

black=carbon

white=hydrogen

red=oxygen

blue=nitrogen

stick=bond

Long stick=double bond

Use the Molecular Model Kits to Build the Following Molecules

	Molecule	Draw the molecule as you built it
1	H₂	
2	H₂O	
3	O₂	
4	CH₄	
5	C₂H₆	
6	CO₂	
7	GLUCOSE	

After You Complete Building Your Models Answer the Following (pgs 88-100)

1. Why do atoms form bonds?

2. How do atoms form bonds? (what are they sharing or taking?)

3. What is an Ionic Bond? (give an example molecule)

4. What is a Covalent Bond? (give an example molecule)

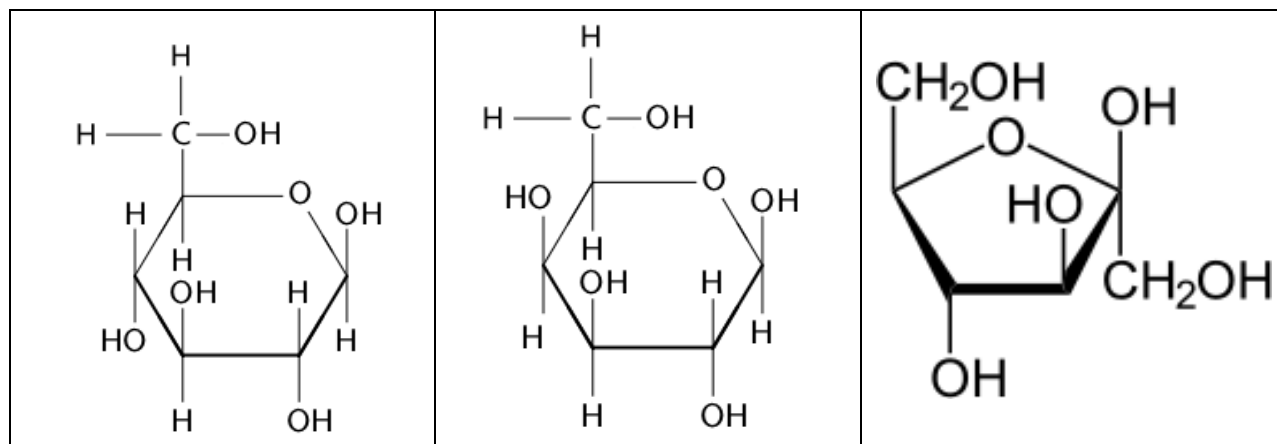
5. What is a Double Bond? (give an example molecule)

6. Compare Inorganic and Organic compounds. (give example molecules)

7. Why is carbon so useful for creating organic molecules? (give example molecules)

Sugars and Carbohydrates

1. In the space after the name of each compound shown below write the molecular formula
2. Are these three compounds the same substance? Explain.
3. Why is each of these three compounds called a carbohydrate?
4. Each of these compounds is also called a monosaccharide. What does this mean?

