

Biomolecules Concept Map

Create a concept map for the four major classes of biological macromolecules. Your concept map should be able to answer the following questions for each biomolecule. You should also include the terms in the word bank. Examples of concept maps are at the end of the document.

Carbohydrates	<ul style="list-style-type: none">• What is the structure of a carbohydrate?• What are they made of?• How are photosynthesis and carbohydrates connected?• Explain the relationship between photosynthesis and carbohydrates.• What types of living organisms produce carbohydrates for the entire ecosystem?• Describe how carbohydrate polymers are constructed by dehydration synthesis and broken down into monomers by hydrolysis.• What is the difference between simple and complex carbohydrates? Give examples of each.• What types of carbohydrates can and cannot humans digest?• Include a diagram showing the molecular structure of a carbohydrate
Lipids	<ul style="list-style-type: none">• Describe the general structure and function of lipids?• Give examples of different lipids?• Describe the structure and function of a phospholipid.• What's the difference between saturated and unsaturated fats?• Describe the structure and function of cholesterol and triglycerides.• Where are lipids made within a cell?• Include a diagram of the molecular structure of a phospholipid and triglyceride.
Proteins	<ul style="list-style-type: none">• What is the composition of proteins or what are proteins made of?• How are proteins produced in the cell?• What are some roles that proteins serve in your body?

	<ul style="list-style-type: none"> ● What tells the cell how to make a protein? ● What can be the outcome of a faulty or defective protein? ● Describe how protein polymers are constructed by dehydration synthesis and broken down into monomers by hydrolysis. ● Why is the structure or shape of proteins so important? ● Define an enzyme; explain the impact of extreme temperature and acidity on enzymes. ● Include a diagram of the molecular structure of an amino acid,
Nucleic Acids	<ul style="list-style-type: none"> ● Describe the different functions and compositions of DNA, RNA, mRNA and tRNA. ● In what cellular processes are these molecules involved? ● Where are the nucleic acids located within the cell? ● Describe the composition of nucleic acids. ● Describe how nucleic acid polymers are constructed by dehydration synthesis and broken down into monomers by hydrolysis. ● How are nucleic acids related to proteins, heredity, and inheritance? ● Include a diagram showing the molecular structure of a nitrogenous base.

WORD BANK

Amino acids, animals, Carbohydrates, Cell membrane, Cholesterol, DNA, Disaccharide, Egg yolk, Energy storage, Enzymes, Fats, Fatty acid, Fructose, Glucose, Glycogen, Hemoglobin, Hormones, Insulin, Lactose, Lipids, Monosaccharide, Nitrogen Base, Nucleotide, Nucleic Acids, Phosphate Group, Phospholipid, Plants, Polypeptides, Polysaccharides, Proteins, Saturated, Starch, Steroids, Sucrose, Unsaturated, 4 rings of carbon, 5 carbon sugar

