

Name _____

Date _____

KEY TERMS - DNA/RNA and PROTEIN SYNTHESIS

1. **DNA: deoxyribonucleic acid; large double stranded molecule (polymer) made of nucleotides which contains the genetic information which determines an organism's traits. (Controls by producing proteins) Contains thymine to pair with adenine, guanine to pair with cytosine**
2. **RNA: ribonucleic acid; large single stranded molecule (polymer) Differs from DNA in that it contains ribose sugar (not deoxyribose), it is single stranded, and it contains uracil (not thymine) to pair with adenine**
3. **PROTEIN: large, complex polymer essential to all life. Composed of carbon, hydrogen, oxygen, nitrogen, and usually sulfur; provides structure for tissues and organs and helps carry out cell metabolism**
4. **CHROMOSOME: structure in the nucleus of a cell consisting of long thread of DNA that is tightly coiled**
5. ***GENE: specific location on chromosome, consisting of a segment of DNA that codes for a particular protein***
6. **NITROGEN BASE: carbon ring structure found in DNA or RNA that contains one or more atoms of nitrogen; includes adenine, guanine, cytosine, thymine, and uracil**
7. **PHOSPHATE GROUP: part of the nucleotide that makes up the backbone of the DNA/RNA molecule**
8. **COMPLEMENTARY BASES: nitrogen bases that always attach to one another: A-T, C-G, A-U**
9. **DOUBLE HELIX: name given to the structure of the DNA molecule**
10. **DNA REPLICATION: process in which chromosomal DNA is copied exactly before mitosis or meiosis**

11. **PROTEIN SYNTHESIS:** The creation of a protein as amino acids are bonded together to form a protein chain
12. **NUCLEOTIDE:** small units of DNA and RNA that have a sugar, a phosphate group and a nitrogen base
13. **MESSENGER RNA:(mRNA)** RNA that transports information from DNA in the nucleus to the cell's cytoplasm
14. **TRANSFER RNA: (tRNA)** RNA that transports amino acids to the ribosomes to be assembled into proteins
15. **TRANSCRIPTION:** process in the cell nucleus where enzymes make an RNA copy of a DNA strand
16. **CODON:** set of 3 nitrogen bases that represents an amino acid; order of nitrogen bases in mRNA determines the type and order of amino acids in a protein
17. **TRANSLATION:** process of converting information in mRNA into a sequence of amino acids in a protein
18. **MUTATION:** any change or random error in a DNA sequence
19. **POINT MUTATION:** mutation in a DNA sequence; occurs from a change in a single base pair
20. **FRAMESHIFT MUTATION:** mutation that occurs when a single base is added or deleted from DNA; causes a shift in the reading of codons by one base
21. **CHROMOSOMAL MUTATION:** mutation that occurs at the chromosome level resulting in changes in the gene distribution to gametes during meiosis; caused when parts of chromosomes break off or rejoin incorrectly
22. **MUTAGEN:** any agent that can cause a change in DNA; includes high-energy radiation, chemicals, or high temperatures
23. **RIBOSE:** the simple sugar contained in RNA

- 24. **DEOXYRIBOSE:** the simple sugar contained in DNA
- 25. **ANTICODON SITE:** the area where tRNA carries the amino acid to match the specific codon from mRNA
- 26. **PEPTIDE BOND:** bond that holds amino acids together forming proteins
- 27. **STOP CODON:** 3 letters that indicate the end of a protein chain

DRAW A NUCLEOTIDE AND LABEL ALL PARTS

