - guppies (like kangaroos)
Viviparous - sharks (like most mammals)

V. Reproduction

1. Where does reproduction generally occur in fish species?

Circle One : External Fertilization Internal Fertilization

p. 750

2. Describe the process of spawning.

- Release of male + female gametes in water (Most hatchlings become food for larger fish)

VI. Today's Fishes *(p. 751 – 757)*

1. Complete the compare-and-contrast table of groups of fishes.

p. 751 p. 752 p. 753-757

Type	Description	Examples
Jawless Fishes (Class Agnatha)	Scaleless, eel-like bodies; Multiple gill slits; Unpaired fins; Keep notochord as adults	Hagfishes + Lampreys
Cartilaginous Fishes (Class Chondrichthyes)	Skeletons made entirely of cartilage; tooth-like scales cover the skin	Sharks, Rays, Skates, Sawfish, Chimaeras
Bony Fishes (Class Osteichthyes)	Skeletons made of hard, calcified tissue called bone.	Ray-finned fishes (flounder, angelfish); Flying fish; Lobe-finned fishes (lungfish, coelacanth)

2. Match each term with the correct definitions.

Senses vibrations →

1. B.	Lateral Line	A. Gas sac that regulates buoyancy.
2. D.	Operculum	B. Sensory system; extends along sides of bony fish.
3. A.	Swim Bladder	C. Fish with mobile fins, thin scales, & symmetrical tails.
4. C.	Teleosts	D. Hard plate; covers the gills on sides of the head.

3. Match each type of fish with the correct characteristics.

Replace 20,000 teeth during a lifetime →

1. E.	Hagfishes	A. Parasite; uses suction-cup structures to attach to hosts.
2. A.	Lampreys	B. Flat, kite-shaped fish with venomous barbs.
3. G.	Sharks	C. Bony, marine, lobe-finned fish.
4. B.	Rays	D. Bony, freshwater, ray-finned fish.
5. F.	Skates	E. Scavengers of dead animals on the ocean floor.
6. D.	Yellow Perch	F. Smaller, flat, triangular-shaped fish without barbs.
7. C.	Coelacanth	G. Possesses 6 to 10 rows of razor-sharp teeth.

4. About 95% of all living fish species are teleosts.

Circle One : True False