

The Life and Times of Snurfles! OL

Go to www.biologybynapier.com, go to the “November 29-December 15 Meiosis and Genetics Unit” in the left margin. Scroll down to the “Click here for Snurfles” Link. When the Bioman page opens, Click on **Snurfle Meiosis and Genetics**, Click **Start a New Game**, Click **Meiosis Interactive** to begin.

Having problems? **Troubleshoot!** →

If website is not playing,
click its “Home” button for
newest edition.
Can’t find simulation?
Click on Genetic and Meiosis
in the left Margin of the
Bioman site.

Choose Meiosis Interactive

Answer the following questions as you play:

- Interphase happens _____ Meiosis.
 - after
 - before
 - during
 - because of
- What must happen to the DNA before Meiosis can occur?
 - disintegrates
 - expands
 - replicates
 - shortens
- What is the purpose of meiosis?
 - To make body cell
 - to make somatic cells
 - to make reproductive cells
- How many divisions are in meiosis?
 - 1
 - 2
 - 3
 - 4
- In what phase does crossing over occur?
 - Cytokinesis 1
 - Interphase 1
 - Prophase 1
 - Prophase 2
- What happens during crossing over?
 - Chromosomes split
 - chromosomes change position
 - chromosomes exchange DNA

In this simulation – there is no color change to show crossing over but remember that once crossing over occurs, no single chromosome is the same.

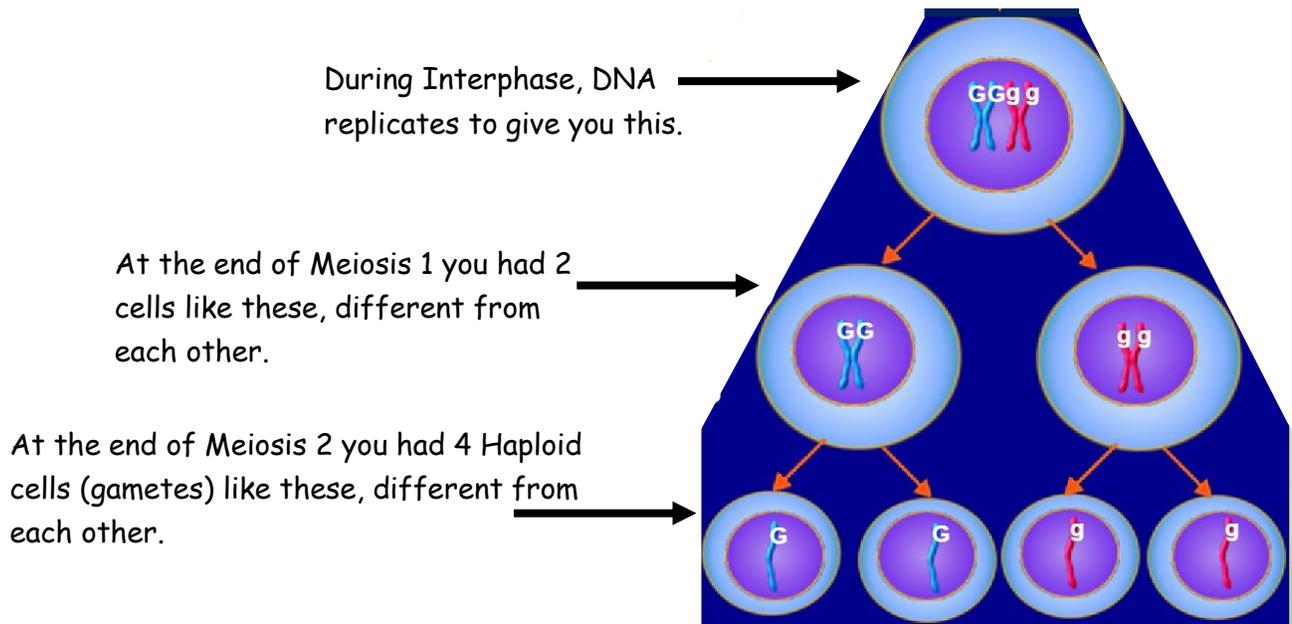
- After crossing over, how does each single chromosome compare to each other?
 - they are identical
 - they show no change
 - they are different
- Has DNA replication happened for Prophase 2?
 - Yes
 - No

9. Does crossing over occur in Prophase 2?

- a. Yes
- b. No

10. Are the cells at the end of Telophase 2/Cytokinesis 2 diploid or haploid?

- a. Diploid – full set of chromosomes
- b. Haploid – half the number of chromosomes



11. What are the gametes called in females?

- a. Egg
- b. Pollen
- c. Ovaries
- d. Sperm

12. What are the gametes called in males?

- a. Egg
- b. Pollen
- c. Testes
- d. Sperm

13. How many cells result from Meiosis?

- a. 1
- b. 2
- c. 3
- d. 4

14. Explain why they only contain half the number of the organism's chromosomes?

Click on "Genetics and Meiosis" in the left menu. Scroll down to:

Snurfle Meiosis and Genetics 2

- Click on Start a new game
- Click on Continue
- Click on Continue
- Click on the sections listed below. (you may need to double click) As you go through the tutorial, read and follow the directions on the screen AND answer the questions.

Crossing Over

1. What process in cells undergoing meiosis increases genetic diversity?
2. How many cells are produced by meiosis?
3. In the interactive activity, what are the possible phenotypes for fur color and what gene represents each?
4. In the interactive activity, what are the possible phenotypes for wings and what gene represents each?
5. What are the phenotype possibilities for the gametes in question 3 given this information?
6. What do you call two genes that are often inherited together?
7. What phase of meiosis will crossing over occur?
8. What is crossing over?
9. Draw what the chromosomes would look like AFTER crossing over.

Before crossing over



After crossing over

10. In crossing over, do sister chromatids or homologous chromosomes exchange genetic information?

11. Draw in the missing chromosomes in the boxes.

