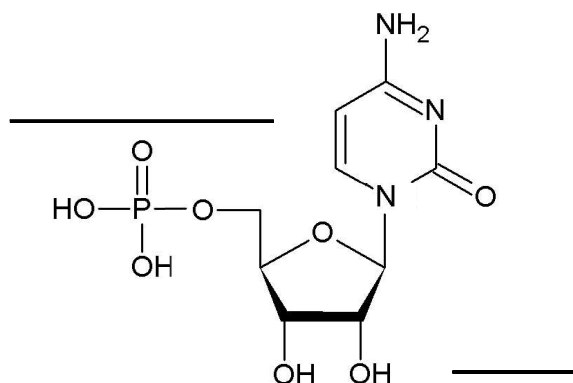


Nucleotides

Nucleotides are made of a _____,
a _____, and a _____.

Cells "mix-and-match" different phosphate
groups, sugars, and nitrogenous bases to
create _____ for different purposes.

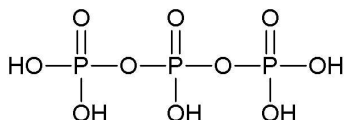
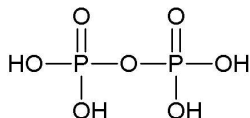
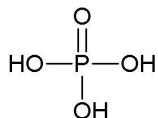
Label the parts of the nucleotide.



Is it a DNA or RNA nucleotide?

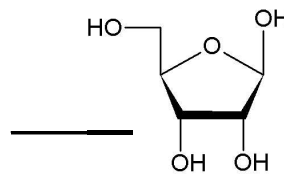
Is the base a purine or a pyrimidine?

Phosphate Groups:

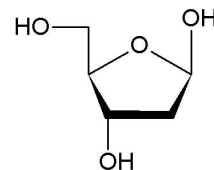


Name: _____

Pentose Monosaccharides:



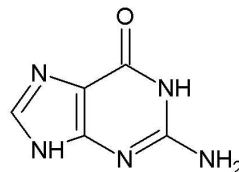
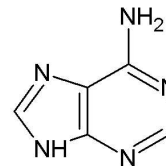
_____ is
found in RNA
nucleotides.



_____ is
found in DNA _____
nucleotides.

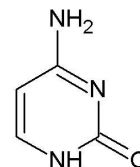
Nitrogenous Bases:

Two-ringed bases
are called _____.

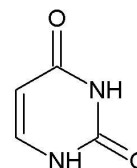
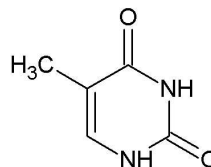


One-ringed bases are
called _____.

DNA nucleotides can have
_____, _____, _____, or _____.



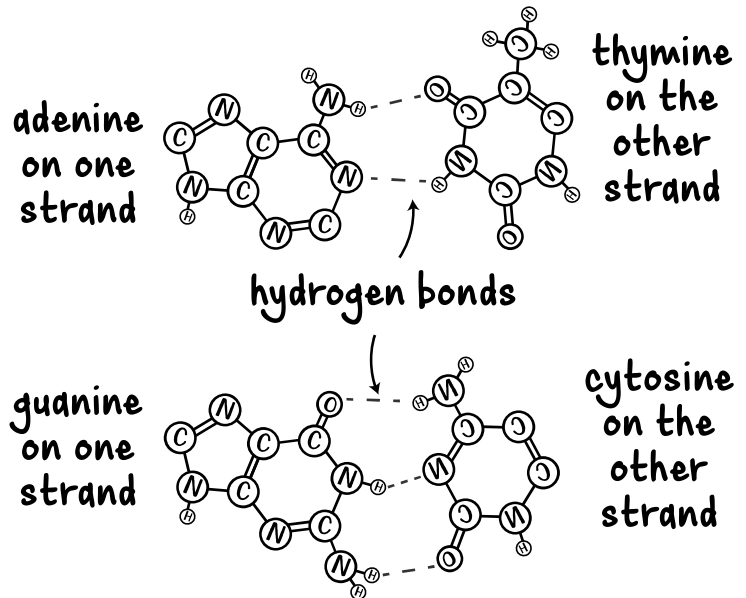
RNA nucleotides can have
_____, _____, _____, or _____.



Function:

- DNA is like a giant _____ in the cell that holds the instructions for building proteins and other things in the cell.
- DNA in human cells is kept in the _____ of the cell

Complementary Base Pairs:



The two strands are _____, meaning one is "upside down" as compared to the other.

Deoxyribo-Nucleic Acid

Name: _____

Structure:

- Two strands of DNA form a _____, like the vertical sides of a ladder.
- The two strands have backbones made of the _____ and _____.
- The ladder "rungs" are made of two _____, one _____ on one strand and one _____ from the other strand.
- These _____ are shown on the right and they are held together with _____

Use purple for the phosphate backbone.

