Day 2 of AP Review

AP Biology Vocabulary Mania
Get a flash card and quiz at least three people then have a seat to start your quick write.

Quick write

- Continuity and Change—All species tend to maintain themselves from generation to generation using the same genetic code. However, there are genetic mechanisms that lead to change over time, or evolution.
- Example: Mitosis consistently replicates cells in an organism; meiosis (and hence sexual reproduction) results in genetic variability.
- Comment (discuss) on either of the first two examples or come up with one or two more examples of continuity & change and discuss how they relate to continuity & change.

Review lab #2 Enzyme Catalysis

- What was the enzyme?
- What was the substrate?
- What was the product in the reaction?
- How could you prove that the gas emitted was O2?
- If you were to draw a graph, what would be the independent variable and the dependent variable?
- How would you title it?
- What was the best temperature? Why?
- What was the best enzyme & substrate concentration? Why?

Review Lab #3 Compare & Contrast Mitosis & Meiosis

Mitosis

- Formation of new cells genetically identical to parent cell
- New somatic cells for growth and repair
- Formation of adult from zygote
- Asexual reproduction in unicellular organisms
- Regeneration

Meiosis

- Reduction of chromosome number
- Formation of gametes in animals
- Formation of spores in plants

Mitosis

- Prophase duplicated homologous chromosomes do not pair to form tetrads, & crossing over between homologous chromosomes does not occur
- Metaphase individual chromosomes align independently of one another at the metaphase plate.
- Anaphase Sister chromatids of each duplicated chromosomes stay together and homologous pairs of chromosomes separate. Homologous chromatids are separted during the meiotic division.

Meiosis

- Prophase I duplicated homologous chromosome pair to form tetrads, and crossing over does occur between homologous chromosomes.
- Metaphase I tetrads align at the metaphase plate.
- Anaphase I sister chromatids of each duplicated chromosome stay together and homologous pair of chromosomes separate. Homologous chromatids are separated during the second meiotic division.

Comparing Mitosis & meiosis

	Mitosis	Meiosis
Chromosome Number of Parents	2N	2N
Number of DNA Replications	1	1
Number of Divisions	1	2
Number of Daughter Cells Produced	2	4
Chromosome Number of Daughter Cells	2N	N
Purpose/ Function	Growth, Repair, Replace	Formation of gametes and spores

Fetal Pig Dissection

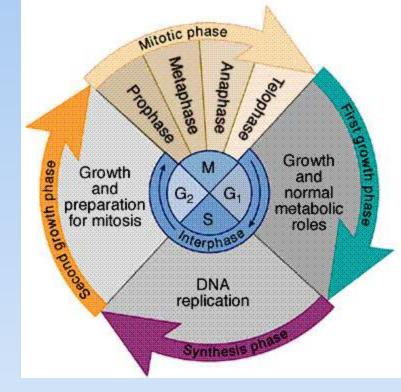
- Continuity & change
- Both the Fetal Pig and humans have DNA, but DNA is coded differently to produce different proteins.

Good Review Study Questions

 The continuity of life is based on heritable information in the form of DNA. In a short essay (100 – 150) words, explain how the process of mitosis faithfully parcels out exact copies of this heritable information in the production of genetically identical daughter cells. The continuity of life is based on heritable information in the form f DNA. In a short essay (100 – 150 words), explain how chromosomes behavior during sexual reproduction in animals ensures perpetuation of parental traits in offspring and, at the same time, genentic variation among offspring.

Cell Cycle

- Check points exist at G1, G2 & M.
- A checkpoint is a control point
 where the signals for stop and
 go ahead regulate the cycle. These
 signals report whether important



- cellular processes have occurred by that point in the cycle.
- G_0 phase is the non-dividing state where the cell exits the cell cycle
- Cells in the body that are in G₀ phase are the nerve cells and muscle cells that never divide.