



Genetic Continuity via Binary fission, Mitosis, and Meiosis 101

1. **Genetic Continuity** is the _____ of a _____ via _____

- When a cell _____, the resulting two daughter cells have the _____ and type of _____ as the original parent cell (_____)

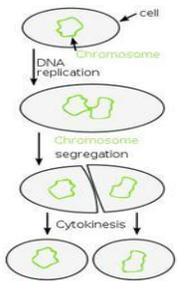
2. How is genetic material passed from cell to cell with binary fission? _____

3. How is genetic material passed from cell to cell with mitosis? _____

- When two _____ organisms mate, the _____ have the _____ of _____ as the parent organisms (_____).

4. How is genetic continuity maintained in the process of meiosis? _____

Binary Fission is a type of _____ reproduction when an organism _____ it's _____ and _____ in half.



- Occurs in _____ (_____)
- Lacks a _____, genetic material found in a _____
- Prokaryotic cells are _____ and less _____ than Eukaryotic cells so the process of binary fission is _____ and _____ than mitosis
- No _____ needed so uses less _____ to _____
- Errors in _____ (mutations) in Prokaryotic cells introduces more _____ and often crucial for their _____
- Most prokaryotic/bacteria cells are genetically _____ so one thing could _____ out the population (_____)

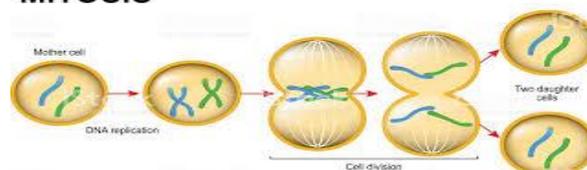
Steps of Binary Fission

1. Chromosome _____ begins. Soon thereafter, one _____ of the origin moves rapidly toward the _____.
2. _____ continues. One copy of the _____ is now at _____
3. Replication finishes. The plasma membrane _____, and new cell wall is deposited.
4. _____ result.
 - Why does binary fission occurs so rapidly in the video? _____

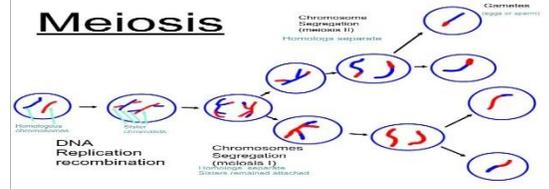
Genetic Continuity through Mitosis

- Consistently replicates _____ from parent cell to _____
- Done for _____ of single organisms cells (one person), helps humans to reach process of _____
- Result = _____ daughter cells with the same amount of _____ as the _____

MITOSIS



Meiosis



Genetic Continuity through Meiosis

- Meiosis goes through _____ cycles of the _____.
- Meiosis helps provide genetic _____ in resulting _____ by _____ over during prophase I which produces new _____ in the cell which increases _____
- Four _____ cells called _____ (sperm or egg) with _____ the DNA of the original _____ are produced at the end of Meiosis.
- Each gamete (_____) contains a mixture of genes from two different _____ chromosomes in sexual reproduction, which also _____ genetic diversity.
- The end result is more _____ within a sexually reproducing population, which ultimately increases it's chances for _____.

Mitosis	Same	Meiosis

1. What is genetic continuity? _____
2. How do Prokaryotic (bacteria) cells ensure genetic continuity? What is this process called? _____
3. What are some benefits of binary fission? What are some cons of binary fission? _____
4. Relate the population of bacteria cells to how they reproduce. _____
5. How does Mitosis ensure genetic continuity? _____
6. Why do organisms go through mitosis? _____
7. How are binary fission and mitosis similar with genetic continuity? How are they different? _____
8. In what ways does Meiosis ensure genetic continuity? _____
9. Challenge Question! How does Mitosis help genetic continuity for Meiosis? _____
10. Challenge Question! How does Meiosis help genetic continuity for Mitosis? _____