Use orange for the deoxyribose sugars.

For the "ladder rungs" or base pairs, color some like this:

- Half Blue (A)/ Half Yellow (T)
- Half Yellow (T)/ Half Blue (A)
- Half Red (C)/ Half Green (G)
- Half Green (G)/ Half Red (C)

Function:

- RNA strands are usually _____ than the long DNA strands and often carry genetic information (like photocopies) from _____ to other _____.
- Some types of RNA act as _____, enzymes made of nucleic acid. Enzymes can _____ chemical reactions. Many enzymes in the cell are made of _____.
- There are some ribozymes that can self-replicate or build other _____ molecules.
- Some can "stick" to _____, helping them to speed up reactions that involve proteins.

RNA World Hypothesis:

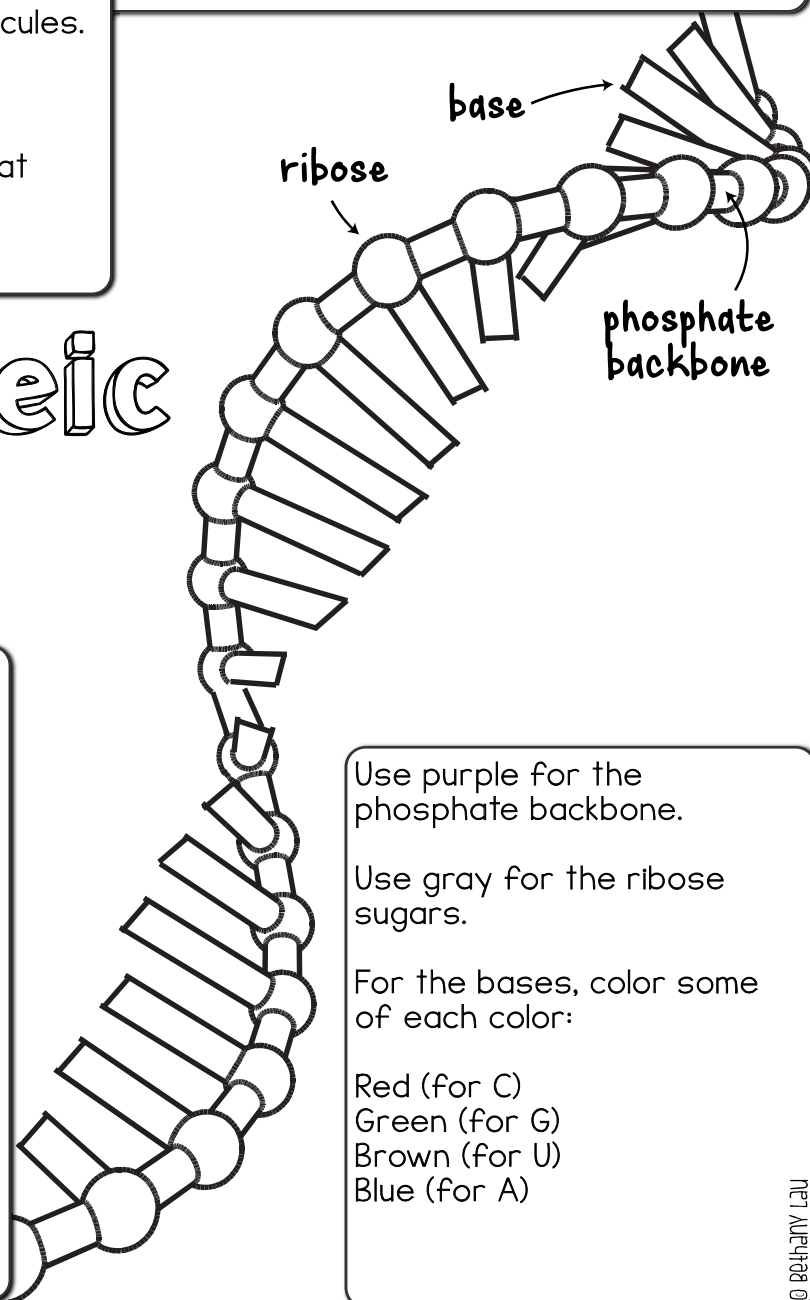
- Because some RNA can self-replicate and can catalyze reactions (including reactions with proteins), some scientists believe that _____ was one of the first molecules to carry genetic information in very primitive organisms.
- Many scientists believe self-replicating RNA molecules were used in living things before _____ and _____.

Ribonucleic Acid

Name: _____

Structure:

- RNA strands can be found in _____ and _____ form in the cell.
- Just like DNA, sugar and phosphate groups make up the _____. The bases stick out of the backbone.
- RNA strands can base pair with other _____ or _____ strands, if they are complementary.



Use purple for the phosphate backbone.

Use gray for the ribose sugars.

