**BIOLOGY 2022-23 January 4, 2023**

**Today’s Agenda (Day 80)**

1. HOUSEKEEPING ITEMS

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1. Homework Check:

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1. Class Activity:

🡪 Day 2: Science Fair

 \*Update template – Complete and get approval

\*Begin literature review – Make a list of topic headings and subheadings that will help you and the reader to know what your project and experimental design/prototype is about.

🡪BEGIN: Chapter 11 PPT Review

1. Section 11.1 – Basic Patterns of Human Inheritance
2. Section 11.2 – Complex Patterns of Inheritance
3. Section 11.3 – Chromosomes and Human Heredity

HOMEWORK:

* READ: Chapter 11 – Complex Inheritance and Human Heredity
* COMPLETE: Chapter 11 Vocabulary and Reading Guide Questions
* **STUDY**: Chapter 11 Vocabulary Quiz & Test

**CHAPTER 11 VOCABULARY**

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| --- | --- | --- | --- | --- |
| Autosome | Carrier | Codominance | Epistasis | Incomplete dominance |
| Karyotype | Multiple alleles | Nondisjunction | Pedigree | Polygenic trait |
| Sex chromosome | Sex-linked trait | telomere |  |  |

**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:

* Chapter 11 Vocabulary **-** Jan. 8
* Chapter 11 Reading Guide – Jan. 10
* **QUIZ:** Ch 11 Vocabulary **🡪 Tue, Jan. 10**
* **TEST: Ch 11🡪 Thursday, Jan. 12**

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**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 generated1. 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 generated1. 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 generated1. 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 generated1. 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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**SCIENCE FAIR 2023 OUTLINE - Updated**

1. WHAT IS THE SITUATION/PHENOMENON/PROBLEM THAT YOU WOULD LIKE TO INVESTIGATE?
2. WHO ARE YOUR PARTNERS? (Maximum 3 per team)
3. WHAT CATEGORY WOULD IT FALL UNDER: (Circle the appropriate category.)

Technical Environment Science

1. WHAT IS YOUR HYPOTHESIS OR MODEL YOU WILL BE INVESTIGATING/CREATING?
2. STATE THE FOLLOWING:
3. Independent Variable
4. Dependent Variable
5. Control Variable(s)
6. Operational Definition(s)
7. Prototype (if doing TECHNICAL)
8. DESCRIBE BRIEFLY WHAT YOU WANT TO DO, WHY YOU WANT TO EXPLORE THIS TOPIC, AND WHAT IS THE SIGNIFICANCE TO EITHER SXM OR GLOBALLY?
9. LIST THE MATERIALS YOU WILL/EXPECT TO NEED:
10. OUTLINE THE PROCEDURES FOR THIS INVESTIGATION/MODEL CREATION:
11. YOU WILL BE EXPECTED TO CONDUCT A LITERATURE REVIEW OF YOUR TOPIC. PROVIDE A LIST OF KEYWORDS/QUESTIONS THAT YOU WILL TYPE INTO THE SEARCH ENGINE TO RESEARCH YOUR TOPIC.
12. BRIEFLY DESCRIBE WHAT YOU WILL BE THE FOCUS FOR EACH OF THE FOLLOWING WEEKS:
13. Week 1
14. Week 2
15. Week 3
16. Week 4
17. Week 5
18. Week 6