Bio-1
Study Guide for Chapter 22 (and beginning of 23)

**Disclaimer** This sheet does NOT necessarily include everything you will need to know for the exam – it is merely to help guide your studying. You will be responsible for everything that has been covered in lecture, for information from any videos that we watched or activities that we did in class, and for relevant information in the book.

**Vocabulary**

<table>
<thead>
<tr>
<th>Aboral</th>
<th>Cuticle</th>
<th>Polyp</th>
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</thead>
<tbody>
<tr>
<td>Acoelomate</td>
<td>Deuterostome</td>
<td>Posterior</td>
</tr>
<tr>
<td>Amoebocyte</td>
<td>Dorsal</td>
<td>Proglottid</td>
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<tr>
<td>Anterior</td>
<td>Ectoderm</td>
<td>Protostome</td>
</tr>
<tr>
<td>Bilateral symmetry</td>
<td>Endoderm</td>
<td>Pseudocoelomate</td>
</tr>
<tr>
<td>Blastopore</td>
<td>Exoskeleton</td>
<td>Radial symmetry</td>
</tr>
<tr>
<td>Blastula</td>
<td>Gastrovascular cavity</td>
<td>Radula</td>
</tr>
<tr>
<td>Biramous</td>
<td>Gastrula</td>
<td>Scolex</td>
</tr>
<tr>
<td>Chelicerae</td>
<td>Mantle</td>
<td>Sessile</td>
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<tr>
<td>Choanocyte</td>
<td>Medusa</td>
<td>Suspension feeder</td>
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<tr>
<td>Chordate</td>
<td>Mesoderm</td>
<td>Tunicate</td>
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<tr>
<td>Cnidocye</td>
<td>Notochord</td>
<td>Ventral</td>
</tr>
<tr>
<td>Coelomate</td>
<td>Oral</td>
<td>Zygote</td>
</tr>
</tbody>
</table>

**Important Concepts**

**Intro to Animals**

- How do we define an animal? Be familiar with the various characteristics and how those characteristics separate animals from other groups.
- Know the basic progression of embryonic development in animals (gametes, zygote, blastula, gastrula)
- What organism is likely the common ancestor of all animals?
- Be familiar with the different ways that animals are classified (radial vs. bilateral symmetry, acoelomate vs. pseudocoelomate vs ceolomate, protostome vs. deuterostome)
Invertebrates

Sponges (Porifera)
- What are the two specialized types of cells found in sponges? What are their functions?
- How do sponges feed?
- In what ways are sponges different from all other animal groups?

Jellies & Friends (Cnidaria)
- Be able to describe the two variations on the basic body plan of a cnidarian. Which of these is sessile?
- What is the central cavity of a cnidarians called?
- What is the name of the stinging cells found in cnidarians?

Flatworms (Platyhelminthes)
- Be familiar with the basic body plan of a flatworm.
- What are the scolex and proglottids of a tapeworm?

Roundworms (Nematoda)
- Be able to describe the basic body plan of a nematode.
- What feature do nematodes possess that allows them to exist in harsh environments?

Snails, Bivalves, & Octopuses (Mollusca)
- Be able to describe the basic body plan of a mollusc (including the four main parts).
- What is a radula? How can they be modified for defense?
- What adaptations do cephalopods have to being effective mobile predators?

Insects, Crustaceans, & Friends (Arthropoda)
- Be able to describe the basic body plan of an arthropod. How did these traits contribute to the ability of arthropods to thrive on land?
- Be familiar with the four major groups of arthropods. Which one is most diverse? Which one is primarily aquatic?
- What are chelicerae?
- What is the difference between the diet of a centipede and a millipede?
- Why were wings so important in the success of insects?

Starfish & Friends (Echinodermata)
- Be familiar with the basic body plan of an echinoderm.
- What is the water vascular system? What are tube feet and what are they used for?
- Besides sea stars, what other types of organisms are in the phylum Echinodermata?

Chordates
- What are the four key traits that all chordates possess at some point in their life cycle?
- Why are adult tunicates called “sea squirts”?

**NOTE:** For each of these groups, when I say “be familiar with the basic body plan”, I mean: symmetry, presence or absence and type of coelom, protostome vs. deuterostome, incomplete vs. complete digestive system, and any major distinguishing characteristics that we discuss.