

Chapter 6A - Animals (introduction and invertebrates)

1. Animal energetics:
 - a. What is a heterotroph?
 - b. What is a primary consumer vs. a secondary consumer?
 - c. Are food webs always really this simple? Describe a food web for an animal you can observe from home.
 - d. What do the following terms mean?
 - i. Nocturnal
 - ii. Diurnal
 - iii. Crepuscular
 - iv. Hibernation
 - v. Torpor
 - vi. Estivation
 - e. Where are animals more likely to use hibernation vs. estivation as an energy conservation strategy?
 - f. What is the difference between endothermic and ectothermic animals?
 - g. Parental care: What are the advantages and disadvantages of having many vs. few offspring? What are the costs in each method?
 - h. How are exoskeletons and skin similar?
 - i. What are two examples of how animals engineer ecosystems?
2. Evolutionary groups: What are some characteristics of the following groups:
 - a. Monera
 - b. Protista
 - c. Fungi
 - d. Plantae
 - e. Animalia
3. Compare and contrast Invertebrates to Vertebrates (or, create your own table)

Invertebrates	Vertebrates
Skeleton type	
Body segmentation	
Ancestral "type"	
Worldwide biomass	
Locomotion	
4. What are characteristics of the following invertebrate types: crustaceans, spiders, millipedes, and insects (complete vs. incomplete metamorphosis)?
5. Over 80% of all species on earth are invertebrates. California has approximately 34,000 species, many of them beneficial. What are some of the ecosystem services invertebrates provide? What are some of the challenges facing them today?

For discussion in class- Insect populations worldwide are in decline. As noted in the SD Union Tribune article below, the courts don't necessarily support listing susceptible insects on the Endangered Species list. What's your viewpoint on this topic?

<https://www.sandiegouniontribune.com/opinion/commentary/story/2020-12-16/california-superior-court-insects-endangered-species>

<https://www.nature.com/articles/s41586-019-1684-3?app=true>

