

### SBI 3UI Review for Taxonomy

Taxa	Organism A	Organism B	Organism C	Organism D
Kingdom	Animalia	Animalia	Animalia	Animalia
Phylum	Chordata	Chordata	Chordata	Chordata
Class	Mammalia	Mammalia	Mammalia	Chondrichthyes
Order	Carnivora	Carnivora	Chiroptera	Lamniformes
Family	Canidae	Mustelidae	Vespertilionidae	Lamnidae
Genus	Canis	Mephitis	Myotis	Carcharodon
Species	latrans	odiferans	lucifugus	carcharia

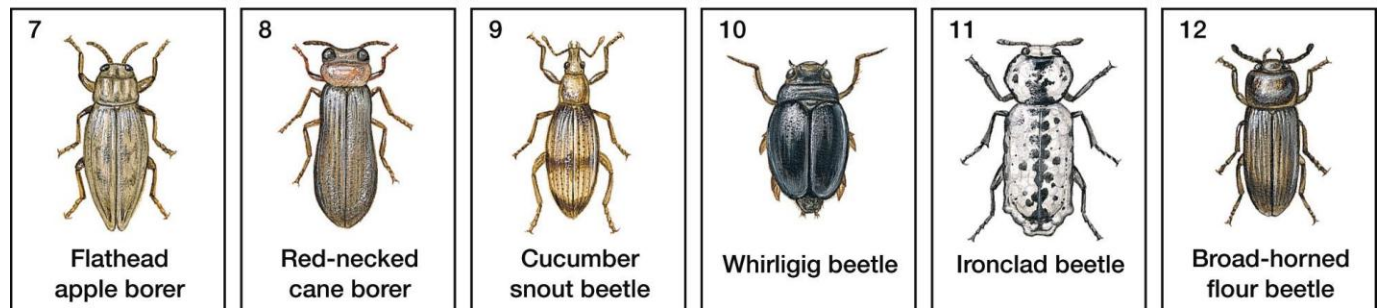
1. Referring to the taxonomic information in the table above:

- To which **order** does Organism C belong? **Chiroptera**
- To which **family** does Organism B belong? **Mustelidae**
- Which organism is the most different from the other three? **Organism D** (it is class chondrichthyes)
- Which two organisms are the most closely related? **Organisms A & B**  
How do you know this? A and B have four taxa in common and both are from the same order (Carnivora) while the other two organisms are from different classes and orders than A and B, and from each other
- Using correct form, write the scientific name for Organism A: either Canis latrans or *Canis latrans*
- What is the name of the man who first came up with the binomial naming system? **Carolus Linnaeus**

2. Indicate whether each of the following characteristics best describes a Prokaryote (“P”) or Eukaryote (“E”):

Characteristic	P or E?
Their cells lack a true nucleus.	Prokaryote
These organisms are always aerobic.	Eukaryote
The genome of these organisms is made up of several linear chromosomes.	Eukaryote
These cells include either Bacteria and Archaea	Prokaryote
These cells are primitive, small and simple.	Prokaryote
These cells commonly reproduce sexually.	Eukaryote
The DNA in these cells is concentrated to form a nucleoid region.	Prokaryote
These cells contain ribosomes, mitochondria and other organelles.	Eukaryote

3. Referring to the beetles in the picture below, suggest three different criteria that could be used as questions in a dichotomous key.



Possible Questions (there are many correct answers)

- Does the beetle have one pair of antenna or more than one pair of antenna?
- Does the beetle have very short, thick legs or are the legs long and thin?
- Does the beetle have a rounded exoskeleton or a exoskeleton with straight sides and back?
- Do the back legs reach past the back of the exoskeleton or stop before the back of the exoskeleton
- Is the thorax (front section behind the head) narrower than the abdomen (the back section) or at least as wide as the abdomen?
- Is the exoskeleton (shell) all one colour or varied colours?

