

Elaborate: The Birds and the Bees

THE ACTIVITY

1. Using a ruler, divide two adjoining pages in your lab notebook each into halves both horizontally and vertically. In other words, each page will now have 4 sections in it. Your instructor will demonstrate on the board.
2. Label the sections going across the two pages across the tops of the boxes. The sections going across the top halves of the pages will be Prophase I, Metaphase I, Anaphase I, and Telophase I. The bottom sections will be Prophase II, Metaphase II, Anaphase II, and Telophase II.
3. Using colored pencils for the cells and a regular pencils for the steps, follow the diagrams your instructor draws on the board and put those into your boxes as well. Be sure to include the explanations in the bottom of each box using regular pencil.
4. Using your notebook and working with a partner, draw the eight stages of meiosis on a whiteboard. Be sure to make clear where **crossing over** and **independent assortment** occur.
5. Erase your whiteboard and put away your notebooks. Your partner and you now need to once again show the eight stages of meiosis on the whiteboard. You may help each other, but you may not refer to your notebooks.

FOLLOW UP QUESTIONS

Answer the following questions in your notebook using complete sentences.

1. If a butterfly has 62 chromosomes in its normal body cells, how many chromosomes would you find in a cell from one of the butterfly's antennae?
2. How many chromosomes would you find in a butterfly egg cell?
3. What specific structures are being separated during **anaphase** of **meiosis I**?
4. What specific structures are being separated during **anaphase** of **mitosis**?
5. Which cells in your body are undergoing meiosis currently?
6. Certain types of somatic cells (body cells) do **not** undergo mitosis. What kind(s) are these?
7. How do cells know when to stop dividing as they undergo mitosis?
8. What disease is characterized by cells that **don't** stop undergoing mitosis?
9. What is the name of the process by which animals & plants produce sex cells?
10. What is the name of the process by which identical new body cells are made?
11. Gametes, sex cells, only have one set of chromosomes. These cells are often referred to as "**1N**" or being _____.
12. Your normal body cells, however, have 2 complete sets of chromosomes, one from each parent. These cells are referred to as being "**2N**" or _____.
13. Two events occur during **meiosis I** to help increase genetic variation. Name these two events and which stage of meiosis I that they occur during.