

What characteristics make a fish recognizable?

tail mouth gills  
fins scales  
colors  
live in H<sub>2</sub>O



“Fish” refers to anything in the three categories

Agnatha (jawless fishes)

Chondrichthyes (cartilaginous fishes)

Osteichthyes (bony fishes)

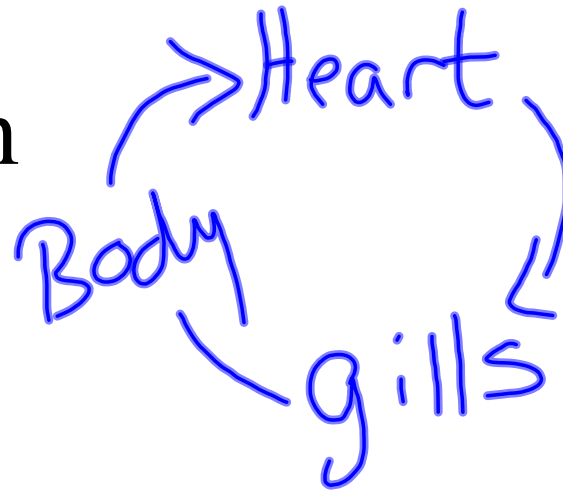


# Key Characteristics

## Gills

Single-loop blood circulation

Vertebral Column



Gills are made up of gill filaments  
(finger-like projections by which gas  
enters and leaves the blood)

Gill slits are where the water exits the  
fish

# Fish Heart

1. Sinus Venosus- the collection chamber that acts to reduce the resistance of blood flow into the heart

2. Atrium- Chamber is large and has thin, muscular walls

3. Ventricle- thick walled pump  
with enough muscle to contract  
strongly

4. Conus arteriosus- a 2nd pump  
that smoothes the pulsation and adds  
more pressure



The concentration of salt in the sea water is 3 times that of the tissues of the fish

The fish always then lose water through osmosis

They need to constantly drink water

Freshwater fish tend to take in water by osmosis and this dilutes the ions so they need to take them from their environment

Kidneys are made of thousands of nephrons (tubelike units that regulate the body's salt and water)

Spawning- male and female gametes are released near one another in the water.