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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?1.
2.
3.
 | What is the rule for the bonding of DNA nucleotides (Chargaff’s Rule)?  |
| In eukaryotic cells, which organelles contain DNA? 1.
2.
3.
 | What kind of macromolecule is DNA? What is its monomer? |
| Name the two scientists credited with discovering the double-helical structure of DNA.1.
2.
 | What does DNA stand for? What sugar is found in DNA?  |
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