

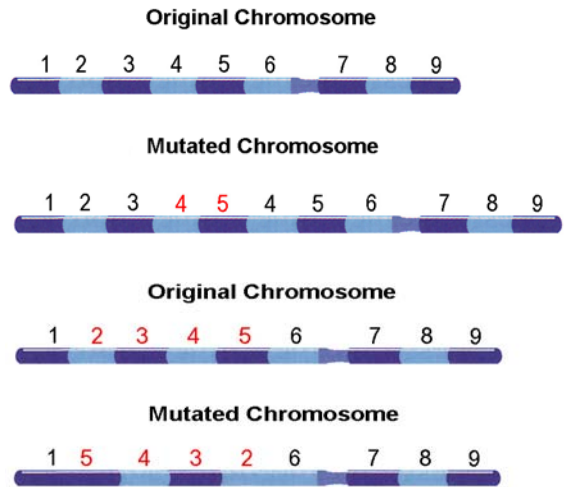
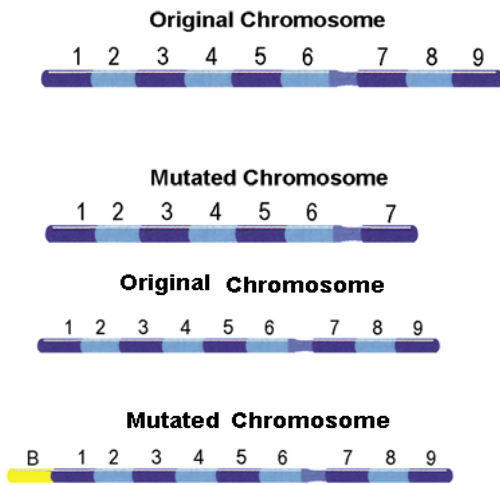
## More Mutations

1. What is a mutation?
2. What is a mutagen?
3. What is the relationship between DNA and a protein?
4. What determine the shape and function of a protein?
5. What would happen to a protein if the sequence of the amino acids in it were changed?
6. What is a point mutation?
7. What are two types of frameshift mutations? Explain each.
8. Below, you will see 3 DNA sequences. Create a mutation and write out the new strand to the right. Include an example of each type of gene mutation. Indicate where the mutation occurred and identify the type of mutation

Original DNA Sequence	Changed DNA Sequence	Mutation Type
<b>CTGGGGCAGTTAACC</b>		
<b>CTGGGGCAGTTAACC</b>		
<b>CTGGGGCAGTTAACC</b>		

9. Do gene mutations or chromosome mutations have a greater impact on an organism? Explain why.
10. What is nondisjunction?
11. When can nondisjunction occur?
12. What types of mutation can be created as a result of a nondisjunction?
13. There are 4 types of chromosomal mutations. Identify them and explain what they are below.
  - a.
  - b.
  - c.
  - d.

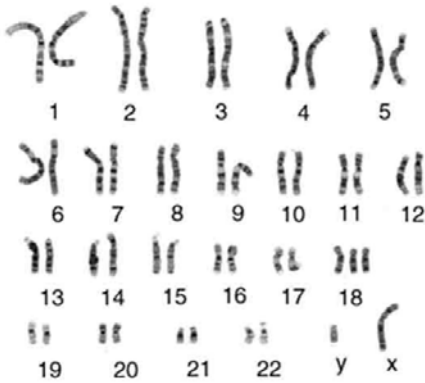
14. Identify the type of mutation that has occurred in each diagram below.



15. What is the purpose of a karyotype?

16. How are karyotypes made?

17. For each karyotype below: Identify the sex of the individual, circle the mutation, identify the type of mutation and identify the disorder that would be caused by it.

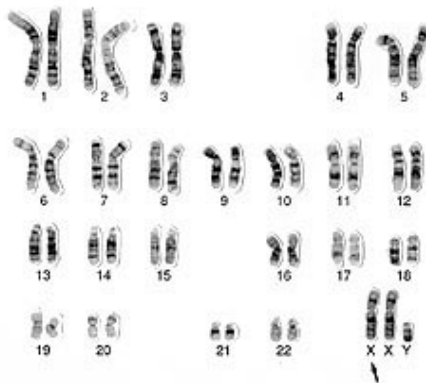


Karyotype 1

Sex \_\_\_\_\_

Mutation \_\_\_\_\_

Disorder \_\_\_\_\_

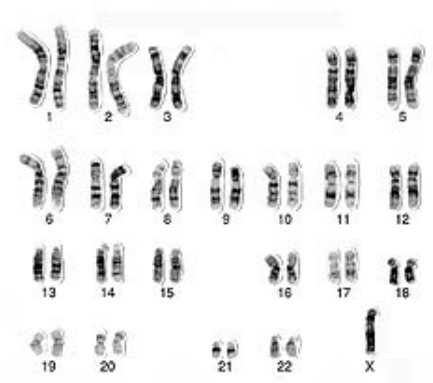


Karyotype 2

Sex \_\_\_\_\_

Mutation \_\_\_\_\_

Disorder \_\_\_\_\_



Karyotype 3

Sex \_\_\_\_\_

Mutation \_\_\_\_\_

Disorder \_\_\_\_\_