Nucleic Acids

1 2 3 4 5

Nucleotides

D.N.A

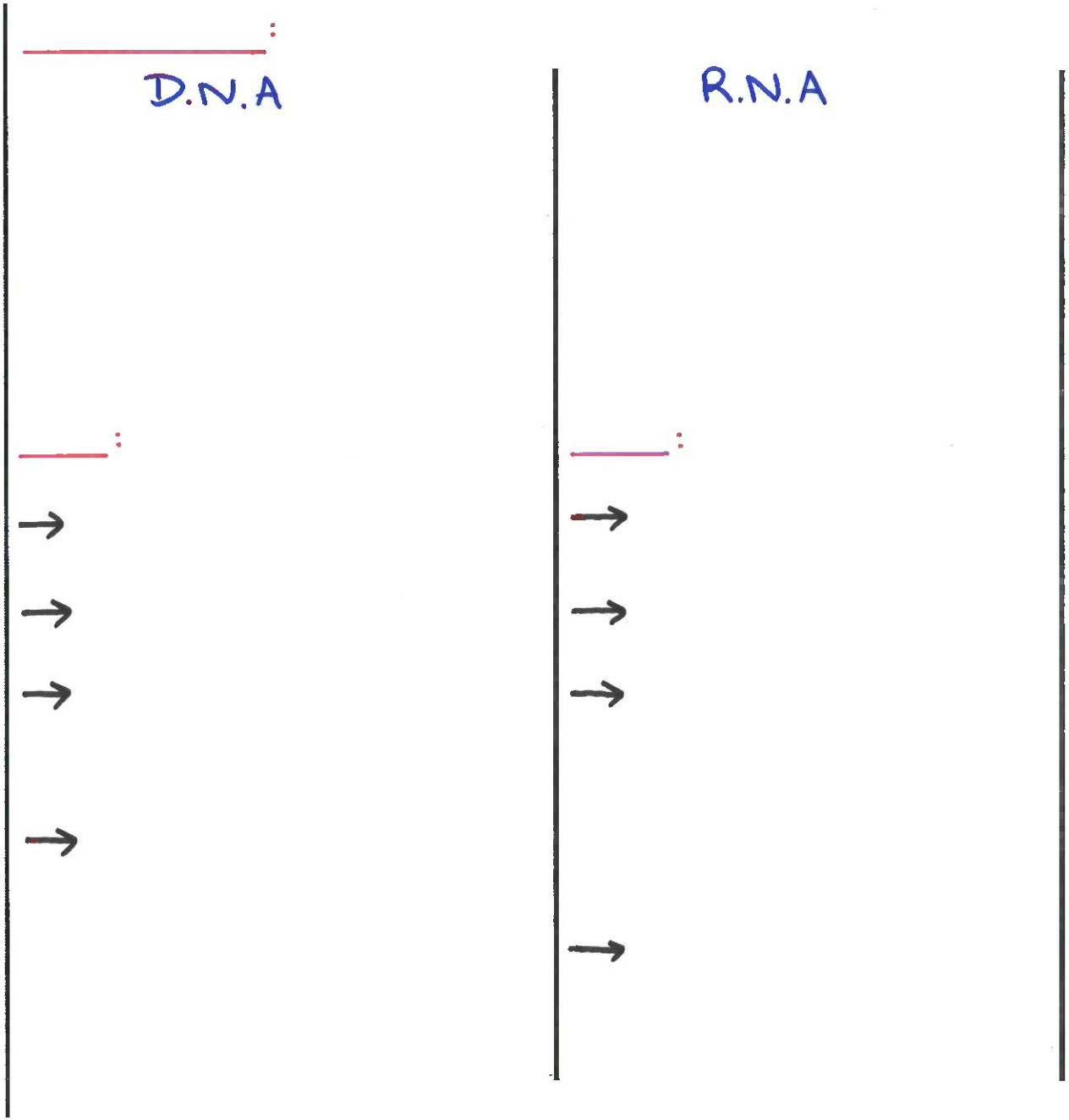
R.N.A

Polynucleotides

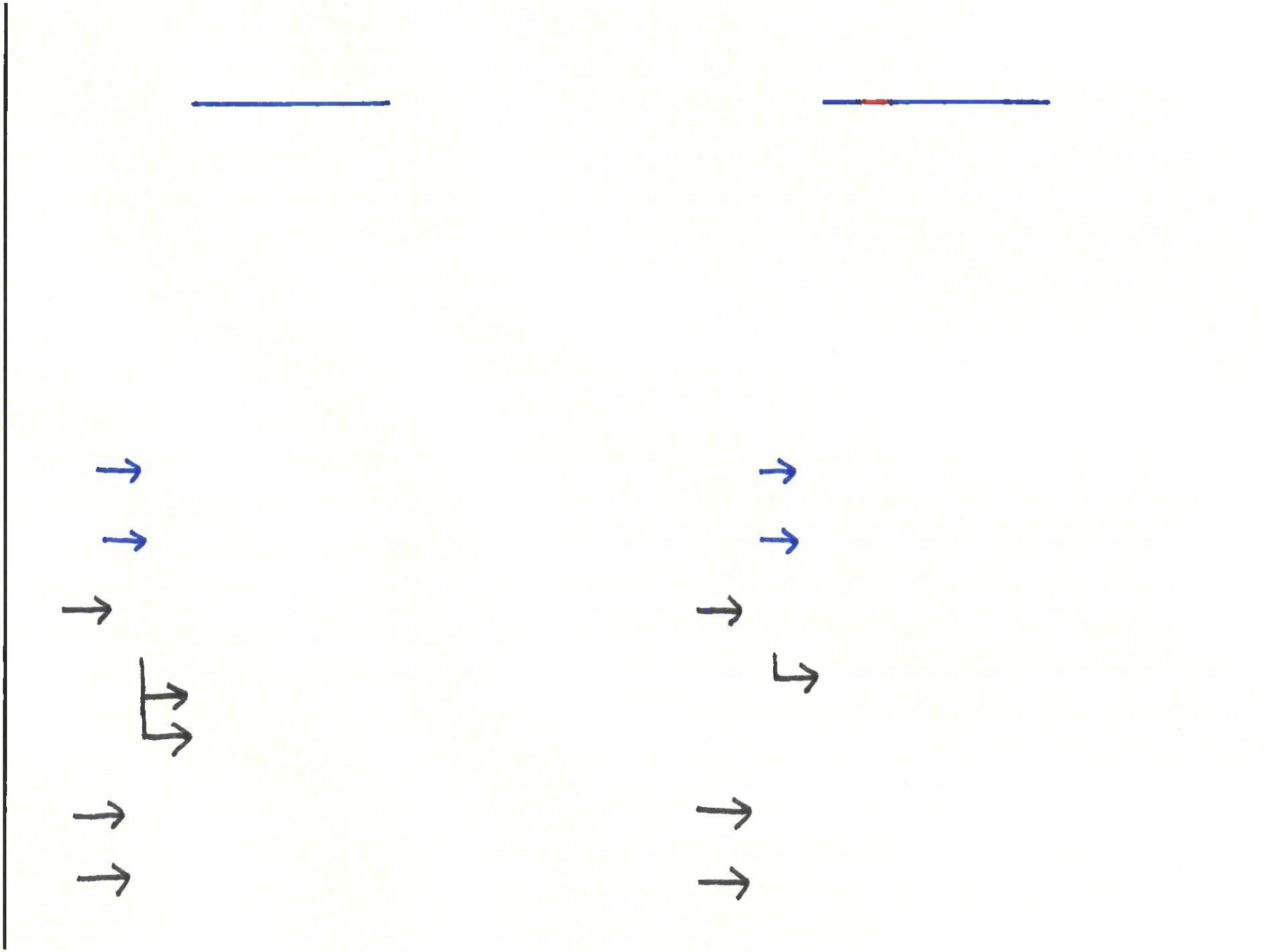
DNA

RNA

Phosphodiester Bond



Purines & Pyrimidines



ATP

TT

1 2 3 4 5

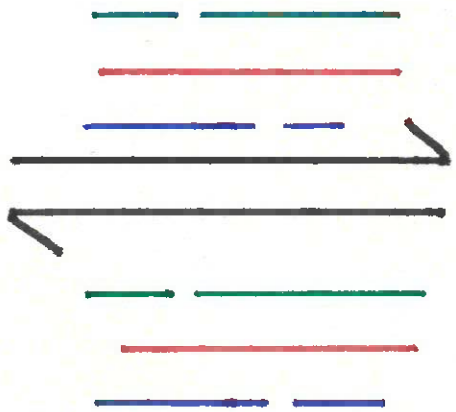
ATP is useful because:

