

**Biology EOC Review**

**Goal 2: Learner will develop an understanding of the physical, chemical and cellular basis of life.**

**2.01: Compare and contrast the structure and functions of the following organic molecules: carbohydrates, proteins, lipids, nucleic acids.**

<u>Macromolecules</u>	<u>Function</u>	<u>Subunits</u>
Carbohydrates		
Proteins		
Lipids		
Nucleic Acids		

<u>Specific Molecule</u>	<u>Function</u>	<u>Subunits</u>
Starch	Plant storage of energy	Simple sugar
Cellulose	Plant cell walls	Simple sugar
Insulin	Blood glucose levels	Amino acids
Glycogen	Animal starch	Simple sugars
Glucose	Energy broken down in mitochondria for ATP	
Enzymes	Speed up chemical reactions	Amino acids
Hemoglobin	Transport oxygen in the blood	Amino acids
Fats	Long-term energy storage	Fatty acids and glycerol
DNA	Genetic info	Nucleotides (sugar, phosphate, base)
RNA	mRNA: made in nucleus during transcription; in a pattern of the DNA molecule tRNA: brings amino acids to the ribosome during translation	Nucleotides (sugar, phosphate, base)

<u>Nutrient</u>	<u>Type of Test</u>	<u>Positive Test</u>	<u>Example of...?</u>
Starch	Iodine	Black	Potato, crackers, corn starch
Lipids	Paper bag	Greasy spot	Oil, butter
Monosaccharides	Benedicts	Yellow, red	Honey, juice
Protein	Biuret	Violet, lavender	Egg whites

**2.02: Investigate and describe the structure and function of cells.**

1. Give the structure and function of each of the following: Nucleus, plasma membrane, cell wall, mitochondria, vacuoles, chloroplasts, and ribosomes draw and label a cell with these parts.  
**Nucleus: darkly shaded large spot; contains DNA; brain of the cell**  
**Plasma (cell) membrane: phospholipids, proteins, carbs; regulates transport**  
**Cell wall: plant cells; cellulose; structure**  
**Mitochondria: plants and animals; lots of folds; breaks down glucose into ATP**  
**Vacuoles: storage**  
**Chloroplasts: bean-shaped with stacks of "coins"; photosynthesis**