Biology 11 **Kingdom Animalia - Introduction** Name:

 Date:

**Animal Characteristics**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by ingestion.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with a high degree of cell specialization.

Classification Criteria

**1. Germ layers** The word germ means grow - the germ layers in animals grow to form the

 various tissues and organs

A. No Germ Layers

* animals develop no tissues or organs

B. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Two germ layers: ectoderm and endoderm
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: outer layer (forms skin and nervous system)
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: inner layer (forms lining of digestive tract)

C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: three germ layers

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ grows between the ectoderm and endoderm.
* Forms muscle and most of remaining internal organs
* This is the highest level



**2. Symmetry** (body axis)

A. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Can be divided into many planes through central axis
* These have a cylindrical shape

B.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Can be cut into two equal halves only one way, through the mid dorsal line.
* Results in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Allows for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (concentration of sense organs and nerve cells at the front end of the body)

**3. Body Plan:** type of body cavity

The evolution of a body cavity, called a Coelom, provided a place for organs and organ systems to grow

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: no coelom
* poorly developed organs

B. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: false coelom

* Have a body cavity between endoderm and mesoderm layers
* No muscle around gut so no co-ordination of food through digestive tract
* Some organs systems develop in this space

C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: true coelom

* Have a body cavity located between the mesoderm of the body wall and the new layer of mesoderm around the gut
* Allows for co-ordinated digestion
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Highest level of development



**4. Segmentation** leads to specialization and body regions

1. Non Segmented: no specialized sections
2. Segmented: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C. Segmented with specialization

* Body segments fuse together to become body regions which focus on one set of tasks

**5. Animal Evolution**

* We typically study animals in three groups which reflect their evolutionary history.

**A. The Lower Invertebrates**

* These phyla demonstrate a fairly linear evolution (simple biology)
* They include: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**B. Higher Invertebrates:**

**i. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* This is one of two main branches of animal evolution
* Named this way due to embryo development
* They include the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ii. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* These are the animals on the other great branch of animal evolution
* Include the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**C. Vertebrates**

* Represent the most highly evolved animals (Us!!)