ADP

Pi

ATP

Condensation

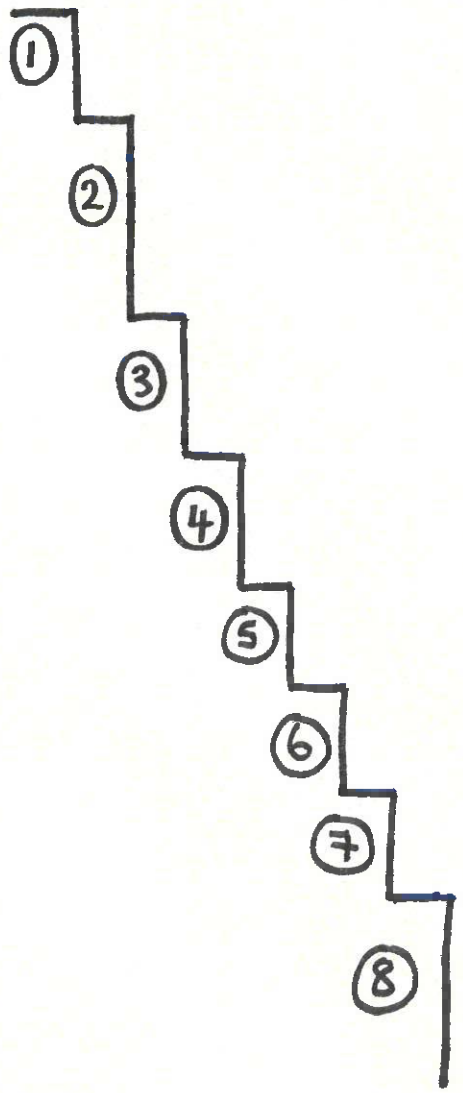


Hydrolysis

Phosphorylate

Purification of DNA by Precipitation

Method



FYI :

