

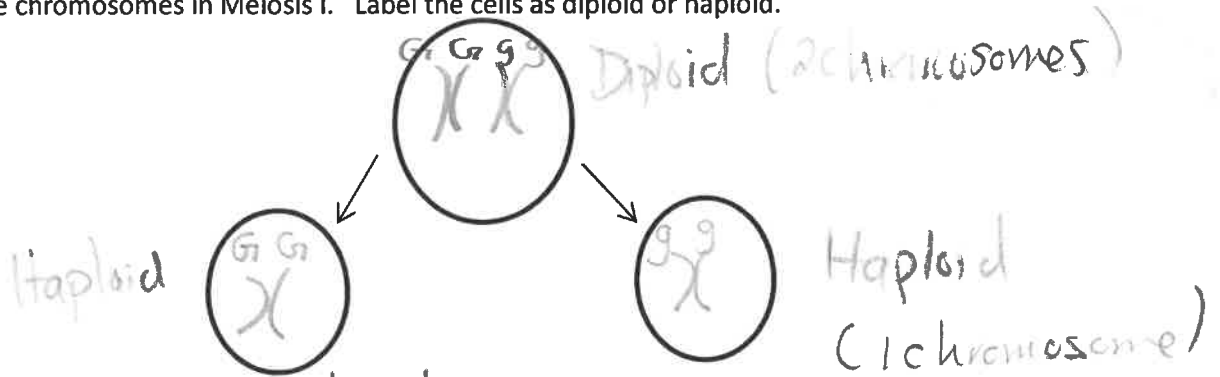
**Snurfl Meiosis Interactive Activity:** Go to → [www.biomanbio.com](http://www.biomanbio.com)

1. Complete *Snurfl 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. *Snurfl Meiosis and Genetics 2 - Diversity*  
-complete *X-over and independent assortment* interactives

**Meiosis Interactive**

1. When does interphase occur? Before meiosis starts
2. What important events occur during interphase? DNA replication, cell growth etc.
3. Uncoiled stringy DNA is called Chromatin
4. Half of your DNA comes from your mother and half from your father
5. DNA contains genes that determine traits of an organism.
6. Different forms of a gene are called alleles
7. What are the 2 alleles for fur colour in the Snurfls and which letters represent these alleles  
G<sub>1</sub> → yellow      g → green
8. gametes are made during Meiosis. Examples of gametes are sperm and eggs
9. Meiosis occurs in 2 cell divisions, Meiosis I and Meiosis II.
10. List the phases of Meiosis I  
PMATI prophase I, metaphase I, anaphase I, telophase I + interkinesis
11. List the phases of Meiosis II  
PMATI prophase II, metaphase II, anaphase II, telophase II + cytokinesis
12. During prophase I the chromosomes condense and become X-shaped.
13. Chromosomes that are the same size and have the same genes are called homologous.
14. Each half of a replicated chromosome is called a sister chromatid
15. Sister chromatids of a chromosome are identical genetically
16. The nucleus and nucleolus disintegrate during prophase I
17. Homologous chromosomes pair up during prophase I to form a tetrad
18. During metaphase I the tetrads line up in the middle of the cell
19. The homologous chromosomes split up and move to opposite ends of the cell during anaphase I
20. 2 independent cells form at the end of telophase I  
Interkinesis is the division of the cytoplasm to make two new cells before meiosis II begins.
21. The 2 new cells that are formed from Meiosis I are haploid because they contain half of the chromosomes compared to the parent cell that started meiosis.
22. Meiosis II must take place because each of the two new cells still has too much DNA

23. Draw the chromosomes in Meiosis I. Label the cells as diploid or haploid.



24. The nuclei and nucleoli disintegrate during prophase II

25. In metaphase II the chromosomes line up single file down the middle of the cell.

26. In anaphase II the sister chromatids split up.

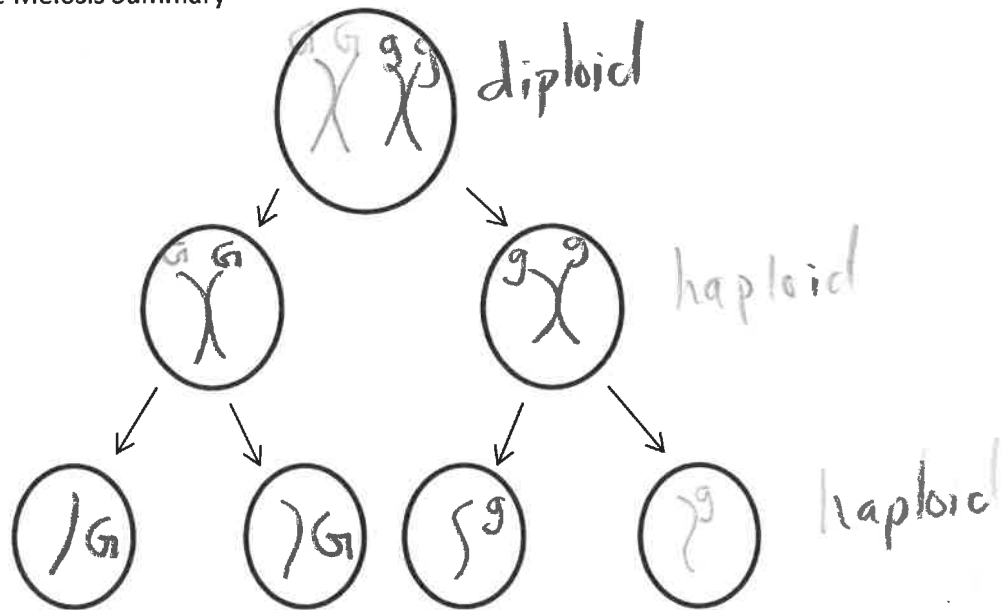
27. During telophase II a nucleus forms around the chromosomes in each newly forming cell.

28. At the end of telophase II, after cytokinesis, 4 haploid daughter cells are formed.

These cells are also called gametes

29. The chromosomes uncoil to form chromatin.

30. Draw and label the Meiosis Summary



### Genetics Interactive

1. If the gametes are produced by a female, they are called eggs
2. If the gametes are produced by a male, they are called sperm
3. The punnett 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 gametes.
5. When sperm and egg join this is called fertilization.
6. A fertilized egg is called a zygote
7. Complete the punnet square to the right.

|   |    |    |
|---|----|----|
|   | G  | g  |
| G | GG | Gg |
| g | Gg | gg |

8. A genotype is the genetic make-up of an organism
9. Give examples from the punnet square of genotypes: Gg, gg, Gg
10. A phenotype is the characteristic or appearance of an organism
11. Give examples of phenotypes: green vs yellow fur
12. Dominate alleles are represented by Capital letters
13. Recessive alleles are represented by lower case letters
14. dominant 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 2 copies of the gene.
16. homozygous means an organism has 2 copies of the same allele in its genotype ( GG, gg)
17. heterozygous 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.

\* imp. to ↑ diversity in the gametes → increased diversity in species.

