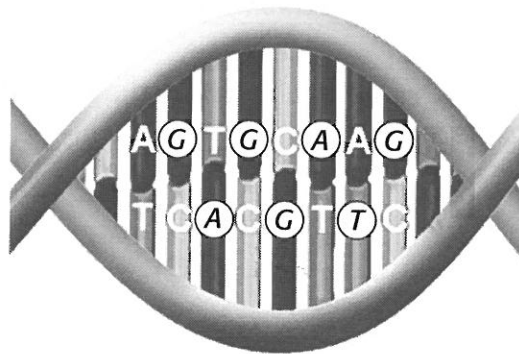


7. In a DNA molecule, nitrogen bases are always linked in the same pairs. Indicate the rule for these pairings:

Adenine is always linked to thymine and cytosine is always linked to guanine.

8. How is the genetic code determined? *By the order of the different nitrogen bases on the DNA strands*

9. The following diagram represents the double-helix structure of DNA. Complete the diagram by showing, on each nucleotide, the abbreviation of the corresponding nitrogen base.



Genes

10. Define "gene." *A segment of DNA that determines a particular genetic characteristic*

11. What makes up a gene? *A variable number of nucleotide pairs*

12. Examples of genetic characteristics determined by genes: *Eye colour, instructions for producing certain substances, especially proteins*

13. At what point does a person pass on genes to his or her descendants?
During sexual reproduction

14. Indicate the term for an individual's entire set of genes: *Genome*

Chromosomes

15. Define "chromosome." Each DNA molecule in the nucleus makes up a chromosome. The chromosome is a structure that contains an individual's DNA and, as a result, his or her genes.
16. Chromosomes come in pairs. One chromosome in the pair comes from the mother, and the other chromosome in the pair comes from the father.
17. Number of chromosome pairs in each human cell, with the exception of reproductive cells:
23 pairs of chromosomes, for a total of 46 chromosomes
18. Chromosome pairs that are the same size and have the same appearance:
Similar or homologous chromosomes
19. Number of pairs of homologous chromosomes:
a) In men: 22 pairs
b) In women: 23 pairs
20. What is special about the 23rd chromosome pair? The 23rd pair is made up of reproductive chromosomes. In women, these chromosomes are homologous and are identified as two X chromosomes. In men, the 23rd pair is different: one is an X chromosome and the other is a Y chromosome.
21. Diploid cells contain chromosome pairs.
22. Haploid cells contain a single copy of each chromosome.
23. All cells in the human body are diploid cells, with the exception of reproductive cells. Diploid cells are also called somatic cells.
24. Haploid cells such as ova and spermatozoa are also called reproductive cells.