1. The universal system of measurement used in science is called SI units
2. Write the 6 most common prefixes of the metric system:

kilo hecto deka deci centi milli

1. What unit would you use to measure length? meters
2. What unit would you use to measure liquids? liters
3. What unit would you use to measure mass? Grams or kilograms
4. What is the difference between a theory and a law? Law is proven (set in stone) and theory can be changed with new evidence
5. Tools of the lab: What do you use these tools to measure?
   1. Beaker - volume
   2. Meter stick - length
   3. Triple-beam balance – mass (weight = scale)
6. What is another name for an “educated guess”? hypothesis
7. What are the six characteristics of life? All living things have cells, require energy, made of DNA, respond to change, reproduce, grow/ develop
8. Key Vocab (Chapter 1 - Cells and Heredity Book)
   1. Cell
   2. Cell membrane
   3. Nucleus
   4. Organelle
   5. Tissue
   6. Organ
   7. Organ system
   8. Carbohydrate – large group compounds, main source of energy, short term energy storage
   9. Lipid – fatty acids that don’t like water, long term energy storage
   10. Protein – building blocks, make up the structure, function of all living things
   11. Nucleic acid – makes up DNA
9. Arrange the following, from smallest to largest level of organization: organ system, tissue, cell, organ. Cell – tissue – organ – organ system
10. How may a lack of proteins in a person’s diet affect the body? Main compound for our bodies, nothing would work properly, muscles are weaker, lose strength to do everyday activities, lack of enzymes cause lack of saliva and digestive problems
11. Key Vocab (Chapter 2 – Cells and Heredity book)
    1. Energy – ability to work
    2. Photosynthesis – creates glucose for plants using sun’s energy, used by plants
    3. Cellular respiration – used by both plants and animals, gives off energy, releases carbon dioxide as a waste product
    4. Cell cycle – Interphase, Mitosis, Cytokinesis
    5. Interphase – cell grows/ develops, DNA replication occurs
    6. Mitosis – two new nuclei form
    7. Cytokinesis – cell splits into two
12. Suppose a volcano threw so much ash into the air that it blocked much of the sunlight. How might this event affect the ability of animals to obtain energy to live? With no sun, plants can’t go through photosynthesis, so then they die, and then animals have no food because there are no plants, with no food = no energy
13. All living things need energy. How do we obtain energy from the sun from a hamburger that we may eat from Five Guys and Fries? (Describe the process of photosynthesis and respiration!) Plants make glucose from sun’s energy plus oxygen, cows eat the plants, and we eat the cows as a hamburger, food is then used in the process of cellular respiration.
14. Key Vocab (Chapter 3 – Cells and Heredity book)
    1. Heredity
    2. Trait
    3. Genetics
    4. Homozygous
    5. Heterozygous
    6. Dominant allele
    7. Recessive allele
    8. Gene
    9. Phenotype
    10. Genotype
15. How do dominant alleles differ from recessive alleles? Dominant alleles (capital letters) are always shown, recessive alleles (lowercase letters) are only shown when no dominant is present
16. I have two cats with black fur. Could you tell the difference between the cat who has homozygous genes for black fur and the cat who has heterozygous genes for black fur? Yes. You could look at the fur of the parents. If the parents were not known, the answer would be no because black fur is dominant- only phenotype is known not genotype
17. Key Vocab (Chapter 4 – Cells and Heredity book)
    1. DNA
    2. Double helix
    3. Chromosomes
18. The sequence of the four nitrogen bases in DNA provides a set of instructions for all living organisms.
19. In each cell, humans have 46 chromosomes. DNA is broken down into subunits called nucleotides.
20. A string of nucleotides that give the cell information about a certain trait is called genes.
21. How can a parent pass a trait such as eye color to its offspring? Genes are composed of certain combinations of nucleotides on DNA, genes are specific sections of our DNA, DNA is held in chromosomes. (Suitcase filled with blue jeans), we get half of our genes from our mom and half of our genes from our dad