Chapter 1: The Science of Nutrition

1. What is nutrition? What is a nutrient and what are the 6 major classes?
   - The science of food, the nutrients and the substances therein, their actions, interactions, and balance in relation to health and disease, and their process by which the organism ingests, digests, absorbs, transports, utilizes, and excretes food substances
   - Carbohydrates - Carbon, Hydrogen, oxygen
     - Fruits, vegetables, grains, Simple vs. Complex (sucrose and glucose)
   - Lipids - Carbon and Oxygen
     - More energy than carbs because they contain fewer oxygen atoms. Triglyceride is major form of fat in foods and help energy source.
     - Saturated vs. unsaturated: unless solid or liquid at room temperature
       - Plants are unsaturated (liquid) vs. animal fats in saturated (solid)
   - Proteins - Carbon, oxygen, hydrogen, and nitrogen
     - Muscles, enzymes, blood, hormones, immune system
     - Consists of linked amino acids
   - Vitamins: Organic, essential nutrients required in small amounts by the body
     - Don't provide energy, mostly detergent
     - Water soluble vs. Fat soluble
       - B & C vs. A, D, E, K - Where can be toxic
   - Minerals: Inorganic elements, required in small amounts
     - Don't provide energy, mostly structural
     - Major vs. Trace minerals
       - Major: Sodium, Potassium, Chloride, Calcium and Phosphorus
       - Trace: Iron, Zinc, Copper, Selenium
   - Water
     - Lubricant & solvent, transports waste, regulates body temperature, transports vital materials to cells

2. What is the most common nutrient in the body?
   - Water 60%

3. What is meant by an essential vs. nonessential nutrient?
   - Essential: It has a specific biological function. If you take it out there is a deficiency and if you bring it back in you can cure it: growth, function, maintenance, support

4. What is the definition of a calorie (as in kcal or kilocalorie)?
   - The unit by which energy is measured - amount of heat energy it takes to raise the temperature of 1 gram of water 1 degree Celsius.
   - A kcal (1000 calories) the amount of heat energy it takes to raise the temperature of 1000 g of water 1°C

5. How many calories per gram are associated with each nutrient? **Be able to represent grams of a nutrient in kcals and kcals of a nutrient in grams.**
   - Carbohydrate: 4
   - Protein: 4
   - Alcohol: 7
   - Fat: 9

6. **If I tell you the nutrition grams of an energy nutrient in a serving, be able to calculate the percent of the daily value that nutrient represents.**

7. What nutrients have to be on nutrition labels?
   - Total calories, calories from fat
   - Total fat, saturated fat, cholesterol
   - Sodium
   - Total carbs, fiber, sugars
   - Protein