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| Science 9 | Unit A |
| Lesson 7: DNA and Heritable | 84 mins |

*We have looked in the past at inheritable traits, but we have yet to talk about how those traits are passed down.*

*There is two ways:*

* *DNA (Genetic)*
* *Environment (Taught)*

DNA

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| * Genetic material found in the nuclei of cells * Double Helix (Ladder twisted)   Uses   * Criminology * Taxonomy (Classifying organisms) * Archeology   *DNA Picture: How they saw a double helix in this picture is anyone’s guess…*  DNA Structure  **DRAW Again**  DNA Forms  Chromosome: Tightly compact DNA stands  Gene: an uninterrupted segment of DNA, containing the coded instructions for life  Chromosomes   * Humans have 46 (23 pairs) * Dogs have 78 (39 pairs) * Cats have 38 (19 pairs) * Fruit Flies have 8 (4 pairs)   Code for Life:   * Genes are located on the chromosomes * Each chromosome contains numerous gene locations * Like chromosomes, genes come in pairs * Both genes in a pair carry DNA instructions for the same thing * The DNA code may not be exactly the same in both locations   Alleles: The possible forms of a gene on a chromosome. | * Deoxyribonucleic Acid * **DRAW**   Found by:  James Watson and Francis Crick.. and Rosalind Franklin (x-ray tech)    A = Adenine T = Thiamine  C = Cytosine G = Guanine  Our bodies can replicate these molecules but some we have to eat proper proteins to get them  Macintosh HD:private:var:folders:K-:K-mnU2zDGJ0SRTGleCBoA++++TI:-Tmp-:TemporaryItems:r22_chromosome.jpg  Chromosomes are always paired!  From fruit fly research  Dominate Alleles: that trait will show when paired with recessive or dominate alleles  Recessive Alleles: that trait will ONLY show when paired with other recessive alleles |

Cell Division

*WATCH YOUTUBE MOVIE (https://www.youtube.com/watch?v=Ba9LXKH2ztU)*

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| Mitosis – The exact copying of a cell and DNA for reproduction of a cell  Meiosis – The making of cells that have half the amount of chromosomes needed for a whole organism. | Examples: Somatic (body) cells for repairing damaged cells, Asexual reproduction  Examples: Sex cells (gametes) used for reproductions during sexual reproduction. |

Practice: Pg. 45 #1,3,4,10

Pg. 48 #1,2,3,7