Name:\_\_\_\_\_\_\_\_\_\_\_

Macromolecules: MOLO

<http://molo.concord.org/database/activities/226.html>

**Proteins**

What are the molecular building blocks (monomers) of proteins?

1. Nucleotides
2. Amino acids
3. Sugars
4. Proteins are not polymers made from monomers.

Which common atoms are present in proteins?

1. Hydrogen
2. Carbon
3. Oxygen
4. Nitrogen
5. Sulfur
6. Phosphorus

Are these molecules polar or non-polar? (Hint: When looking at this type of molecule, select "surface charges" from the "view" menu just above the molecule. Should polar molecules have a charge or not?)

1. Polar
2. Non-polar
3. Mostly non-polar

**DNA**

What are the molecular building blocks (monomers) of DNA?

1. Nucleotides
2. Amino acids
3. Sugars
4. DNA is not polymers made from monomers.

Which common atoms are present in DNA?

1. Hydrogen
2. Carbon
3. Oxygen
4. Nitrogen
5. Sulfur
6. Phosphorus

Are these molecules polar or non-polar?

1. Polar
2. Non-polar
3. Mostly non-polar

**Carbohydrates**

What are the molecular building blocks (monomers) of carbohydrates?

1. Nucleotides
2. Amino acids
3. Sugars
4. Carbohydrates are not polymers made from monomers.

Which common atoms are present in carbohydrates?

1. Hydrogen
2. Carbon
3. Oxygen
4. Nitrogen
5. Sulfur
6. Phosphorus

Are these molecules polar or non-polar?

1. Polar
2. Non-polar
3. Mostly non-polar

**Lipids**

What are the molecular building blocks (monomers) of lipids?

1. Nucleotides
2. Amino acids
3. Sugars
4. Lipids are not polymers made from monomers.

Which common atoms are present in lipids?

1. Hydrogen
2. Carbon
3. Oxygen
4. Nitrogen
5. Sulfur
6. Phosphorus

Are these molecules polar or non-polar?

1. Polar
2. Non-polar
3. Mostly non-polar

**Summary Questions**

Which major type of biological molecule is NOT a polymer?

Which major type of biological molecule is the only one to have Sulfur?

Which major type of biological molecule is the only one to have phosphorus?

If a molecule is polar is also has the chemical property of being **hydrophilic (water loving)**. If it is non-polar, then it is considered to be **hydrophobic (water fearing)**. Which major type of molecule is the only one which would be considered **hydrophobic**? Hint! Polar molecules are attracted to other polar molecules.