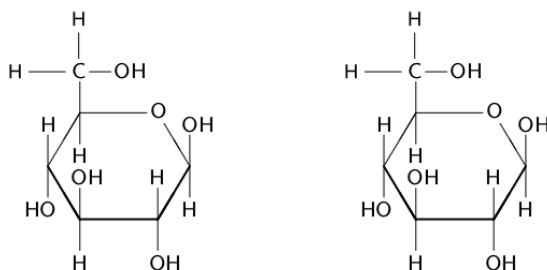


Glucose: _____

Galactose: _____

Fructose: _____

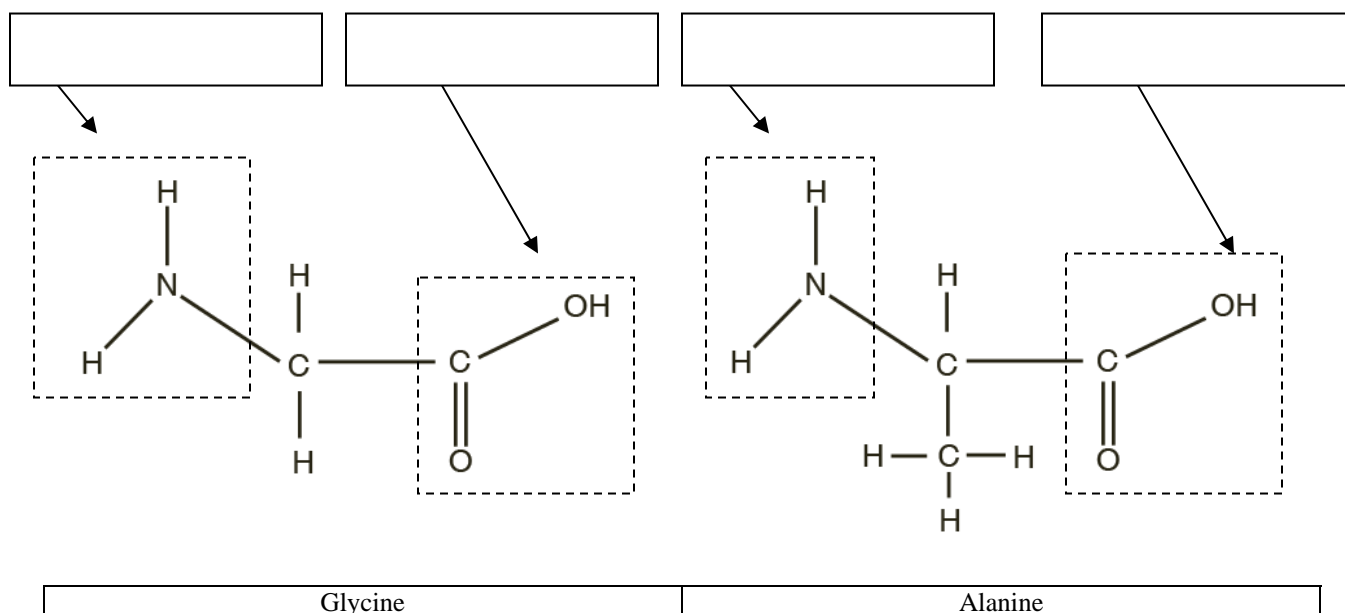
5. In the space below show how two glucose molecules can combine to form a single molecule by removing a water molecule between them.



6. The compound you just created is called maltose a double sugar also called a ___ saccharide.
7. Its molecular formula is
8. Is maltose a carbohydrate? Why?
9. What is a polysaccharide?
10. Name two important examples of polysaccharides.

11. Amino Acids and Proteins

- Using the small boxes at the top of each chemical drawing below label the amino group and the acid group of each compound shown.
- What kind of compound are Glycine and Alanine?
- How do the formulas of these two compounds differ?
- How many different compound of this kind are present in human tissues? _____
- In the space at the bottom of the page, show how these two molecules could be joined to make a single molecule.
- What is the name of the process you just performed?
- What kind of compound results from joining these two molecules?
- What is a protein?
- Why is the number of different proteins virtually unlimited?



1 H 1.008																	2 He 4.00
3 Li 6.94																	9 F 19.00
4 Be 9.01																	8 O 16.00
11 Na 23.00	12 Mg 24.31															17 Cl 35.45	18 Ar 39.95
19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.87	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.84	27 Co 58.93	28 Ni 58.69	29 Cu 63.55	30 Zn 65.41	31 Ga 69.72	32 Ge 72.64	33 As 74.92	34 Se 78.96	35 Br 79.90	36 Kr 83.80
37 Rb 85.47	38 Sr 87.62	39 Y 88.90	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc 98.00	44 Ru 101.07	45 Rh 102.90	46 Pd 106.42	47 Ag 106.90	48 Cd 112.41	49 In 114.82	50 Sn 118.71	51 Sb 121.76	52 Te 127.60	53 I 126.90	54 Xe 131.29
55 Cs 132.90	56 Ba 137.33	57-71	72 Hf 178.49	73 Ta 180.95	74 W 183.84	75 Re 186.21	76 Os 190.23	77 Ir 192.22	78 Pt 195.08	79 Au 196.97	80 Hg 200.59	81 Tl 204.38	82 Pb 207.20	83 Bi 208.98	84 Po 210	85 At 210	86 Rn 220
87 Fr 223	88 Ra 226	89-103	104 Rf 261	105 Db 262	106 Sg 266	107 Bh 264	108 Hs 277	109 Mt 268	110 Ds 271	111 Rg 272	112 Uub 285	113 Uut 284	114 Uuq 289	115 Uup 288	116 Uuh 292		

57 La 138.90	58 Ce 140.12	59 Pr 140.91	60 Nd 144.24	61 Pm 145.00	62 Sm 150.36	63 Eu 151.96	64 Gd 157.25	65 Tb 158.92	66 Dy 162.50	67 Ho 164.93	68 Er 167.26	69 Tm 168.93	70 Yb 173.04	71 Lu 174.97
89 Ac 227	90 Th 232.04	91 Pa 231.03	92 U 238.03	93 Np 237	94 Pu 244	95 Am 243	96 Cm 247	97 Bk 247	98 Cf 251	99 Es 252	100 Fm 257	101 Md 258	102 No 259	103 Lr 262