

# How Do Cells Divide and Reproduce?

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## How Do Cells Divide and Reproduce?

- God designed \_\_\_\_\_ different \_\_\_\_\_ involving cell division that allow cells to reproduce.
- One makes new cells for routine \_\_\_\_\_ and \_\_\_\_\_.
- The other enables the organisms to \_\_\_\_\_.

## Mitosis

- \_\_\_\_\_ describes how body cells grow and reproduce.
- During this process, \_\_\_\_\_ that contain the organism's DNA are copied in the nucleus.
- DNA carries God's instructions for an organism's \_\_\_\_\_.
- \_\_\_\_\_ is the dividing of the cytoplasm of the cell, which produces two daughter cells.

## Mitosis: Step-by-Step

- \_\_\_\_\_ (\_\_\_\_\_): The cell has two chromosomes. The chromosomes are copied, just before the cell starts to divide.
- \_\_\_\_\_ (\_\_\_\_\_): The chromosomes condense and become tightly wound. The chromosomes are X-shaped. Each side of the X is a copy of the other side. They are attached at a knot like point. The nucleus membrane disappears.
- \_\_\_\_\_ (\_\_\_\_\_): A network of fibers develops in the cytoplasm. The chromosomes line up in the center of the cell. The fibers attach to each side of the X-shaped chromosomes.
- \_\_\_\_\_ (\_\_\_\_\_): The fibers pull apart the duplicated chromosomes, moving one strand to each side of the cell.
- \_\_\_\_\_ (\_\_\_\_\_): A new nucleus starts to form around each set of chromosomes.
- \_\_\_\_\_ (\_\_\_\_\_): The cytoplasm pinches in, and two separate cells form during the process of *cytokinesis*. The two cells are identical to the original cell.

### Mitosis: Number of Chromosomes

- Chromosomes contain specific \_\_\_\_\_ needed by the organism, whether it is a frog, a fungus, or a sunflower.
- It is important that each new cell has the \_\_\_\_\_ codes as the \_\_\_\_\_ cell.
- Each species of organism has a \_\_\_\_\_ of chromosomes in its body cells.
- At the end of cell division, the \_\_\_\_\_ of each new cell must have the same \_\_\_\_\_ of chromosomes as the original cell.
- A potato cell has \_\_\_\_\_ chromosomes before it divides.
- After mitosis, there are \_\_\_\_\_ new cells.
- Each new cell has \_\_\_\_\_ chromosomes.

<b>Organism</b>	<b>Number of Chromosomes</b>
Mosquito	
Lettuce	
Humans	
Horse	