**Snurfle Meiosis Interactive Activity:** Go to 🡪 <http://biomanbio.com/GamesandLabs/Genegames/snurfle_meiosis_and_genetics.html>

1. Complete *Snurfle Meiosis and Genetics* \*\*\*\*Complete provided handout as you proceed.

-do *meiosis* interactive

-*genetics* interactive

-the *chromosome quandary*

2. *Do Meiosis and Genetics* Quiz

 If time remains:

3.  *Snurfle Meiosis and Genetics 2 – Diversity* [*http://biomanbio.com/GamesandLabs/Genegames/snurflemeiosis2diversity.html*](http://biomanbio.com/GamesandLabs/Genegames/snurflemeiosis2diversity.html)

-complete *X-over and independent assortment* interactives

**Meiosis Interactive**

1. When does interphase occur?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What important events occur during interphase?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Uncoiled stringy DNA is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Half of your DNA comes from your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and half from your \_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. DNA contains \_\_\_\_\_\_\_\_\_\_\_\_\_that determine traits of an organism.
6. Different forms of a gene are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. What are the 2 alleles for fur colour in the Snurfles and which letters represent these alleles
8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_are made during Meiosis. Examples of gametes are \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_
9. Meiosis occurs in \_\_\_\_\_cell divisions, Meiosis \_\_\_\_\_\_ and Meiosis \_\_\_\_\_\_.
10. List the phases of Meiosis I
11. List the phases of Meiosis II
12. During prophase I the chromosomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and become \_\_\_\_\_shaped.
13. Chromosomes that are the same size and have the same genes are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
14. Each half of a replicated chromosome is called a \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. Sister chromatids of a chromosome are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ genetically
16. The nucleus and nucleolus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during prophase I
17. Homologous chromosomes pair up during prophase I to form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
18. During metaphase I the tetrads line up in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of the cell
19. The homologous chromosomes split up and move to opposite ends of the cell during \_\_\_\_\_\_\_\_\_\_\_\_\_\_
20. \_\_\_\_\_\_\_\_\_independent cells form at the end of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Interkinesis is the division of the cytoplasm to make two new cells before meiosis II begins.

1. The 2 new cells that are formed from Meiosis I are \_\_\_\_\_\_\_\_\_\_\_\_ because they contain half of the chromosomes compared to the parent cell that started meiosis.
2. Meiosis II must take place because each of the two new cells still has too much \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Draw the chromosomes in Meiosis I. Label the cells as diploid or haploid.
4. The nuclei and nucleoli \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during prophase II
5. In metaphase II the chromosomes line up single file down the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the cell.
6. In \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the sister chromatids split up.
7. During telophase II a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ forms around the chromosomes in each newly forming cell.
8. At the end of telophase II, after cytokinesis, \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ daughter cells are formed. These cells are also called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. The chromosomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to form chromatin.
10. Draw and label the Meiosis Summary

**Genetics Interactive**

1. If the gametes are produced by a female, they are called \_\_\_\_\_\_\_\_\_\_\_\_\_
2. If the gametes are produced by a male, they are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_square is a tool that is used to predict the possible offspring of a genetic cross.
4. The letters on a punnet square actually represent possible \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. G g
5. When sperm and egg join this is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. G
6. A fertilized egg is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Complete the punnet square to the right. g
8. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the genetic make-up of an organism
9. Give examples from the punnet square of genotypes:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the characteristic or appearance of an organism
11. Give examples of phenotypes:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. Dominate alleles are represented by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_letters
13. Recessive alleles are represented by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ letters
14. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_alleles will show in your phenotype even if there is only one copy.
15. For recessive traits to show in the phenotype the Snurfle will need \_\_\_\_\_\_\_\_ copies of the gene.
16. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_means an organism has 2 copies of the same allele in its genotype ( GG, gg)
17. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_means an organism has 2 different alleles in its genotype (Gg, Tt etc.)

Complete *Chromosome Quandary* and *Meiosis and Genetics Quiz*!

\*\*Click on Score Sheet.

Quiz Mark:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*If time permits complete X-over interactive and independent assortment as described at the beginning of handout.*