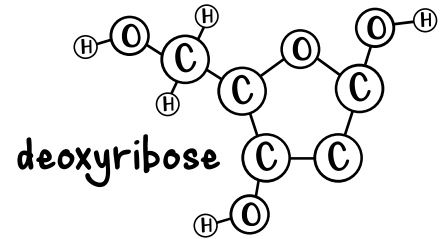
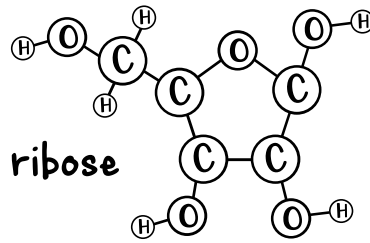
For the bases, color some of each color:

Red (for C)
Green (for G)
Brown (for U)
Blue (for A)

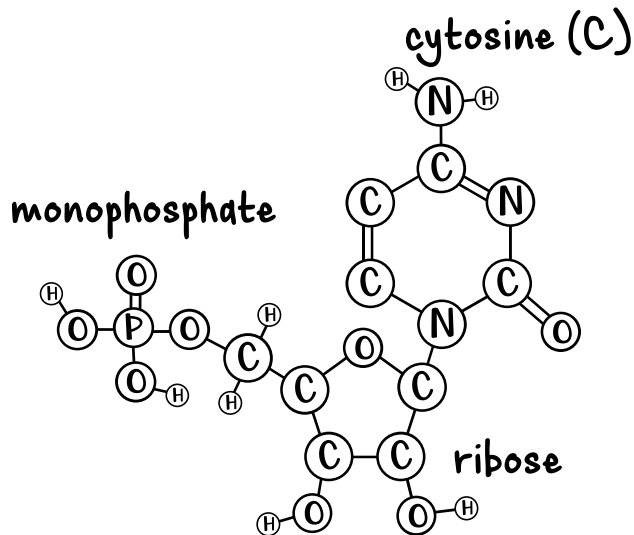
Nucleotides

Name: _____

Pentose Monosaccharides:



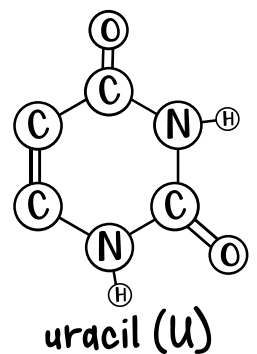
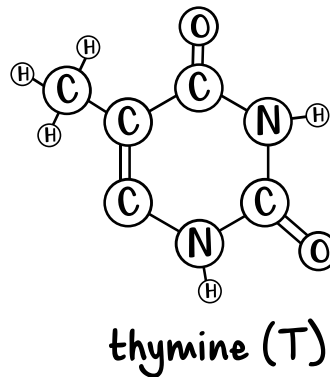
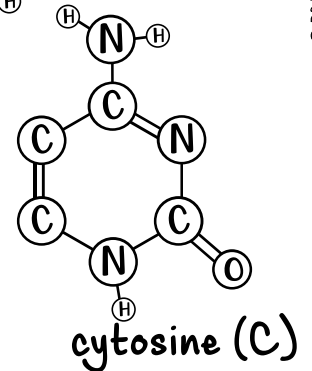
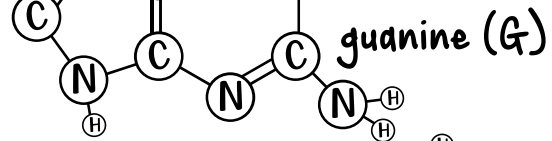
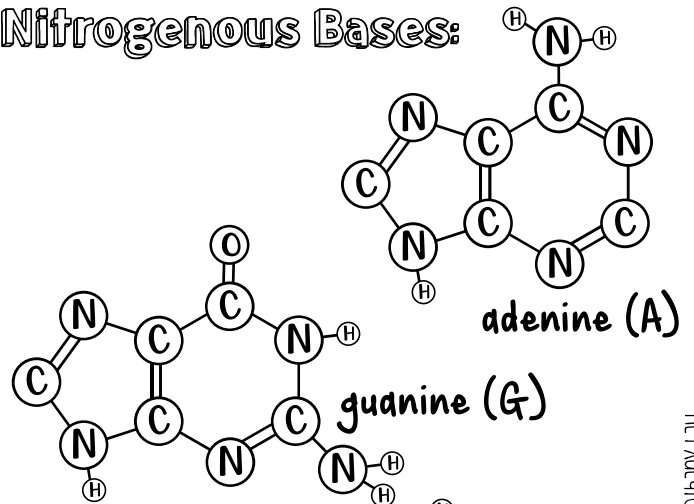
Label the parts of the nucleotide.



Is it a DNA or RNA nucleotide?

Is the base a purine or a pyrimidine?

Nitrogenous Bases:



Phosphate Groups:

