

Classification

Phylum: Echinodermata (means "spiny skin")

- No head or brain
- Adult - 5-part radial symmetry; Larvae Bilateral symmetry
- Endo-skeletal plates
- Water vascular system

Class:

Asterozoa (means "star-like")

- Flattened body
- Central disc
- Multiple radiating arms

Echinozoa (means "spiny")

- Hard shell or "test"
- Round body
- Covered in spines

Holothurozoa (means "water polyp")

- Soft, cylindrical body
- Tube feet along side
- Feeding appendages

Phylum: Arthropoda (means "jointed foot")

- Exoskeleton
- Jointed appendages
- Bilateral symmetry

Subphylum:

Crustacea (means "shelled")

- Two pairs of antennae
- Mostly aquatic with planktonic larval stage
- Bi-ramous appendages

Class:

Malacostraca (means "soft shelled")

- Three body segments - head and thorax (sometimes fused) and abdomen
- Paired compound eyes

Phylum: Cnidaria (means "jointed nettle")

- Cnidocytes (stinging cells)
- Polyp and/or medusa body form
- Single orifice used for ingestion/excretion

Class:

Scyphozoa (means "cup animal")

- Most recognisable in adult medusa form
- 4-part radial symmetry

Anthozoa (means "flower animal")

- Only exists in polyp form
- Can be colonial or solitary
- 6-part or 8-part radial symmetry

Phylum: Chordata (means "chord bearing")

- Dorsal nerve chord
- Flexible Notochord
- Gill slits and post anal tail
- Bilateral symmetry

Subphylum:

Vertebrata (means "jointed spine")

- Backbone (vertebrae)

Class

Osteichthyes (means "bony fish")

- Fish with skeleton constructed of bone
- Single gill opening

Chondrichthyes (means "cartilaginous fish")

- Fish with skeleton constructed of cartilage
- 5-7 gill openings
- Jaws

Reptilia (means "creeping")

- Have four limbs, or descended from 4 limbed ancestors
- Scaled skin
- Cold blooded

Amphibia (means "life of both kinds")

- Have four limbs, or descended from 4 limbed ancestors
- Have an aquatic larval stage (tadpole)
- Undergo metamorphosis to reach adult stage

Phylum: Mollusca (means "soft")

- Head, muscular foot and visceral mass (digestive, reproductive and excretory organs)
- Mantle - produces a shell which may be reduced, internal or absent in some groups
- Gills and Radula (teeth)
- Bilateral symmetry

Class:

Bivalvia (means "two doors")

- Shell made up of two hinged parts
- No head or radula

Gastropoda (means "stomach foot")

- Right spiralled shell
- Sensory tentacles or appendages on head
- Radula (teeth)
- Operculum (door)

Classification

Activity 1 – Class features

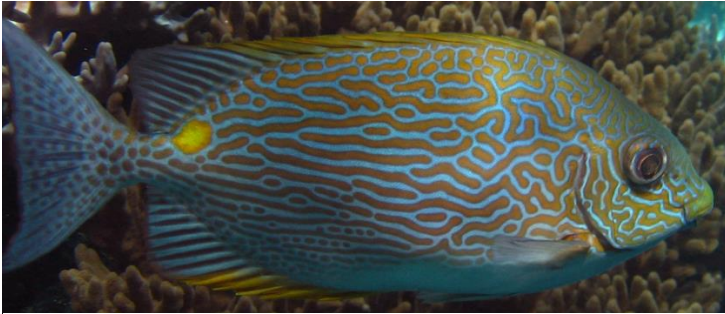
Using the information from page 1, find examples of reef animals for each of the Classes to complete the table below. Include the **Genus** and **species** name for each animal if you can. In the last column, record the features of the animal that group it in this **Class**.

Phylum	Class	Animal name <i>Genus species</i>	What features does the animal possess to include it in this Class?
Chordata	Osteichthyes		
	Chondrichthyes		
	Reptilia		
	Amphibia		
Arthropoda	Malacostraca		
Mollusca	Gastropoda		
	Bivalvia		
Echinodermata	Asteroidea		
	Echinoidea		
	Holothuroidea		
Cnidaria	Scyphozoa		
	Anthozoa		
Annelida	Polycheata		

Classification

Activity 2 – What’s in a name?

Answer the questions about the two fish pictured below.



Siganus lineatus



Acanthurus lineatus

1. Explain how we can tell they are different species if they have the same species name?

2. Investigate what the word “*lineatus*” means. Record your findings below.

3. Explain why both fish have the same species name of *lineatus*?
