

Name _____

Date _____

Cell Division

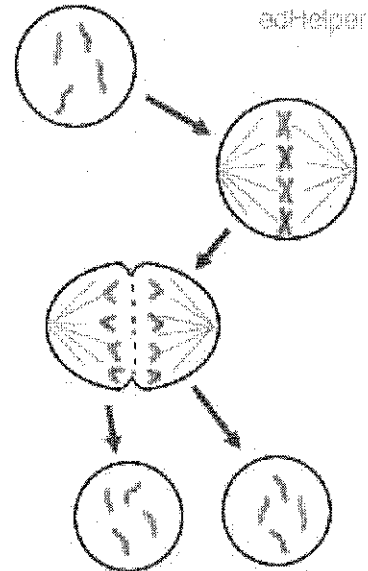
By Cindy Grigg

¹ Living things grow by cell division. Cell division also replaces dead or worn-out cells. Cells divide to multiply. The process that cells go through when they divide is called **mitosis**. During mitosis, a single cell splits into two cells. The nucleus of the cell divides first. This is called mitosis. Then the cytoplasm divides. This is called **cytokinesis**.

² The two cells produced by mitosis are called daughter cells. They are identical. Mitosis causes the number of cells to double. At the end of the process, there are twice as many cells. For example, if three cells go through mitosis, six cells are produced. If those six cells go through another cell division, twelve cells are produced.

³ Cells divide at different rates. Mitosis might take place every minute or every three hours. The rate depends on the type of cell and the type of organism. Chemicals, temperature, and the time of day also affect the rate of mitosis.

⁴ If you know the rate at which a cell divides, you can determine the number of cells that will be present after an hour, a day, or a week. Scientists can use the rate of mitosis to calculate how long it will take to grow a certain number of cells. This helps them plan their experiments.



<p>1. How do living things grow?</p> <p><input type="radio"/> A By cell division</p> <p><input type="radio"/> B One cell splits into two cells</p> <p><input type="radio"/> C By a process called mitosis</p> <p><input type="radio"/> D All of the above</p>	<p>2. What part of the cell divides first?</p> <p>_____</p> <p>_____</p>
<p>3. Mitosis produces two _____.</p> <p><input type="radio"/> A Mother cells</p> <p><input type="radio"/> B Father cells</p> <p><input type="radio"/> C Brother cells</p> <p><input type="radio"/> D Daughter cells</p>	<p>4. All cells divide at the same rate.</p> <p><input type="radio"/> A False</p> <p><input type="radio"/> B True</p>
<p>5. What things can affect the rate of mitosis?</p> <p><input type="radio"/> A The kind of organism</p> <p><input type="radio"/> B The type of cell</p> <p><input type="radio"/> C Temperature, chemicals, and the time of day</p> <p><input type="radio"/> D All of the above</p>	<p>6. Mitosis causes the number of cells to _____.</p> <p><input type="radio"/> A Divide</p> <p><input type="radio"/> B Triple</p> <p><input type="radio"/> C Multiply</p> <p><input type="radio"/> D Double</p>

Math: Suppose you are a scientist who wants to grow cells. Sample 1 is a cell that divides every twenty minutes. Sample 2 is a cell that divides every thirty minutes. Will there be more cells of Sample 1 or 2 after three hours? How many more?

Why do living things need to produce new cells?

rate	determine	double	division
organism	temperature	cytoplasm	daughter
cytokinesis	worn-out	living	mitosis
single	grow	process	

Directions: Fill in each blank with the word that best completes the reading comprehension.

(1) _____ things (2) _____ by cell division. Cell (3) _____ also replaces dead or (4) _____ cells. Cells divide to multiply. The (5) _____ that cells go through when they divide is called mitosis. During mitosis, a (6) _____ cell splits into two cells. The nucleus of the cell divides first. This is called mitosis. Then the (7) _____ divides. This is called (8) _____.

The two cells produced by mitosis are called (9) _____ cells. They are identical. Mitosis causes the number of cells to (10) _____. At the end of the process, there are twice as many cells. For example, if three cells go through mitosis, six cells are produced. If those six cells go through another cell division, twelve cells are produced.

Cells divide at different rates. Mitosis might take place every minute or every three hours. The rate depends on the type of cell and the type of (11) _____. Chemicals, (12) _____, and the time of day also affect the (13) _____ of (14) _____.

If you know the rate at which a cell divides, you can (15) _____ the number of cells that will be present after an hour, a day, or a week. Scientists can use the rate of mitosis to calculate how long it will take to grow a certain number of cells. This helps them plan their experiments.