1.5 NUCLEIC ACIDS

DNA

- Two polynucleotide chains, H-bonds between complementary bases
- A pairs with T C pairs with G
- Nucleotides in DNA contain deoxyribose, a phosphate, and one of four bases – adenine, cytosine, guanine or thymine
- DNA is a double helix
- Very stable molecule
- DNA carries genetic information
- Deoxyribonucleic acid

Monomers

- Bases and sugars differ between DNA and RNA
- Nucleotides contain a pentose sugar, a nitrogenous base and a phosphate group
- Nucleotides are the monomers of polynucleotides (nucleic acids) like DNA and RNA
- Nucleotides are joined by condensation reactions

DNA replication

- DNA Helicase
- Semi-conservative
- Double helix is separated, H-bonds are broken
- Each strand acts as a template, free nucleotides pair with complementary bases
- Nucleotides joined together to form new strand
- DNA polymerase
- Phosphodiester bonds

RNA

- Nucleotides in RNA contain ribose, a phosphate, and one of four bases – adenine, cytosine, guanine or uracil
- Phosphodiester bonds
- Ribonucleic acid
- A short polynucleotide chain
- A pairs with U C pairs with G
- Transfers genetic information from DNA (in nucleus) to ribosomes (cytoplasm)
- Ribosomes are made up of RNA and proteins
- Protein synthesis

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