Marine Fish – Part 1

Kingdom:

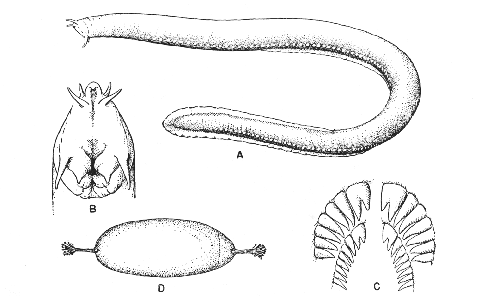
Phylum:

Subphylum:

* What structure do all fish possess (which will later become a backbone)?
* What is the name for the study of fish?
* What are the 6 typcial fish characteristics?

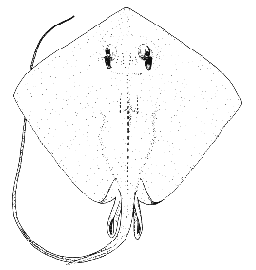
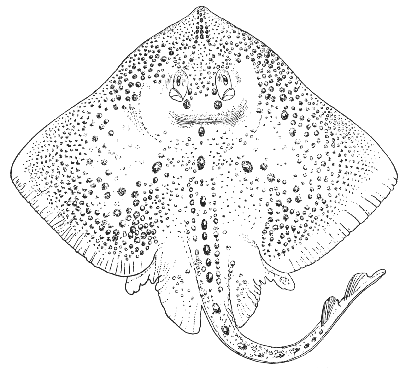
*Agnatha*:

* What does “agnatha” mean?
* Are these fish primitive or complex?
* Why are their numbers falling?
* How do they eat?
* Do they have fins? Scales?
* Examples?



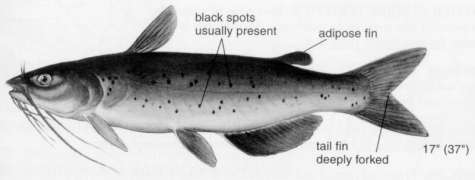
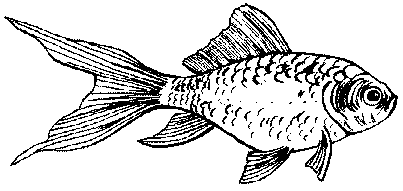
*Chondrichthyes*:

* What type of skeleton do these fish have?
* Where is their mouth?
* What are their teeth like?
* Examples?



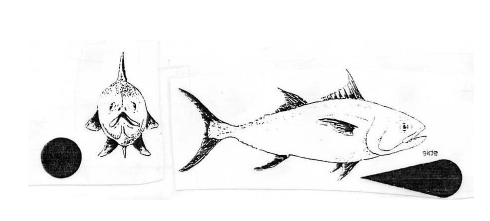
*Osteichthyes*:

* What type of skeleton do these fish have?
* How are they doing population wise?
* Where is their mouth?
* How do they control buoyancy?

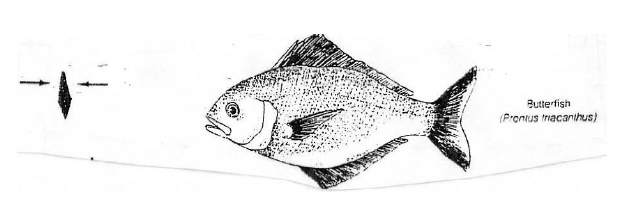


Body forms:

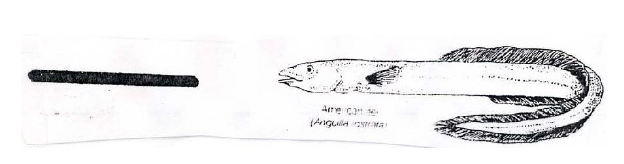
* What is body shape related to?
* Fusiform:
  + What are these built for?
  + Why are they more efficient at this?
  + Examples:



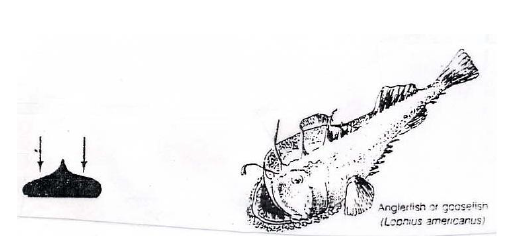
* Compressed:
  + Describe.
  + Why are they shaped this way?
  + Examples:



* Attenuated:
  + How are these shaped?
  + Where do they live?
  + Slimy or “dry” skin?
  + Examples:

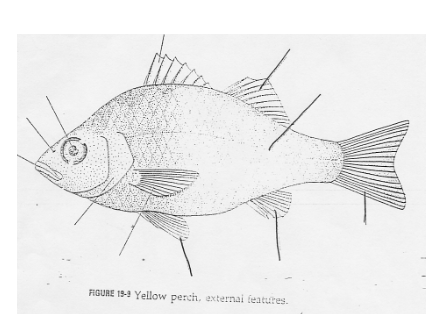


* Depressed:
  + How are these shaped?
  + Where do they normally live?
  + Examples:

