**NOTES CHAPTER 13.3---MUTATIONS Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_---- any \_\_\_\_\_\_\_\_\_\_\_ in the \_\_\_\_\_\_\_\_\_ sequence.**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be caused by \_\_\_\_\_\_\_\_\_\_\_ in ;**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_-----i.e. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ exposure.**
1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_**
* **If the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurs in a \_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_ cell:**
1. **May \_\_\_\_\_\_\_\_\_\_\_\_\_ a \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_.**
2. **Results in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that \_\_\_\_\_\_\_\_\_\_\_\_\_ work \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
3. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ problems.**
4. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ may not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
5. **Body Cells**
* **If the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurs in a \_\_\_\_\_\_\_\_\_\_\_\_ cell:**
1. **Is \_\_\_\_\_\_\_\_\_\_ passed onto \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a \_\_\_\_\_\_\_\_\_\_\_\_\_.**
3. **May \_\_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a \_\_\_\_\_\_\_.**
4. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

 **Two \_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_------ a \_\_\_\_\_\_\_\_\_\_\_\_\_ in a \_\_\_\_\_\_\_\_\_\_ base pair in \_\_\_\_\_\_\_\_\_\_\_.**
* **Changes \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ which can \_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_ structure of a \_\_\_\_\_\_\_\_\_\_\_\_.**
1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ----mutation in which a \_\_\_\_\_\_\_\_\_\_ base is \_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_ from \_\_\_\_\_\_\_\_\_.**
* **Causes \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ from that point on to be \_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Chromosomal Alterations**

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_---- caused when \_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ break off or \_\_\_\_\_\_\_\_\_ incorrectly. Effects the \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ not just a \_\_\_\_\_\_\_\_.**
2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ --- when \_\_\_\_\_\_\_\_ of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is left out, a \_\_\_\_\_\_\_\_\_\_\_\_ occurs.**
3. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_---when \_\_\_\_\_\_\_\_ of a chromatid \_\_\_\_\_\_\_\_\_\_\_\_ off and \_\_\_\_\_\_\_\_\_\_\_ to its \_\_\_\_\_\_\_\_\_\_\_\_ chromatid. \_\_\_\_\_\_\_\_\_\_\_\_ in a duplication of \_\_\_\_\_\_\_\_\_\_\_.**
4. **\_\_\_\_\_\_\_\_\_\_\_\_---- when \_\_\_\_\_\_\_ of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ breaks off and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ backwards.**
5. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_----- when part of one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ breaks off and is \_\_\_\_\_\_\_\_\_ to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ chromosome.**



1. **Causes of Mutations**
2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-----some \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ seem to just \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
3. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: Mutagen---any \_\_\_\_\_\_\_\_\_\_ that can \_\_\_\_\_\_\_\_\_\_\_\_ a change in \_\_\_\_\_\_\_\_\_\_.**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_----X-rays, UV light, etc.**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-----dioxins, asbestos, benzene, & formaldehyde**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**