**BIOLOGY 2022-23 January 12, 2023**

**Today’s Agenda (Day 86)**

1. HOUSEKEEPING ITEMS

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1. Homework Check:

🡪 SCIENCE FAIR: Literature Review and Reverence Page

🡪 Ch 11 Reading Guide Questions

1. Class Activity:

🡪 Day 8: Science Fair

\*Finalize Experimental Design – identify variables (controls, independent, dependent), outline materials needed and procedures (step-by-step); OR Sketch of Prototype Design --include materials needed and timeline of how prototype will be constructed

\*Prepare to have materials ready to begin experimental study/prototype construction for MONDAY!

🡪 **TEST: Ch 11**

**\*Go to** [**www.socrative.com**](http://www.socrative.com) **🡪 enter room “MSBBIOLOGY” 🡪 enter ID #**

🡪MONDAY: Chapter 12 PPT Review

1. Section 12.1 – DNA: The Genetic Material
2. Section 12.2 – Replication of DNA
3. Section 12.3 – DNA, RNA, and Protein
4. Section 12.4 – Gene Regulation and Protein

HOMEWORK:

* READ: Chapter 12 – Molecular Genetics
* COMPLETE: Chapter 12 Vocabulary
* **STUDY**: Chapter 11 Test

**CHAPTER 12 VOCABULARY**

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| --- | --- | --- | --- | --- |
| Codon | DNA polymerase | Double helix | Gene regulation | Intron |
| Exon | Messenger RNA | Mutagen | Mutation | Nucleosome |
| Okazaki fragment | Operon | Ribosomal RNA | RNA | RNA polymerase |
| Semiconservative replication | Transcription | Transfer RNA | translation |  |

REMINDERS:

* **TEST: Ch 11🡪 Thursday, Jan. 12**
* **QUIZ: Ch 12 Vocabulary 🡪 Jan. 19**
* **TEST: Ch 12🡪 Tuesday, Jan. 24**

**BIOLOGY 2022-23 READING GUIDE**

**Chapter 11 Human Heredity Reading Guide**

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| Review pages 296 - 315 in the Glencoe Science *Biology*Textbookand answer the following questions.   1. What is a **carrier**?  What is the genotype of a carrier? 2. Describe what each symbol represents in the pedigree below:         Icon  Description automatically generated with medium confidence   1. How is it possible that one of the children in the following pedigree expresses Tay-Sachs?   Chart, box and whisker chart  Description automatically generated   1. How can pedigrees be used to infer genotypes? 2. Can two parents with **albinism** (a recessive genetic disorder) have an unaffected child?  Explain. 3. What is **incomplete dominance**?  Give an example. 4. This shows the crossing of snapdragons. What is the phenotypic ratio for this incomplete dominant cross?   A picture containing text, clock, gauge  Description automatically generated   1. How does **codominance** differ from **incomplete dominance**? 2. Explain how coat color in rabbits is inherited. 3. What are the two types of **sex chromosomes**?  What is the genotype of a male?  Female? 4. What does the condition shown here cause in cats?   Diagram  Description automatically generated   1. Why are males more likely to be affected **by sex-linked traits**? 2. Study this Punnett square. Why does the father not have **color blindness**?   Table  Description automatically generated   1. How can the environment affect phenotype? 2. How is a **karyotype** prepared? 3. What are **telomeres**?  What may telomeres be involved with? 4. Describe what happens during **nondisjunction**. 5. Why is **down syndrome** called **trisomy 21**? 6. What can parents do if they are unsure if they are a **carrier** for a genetic disease? 7. Describe the risks and benefits for two types of **fetal testing**. |
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**BIOLOGY 2022-23 READING GUIDE**

**Chapter 12 Molecular Genetics Reading Guide**

DIRECTIONS: Refer to your textbook to respond to the following questions.

1. Describe Frederick Griffith’s experiment shown below.



1. How did Oswald Avery identify the molecule that transformed the R strain of bacteria into the S strain?
2. Describe how Hershey and Chase definitively proved DNA was the transforming factor.
3. List the three parts of a DNA nucleotide.
4. Label the parts of the nucleotide below.



1. Name and draw DNA’s two purines.
2. Name and draw DNA’s two pyrimidines.
3. What is the most obvious difference between your drawings in number 6 and 7 above?
4. List three important features of Watson and Crick’s proposed DNA molecule.
5. Draw a DNA double helix and label the sugar, phosphate, and nitrogen bases.
6. Describe the orientation (direction) of the two strands in a DNA molecule.
7. How do nucleosomes form?
8. What is semiconservative replication?  What are the three main stages of this type of replication?
9. Describe the 3 main events during the unwinding stage of replication.
10. What is the role of DNA polymerase in replication?
11. Explain why DNA replication is more complex in eukaryotes than bacteria.
12. Describe the function of each of the following in protein synthesis: rRNA, mRNA, and tRNA
13. What happens during transcription?
14. Why is mRNA so much shorter than the DNA it is made from?
15. Differentiate between codons and anticodons.
16. What happens during translation?
17. Why has Beadle and Tatum’s “one gene, one enzyme” hypothesis been modified since they presented it in the 1940s.
18. What are the three parts of an operon?
19. Describe AND give an example of three types of DNA mutations.
20. Why do you think most mutations in eukaryotes are recessive?