Bio 3

09-13-11

\_\_\_

reminder: lab manual page 34-35 needs to be finished

-otherwise excused from class

-explains test format re: identifying cell names/functions

-Exam: 09-22-11 (ch 1-4)

\_\_\_

**Proteins** (cont)

-Proteins function by shape!

-peptide bonds, amino-acid sequence = shape

-without proper shape = loses function

-what creates hair texture?

-matters on how the proteins bond together

**-Enzymes!**

-group of proteins that start or speed up chemical reactions

-function by shape (like all proteins)

-each enzyme has an active site that is made to fit for its substrate (the chemical it's supposed to link to)

-ex: Lactase (enzyme) connects with Lactose (sugar) (substrate)

-breaks bond

-OT: discussion of lactose intolerance correlating with genetic pools with history (or less history) with milk. Ex. of how environment effects genetics over time (and how genetics determine enzyme functions)

-enzymes are reusable (work again and again and again)

-all enzymes ends in "-ase"

**-Misspelled proteins:**

-incorrect amino acid sequence

-shape wrong

-active site disruptions

-bc of wrong shape can't connect correct

-Phenylketonuria = disease example of this

\_\_\_\_\_

**-Nucleic Acids:**

-DNA

-Stores information on how to build/run the body

-4 bases connected to the sugar-phosphate backbone = relates the information

-Adenine, Thymine, Guanine, Cytosine

-how they are arranged = differences in DNA

-bases connect by hydrogen bonds

-A always connects with T, G always pairs with C

-so knowing half the info, you can guess the other half

-DNA (2 strands), RNA (1 strand)

-both direct protein production in organisms

-macromolecules that store info w/unique sequences of molecules

\_\_\_

**CHAPTER THREE: Cells**

**Learning Objectives:**

-describe what a cell is and the two general types of cells

-describe the structure and functions of cell membranes

-describe several ways in which molecules move across membranes

-describe how cells are connected and how they communicate with each other

-describe nine important landmarks (organelles) in eukaryotic cells

\_\_\_

**Cell Theory:**

1. All living organisms are made up of one or more cells

2. All cells arise from other pre-existing cells

**Cell**: smallest unit of life that can function independently and perform all the necessary functions of life, including reproducing itself

-a three-dimensional structure

-nearly all cells contain DNA (or they contain RNA)

-ex. of single cell you can see: a bird egg/fish egg

-first described by Robert Hooke, British scientist, mid-1600's

**-Two Types of Cells**

-*Prokaryote*

-no nucleus

-bacteria/archaea

-no organelles

-DNA tiny and looped

-*Eukaryote*

-nucleus

-protists, fungi, plants, animals

-lots and varied organelles

-lots of DNA- threads

-much larger than Prokaryote cells

\_\_\_

**Prokaryote:**

-4 structures:

-plasma membrane

-cytoplasm

-ribosomes

-DNA

-additional structures

-cell wall

-pili

-flagellum

\_\_\_

**Eukaryotic Cells**

- have compartments with specialized functions