4. What are the three types of symmetry displayed in the animal kingdom?
  - animals may be asymmetrical (sponges), they may have radial symmetry (Cnidaria such as anemones and jellyfish) or they may have bilateral symmetry (two sides which are mirror images)
5. What four kingdoms belong to Domain Eukarya?
  - Eukarya includes Protista, Fungi, Plantae and Animalia
6. In the space provided, indicate which Kingdom is being described. Kingdoms will be used more than once.

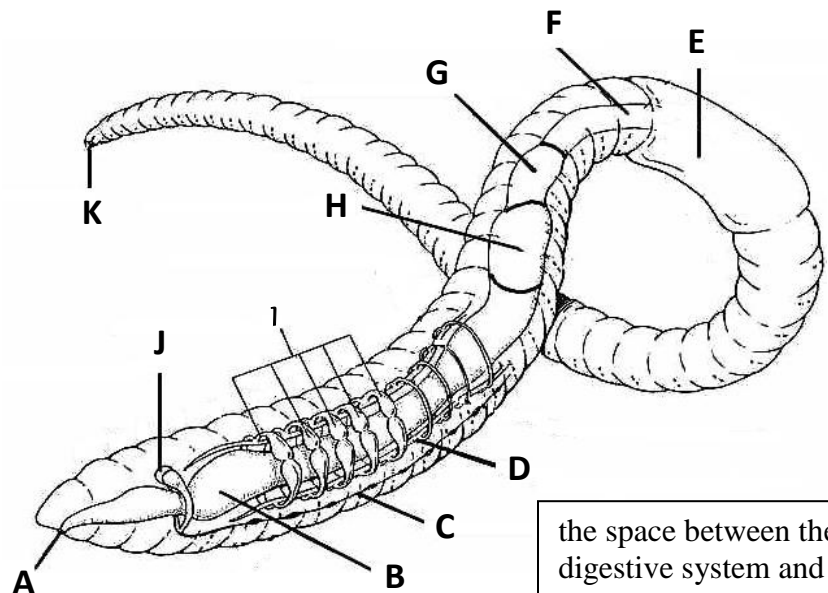
Description	Kingdom
This is the most diverse kingdom and will likely be sub-divided in the future.	Protista
This kingdom includes organisms that can survive extreme conditions.	Archaea
The organisms in this kingdom are classified by the amount of peptidoglycan in their cell wall.	Bacteria
The organisms in this kingdom all require a moist/watery environment.	Protista
This kingdom has eukaryotic, heterotrophic organisms that absorb nutrients from their environment.	Fungi
The organisms in this kingdom are all photoautotrophic.	Plantae
All of the organisms in this kingdom are consumers in food chains.	Animalia
The organisms in this kingdom produce many useful products including antibiotics.	Bacteria
The organisms in this kingdom are all non-motile, multicellular eukaryotes.	Plantae
Some of these prokaryotes are pathogenic.	Bacteria
These plant-like organisms are important producers in aquatic ecosystems.	Protista (algae)
Some members of this kingdom include the slime and water moulds.	Protista
Some members of this kingdom are halophiles or psychrophiles.	Archaea
All members of this kingdom are multicellular, eukaryotic & motile at some point in life.	Animalia
This kingdom is organized by the presence or absence of vascular tissues.	Plantae
Many of these single-celled eukaryotes carry out intra-cellular digestion.	Protista (protozoa)
Some species of this kingdom live in the digestive tracts of animals and produce vitamins.	Bacteria
These prokaryotic heterotrophs are important decomposers in ecosystems.	Bacteria
These eukaryotic heterotrophs are important decomposers in ecosystems.	Fungi
The organisms in this kingdom almost all reproduce using spores.	Fungi

7. Review the parts of the earthworm from our dissection.  
Be able to:

a) label a diagram of the worm

**Earthworm:**

- A. mouth
- B. esophagus (joins mouth to crop)
- C. nerve (connects to brain)
- D. ventral blood vessel (connects to aortic arches)
- E. clitellum
- F. intestine
- G. gizzard
- H. crop
- I. cardiac arches ('hearts')
- J. brain
- K. anus



the space between the digestive system and the body wall is the coelom; it is divided into sections by the septa