

Name _____

Comparing Mitosis and Meiosis

Mitosis and meiosis differ in their outcomes and the types of cells they produce. Here are examples of cell types that use each process:

Mitosis

- Skin cells: Mitosis occurs to replace old or damaged skin cells, helping to maintain the skin's integrity.
- Blood cells: Red and white blood cells undergo mitosis to ensure a constant supply for oxygen transport and immune defense.
- Muscle cells: Mitosis allows for muscle repair and growth, especially after physical activity.

Meiosis

- Sperm cells: In males, meiosis gives rise to sperm cells, each with half the chromosome number, ensuring genetic diversity in offspring.
- Egg cells: In females, meiosis produces egg cells, which also have half the chromosome number and are ready for fertilization.
- Pollen grains: In plants, meiosis generates pollen grains containing male reproductive cells that can fertilize female plant parts.

Questions

1. Provide three examples of cell types that use mitosis in the body and explain why mitosis is essential for them.
2. Name two types of reproductive cells produced through meiosis and describe their chromosome numbers.
3. How does meiosis contribute to genetic diversity in offspring?
4. In what organisms, apart from humans, does meiosis play a crucial role in reproduction?
5. True or False: Mitosis and meiosis produce identical types of cells.