LIFE SYSTEMS OUTLINE
CELLS, TISSUES, ORGANS AND SYSTEMS

A.	Characteristics of Living Things - characteristics of living things - all organisms made of cells - individual cells have same characteristics as living things and must meet the same requirements -Discuss cell projects – 3D cells (balloons, white glue, wool, + things for organelles)
B.	Investigation: Use of microscope - care and use of microscope - field of view and magnification (calculations) - use of microscope to view newsprint letter (dry mount) " e " - viewing of plant cell (wet mount) – plant cell lab. - viewing of animal cell (prepared mount) except for pond water – animal cell lab.
C.	Plant and Animal Cells - compare plant and animal cell organelles and functions - describe plants and animals as multi-celled organisms – compare to a city/factory
D.	Osmosis and Diffusion - demonstrate diffusion and osmosis (dialysis tubing) or potato - function of semi-permeable membranes in cells - demonstrate turgor pressure in plants
E.	Unicellular Organisms - introduce single-celled organisms (i.e., bacteria and protests) and compare with multi-celled organisms - describe how unicellular organisms meet basic needs - Investigation: effect of chemicals on unicellular organisms (salt)
F.	Cellular Organization

	- introduce the need for, and processes of, cell division (for reproduction in unicellular organisms; for growth, specialization and repair in multi-celled organisms - mitosis - from cells to tissues - tissues to organs - and - organs to organ systems -
G.	Animal Organ Systems - compare needs and function of organ system cells to the needs of the body - efficient functioning of body systems - interdependence of body systems - link between blood, blood pressure, oxygen and nutrients
H.	Manipulating Cells and Cell Functions - describe how substances alter cell functions - describe how cell activities contribute to healthy bodies - cell research to improved health conditions ??? - genetic engineering, stem cell, cloning
I.	Plant Tissues and Systems - describe and explain the structure and function of specialized cells and tissues - describe transport of food, water and gases in plants - emphasize and show examples where special conditions require specialized systems - Water Movement in Celery (food colouring), white carnations (lab)
J.	Project Work - time for planning, working on and presenting of 3D cell models