

# *How does Cancer relate to the cell cycle*

## *Warm Up*

You have learned how cells divide. One cell divides into two daughter cells. Each of those daughter cells divide into two more daughter cells. Make a graph that shows how the number of cells increases.



*Essential Question:* How do cells maintain homeostasis?

*Focus Question:*

- How does Cancer relate to the cell cycle?
- Why does cancer occur?

*Controls*

- Cell division is highly controlled.
- Cell growth and division depend on protein signals and other environmental signals. Many proteins within the cell control the phases of the cell cycle.
- Signals from surrounding cells or even from other organs can also regulate cell growth and division.
- Environmental conditions, including the availability of nutrients, also affect the cell cycle.

*Checkpoints*

- During the cell cycle, a cell undergoes an inspection process to ensure that the cell is ready for the next phase in the cell cycle.
- Feedback signals at key checkpoints in the cell cycle can delay or trigger the next phase of the cell cycle.
- There are three main checkpoints in the cell cycle—G<sub>1</sub> Checkpoint, G<sub>2</sub> checkpoint, mitosis checkpoint.