Mr. Sowerby

Biology 11

Classification

- What is taxonomy
- Identify a scientific name
- Describe and create a classification system (dichotomous key)
- Levels of classification and the Six Kingdoms

Evolution and Adaptation

- Describe the basic structure of DNA
- Identify the role of DNA in evolution
- Direct vs indirect evidence
- Explain the role of sexual reproduction in variation and evolution
- Describe the process of natural selection
- Explain the condition of genetic drift, differential migration, mutation
- Differentiate among and give examples of convergence, divergence, and speciation
- Identify the role of extinction in evolution

Viruses

- Describe the basic structure of a virus
- Evaluate the evidence used to classify viruses as living or non-living
- Compare and contrast the lytic and lysogenic cycles
- Describe the bodies basic line of defense against a viral attack
- Give examples of reducing the chance of contracting a viral disease
- Define and give examples of viral specificity

Kingdom Eubacteria/Archaebacteria

- Describe the basic structure of a prokaryotic cell
- Describe the characteristics that unify the Kingdoms Eubacteria and Archaebacteria
- Differentiate among fermentation, aerobic respiration, and photosynthesis in bacteria
- Demonstrate the correct use of a compound microscope
- Describe the shapes of bacteria
- Evaluate the effectiveness of various antibiotics, disinfectants, and antiseptics
- Give examples of the beneficial role of bacteria

Kingdom Plantae (algae, moss, & ferns)

- Describe the characteristics that unify algae, moss & ferns
- Explain the benefits of the alternation of generations
- Use examples of unicellular, colonial, and multicellular green algae to illustrate their diversity
- Describe the ecological roles of green algae, mosses, & ferns
- Describe mosses as pioneer plants
- Compare and contrast how ferns and mosses have adapted to a land environment

Kingdom Plantae (gymnosperms and angiosperms)

- Describe the characteristics that unify gymnosperms and angiosperms
- Explain how gymnosperms & angiosperms are adapted for survival in a land environment with respect to the following: alternation of generations, needles, seeds, pollen and vascular tissue
- Compare and contrast the ways in which angiosperms &gymnosperms have adapted to a land environment
- Explain the role of meristems in primary & secondary stem growth
- Evaluate the ecological & economical importance of angiosperms & gymnosperms
- Differentiate between monocots and dicots

Kingdom animalia (invertebrates)

- Examine members of each of the eight phyla of invertebrates and describe characteristics that unify each
- Demonstrate knowledge of the ecological roles of each of the phyla
- Compare and contrast modes of movement among the different species of invertebrates
- Explain the evolutionary significance of multicellular versus colonial life forms
- Demonstrate safe and correct dissection techniques

Kingdom animalia (vertebrates – fishes & amphibians)

- Examine the members of the three classes of vertebrate fish **and** amphibians and describe the characteristics that unify each class
- Describe the characteristics that make one class more or less complex than the other two
- Demonstrate a knowledge and ability of safe dissection rules
- Be able to create a classification system for different members of fish

Kingdom animalia (vertebrates – reptiles, aves, & mammals)

- Examine the members of the three most complex classes of vertebrates and describe the characteristics that unify each class
- Describe the characteristics that make these classes of vertebrates more complex than the fishes and each other
- Compare and contrast endothermic & exothermic
- Explain the major significance of the amniotic egg

Course Evaluation

65% tests and exams
35% assignments

course work = 80%
final exam = 20%

<u>Contacts</u>

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