

Chapter 2.3 – From DNA to Proteins

Chromosomes are structures within the nucleus that are made of DNA (deoxyribonucleic acid). Each chromosome is made of one very long molecule of DNA.

1) Structure of DNA: components to replication (pg 42 to 43)

DNA – made of two strands of _____

Nucleotides are made of: _____; _____; _____

2) Genetic Code: bases to amino acids to proteins (pg 43)

Nitrogenous bases are described in groups of 3, according to their order on the DNA molecule (rungs on the ladder – e.g. TTA; CCG; AGT; etc).

Each 3 letter “word” is the code for the production of an _____. There are _____ different amino acids.

Amino acids are the building blocks of: _____

Different combinations of _____ form different _____.

Characteristics of organisms are determined by _____.

The genetic code is _____

3) DNA to Genes: genes to genome (pg 44)

Each chromosome is made of one DNA molecule. Short sections of the DNA molecules that contain instructions to make specific proteins are called: _____.

The instructions for the making the proteins are determined by the order of the _____.

The genome is: _____.

4) Genes to Proteins (i.e. making proteins): Protein Synthesis (pg 44 to 45)

Step 1 - The DNA segment that makes up the gene is used to make _____ (RNA is similar to DNA, but, unlike DNA, RNA has _____)

Step 2 – A gene segment of _____ separates and an _____ molecule is constructed from _____ of the DNA.

Step 3 – The RNA molecule then _____

Step 4 – The ribosome _____

List 4 common proteins and describe their function. _____

5) Genetic Variations – traits (pr 45 to 46)

_____ are responsible for all the characteristics that make up a species.

All members of the same species have the same number and type of _____.

State the definition of the term “traits”? _____

Give 4 examples of human traits:

Do: “Try This” activity – Page 46 – but, just identify your own traits (we’ll compare class results next day)

Trait		Check mark the traits that you have	Total # of people in the class with the trait	Ratio (# of people with the trait/# of people in the class)
Earlobes	Free			
	attached			
Thumb shape	Hitch-hiker			
	straight			
Tongue	Rolls			
	Does not roll			
Hair on middle section of fingers	Hair is present			
	Hair is not present			
Dimples on face	present			
	absent			
Hairline	Widows peak (V)			
	Straight			
2 nd toe length	Longer than big toe			
	Not longer than big toe			
Hair colour	dark			
	light			
Hair texture	Curly hair			
	Straight hair			
Eye colour	Dark			
	blue			