UNIT 1: Characteristics of Living Things
1. List and describe the characteristics of life.
2. Describe the difference between the various types of cells.
3. Know the structure of DNA and how the bases pair-up.
4. Review the conditions of early earth.
5. Describe the evolution in our understanding of the origin of life.
6. Summarize The Cell Theory (original and modern).
7. Be able to calculate the size of an object viewed under the microscope.

UNIT 2: Evolution & Taxonomy Ch.13/14/15
1. Describe the main pieces of evidence for evolution.
2. List and understand the 5 methods of evolution.
3. Know what evidence Darwin used to support his theory of evolution.
4. Know how sexual reproduction has sped up evolution.
5. Define Taxonomy.
6. Know the order of categories for scientific naming (KPCOFGS) and understand how that system of naming works.
7. Define Binomial Nomenclature and give an example of what that looks like when written.
8. Name the 5 kingdoms and identify the general characteristics of each.
9. Determine how organisms are classified, both today and in the past.

UNIT 3: Microbiology Ch. 16/17/45
1. Know the structure of a virus and the function of each of the parts.
2. Recognize the 3 shapes of viruses.
3. Label and describe the two life cycles of viruses (Lytic and Lysogenic).
4. Define a prophage and describe what might cause a virus to move from being lysogenic to lytic.
5. Explain why viruses are not considered living.
6. Describe the different methods of disease prevention (antibiotics, soap, hand-sanitizer).
7. List the 3 main shapes of bacteria.
8. Know the bacteria diagram.
9. Name several ways that bacteria are helpful to the environment, people or industry.

UNIT 4: Plants Ch. 20/21/22
1. Complete an evolutionary tree for Kingdom Plantae.
2. List the general characteristics common to all plants.
3. Identify what separates algae from all other types of plants.
4. Know the names of the different types of algae and how they are classified.
5. Know the names Chlorophyta, Bryophyta, Tracheophyta, Angiosperms and Gymnosperms, and give examples of each. Recognize them in pictures.
6. Describe adaptations plants have for inhabiting a land environment.
7. Understand Alternation of Generations in all plants. Identify structures used in the sporophyte and gametophyte generations.
8. Be able to understand and use the terms haploid and diploid as well as how fertilization and meiosis affects whether something is haploid (N) or diploid (2N).
9. Identify two characteristics of pine needles that make them well adapted to the terrestrial environment.
10. List the function of the cuticle, stoma, xylem, and phloem.
11. List 4 differences between angiosperms and gymnosperms.
12. Know the flower diagram.
13. Know the differences between Monocots and dicots.
14. Describe the function of roots, stems, leaves, flowers and cones.
15. Follow the steps in reproduction of gymnosperms and angiosperms.

UNIT 5: Invertebrates Ch. 30
1. Understand what characteristics are seen as organisms become more complex.
2. Complete an evolutionary tree using the Invertebrate phyla.
3. Define cephalization and coelom. Describe the advantage of a coelom.

PORIFERA Ch. 26
1. Describe how sponges feed.
2. Since sponges don’t have a circulatory, respiratory and excretory system, describe how it carries out those functions.
3. Know the structure and function of all parts of a sponge.
4. Know the function of a Gemmule.

CNIDARIA Ch. 26
1. Know the general characteristics of Cnidaria.
2. Be able to label a diagram of a polyp and jelly, and provide examples of organisms in each stage.
3. Describe how circulation, excretion and respiration happen in cnidarians without specific systems for these.
4. List the 3 classes of Cnidarians. Give an example of each.

PLATYHELMINTHES Ch. 26
1. Know the general characteristics of Platyhelminthes.
2. List and give examples of the 3 classes of Platyhelminthes. Know how each one feeds.
3. Recognize pictures of the 3 classes.
4. List 3 adaptations that make tapeworms well suited to their parasitic way of life.

NEMATODA Ch. 26
1. Compare the characteristics of Nematodes with Platyhelminthes.

annelida Ch. 27
1. List and give examples of the 3 main classes of Annelids.
2. Know the general characteristics Annelids
3. Differentiate between the 3 classes of Annelids.
4. Describe the difference between the structure and function of the crop and gizzard.
5. Know the earthworm diagram.
6. Identify how Annelids are more advanced than previous phyla.

MOLLUSCA Ch. 27
1. List the general characteristics of mollusks and why they are grouped together.
2. List the 4 classes of molluscs and their characteristics.
3. Name and describe the different structures used for feeding in each of the classes and how they work.
4. Be able to identify pictures of each class and label with class name.
5. Know the clam diagram.
**ARTHROPODA** Ch. 28
1. List the general characteristics of Phylum Arthropoda.
2. Differentiate between the 3 classes and identify organisms in each.
3. Know the crayfish diagram.
4. Name the structures used for respiration and excretion in different arthropods.

**ECHINODERMATA** Ch. 29
1. List the general characteristics of Echinoderms. List 4 different organisms found in this phylum.
2. Know what echinoderm means and what type of skeleton they have.
3. Identify how and upon what sea stars feed.
4. Identify the oral and aboral surfaces of a sea star.
5. Know the sea star diagram.

**UNIT 6: CHORDATES** Ch. 36 (some of Ch. 31-33)
1. Know and give examples of Agnatha, Chondrichthyes, Osteichthyes, Amphibia, Reptilia, Aves and Mammalia.
2. Know the general characteristics of each class of vertebrates, be able to fill-in their evolutionary tree.
3. Describe the changes seen in the heart as you move from class Agnatha through class Mammalia.
4. Identify how each class reproduces.
5. Describe how breathing structures change as you go through each Vertebrate class.
6. Name 3 things that make a bird well adapted to flying.
7. Know the difference between Endothermic and Ectothermic, as well as the advantages and disadvantages of each.
8. Know the anatomy of a rat and be able to compare it to the anatomy of all other phyla.