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| **drosophilaGUIDED NOTES: CHROMOSOMES AND DNA REPLICATION** | |
| **DNA and Chromosomes**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: single, circular chromosome  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: DNA in the nucleus of the cell in the form of multiple chromosomes | **Chromosome Number**    * **45030826Examples**  1. Humans: 2. Giant Sequoia Tree: 3. *Drosophila*: |
| **DNA Length**   * Extremely long (more than 1m in the nucleus of a human cell!) * **chromosome1Question:** * **Answer:** | **Chromosome Structure**   * **CHROMATIN:** * **NUCLEOSOME:**  1. Pack together to form a thick fiber with loops and coils 2. Allows a lot of DNA to… |
| **908108Chromatin**    * During which phase of Mitosis (PMAT) does chromatin condense into visible chromosomes? | **DNA Replication Facts**   * DNA has to be copied… * During which stage of the Cell Cycle is DNA replicated? * New cells will need… |
| **DNA Replication**    * 2 strands are complementary | **SK195_2_006i** |
| **Duplicating DNA**   * Copying DNA is called… * dna_replicationResults in two DNA molecules that are… | **How does replication occur?**   * Enzymes… * **“unzipping”:** |
| **nucleotideDNA Polymerase**   * Enzymes end in… * Joins individual nucleotides * “proofreads” new strands to… * **Review:** What kind of macromolecule is an enzyme? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ What is the monomer of this macromolecule? \_\_\_\_\_\_\_\_\_\_\_\_ | **Proofreading New DNA**   * DNA polymerase initially makes about how many errors when base pairing? * How are these mistakes corrected? * What is the new error rate AFTER proofreading? |
| **DNA Damage and Repair**   * DNA in our body cells (somatic cells) is damaged by… * Cells must continuously repair… * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurs when any of 50 repair enzymes remove damaged parts of DNA * DNA polymerase and DNA ligase… | **dnarepWhat does DNA replication look like?** |
| **A Little Bit of Review…** | |
| What are the three parts of a nucleotide? | What is the rule for the bonding of DNA nucleotides (Chargaff’s Rule)? |
| In eukaryotic cells, which organelles contain DNA? | What kind of macromolecule is DNA?  What is its monomer? |
| Name the two scientists credited with discovering the double-helical structure of DNA. | What does DNA stand for?  What sugar is found in DNA? |
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