GEOLOGY OF THE WORLD’S OCEANS

Survey of Marine Life 2
Phylum Mollusca
- Nonsegmented
- Calcareous shell (most)

Clams
Snails
Octopus and squid
Others
Mollusca

Bivalvia

• Two shells joined at hinge
• Clams, oysters and scallops
• Suspension and deposit feeders

Life saving tip #10, the clam just might close on your hand!
Mollusca
Gastropoda

• Spiraled shell
• Distinct “head”
• Snails and slugs
• Grazers and carnivores
Mollusca

Gastropoda
Nudibranchs
“Sea slugs”

• No shell
• Warning Coloration?
Mollusca
Cephalopoda ("head foot")

- Tentacles, intelligent, adaptive camouflage
- Octopus, squid & cuttlefish, nautilus
- Shell greatly reduced in most
- Carnivores
Mollusca
Cephalopoda
Squid
Mollusca
Cephalopoda
Nautilus
(living fossil – has shell)
Phylum Annelida

Polychaeta

- Segmented marine worms
- Some are free living
- Some live inside calcareous tubes
- Carnivores, deposit feeders, suspension feeders

Fire Worm
(Don’t Touch)

Small Polychaete
Captured by Coral

mobile carnivore
Annelida
Polychaeta
Plume Worms

sessile suspension feeders
Annelida
Polychaeta
“Christmas Tree” Worms

sessile suspension feeders
Phylum **Arthropoda**

- Jointed appendages
- Segmented exoskeletons
- Walking appendages
- Insects, scorpions (land only)
- Crustaceans, horseshoe crabs (marine)

**Crustacea**

- Crabs and shrimp
  - Carnivores and scavengers
- Copepods, barnacles
  - Suspension feeders
Banded Shrimp

Arthropoda
Crustacea
• Crabs and shrimp
• Carnivores and scavengers

Arrow Crab

Shrimp
Arthropoda

Crustacea

Copepoda

• Planktonic
• Tiny
• Suspension feeders

Important link between phytoplankton and larger consumers
Arthropoda
Crustacea
Cirripedia
“Barnacles”

• Secrete calcareous dwellings
• Sessile
• Suspension feeders
• Important in intertidal zone
• Important “fouling” organisms
Gooseneck Barnacles on Oregon beach
Echinodermata

- Spiny skinned
- Five fold symmetry
- Tube feet
- Suspension feeders, carnivores, deposit feeders

- Starfish and brittle starfish
- Sea urchins
- Crinoids
- Sea cucumbers
Phylum Echinodermata
Asterozoa
Carnivores

Starfish exposed in littoral zone
“Crown of Thorns”

Sun Star

Note five fold symmetry
Echinodermata
Ophiuroidea
Suspension and Deposit Feeders

(Brittle Stars or Serpent Stars)

Basket Star
Echinodermata

Echinoidea (Sea Urchins)

Grazers and deposit feeders
Echinodermata

Echinoidea

“Irregular”
Burrowing form

Deposit feeder
Echinodermata
Holothuria
“Sea Cucumbers”
Deposit Feeders
Echinodermata
Crinoidea
“Sea Lilies”

Suspension feeders

Deep-water crinoids have plant-like stem, but are animals!