3.1 – DNA & the Genetic Code Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| DNA is short for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  It is contained within the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a cell and holds all the genetic instructions for that living thing.  1869 - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  1944 - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  It appeared that all organisms on Earth had blueprints that were passed on by the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |  |

Two scientists, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ revealed how the same building blocks could carry a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ needed for the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in our world.

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|  | A DNA molecule (*which is contained in the nucleus of a cell*) is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_, and can be compared to a ladder that has been twisted in a spiral. Each \_\_\_\_\_\_\_\_\_\_ contains 2 chemicals, and they always match to their chemical pair.  The 4 chemicals in all DNA are:   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ colour: \_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ colour: \_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ colour: \_\_\_\_\_\_\_\_\_\_\_\_ 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ colour: \_\_\_\_\_\_\_\_\_\_\_\_   The way these chemicals are arranged is called our \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_. The order of the 4 “letters” (*or chemicals*) provide all the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to make an organism. There is so much information in your DNA, that if the DNA from a single cell was stretched out, it would be more than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ long.  In order to fit all the information into their cells, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ arrange their \_\_\_\_\_\_\_\_\_\_\_\_ into packages called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Each human cell contains \_\_\_\_\_\_\_\_\_ chromosome pairs. A chromosome pair has 1 chromosome from EACH parent. This means we have \_\_\_\_\_\_\_\_\_ chromosomes in EVERY cell. |

***WHAT does this have to do with GENETICS?***

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| A single \_\_\_\_\_\_\_\_\_\_\_\_\_ is an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ segment of DNA. Genes are located on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ within a cell and contain all the information “coding” us to be who we are both physically and chemically.  Each chromosome pair contains the same \_\_\_\_\_\_\_\_\_\_\_ (*for example, the chromosome from your mother carries a gene for eye colour, and the chromosome from your father carries a gene for eye colour*).  The possible forms that can be taken on are known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Each allele is marked with an \_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_ case letter indicating whether it is a dominant or recessive trait. |  |

**Think Critically**: *Use the space below to take notes on your group discussion addressing “Jurassic Park” and filling in the genetic code.* ***This will help you with your final challenge at the end of the unit.***