Unit 4 Biological Molecules

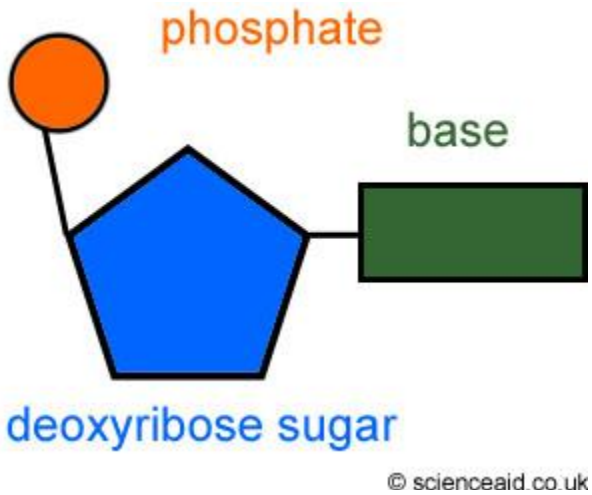
Biological Molecule	Structure	Function	Test	Procedure	Result
Proteins	Complex molecules made from carbon, hydrogen, oxygen and many contain sulfur and nitrogen Made from amino acids, amino acids join together to make peptide bonds Arrangement of amino acids determine the type of protein	Make antibodies Make enzymes, provide surface area for reactions	Biuret Test	Add 5 to 6 drops of biuret solution to an extract of protein in a test tube	A positive result will turn the solution from blue to purple, violet or lilac. If color remains blue there is no protein.

Fats	Made from carbon, hydrogen and oxygen One molecule of glycerol attached to 3 fatty acids	Energy storage Thermal insulation Protection of delicate organs	Emulsion test	Add material you want to test, add enough ethanol to cover it Put stopper on and shake, add distilled water and shake once more	A white emulsion that looks cloudy white or a milky color is a positive result. If this does not happen, the extract does not contain fat

Vitamin C		Growth Repair of tissues	DCPIP test	Put known volume of DCPIP in a test tube, add the extraction in drop by drop	If the color of DCPIP disappears then the test is positive for Vitamin C, if the blue color persists, then the test is negative
Carbohydrate Sugars (simple and complex)		Glucose is used for respiration Sucrose is used for energy	Benedict's test	Put known volume if extract in a test tube Place test tube on a heat proof mat and add boiling water Add same volume of Benediet's solution	A positive test will turn the solution from blue to red or orange If extract turns green, contains only a little reducing sugars If extract turns orange, contains a lot of reducing sugars If remains blue, does not contain any reducing sugars

Carbohydrate Starch		Energy store	Iodine test	Half fill a test tube with the food extract and add two or three drops of iodine solution	A positive test will turn the iodine from yellow/light brown to a blue-black color. If it remains yellow/light brown it does not contain any starch

DNA



- Each chromosome is made up of thousands of gene, genes carry genetic information
- DNA (deoxyribonucleic acid) belongs to a complex group of biological molecule known as nucleic acid. Each DNA molecule is made up of thousands of units each called a nucleotide. A single nucleotide is made up of 3 molecule: a phosphate, a sugar and a base
- Sugar and phosphate molecules join together to form the backbone of the DNA strand, the base is attached to the sugar molecule
- DNA consists of two strands together to form a double helix
- Each strand contains chemical called Adenine, Cytosine, Guanine, and Thymine
- Adenine always bonds with Thymine
- Cytosine always bonds with Guanine
-