*Use the information in Chapter 13 (p.248-260) to complete the following questions. Bozeman also has the following helpful podcasts:* [*Cell Cycle, Mitosis & Meiosis*](http://www.bozemanscience.com/028-cell-cycle-mitosis-and-meiosis)*,* [*Meiosis*](http://www.bozemanscience.com/meiosis)*,* [*Phases of Meiosis*](http://www.bozemanscience.com/phases-of-meiosis)*, and* [*Cellular Variation*](http://www.bozemanscience.com/052-cellular-variation)*.*

**Concept 13.1: Offspring acquire genes from parents by inheriting chromosomes.**

1. Explain how offspring inherit genes from their parents through sexual reproduction.
2. Compare and contrast sexual and asexual reproduction.

**Concept 13.2 Fertilization and meiosis alternate in sexual life cycles.**

1. Complete the following table in which you organize information about human chromosomes.

|  |  |  |
| --- | --- | --- |
| **Term** | **Definition** | **Diagram** |
| Karyotype |  |  |
| Homologous chromosome |  |  |
| Sex chromosomes |  |  |
| Autosomes |  |  |
| Sister Chromatid |  |  |

2. Compare and contrast diploid and haploid cells.

3. Explain how alternation of generations differs from the life cycle of animals. Draw a diagram to help your explanation.

**Concept 13.3: Meiosis reduces the number of chromosomes set from diploid to haploid.**

1. Use Figure 13.8 to draw, label, and explain the stages of meiosis. Be sure to identify/define synapsis, crossing over, alignment of homologous chromosomes, and separation of sister chromatids.
2. Compare and contrast the events, purpose, and products of mitosis and meiosis.

**Concept 13.4 Genetic variation produced in sexual life cycles contributes to evolution.**

1. Define each of the following terms and explain how it contributes to genetic variation.

|  |  |  |
| --- | --- | --- |
| **Term** | **Definition** | **Contribution** |
| Independent Assortment |  |  |
| Crossing Over |  |  |
| Random Fertilization |  |  |

2. Explain how genetic variation within populations leads to evolution. Provide examples to support your explanation.