

# The Mitosis Mystery

Living things start life as a single, microscopic cell. Even the body of the largest blue whale, which can weigh one hundred and fifty tons and measure one hundred feet in length, is descended from the same original cell. The cell then divides; then the two new cells divide (and the four new cells divide, and the eight new cells divide again and again and again. . . . .) to form the great bulk of the whale's body.

Recently, a team of biological experts has set out to study the mysterious process of cell division. An important stage in the life of the cell--a stage that prepares the cell to divide--is known as mitosis. The biological team decided that if they could understand mitosis, then they would be able to develop a better understanding of cell division as a whole. The team of experts has uncovered a great deal of information about mitosis, but they need you, the students of biology, to help them put all of the pieces together so that they can finally crack the code of mitosis.

Since so many different things occur during mitosis, it proved difficult for the biological team to isolate separate phenomena. After each member conducted his or her own research, the team reassembled and put all of the phenomena they had observed into a pool of information. As the team discussed their research, they found that they had many disagreements about the order of the stages in the process. Each scientist proposed a different order for the phenomena he or she observed. In addition, the scientists had several other questions about mitosis. It is up to you and your own biological team to discover the order of the different cellular activities that occur during mitosis and to answer some of the questions that the scientists proposed.

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- Put the strips of paper with the steps of mitosis in their proper order.
- Let Mr. U. know when you're done and compare your order with another group's.
- Discuss discrepancies and adjust as necessary.
- Check your revised order with Mr. U. Once approved, copy the stages down in your notebook.
- Answer the following questions (use your text if you need to):
  1. What is duplicated during mitosis?
  2. What are separated during mitosis?
  3. What is the result of mitosis?
  4. What does your body use mitosis for? BE SPECIFIC!!!
  5. On your list of steps you wrote in your notebook, indicate which steps are in which stages of mitosis (prophase, metaphase, anaphase, telophase, interphase)
  6. How do plant and animal cell mitosis differ?