Comparison ?'s

A. How many of the following organisms are Deuterostomes?

B. Give the Letter(s) of all organism(s) with incomplete digestive systems.

C. How many phyla/classes are represented here?

Read Q's carefully

Compare traits and group

Phyla when studying!!!

Quick Review

- **Diploblastic** - 2 Cell Layers
- **Triploblastic** - 3 Cell Layers

Quick Review

- **Diploblastic** - 2 Cell Layers

  Phylum Cnidaria

- **Triploblastic** - 3 Cell Layers

  Phylum Platyhelminthes

onward...

Level of Organization

Acellular

Cellular Unicellular or Multicellular

Tissue

Organ

What level of organization do we see in Kingdom Protista?

Level of Organization

Cell (multi) - **Phylum Porifera**

(unicellular) - **Kingdom Protista**

Tissue - **Phylum Cnidaria**

Organ - **Phylum Platyhelminthes**

onward…

Symmetry

Radial **Where do we first see this?**

Bilateral **And this?**

Pentaradial **And this?**

Symmetry

Radial — **Phylum Cnidaria**

Bilateral — **Phylum Platyhelminthes onward...**

Pentaradial — **Phylum Echinodermata**

except ……..Holothuroidea which are secondarily bilaterally symmetrical

Digestive Systems

Incomplete (No anus)

Can you name 2 phyla?

Complete (Have an anus)

Can you name 2 phyla?

Digestive Systems

Incomplete (No anus)

Phylum Cnidaria

Phylum Platyhelminthes

If Q had been 'Name 2 classes'….. Ophiuroidea & ?

Complete (Have an anus)

Phylum Nemertina onward…

(no anus in C. Ophiuroidea!)

Body Cavity

Acoelomates — 2 phyla

Phylum **Platyhelminthes**
Phylum **Nemertina**

Pseudocoelomates — 2 phyla

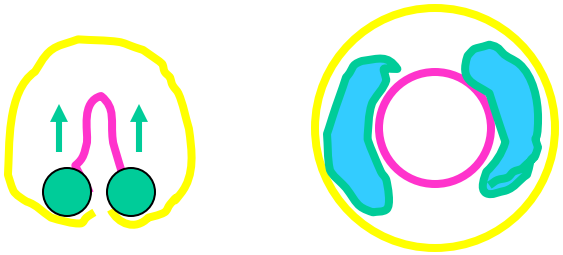
Phylum **Nematoda**
Phylum **Rotifera**

(Eu)Coelomates — 6 phlya

Phylum **Annelida**
Phylum **Arthropoda**
Phylum **Mollusca**
Phylum **Bryozoa**
Phylum **Echinodermata**
Phylum **Chordata**

Coelom Development

Schizocoelous (BAAM)



Endoderm, Ectoderm,
Mesoderm, Coelom

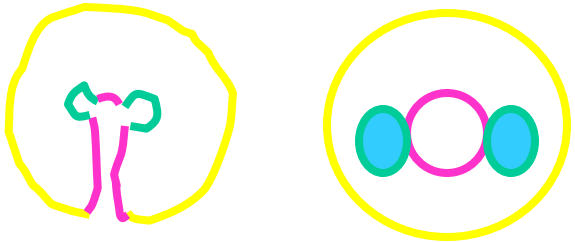
Phylum **Bryozoa**

Phylum **Annelida**

Phylum **Arthropoda**

Phylum **Mollusca**

Enterocoelous



Phylum **Echinodermata**

Phylum **Chordata**

Protostomes

Protostomes, and **S**piral cleavage,
Schizocoelous, **D**eterminate

B

"**P**a**SS**e**D** it!" **(BAAM)**

A **Phylum** Bryozoa

M **Phylum** Annelida

Phylum Arthropoda

Phylum Mollusca

Deuterostomes

Radial cleavage, **E**nterocoelous
Deuterostomes, **I**ndeterminate

"**REDI**" for anything!

C

Phylum **E**chinodermata

Phylum **C**hordata

Study Ideas

Make lists of structures for common purposes, and learn which organisms posses which structures:

e.g. Book lungs, book gills, trachea, spiracles papulae, lungs & gills.

e.g. Malpighian tubules, Renette glands, protonephridia, Flames cells/bulbs etc….

e.g. Statoblasts, gemmules, cryptobiotic eggs

Be able to define

these terms and identify organisms that illustrate them

- Cephalization
- Tagmatization
- Serial Homology
- Torsion
- Ecdysis
- Metamerizism
- Homology
- Polymorphism
- Detorsion

This list is not exhaustive….add to it yourself!

Memory tip!

- Learn the exceptions to the rules, the oddities (I *love* to test on those!)

Make sure you understand *why* they are tricky though

Fire coral is NOT a coral….it has a medusa

Turbellaria is the only free-living class in Platyhelminthes; other two are parasitic

Ophiuroidea - no anus

Holothuroidea - secondarily bilaterally symmetrical

And finally…

- Make a list of all of the unusual terms and structures you have come across and make sure you know where they fit in the "big picture."

  Respiratory tree, mastax, trophi, trochus, septa, annulus, typhlosole, avicularia, crop, clitellum, gizzard, parapodia, acicula, proglottid, carapace, trochophore, …..

Sounds like a song from Nemo!