Nucleic acids and protein synthesis

A-Level Biology · Vocabulary in context

Word	Example
nucleic acid /nju:'klıık 'æsıd/	DNA and RNA are both a **nucleic acid**. DNA RNA
nucleotide /'nju:klıətaıd/	A **nucleotide** is made of a sugar, a phosphate and a base. `
phosphate /'fɒsfeıt/	**Phosphate** groups occur in ATP, nucleic acids and phospholipids. ATP、
base /beıs/	The order of each **base** along DNA carries the genetic code. DNA
adenine /'ædəni:n/	In DNA, **adenine** always pairs with thymine. DNA
ribose /'rıbəʊs/	RNA contains the sugar **ribose**. RNA
energy /'enədʒi/	Food gives your body the **energy** it needs to move.
purine /'pjʊəri:n/	Adenine and guanine are each a **purine**: a base with two rings.
guanine /'gwɑ:naın/	**Guanine** always pairs with cytosine.
pyrimidine /'pırımıdi:n/	Cytosine, thymine and uracil are each a **pyrimidine**: a base with one ring. `
cytosine /'saıtəsaın/	**Cytosine** always pairs with guanine.
thymine /'θaımaın/	**Thymine** is found in DNA but not in RNA. DNA RNA
uracil /'jʊərəsıl/	In RNA, **uracil** takes the place of thymine. RNA

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double helix /'dʌbl 'hi:lıks/	DNA is shaped like a **double helix**: a twisted ladder. DNA
strand /strænd/	DNA has two of them, but RNA has only one **strand**. DNA RNA
deoxyribose /di:'ɒksırıbəʊs/	DNA contains the sugar **deoxyribose**. DNA
phosphodiester bond /'fɒsfəʊdıstə bɒnd/	A **phosphodiester bond** joins one nucleotide to the next along a strand.
complementary base pairing /ˌkɒmplı'mentəri beıs 'peərıŋ/	Because of **complementary base pairing**, A always pairs with T and C with G. A T C G
hydrogen bond /'haıdrədʒn bɒnd/	A **hydrogen bond** is a weak pull between molecules, such as between water molecules.
base pair /beıs peə/	Each **base pair** is held together by hydrogen bonds.
antiparallel /ˌæntı'pærəlel/	The two DNA strands are **antiparallel**: they run in opposite directions. DNA
replication /ˌreplı'keıʃn/	DNA **replication** happens before the cell divides. DNA
semi-conservative replication /'semi kən'sɜ:vətıv ˌreplı'keıʃn/	In **semi-conservative replication**, each new DNA molecule keeps one old strand. DNA
enzyme /'enzaım/	The **enzyme** speeds up the reaction.
polymerase /ˌpɒlımə'reız/	DNA **polymerase** joins new nucleotides to make a new strand. DNA
leading strand /'li:dıŋ strænd/	The **leading strand** is copied in one long piece.

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lagging strand /ˈlægɪŋ strænd/	The **lagging strand** is copied in short pieces that are joined later.
ligase /ˈlɪgeɪs/	**Ligase** joins pieces of DNA together. DNA
helicase /ˈhelɪkeɪs/	The enzyme **helicase** unwinds the helix and breaks the hydrogen bonds between the bases.
gene /dʒiːn/	A **gene** is a piece of DNA that codes for one protein. DNA
polypeptide /ˌpɒlɪˈpeptaɪd/	A **polypeptide** is a long chain of amino acids.
triplet /ˈtrɪplɪt/	Each **triplet** of three bases codes for one amino acid.
amino acid /əˈmiːnəʊ ˈæsɪd/	Glycine is the simplest **amino acid**.
transcription /træn'skrɪpʃn/	In **transcription**, the DNA code is copied into RNA. DNA RNA
template strand /ˈtempleɪt strænd/	RNA is built using the **template strand** as a guide. RNA
non-transcribed strand /nɒn træn'skraɪbd strænd/	The **non-transcribed strand** has the same base order as the mRNA, but with T instead of U. mRNA T U
primary transcript /ˈpraɪmərɪ ˈtrænskrɪpt/	The **primary transcript** still contains introns, which are cut out later.
exon /eg'zɒn/	An **exon** is a part of the gene that stays in the final mRNA. mRNA
intron /ɪn'trɒn/	An **intron** is cut out of the mRNA before it leaves the nucleus. mRNA

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ribosome /ˈriːbəʊsəʊm/	The **ribosome** builds the protein.
translation /træn'sleɪʃn/	In **translation**, the ribosome reads the RNA and builds a protein. RNA
codon /ˈkəʊdɒn/	The **codon** AUG codes for the amino acid methionine. AUG
anticodon /ˌæntɪˈkəʊdɒn/	The **anticodon** on a tRNA matches a codon on the mRNA. tRNA mRNA
peptide bond /ˈpeptaɪd bɒnd/	A **peptide bond** joins two amino acids.
mutation /mjuːˈteɪʃn/	A **mutation** is a change in the DNA. DNA
substitution /ˌsʌbstɪˈtjuːʃn/	In a **substitution**, one base is replaced by another.
deletion /dɪˈliːʃn/	A **deletion** of one base changes every codon after it.
insertion /ɪnˈsɜːʃn/	An **insertion** adds an extra base into the DNA. DNA
degenerate /dɪˈdʒenəreɪt/	The genetic code is **degenerate**: several codons can code for the same amino acid.