Name _____

**Answer Key: The Cell Cycle - Meiosis**

1. Meiosis serves the purpose of producing reproductive cells (sperm and egg cells) and ensuring genetic diversity in offspring, while mitosis is responsible for tissue growth, repair, and maintenance.

2. Meiosis occurs in two stages: meiosis I, which separates homologous chromosomes, and meiosis II, which separates sister chromatids, resulting in four haploid daughter cells.

3. It is essential for meiosis to reduce the chromosome number in reproductive cells to ensure that when sperm and egg cells combine during fertilization, the resulting offspring have the correct diploid chromosome number.

4. Genetic diversity in offspring is significant because it increases the chances of survival in changing environments and contributes to the overall health of a population.

5. False