

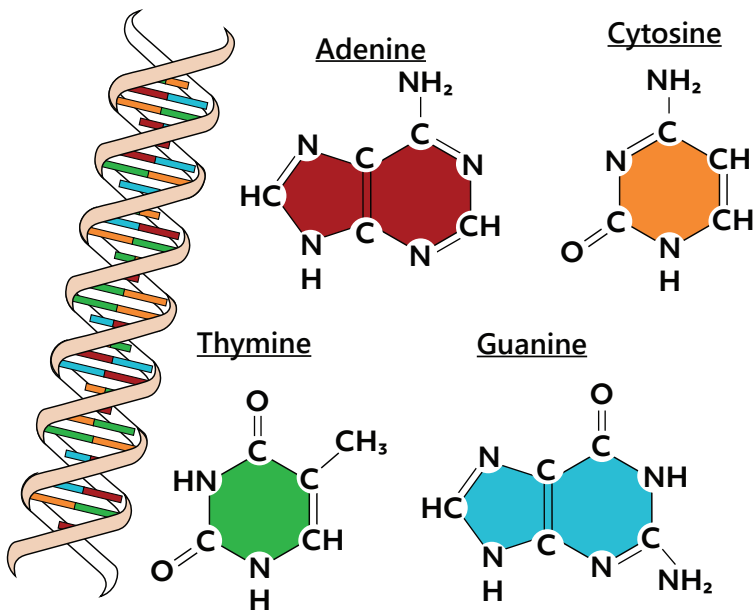
# DNA vs. RNA

**DNA:** DNA stands for "deoxyribonucleic acid." It contains genetic instructions that allow organisms to grow and function.

**RNA:** RNA stands for "ribonucleic acid." It executes the instructions given by DNA and synthesizes proteins.

## DNA

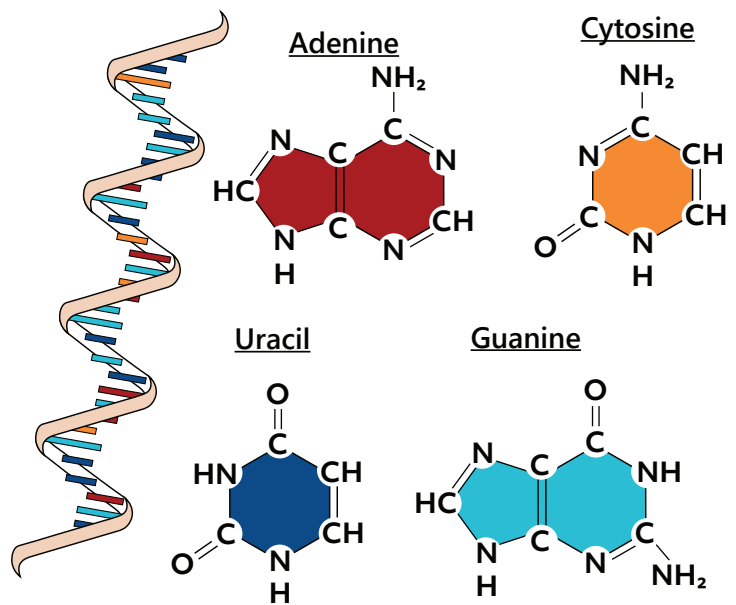
- A type of nucleic acid
- Double-stranded helix
- Located in the nucleus of a cell
- Contains deoxyribose sugar for its backbone
- Contains the following nitrogenous bases:
  - adenine • guanine • cytosine • thymine
- Main type: mostly occurs as B-form DNA



- Sugar covalently bonds to phosphate groups forming RNA's backbone with nitrogenous bases binding the two strands
- Adenine hydrogen bonds to thymine
- Guanine hydrogen bonds to cytosine

## RNA

- Also a nucleic acid
- Single-stranded
- Located in the nucleus and cytoplasm
- Contains ribose sugar for its backbone
- Contains the following nitrogenous bases:
  - adenine • guanine • cytosine • uracil
- Main types: mRNA, rRNA, and tRNA



- Sugar covalently bonds to phosphate groups forming RNA's backbone with nitrogenous bases formed according to the bases from DNA
- Adenine hydrogen bonds to uracil
- Guanine hydrogen bonds to cytosine

