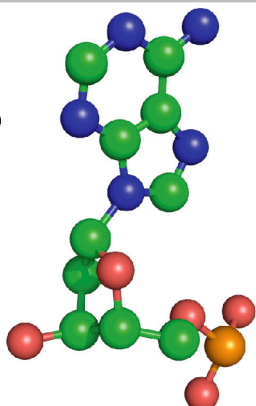
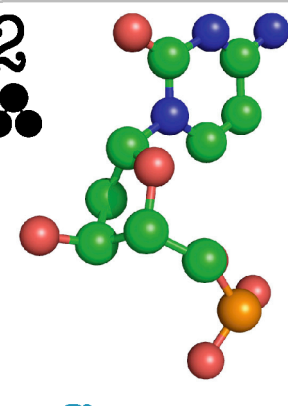
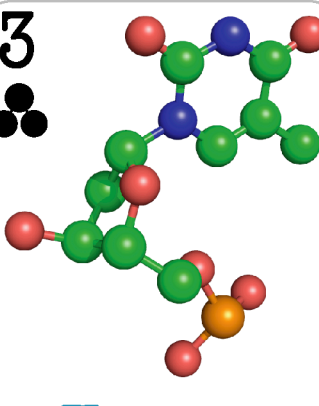
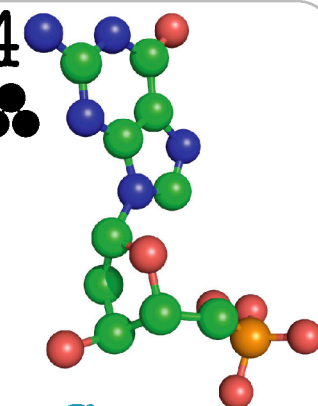
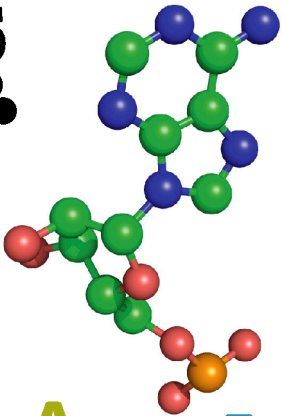


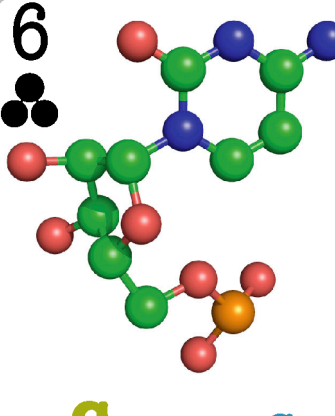
1  
  
**A**denine → **U**  
**DNA**

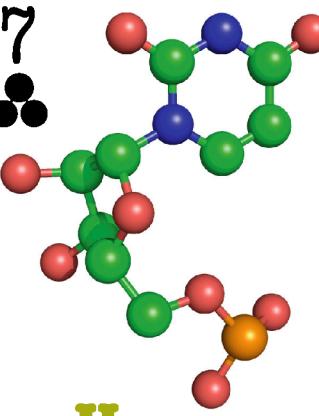
2  
  
**C**ytosine → **G**  
**DNA**

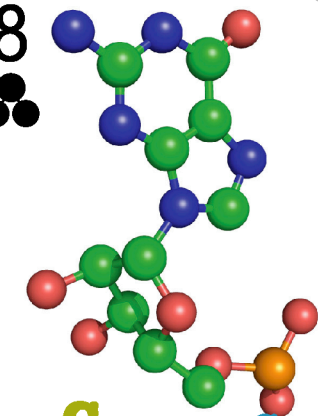
3  
  
**T**hymine → **A**  
**DNA**

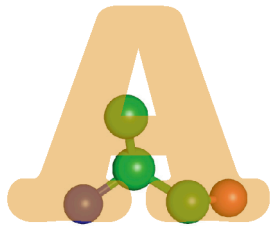
4  
  
**G**uanine → **C**  
**DNA**

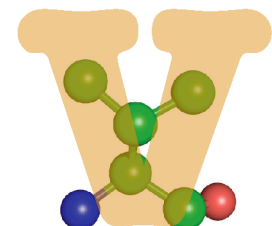
5  
  
**A**denine → **T**  
**RNA**

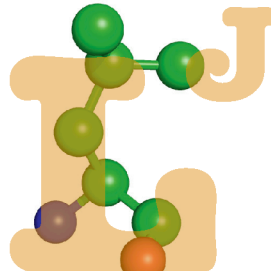
6  
  
**C**ytosine → **G**  
**RNA**

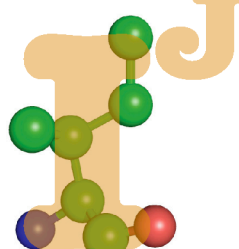
7  
  
**U**racil → **A**  
**RNA**

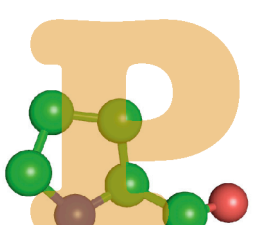
8  
  
**G**uanine → **C**  
**RNA**

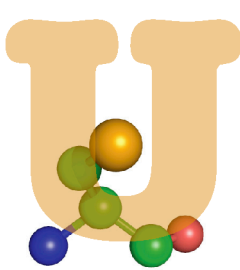
9  
**Alanine**  
  
**GCG, GCA**  
**GCC, GCU**  
**Amino Acid**

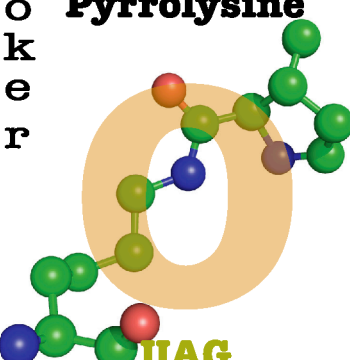
10  
**Valine**  
  
**GUG, GUA**  
**GUC, GUU**  
**Amino Acid**

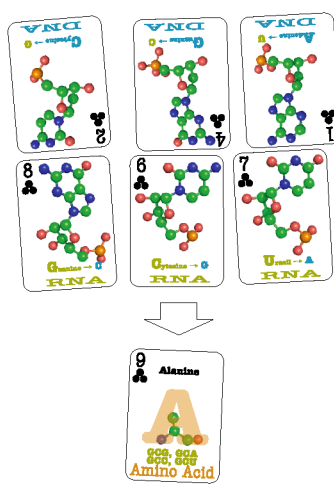
11  
**Leucine**  
  
**CUG, CUA, CUC**  
**CUU, UUG, UUA**  
**Amino Acid**

12  
**Isoleucine**  
  
**AUA, AUG, AUU**  
**Amino Acid**

13  
**Proline**  
  
**CCG, CCA**  
**CCC, CCU**  
**Amino Acid**

J  
o  
k  
e  
r  
**Seleno-  
cysteine**  
  
**UGA**  
**Amino Acid**

J  
o  
k  
e  
r  
**Pyrrolysine**  
  
**UAG**  
**Amino Acid**

  
 A diagram showing the expansion of the genetic code. At the top, three cards represent the standard 64 codons (4<sup>3</sup>) for 20 amino acids and a stop codon. Below, an arrow points to a single card representing the 21st amino acid, Alanine, which is encoded by 3 codons (4<sup>2</sup> × 3 = 12 codons total for 21 amino acids).