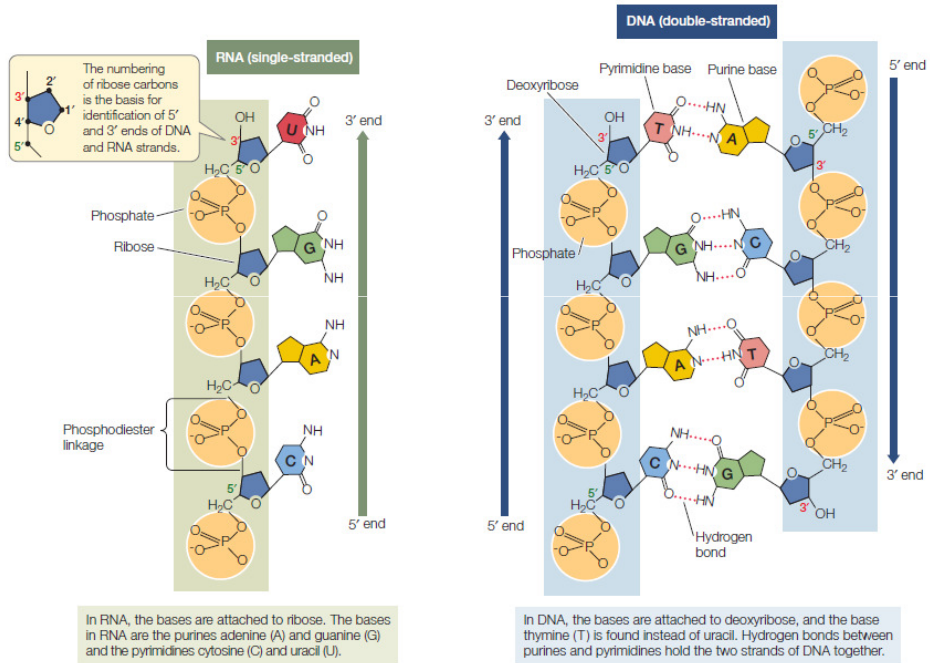


## DNA & RNA compared



## Similarities in DNA and RNA

- Both are **nucleic acids**
- They are **polymers containing polynucleotides**
- Both have a **sugar phosphate backbone**
- Both have **four different types of bases:** Adenine (A), guanine (G), cytosine (C) used in both

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## Differences between DNA and RNA

| DNA   | RNA   |
|---|---|
| <ul style="list-style-type: none"> <li>Consists of <b>two polynucleotide strands</b></li> </ul>                                       | <ul style="list-style-type: none"> <li>Consists of a <b>shorter single polynucleotide strand</b></li> </ul> |
| <ul style="list-style-type: none"> <li>The two polynucleotide strands coil around each other to form a <b>double helix</b></li> </ul> | <ul style="list-style-type: none"> <li><b>No double helix</b> is formed</li> </ul>                          |
| <ul style="list-style-type: none"> <li>The pentose sugar is <b>deoxyribose</b></li> </ul>   | <ul style="list-style-type: none"> <li>Pentose sugar is <b>ribose</b></li> </ul>                            |

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## Differences between DNA and RNA

| DNA   | RNA  |
|---|--|
| <ul style="list-style-type: none"> <li>4 nitrogenous bases: <b>A,C,T,G</b></li> </ul>   | <ul style="list-style-type: none"> <li>4 nitrogenous bases:</li> <li>Except T is replaced by U (<b>A,C,U,G</b>)</li> </ul>     |
| <ul style="list-style-type: none"> <li>Only <b>one</b> type of DNA</li> </ul>   | <ul style="list-style-type: none"> <li><b>Three</b> main types of RNA : mRNA, tRNA and rRNA</li> </ul>                         |
| <ul style="list-style-type: none"> <li>Function in <b>carries genetic information</b></li> </ul>  | <ul style="list-style-type: none"> <li>The 3 main types of RNA important in <b>protein synthesis</b></li> </ul>                |
| <ul style="list-style-type: none"> <li>Found mainly in the <b>nucleus</b> with small amount in mitochondria and chloroplasts</li> </ul> | <ul style="list-style-type: none"> <li>RNA occurs mainly in the <b>cytoplasm</b>, with small amounts in the nucleus</li> </ul> |

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