**NOTES 6.1/6.2: Chromosome mutations and Karyotypes and Sexual Reproduction**

Read pages 194-197. Complete the notes below! *Be sure to look at pictures and descriptions! 10 minutes!*

Types of Chromosome Mutations

|  |  |
| --- | --- |
| A.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  B.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  C.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  D.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |

Describe an Example of a Chromosome Mutation in Fruit Flies (figure 6.9)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| Refer to figure on the left and text page 195.  E. When do Whole Chromosome mutations occur?  What are whole chromosome mutations? |  |

**Syndrome**: a disease or disorder with a specific group of symptoms that occur together

Example of Whole Chromosome Mutation

* Down Syndrome caused by a whole chromosome mutation where an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ chromosome is present in cells. Individuals with this syndrome are shorter, have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ facial features, prone to heart defects and diseases such as Alzheimer’s and leukemia.

Unlike gene mutations, chromosome mutations can result in \_\_\_\_\_\_\_\_\_\_\_\_\_ changes in the organism.  
 (minor or major)

Because \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ are affected instead of just a few \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Most chromosome mutations \_\_\_\_\_\_\_\_\_\_\_\_\_passed on to the offspring.

Chromosome mutations usually cause organisms to\_\_\_\_\_\_\_\_\_\_\_\_\_ before they can reproduce.

**Karyotypes - Refer to text page 196.**

We can capture what chromosomes look like to discover chromosome mutations by:

* Extracting DNA from cells in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of mitosis
* Enlarging a picture of the chromosomes from the cell
* Homologous Chromosomes are identified and paired by comparing \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Read p. 1976-1B** Analyzing a Karyotype and write the answers down BELOW

**Reply to answers below!**

**What to Do!**

2. Total # of Chromosomes:\_\_\_\_\_\_\_\_\_ # of Chromosome pairs:\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Individual is a\_\_\_\_\_\_\_\_\_\_\_\_

**What did you find out?**

1. Describe chromosome error found:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. a. Yes or No

b. Why or why not?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What’s Essential:**

**Mating: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Success after fertilization requires:**

**External Fertilization**

|  |  |
| --- | --- |
| **What is it?** | |
| **PROS**   * Less \_\_\_\_\_\_\_\_\_\_\_\_ needed to find mate * Large number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **CONS**   * Exposure to the outside world * \_\_\_\_\_\_\_\_\_\_\_ do not care for offspring – many offspring do not survive to adulthood |

**Internal Fertilization**

|  |  |
| --- | --- |
| **What is it?** | |
| **PROS**   * \_\_\_\_\_\_\_\_\_\_\_\_\_ develops inside female, protected and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Offspring raised by parents for \_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_ | **CONS**   * Requires more \_\_\_\_\_\_\_\_\_\_\_\_\_ to find mate and perform \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ * \_\_\_\_\_\_\_\_\_\_\_\_ zygotes produced |

**Pollen Transport**

**Purpose:** Increase Genetic Diversity

* Move ***\_\_\_\_\_\_\_\_\_\_\_*** or ***\_\_\_\_\_\_\_\_\_\_\_\_*** away from parent (as far away as possible)
* Genes spread around rather than remaining near parent
* ***\_\_\_\_\_\_\_\_\_\_\_\_\_*** (containing ***\_\_\_\_\_\_\_\_\_\_\_\_***) released and carried by \_\_\_\_\_\_\_\_\_\_ to female parts
* ***\_\_\_\_\_\_\_\_\_\_\_\_\_*** (containing ***\_\_\_\_\_\_\_\_\_\_\_\_***) carried in fruit, eaten by animals and dispersed in feces to form new plants that grow away from parent plants so less competition for food and other resources which increases survival of offspring

HW: Textbook Pg 203 # 5, 7-8,