# PURINE AND PYRIMIDINE IN DNA SECOND STAGE

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# INTRODUCTION TO NITROGENOUS BASES

NITROGENOUS BASES IN DNA AND RNA ARE CLASSIFIED INTO TWO

MAIN GROUPS: PURINES AND PYRIMIDINES. THESE ARE THE ESSENTIAL BUILDING BLOCKS FOR GENETIC MATERIAL. A PURINE

ALWAYS PAIRS WITH A PYRIMIDINE TO MAINTAIN THE STRUCTURE OF THE GENETIC CODE. THE NITROGEN

BASES INCLUDE ADENINE, THYMINE, CYTOSINE, AND GUANINE.

# PURINES

THE BASES: THE PURINES CONSIST OF ADENINE (A) AND GUANINE (G).

STRUCTURE: THEY ARE COMPOSED OF A DOUBLE RING STRUCTURE.

SIZE: PURINES ARE PHYSICALLY LARGER THAN PYRIMIDINES.

MNEMONIC: USE THE PHRASE "PURE AS GOLD" TO REMEMBER THAT ADENINE AND GUANINE ARE PURINES.

# PYRIMIDINES

THE BASES: THE PYRIMIDINES CONSIST OF CYTOSINE (C), THYMINE (T), AND URACIL (U). THYMINE IS FOUND ONLY IN DNA. URACIL IS FOUND ONLY IN RNA.

STRUCTURE: THEY ARE COMPOSED OF A SINGLE RING STRUCTURE.

SIZE: PYRIMIDINES ARE SMALLER THAN PURINES.

MNEMONIC: USE THE PHRASE "CUT THE PIE" TO REMEMBER THAT CYTOSINE, URACIL, AND THYMINE ARE PYRIMIDINES.

# BASE PAIRING RULES

DNA PAIRING: ADENINE (A) PAIRS WITH THYMINE (T). CYTOSINE (C) PAIRS WITH GUANINE (G).

RNA PAIRING: ADENINE (A) PAIRS WITH URACIL (U). CYTOSINE (C) STILL PAIRS WITH GUANINE (G). STRUCTURAL MEMORY TRICK: REMEMBER

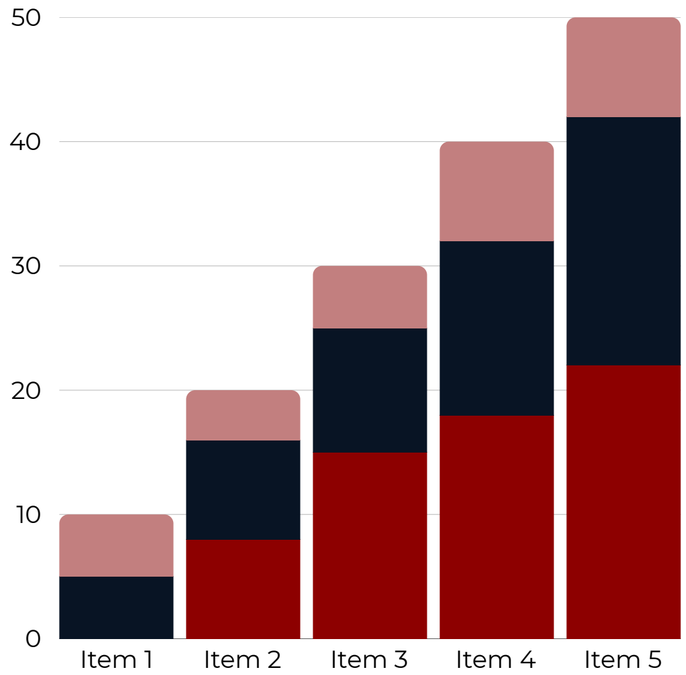
THAT "PURINE" IS A SMALLER WORD BUT HAS THE LARGER DOUBLE RING, WHILE "PYRIMIDINE

" IS A LARGER WORD BUT HAS THE SMALLER SINGLE RING.

# DETAILED BASE PAIRING

**THE BASES OF DNA PAIR WITH EACH OTHER IN A PREDICTABLE WAY: A ALWAYS PAIRS WITH T, AND C ALWAYS PAIRS WITH G.**

**THE BASES OF RNA PAIR WITH EACH OTHER IN A PREDICTABLE WAY: A ALWAYS PAIRS WITH U, AND C STILL PAIRS WITH G.**



# THANK YOU FOR YOUR ATTENTION