



Biology 2nd Semester Project-The Branches of Biology



Due Date: _____

Objective: We will conclude and generate the 5 branches of Biology using a bubble map poster.

Materials Needed:

Science journal

Poster Board (regular size ~ 11" x 17)

Other science/biology resources

Colors (map, pencils, crayons, etc..)

This semester project will expect you to recall the five branches of biology that we learned within this school year and sum up the topics that encompass each category. Below you will find the instructions and rubric of expectations:

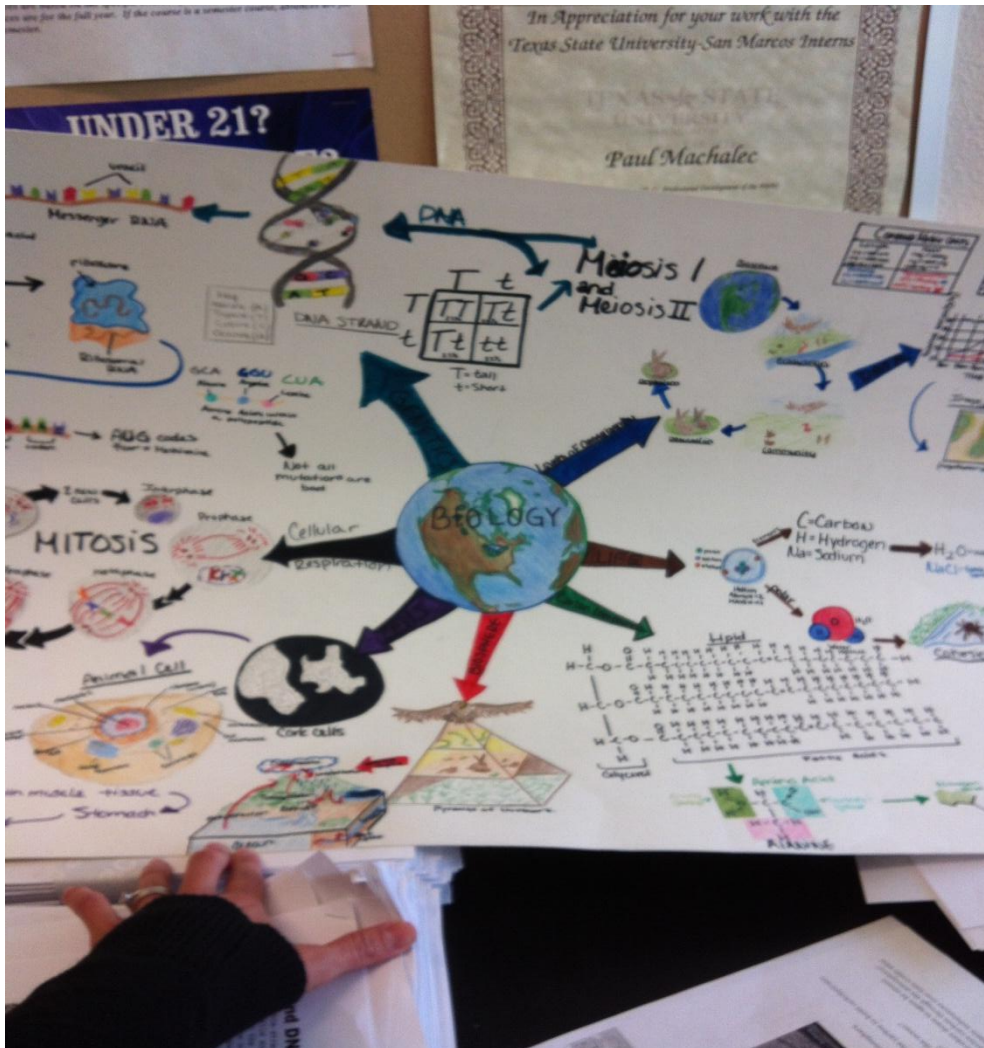
The five branches of Biology and their topics that we covered/will cover are the following:

1. **cell structure and function:** Prokaryotic vs Eukaryotic cells, cell membrane transport, the 4 biomolecules (macromolecules), cell differentiation, cell cycle (mitosis), organic molecule organization (structure of DNA)
2. **mechanisms of genetics:** RNA, Protein Synthesis, changes in DNA (mutations), genetic combinations (traits, homo vs heterozygous, dominant vs recessive traits, pheno vs genotypes), Mendelian genetics (punnet square and terms), Meiosis
3. **biological evolution and classification:** common ancestry evidence (fossil record, molecular homology, biogeography, anatomical homology, developmental homology), taxonomy (hierarchical classification-King Phillip Came Over For Grape Soda), Natural selection, genetic drift, gene flow
4. **biological processes and systems:** photosynthesis, cellular respiration, enzymes, levels of organization, feedback mechanisms, homeostasis, ecological succession (primary and secondary), organ systems (digestive, excretory, etc), plant reproduction and transport
5. **interdependence with environmental systems:** symbiosis (mutualism, predation, parasitism, commensalism), matter and energy flow (food chain, food web, energy pyramid), cycles (nitrogen, carbon)

Rubric of Expectations:

Expectations	Possible Points
The five branches of biology are “branched” out in a organized fashion	10
Each branch covers its topic (refer to 1 st page): Topics are listed and an illustration/diagram is labeled . Not looking for explanations but rather pictures. Side annotations (small description of pic) are accepted.	70
Poster board is ~11 x 17 (normal length)	5
Illustrations/diagrams are drawn, neat, organized, and detailed	Expected or will not be graded!
Your Name is on the back of the poster!!! (points will be deducted if it is missing)	5
Title of the poster is present (The Branches of Biology) In middle section of poster in which everything else branches out from	10
Total points	100

Examples of work: (not to be copied!)



Example 1

Example 3



