Inheritance

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| What did Walter Sutton discover?  What evidence is there that chromosomes are responsible for inheritance?  Why do chromosomes exist in pairs?  How are genes related to chromosomes?  What is meiosis?  What happens during meiosis?  How do Punnett squares show meiosis?  How do genes line up?  What are the steps of meiosis? | Walter Sutton studied the sperm and egg cells of grasshoppers and discovered how they pass on traits.  There is only half the amount of sex cells as body cells, meaning half come from each parent!  One chromosome comes from the male parent and the other comes from the female parent.  Alleles are different forms of genes, and paired alleles are carried on paired chromosomes.  Meiosis is when cells split to form sex cells (sperm and egg).  During meiosis, the chromosome pairs separate and are distributed to two different cells.  Punnett squares show the possible allele combinations when the chromosomes combine in sex cells.  Genes are lined up in the same order on both chromosomes.  1. Every chromosome in the parent cell is copied.  2. Chromosome pairs line up in the center of the cell.  3. Pairs separate and move to opposite ends of the cell.  4. The cell pinches together in the middle and splits in two.  5. Process repeats until 4 sex cells are produced. |

Summary: