**Concept 1:**

Analyzing the diversity of animals   
*(Ch 26,* ***32****, 33, 34) Holtzclaw: pg. 186-197*

Developmental Biology

What DEFINES an animal? (Metazoa):

Cell Structure and Specialization

Unique to Animals:

* + No cells walls
  + Muscle and nervous tissue

Reproduction and Development

* Primarily sexual (but some asexual)
* Zygote grows by many mitotic divisions
  + Called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Zygote to blastula to gastrula (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
    - Gastrulation:
    - Larva to adult by metamorphosis
* Same gene to regulate expression (\_\_\_\_\_\_\_\_\_\_\_\_)

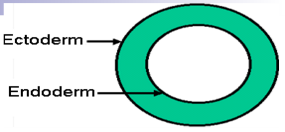
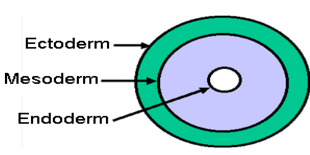
Body Plans

* Useful for categorization
  + Symmetry
  + Tissues
  + Body Cavities
  + Protostome vs D

Symmetry

* “no” symmetry
* Radial Symmetry
* Bilateral Symmetry
  + Distinct anterior (head-end), posterior (tail-end), left, right, dorsal (top), ventral (bottom)
  + Some have cephilization
    - Sensory organs and central nervous system in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    - Good for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_movement

Types of Tissue Layers

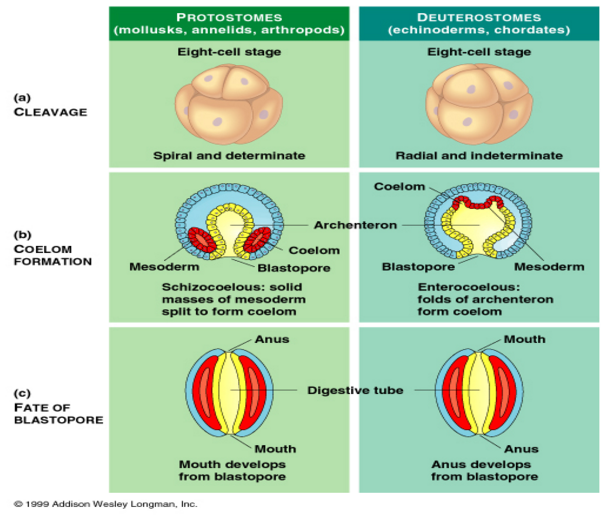


* Tissue: Group of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells
* Diploblastic – two layers (radial animals: )
  1. Ectoderm
  2. Endoderm
* Triploblastic – three layers (all bilateral animals)
* Diploblastic – two layers (radial animals: Cnideria … and Porifera… kinda)
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Body Cavities

* Coelom – fluid filled body cavity separating the digestive tract from the outer body
  + Acoelomates – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    - (Porifera, Cnideria,) Platyhelminthes
  + Pseudocoelomates – animals with a cavity, but not all from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    - Organs held in place loosely
    - Nematoda
  + Coelomates – animals with a “true” Coelom (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
    - Organs suspended in order
    - Annelida, Mollusca, Arthropoda, Enchinodermata, Chordata

Protostome vs Deuterostome



|  |  |  |
| --- | --- | --- |
|  | Protostomes | Deuterostomes |
| Cleavage |  |  |
| Coelom formation |  |  |
| Blastopore formation |  |  |
| Phyla |  |  |