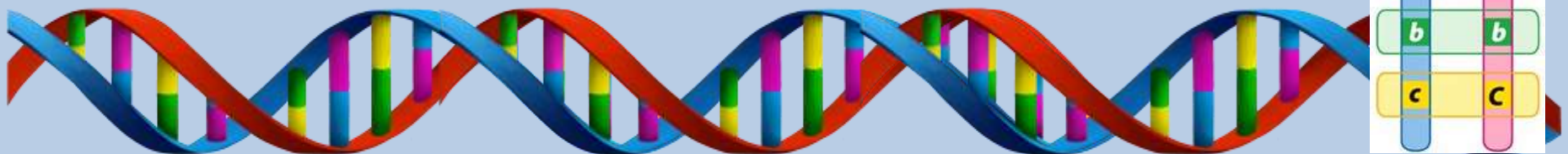
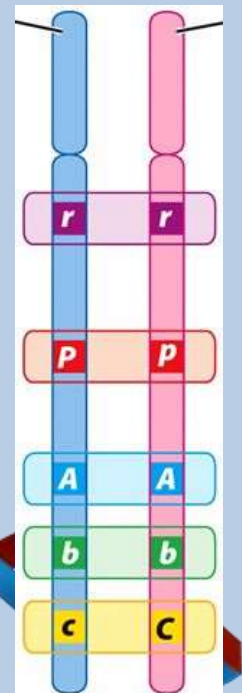


1. Scientists have bioengineered a mosquito that does not transfer the parasite that causes malaria. What might happen to the frequency of the sickle cell anemia allele?



2. Which 2 genes are most likely to be separated during crossover?



Logistics

- Unit 6 Assessment is on **TOMORROW**
- Chapter 12, sections 15.1 and 15.2

Logistics

- **Being prepared:**
 - **Make sure you have signed up for remind**
 - **Make sure you know where your biology textbook is at home**

<u>Class Period</u>	<u>Text to 81010</u>
1 st Period	@dmoberly1
2 nd Period	@dmoberly2
3 rd Period	@dmoberly3
4 th Period	@dmoberly4

Logistics

- **Get out the Real Beauty and the Beast questions**

Genetics and Heredity

- 1. Describe the events that occur during each phase of meiosis**
- 2. Explain how meiosis is different from mitosis**

Genetics and Heredity

1. Describe the events that occur during each phase of meiosis: **Prophase I (SYNAPSIS and CROSSOVER), Metaphase I, Anaphase I, Telophase I, Prophase II, Metaphase II, Anaphase II, Telophase II**
2. Explain how meiosis is different from mitosis: **MEIOSIS happens for sexual reproduction and makes 4 unique haploid daughter cells, MITOSIS happens for growth, healing, when a cell gets too big and makes 2 identical diploid daughter cells**

Genetics and Heredity

3. Describe the effects of errors in meiosis

Genetics and Heredity

3. Describe the effects of errors in meiosis: **NONDISJUNCTION** errors that occur during anaphase I or anaphase II cause chromosomes to not separate properly, leading to the **WRONG NUMBER OF CHROMOSOMES** in gametes (aneuploidy), and if used to produce offspring can cause individuals with nondisjunction disorders

Genetics and Heredity

4. Explain where an organism gets its unique characteristics from
5. Describe how many sets of genes are found in most adult organisms:

Genetics and Heredity

4. Explain where an organism gets its unique characteristics from:

organisms are unique because they inherit unique combinations of DNA from parents (crossover, Law of IA, Law of S)

5. Describe how many sets of genes are found in most adult organisms:

TWO, most adults are diploid

Genetics and Heredity

6. Explain how we can use probability to predict traits

Genetics and Heredity

6. Explain how we can use probability to predict traits:

- **BE ABLE TO:**
 - Complete Punnett Squares for monohybrid and dihybrid crosses
 - Calculate probability of events happening independently and at the same time (multiplication)

Genetics and Heredity

7. Explain how different forms of a gene are distributed to offspring

Genetics and Heredity

7. Explain how different forms of a gene are distributed to offspring:
law of segregation; one form is inherited from each parent

Genetics and Heredity

8. Explain how alleles segregate when more than one gene is involved

Genetics and Heredity

8. Explain how alleles segregate when more than one gene is involved: **law of independent assortment; alleles for one gene are separated and alleles for two genes are inherited independently (they are more likely to be inherited together if the genes are close together on a chromosome)**

Genetics and Heredity

9. Explain how two alleles from different genes can be inherited together

Genetics and Heredity

9. Explain how two alleles from different genes can be inherited together: **two alleles for different genes can be inherited on the same chromosome, they are more likely to be inherited together the closer they are on the chromosome**

Genetics and Heredity

10. Describe what Mendel contributed to our understanding of genetics

Genetics and Heredity

10. Describe what Mendel contributed to our understanding of genetics: **law of segregation, law of independent assortment, rule/principle of dominance**

Genetics and Heredity

11. Describe some exceptions to Mendel's principles

12. Describe the role of the environment in how genes determine traits

Genetics and Heredity

11. Describe some exceptions to Mendel's principles: **codominance, incomplete dominance, polygenic traits, epistasis, multiple alleles, environmental effects**
12. Describe the role of the environment in how genes determine traits: **the environment can affect the proteins produced by DNA, affecting physical traits**

Genetics and Heredity

13. Explain how human karyotypes are used

Genetics and Heredity

13. Explain how human karyotypes are used: **human karyotypes are used to diagnose nondisjunction disorders**

Genetics and Heredity

- 14. Describe what patterns of inheritance human traits follow**
- 15. Explain how pedigrees can be used to analyze human inheritance**

Genetics and Heredity

14. Describe what patterns of inheritance human traits follow:

- **Autosomal recessive**
- **Autosomal dominant**
- **Sex-linked recessive**
- **Sex-linked dominant**

15. Explain how pedigrees can be used to analyze human inheritance: **human pedigrees are used to identify the pattern of inheritance a particular trait, like a genetic disorder, follows**

Genetics and Heredity

16. Explain how small changes in DNA affect human traits

Genetics and Heredity

16. Explain how small changes in DNA affect human traits: **if DNA of a gene changes, the protein produced changes, and the trait changes**

Today

1. **Make sure you have no missing assignments**
2. **STUDY**
 - **Chapter 12, sections 15.1 and 15.2**

Page	Title of Page	Check	Page	Title of Page	Check
54	Stem Cells		55	Unit 5 Cover Sheet	
56	Meiosis Notes		57	Genetics Background and Gene Map	
58	Guinea Pig Genetics		59	Poker Chip Lab	
60	Human Traits and Dragon Genetics		61	Patterns of Inheritance Notes	
62	Pedigree Activity and Flow Chart		63	Karyotype Diagnostics	
64	Complex Inheritance Notes and Problems		65	Real Beauty and the Beast	
66	Genetic Disorder Research		67	Unit 7 Cover Sheet	