100 Facts about DNA

1. DNA stands for deoxyribonucleic acid.
2. DNA is part of our definition of a living organism.
3. DNA is found in all living things.
4. DNA was first isolated in 1869 by Friedrich Miescher.
5. James Watson and Francis Crick figured out the structure of DNA.
6. DNA is a double helix.
7. The structure of DNA can be likened to a twisted ladder.
8. The rungs of the ladder are made up of “bases”
9. Adenine (A) is a base.
10. Thymine (T) is a base.
11. Cytosine (C) is a base
12. Guanine (G) is a base.
13. A always pairs with T in DNA.
14. C also pairs with G in DNA.
15. The amount of A is equal to the amoun tof T, same for C and G.
16. A+C = T+G
17. Hydrogen bonds hold the bases together.
18. The sides of the DNA ladder is made of sugars and phosphate atoms.
19. Bases attached to a sugar; this complex is called a nucleoside.
20. Sugar + phosphate + base = nucleotide.
21. The DNA ladder usually twists to the right.
22. There are many conformations of DNA: A-DNA, B-DNA, and Z-DNA are the only ones found in nature.
23. Almost all the cells in our body have DNA with the exception of red blood cells.
24. DNA is the “blueprint” of life.
25. Chromosomal or nuclear DNA is DNA found in the nucleus of cells.
26. Humans have 46 chromosomes.
27. Autosomal DNA is part of chromosomal DNA but does not include the two sex chromsomes – X and Y.
28. One chromosome can have as little as 50 million base pairs or as much as 250 million base pairs.
29. Mitochondrial DNA (mtDNA) is found in the mitochondria.
30. mtDNA is only passed from the mother to the child because only eggs have mitochondria, not sperm.
31. There’s a copy of our entire DNA sequence in every cell of our body with one exception.
32. Our entire DNA sequence is called a *genome*.
33. There’s an estimated 3 billion DNA bases in our genome.
34. One million bases (called a megabase and abbreviated Mb) of DNA sequence data is roughly equivalent to 1 megabyte of computer data storage space.
35. Our entire DNA sequence would fill 200 1,000-page New York City telephone directories.
36. A complete 3 billion base genome would take 3 gigabytes of storage space.
37. If unwound and tied together, the strands of DNA in one cell would stretch almost six feet but would be only 50 trillionths of an inch wide.
38. In humans, the DNA molecule in a non-sex cell would have a total length of 1.7 metres.

39. If you unwrap all the DNA you have in all your cells, you could reach the moon 6000 times!
40. Our sex cells–eggs and sperm–have only half of our total DNA.
41. Over 99% of our DNA sequence is the same as other humans'.
42. DNA can self-replicate using cellular machinery made of proteins.
43. Genes are made of DNA.
44. Genes are pieces of DNA passed from parent to offspring that contain hereditary information.
45. The average gene is 10,000 to 15,000 bases long.
46. The segment of DNA designated a gene is made up of exons and introns.
47. Exons have the code for making proteins.
48. Introns are intervening sequences sometimes called "junk DNA."
49. Junk DNA's function or lack thereof is a source of debate.
50. Part of "junk DNA" help to regulate the genomic activity.
51. There are an estimated 20,000 to 25,000 genes in our genome.
52. In 2000, a rough draft of the human genome (complete DNA sequence) was completed.
53. In 2003, the final draft of the human genome was completed.
54. The human genome sequence generated by the private genomics company Celera was based on DNA samples collected from five donors who identified themselves only by race and sex.
55. If all the DNA in your body was put end to end, it would reach to the sun and back over 600 times (100 trillion times six feet divided by 92 million miles).
56. It would take a person typing 60 words per minute, eight hours a day, around 50 years to type the human genome.
57. If all three billion letters in the human genome were stacked one millimeter apart, they would reach a height 7,000 times the height of the Empire State Building.
58. DNA is translated via cellular mechanisms into proteins.
59. DNA in sets of 3 bases, called a codon, code for amino acids, the building blocks of protein.
60. Changes in the DNA sequence are called *mutations*.
61. Many thing can cause mutations, including UV irradiation from the sun, chemicals like drugs, etc.
62. Mutations can be changes in just one DNA base.
63. Mutations can involve more than one DNA base.
64. Mutations can involve entire segments of chromosomes.
65. Single nucleotide polymorpshisms (SNPs) are single base changes in DNA.
66. Short tandem repeats (STRs) are short sequences of DNA repeated consecutively.
67. Some parts of the DNA sequence do not make proteins.
68. Genes make up only about 2-3% of our genome.
69. DNA is affected by the environment; environmental factors can turn genes on and off.
70. There are many ways you can analyze your DNA using commercially available tests.
71. Paternity tests compare segments of DNA between the potential father and child.
72. There are other types of relationship testing that compares DNA between siblings, grandparents and grandchild, etc.
73. DNA tests can help you understand your risk of disease.
74. A DNA mutation or variation may be associated with a higher risk of a number of diseases, including breast cancer.
75. DNA tests can help you understand your family history aka genetic genealogy.
76. DNA tests can help you understand your ethnic make-up.
77. DNA can be extracted from many different types of samples: blood, cheek cells, urine.

78. DNA can be stored either as cells on a cotton swab, buccal brush, or frozen blood or in extracted form.
79. In forensics, DNA analysis usually looks at 13 specific DNA markers (segments of DNA).
80. The odds that two individuals will have the same 13-loci DNA profile is about one in one billion.
81. A DNA fingerprint is a set of DNA markers that is unique for each individual except identical twins.
82. Identical twins share 100% of their genes.
83. Siblings share 50% of their genes.
84. A parent and child share 50% of their genes.
85. You can extract DNA at home from fruit and even your own cheek cells.
86. DNA is used to determine the pedigree for livestock or pets.
87. DNA is used in wildlife forensics to identify endangered species and people who hunt them (poachers).
88. DNA is used in identify victims of accidents or crime.
89. DNA is used to exonerate innocent people who've been wrongly convicted.
90. Many countries, including the US and UK, maintain a DNA database of convicted criminals.
91. The CODIS databank (COmbined DNA Index System) is maintained by the BI and has DNA profiles of convicted criminals.
92. Polymerase chain reaction (PCR) is used to amplify a sample of DNA so that there are more copies to analyze.
93. We eat DNA every day.
94. DNA testing is used to authenticate food like caviar and fine wine.
95. DNA is used to determine the purity of crops.
96. Genetically modified crops have DNA from another organism inserted to give the crops properties like pest resistance.
97. Dolly the cloned sheep had the same nuclear DNA as its donor mom but its mitochondrial DNA came from from the egg mom. (Does that make any sense?)
98. People like to talk about DNA even if it bears no relation to science or reality.
99. A group of bloggers who write regularly about DNA and genetics have banded to gether to form The DNA Network.
100. Lists about DNA can get a little boring.

Ref:
http://www.eyeondna.com/2007/08/20/100-facts-about-dna/