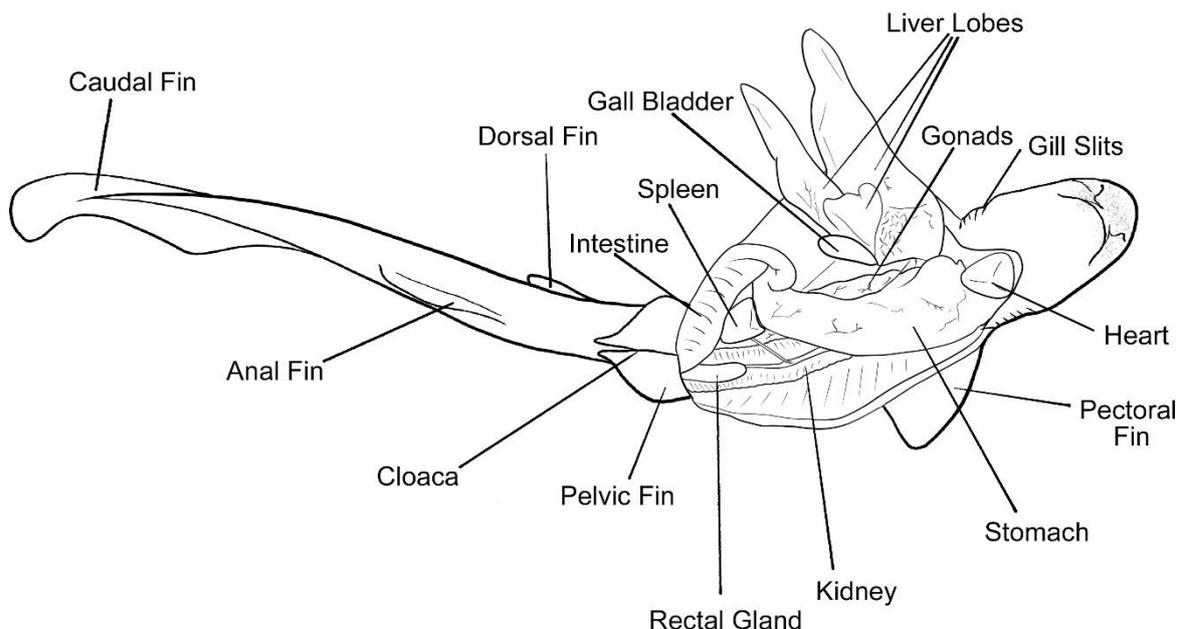


# Comparative Anatomy

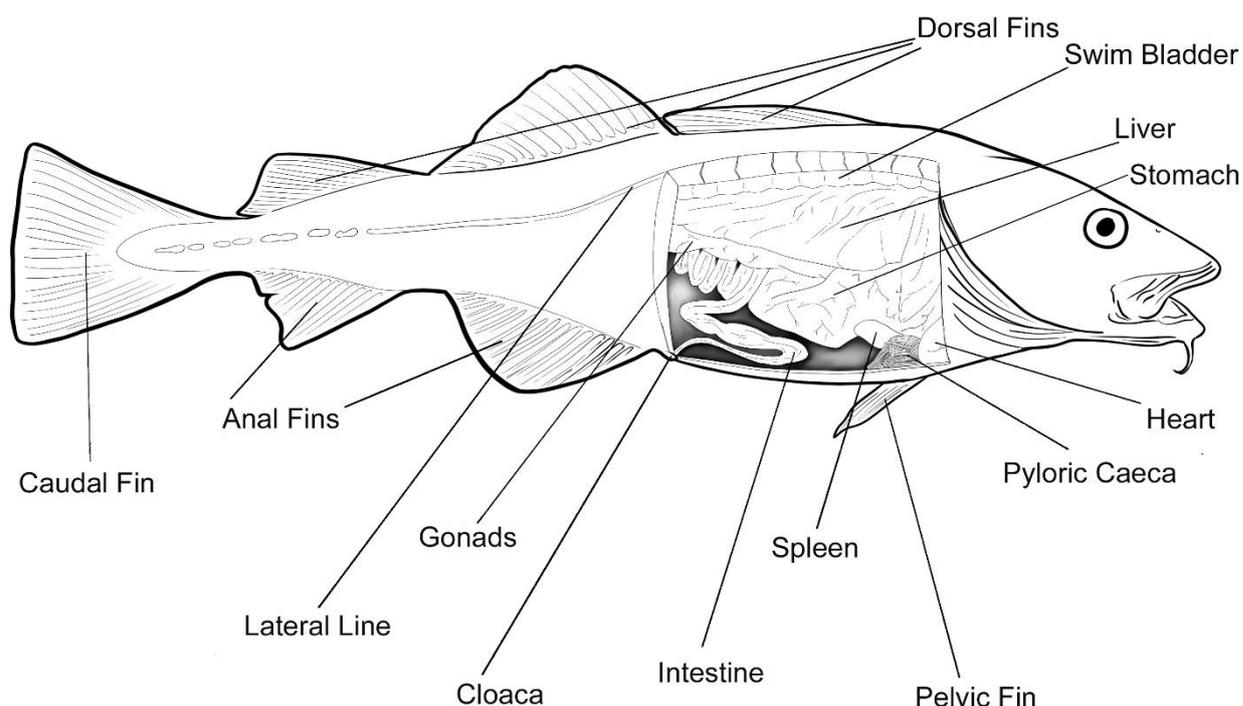
Sharks are very different from other fish. Have a close look at the anatomy of a typical shark and bony fish and see if you can spot some of the differences! Compare the two by colouring them in so that all the features they have in common are the same colour, here is key to help:

Heart - red, Stomach - yellow, Intestine - green, Spleen - pink, Liver - purple, Gonads - blue

## Internal Anatomy of a Catshark



## Internal Anatomy of a Typical Bony Fish- Cod



\*Bony fish do also have kidneys and a gall bladder they are just not visible in this diagram.

Next, contrasts the two by looking at what organs are unique to the bony fish and to the shark. Remember that bony fish do have kidneys and a gall bladder, so look for the other organs that are not coloured in, these are the unique organs.

Match the unique organs to their functions and draw a for  shark or a for  bony fish next the organs name below so you know what animal they are from:

Pyloric Caeca

A gland in sharks that secretes excess salts (NaCl)

Swim Bladder

A gas filled organ found in many bony fish that aids in buoyancy

Rectal Gland

An organ with finger-like projections located near the junction of the stomach and the intestines. It secretes enzymes that aid in digestion and may function to absorb digested food.

## What makes a shark a shark and a bony fish a bony fish?

	Typical Sharks	Typical Bony Fish
<b>Skeleton</b>	Made of cartilage	Made of bone
<b>Buoyancy</b>	Large oily liver to help with floatation	Gas filled swim bladder to maintain neutral buoyancy
<b>Skin covering</b>	Denticles (modified teeth)	Scales/just skin
<b>Ampullae of Lorenzini</b>	Present- these are electroreceptors organs that allow sharks to sense electric fields in water and use them to detect prey.	No ampullae of lorenzini present.
<b>Brain</b>	Large olfactory lobes and cerebrum with small optic lobes and cerebellum- this means that sharks rely more on smell and electroreception to find prey.	Small olfactory lobes and cerebrum and large optic lobes and cerebellum- this means that fish rely more on eyesight to find their food.