

Meiosis and Sexual Life Cycles

Chapter 13

1. How are traits from parents transmitted to their offspring?
2. Outline the advantages and disadvantages of both asexual and sexual reproduction.
3. Define somatic cell, gamete, zygote, fertilization, homologous chromosome, sex chromosome, autosome, haploid, and diploid.
4. How does the alternation of meiosis and fertilization maintain the normal chromosome number between generations?
5. There are three main types of sexual life cycles exists. What do they have in common?
6. Give a brief description of how meiosis I and II reduce the chromosome number.
7. List and describe the events in meiosis.
8. How are the chromosomes in a cell at metaphase of mitosis similar to and different from those in a cell at metaphase I of meiosis? Metaphase II?
9. How many chromosomes do the four daughter cells have after meiosis in comparison to the mother cell?
10. Describe how independent assortment, crossing over and random fertilization increase genetic diversity through sexual reproduction.
11. Fruit flies have a diploid number of 8, and honeybees have a diploid number of 32. Assuming no crossing over, is the genetic variation among offspring from any two parents likely to be greater in fruit flies or honeybees. Support your answer.
12. When would crossing over during meiosis *not* contribute to genetic variation among daughter cells?
13. What is the connection between genetic diversity and evolution?