Marine Biology - Unit 4

Nutrients are substances that organisms need to perform vital bodily functions. They can be gases, salts or organic compounds. Some of the most important ones are carbohydrates, lipids, proteins, vitamins and minerals.

Each nutrient group has a specific role in the body of an organism. Protein - Tissue repair and growth Carbohydrate - Energy Lipid - Insulation and energy storage Vitamins and Minerals - Overall health

Eaten > Starch breaks down > Glucose is absorbed > Used by body cells

Carbohydrates: Key energy source, Sugars and starch, Glucose + Fructose, Starch + Cellulose (Polysaccharides made by plants)

Lipids: Energy dense, Long term energy storage, insulation and buoyancy Micronutrients: producers make their own, animals eat them, fish absorb them

Carbon is the backbone of all life on earth. Carbon compounds help regulate earth's temperature. 18% of the human body is Carbon.

Nutrients can also be found in different forms such as organic possibles, dissolved ions or gases.

When organisms die or produce was e, their organic molecules break down. These are returned as carbon, approvide or phosphate.

Marine snow is waste sinking from the surface to the bottom of the sea. Upwelling is when cold, nutrient rich water rises to the surface.

Zooplankton feed on phytoplankton and use their organic molecules for energy and growth.

Respiration allows living things to release the energy from nutrient molecules

Aerobic - From glucose using oxygen, happens in mitochondria, produces CO2 and H2O O + CH12O6 = C02 + H20

Anaerobic - without oxygen, less energy, not as efficient

Gas exchange is breathing and respiration is energy release

Plants and algae photosynthesise for energy, using their blades and leaves, leaving oxygen as waste.

Gill filaments have lots of capillaries inside and the blood flows opposite to water. Counter current exchange - helps most oxygen get into the blood