Bio 3

09-13-11

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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)

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**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

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**-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

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**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

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**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

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**Prokaryote:**

 -4 structures:

 -plasma membrane

 -cytoplasm

 -ribosomes

 -DNA

 -additional structures

 -cell wall

 -pili

 -flagellum

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**Eukaryotic Cells**

 - have compartments with specialized functions