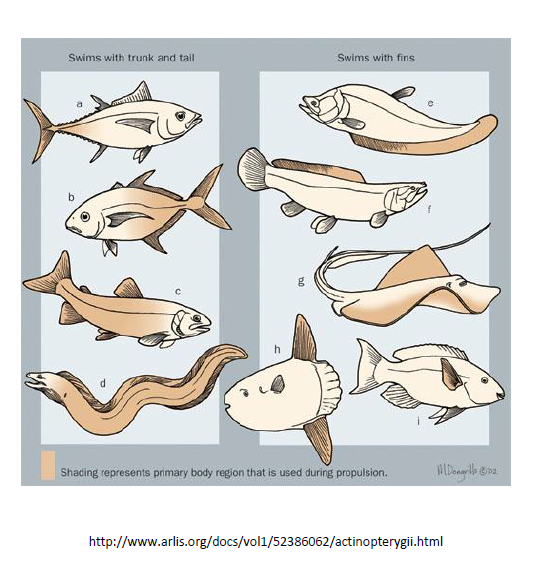
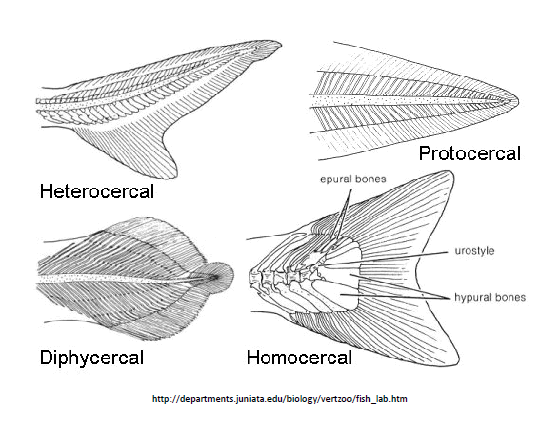


Fins

* What is the main purpose of fins?
* List the 6 fins:
* How do fins differ in cartilaginous versus bony fish?

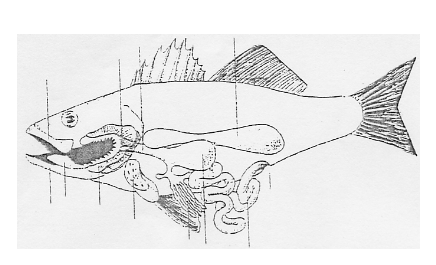


* Caudal fins:
  + Heterocercal
    - Who has this?
    - Why do they need this?
    - How do pectoral fins help?
  + Diphycercal:
    - Lobes?
    - Example:
  + Homocercal
    - Who has these?
    - What is distinctive about these lobes?

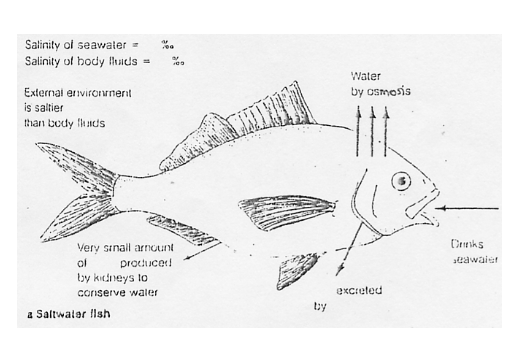


Fish Notes Part 2

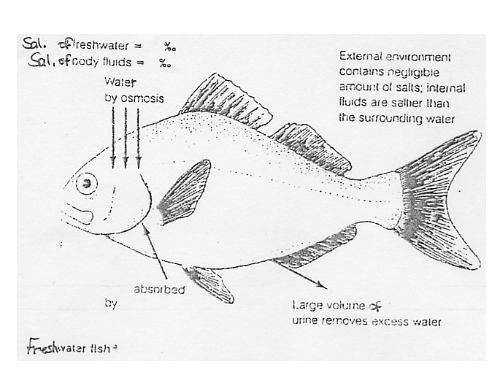
* What is the shape of the mouth related to?
  + Razor sharp teeth =
  + Needle sharp teeth =
  + Do all chase their prey?
* Nibblers/grazers:
  + Large or small bites of food?
  + Examples?
* Strainers:
  + Where do they get their food?
  + Examples:
* Suckers
  + How do they gather food?
  + Why do many have barbels?
  + Examples?
* Parasitic
  + Where do they get their food?
  + Examples?
* Digestive system:
  + List the organs food flows through – in order:
  + What is unique about the esophagus?
  + How are the stomachs different?
  + Who has a longer intestine – carnivores or herbivores?