Semi-Conservative DNA Replication

1 2 3 4 5

DNA Helicase

Complementary Base Pairing

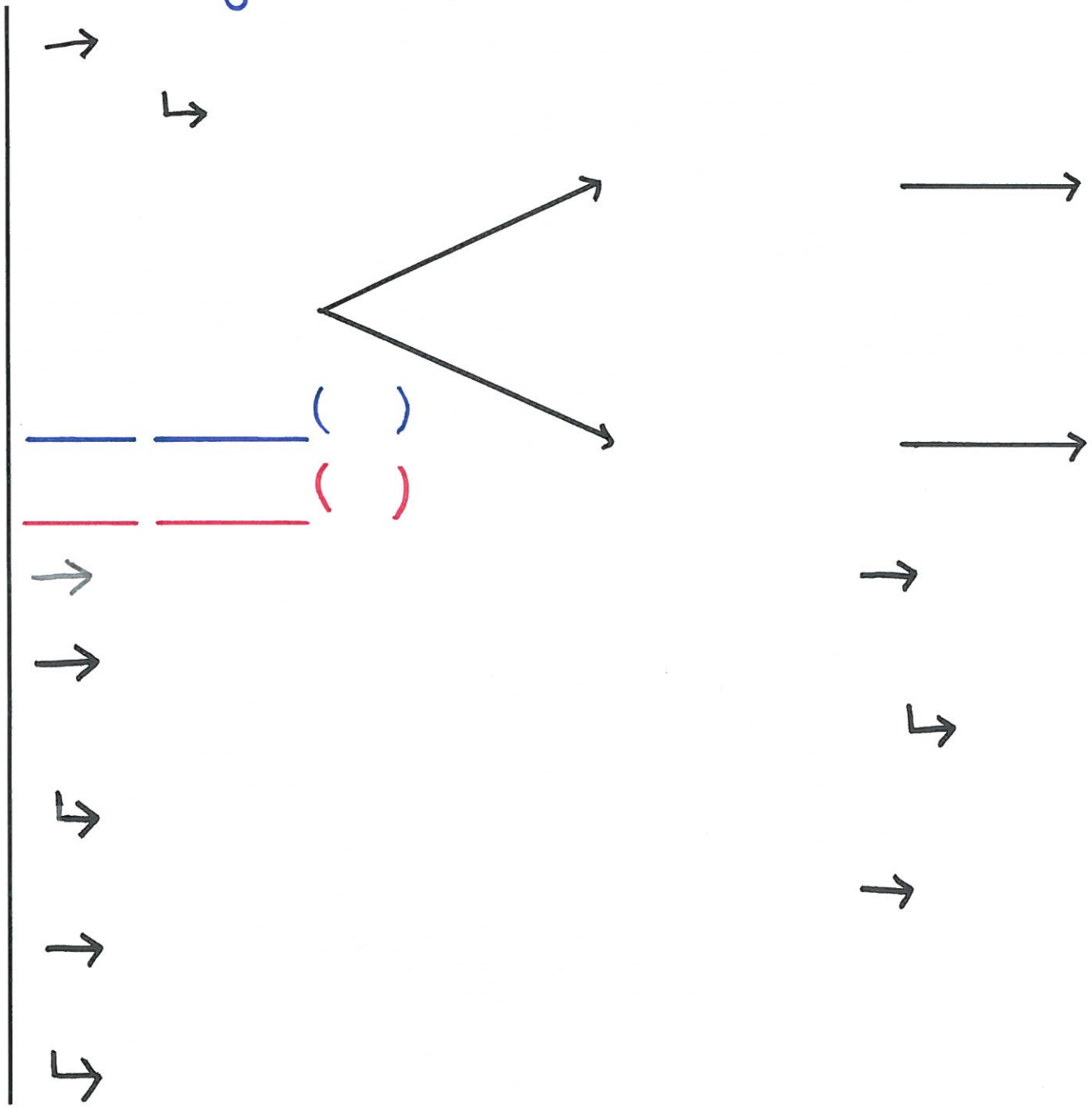
DNA Polymerase

Phosphodiester Bonds

Anti-parallel

Proving DNA Replication is Semi-Conservative

1 2 3 4 5



Protein Synthesis : Transcription

1 2 3 4 5

TT

Exons

Splicing

DNA Helicase

Hydrogen Bonds

Complementary Base Pairing

RNA Polymerase

Prokaryotes vs. Eukaryotes

Prokaryotes: →

→

Eukaryotes :

→

Protein Synthesis - Translation

Codon

_____ :

_____ :

Anticodon

→

→

→

→

→

→

→

TT

DNA & Protein Synthesis Key Terms

1 2 3 4 5

Pre-mRNA / Primary mRNA

DNA Antisense Strand:

→

↳

→

DNA Sense Strand

→

→

AQA + Edexcel =

OCR =

mRNA / mature mRNA

AQA + Edexcel

OCR

DNA is Universal, Non-Overlapping & Degenerate

1 2 3 4 5

TT

Universal

Non-overlapping

Degenerate

Genome

Proteome

Transcription

Protein Synthesis

Translation

DNA, Genes & Chromosomes

1 2 3 4 5

TT

Gene

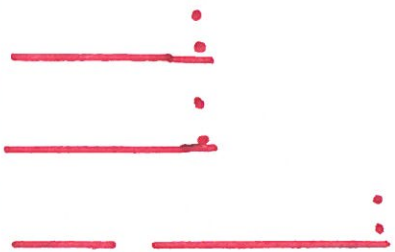
Locus

DNA Triplet

Eukaryotes →

Prokaryotes →

Mitochondria + Chloroplasts



Not all DNA codes for proteins / polypeptides / functional RNA

Gene Mutations

Gene Mutation

Substitution

Deletion

Mutations can cause a non-functional protein

No change to primary structure