

13. Color the structure of DNA attached. Label the parts

DNA Structure Coloring Instructions

The rungs of the ladder are pairs of 4 types of nitrogen bases. The bases are known by their coded letters A, G, T, C. These bases always bond in a certain way. Adenine will only bond to thymine. Guanine will only bond with cytosine. This is known as the "Base-Pair Rule". The bases can occur in any order along a strand of DNA. The order of these bases is the code that contains the instructions. For instance ATGCACATA would code for a different gene than AATTACGGA. A strand of DNA contains millions of bases. (For simplicity, the image only contains a few.)

Color the thymines orange.



Color the adenines green.



Color the guanines purple.



Color the cytosines yellow.

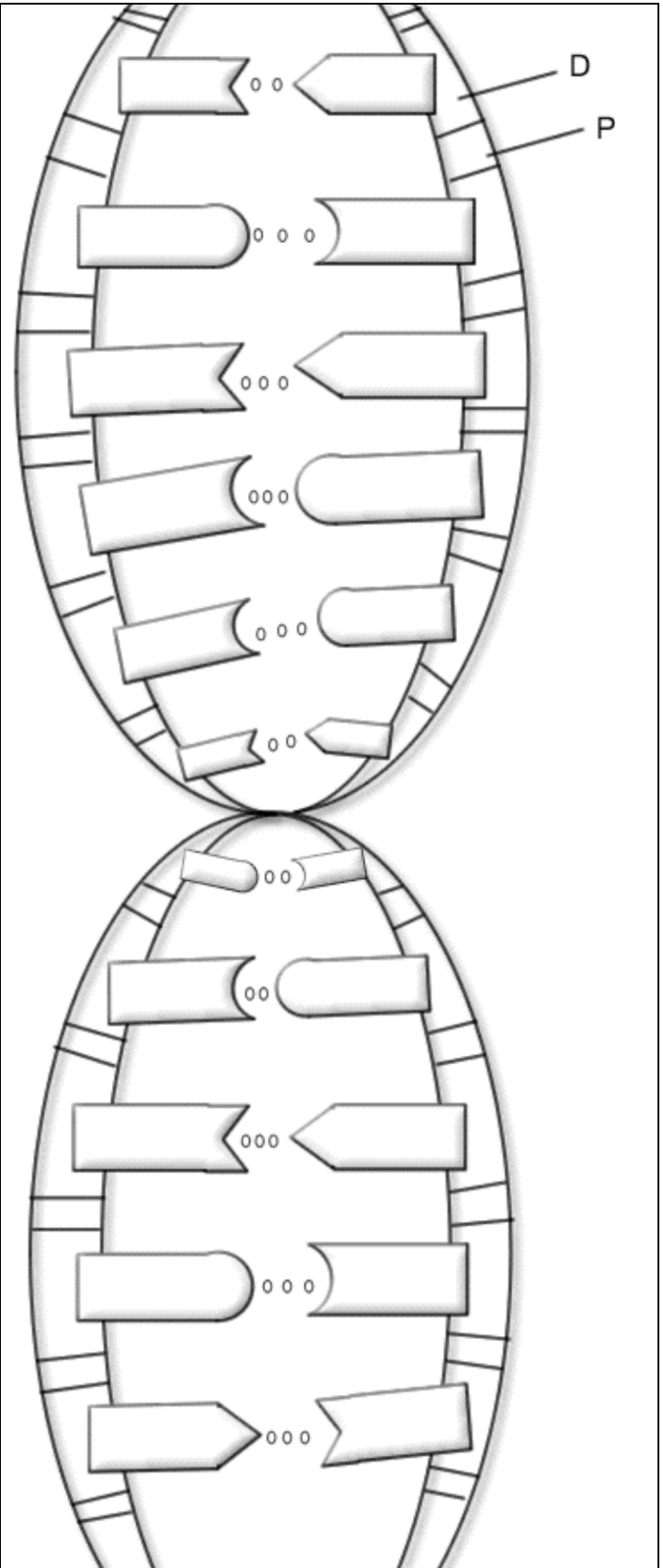


Note that the bases attach to the sides of the ladder at the sugars and not the phosphate. The DNA helix is actually made of repeating units called nucleotides. Each nucleotide consists of three molecules:

- a sugar (deoxyribose),
 - a phosphate which links the sugars together,
 - and then one of the four bases.
- Two of the bases are purines - adenine and guanine. The pyrimidines are thymine and cytosine.

The two sides of the DNA ladder are held together loosely by hydrogen bonds. The DNA can actually "unzip" when it needs to replicate - or make a copy of itself. DNA needs to copy itself when a cell divides, so that the new cells each contain a copy of the DNA. Without these instructions, the new cells wouldn't have the correct information. The hydrogen bonds are represented by small circles.

Color the hydrogen bonds grey.



Coloring Elements Found in Living Things

C 18.5%
black

O 65%
red

P 1.0%
pink

K 0.4%
brown

H 9.5%
yellow

N 3.3%
blue

S 0.3%
green

Ca 1.5%
purple