* Buoyancy control
  + What structure enables fish to move up and down in the water column?
  + In what two ways can they fill their swim bladder with air?
  + What is neutral buoyancy?
  + Cartilagenous fish do not have a swim bladder. What do they do instead?
  + What is the difference between descension and ascension?
  + How are the open and closed systems different?
* Temperature – are fish endothermic or exothermic?
  + What happens to their metabolism as the temperature increases?
  + What is the purpose of a countercurrent system?
* Circulatory system
  + How many chambers are in a fish’s heart? A human’s?
  + Do their red blood cells have a nucleus?
* Respiration
  + What organ extracts oxygen from the water?
  + Show the flow of air/oxygen through the fish’s body:
  + What is the job of the operculum in fish?
  + How does “gulping” air help some fish?
  + Why are lungfish called this?
* Excretion and salt water balance
  + What is excretion?
  + What 2 organs are primarily involved?
  + What is the salinity of marine fish? The ocean?
  + What are chloride cells?
  + Why is osmoregulation so important?
  + How do salt water fish maintain homeostasis in regards to water/salt?

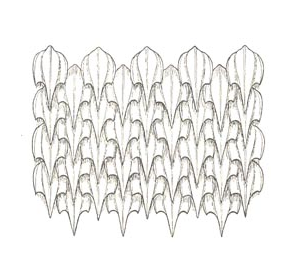
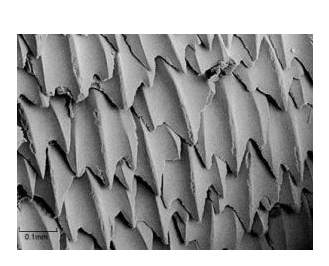
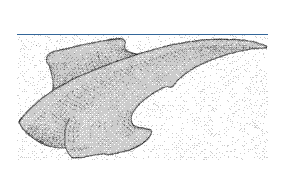


* + How do fresh water fish maintain homeostasis in regards to water/salt?

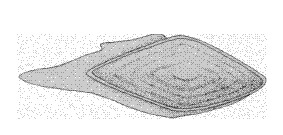
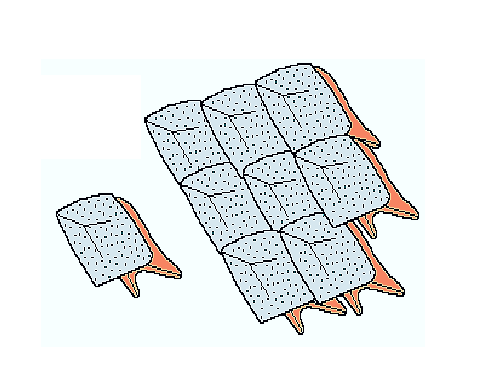


Fish Notes – Part 3

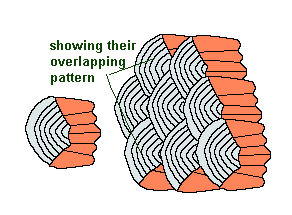
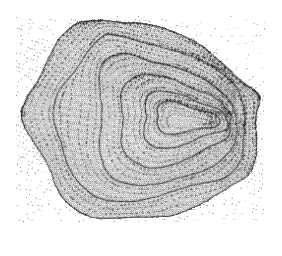
* Skin
  + Is the skin alive?
  + Are the scales on the outside of the skin?
  + What are the two main functions of mucus on fish?
  + What causes the “fishy” odor?
  + What can this be used for?
* Scales
  + Do they have more as they get older?
  + How can you “age” a fish?
  + Name 2 fish without scales.
  + Types:
    - Placoid
      * What are these like?
      * What do they feel like?
      * Examples:



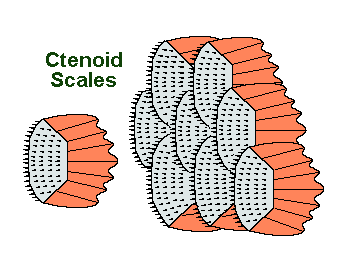
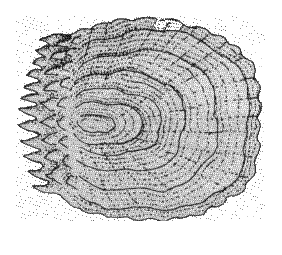
* + - Ganoid
      * What are these like?
      * Examples:



* + - Cycloid
      * What are these like?
      * Examples:



* + - Ctenoid
      * What are these like?
      * Examples:



* Coloration
  + What is the point of coloration – why do fish have it?
  + How are they colored – what 2 cells cause color?
* Defensive strategies
  + How do modified scales provide defense?
  + What good is a prehensile tail on a seahorse?
  + What strategy does the puffer fish use?
  + What is countershading and how does it help a fish?
  + What is the point of disruptive contrast?
  + What are secretions?
  + Why school?
  + How might a fish try to intimidate you?
* Migrations:
  + For what 2 reasons will fish migrate?
  + Two types of migratory fish:
    - Anadromous
      * Where are they born?
      * Where do they live?
      * Where do they breed?
      * Example:
    - Catadromous
      * Where are they born?
      * Where do they live?
      * Where do they breed?
      * Example:
* Reproduction
  + Sexual or asexual?
  + Internally or externally?
  + What is spawning?
  + What is milt?
  + What is roe?
  + Dioecious or hermaphroditic?
  + What is an ovotestes?
  + What is sex reversal? Name 2 types of fish that can do this.
  + What can control the hormones that control the urge to breed?
  + What are 3 courtship rituals fish may go through?