**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 |   |   |