



TERM 1

**LESSON PLAN 1
NATURAL SCIENCES
GRADE 9**

KNOWLEDGE AREA	LIFE AND LIVING	TOTAL TIME: 9 WEEKS
Term	1	
Unit 1	Cells as the basic units	
Date	/ /20__	
Resource	Doc Scientia Textbook and Workbook Natural Sciences Grade 9 P. 13 – 25	
Time	2 weeks (9 days)	
Core knowledge	<p>Cell structure</p> <ul style="list-style-type: none"> The cell is the basic structural and functional unit of all living organisms. Cells can be seen under a microscope (they are microscopic). Plant cells and animal cells have cell membranes, cytoplasm, nucleus, and organelles such as mitochondria, vacuoles and chloroplasts. <ul style="list-style-type: none"> The cell membrane encloses the contents of the cell. It allows specific substances to pass into and out of the cell. The cytoplasm is the jelly-like medium in which many chemical reactions take place. The nucleus contains DNA. <ul style="list-style-type: none"> the nucleus is enclosed by a nuclear membrane (in plants and animals) DNA contains hereditary characteristics, such as whether eyes are blue or brown DNA is unique to each person; this variation accounts for differences within species Mitochondria are responsible for respiration to release energy from food. <p>Differences between plant and animal cells</p> <ul style="list-style-type: none"> Plant cells differ from animal cells <ul style="list-style-type: none"> plant and animal cells are enclosed by a cell membrane, and plant cells also have rigid cellulose cell walls to provide support for the plant plant cells also contain organelles such as large vacuoles and chloroplasts. Chloroplasts contain chlorophyll to absorb light energy for photosynthesis (refer to Grade 8 Life & Living). Vacuoles in plant cells have several functions including support and storage (Vacuoles in animal cells are small and temporary or absent.) <p>Activities/Practical tasks</p> <ul style="list-style-type: none"> Making a 3-dimensional (3D) model of a cell Drawing, labelling and describing the structure of plant cells and animal cells. 	



<p>Core knowledge</p>	<p>Cells in tissues, organs and systems</p> <ul style="list-style-type: none"> • Cells come in many different shapes and sizes • Cells are adapted to perform specific functions, such as muscle cells which are specialised to contract and enable movement. • Microscopic organisms such as bacteria, consist of a single cell. Macroscopic organisms such as humans, consist of large numbers of cells. • A group of cells performing a specific function form a tissue, a group of tissues make up an organ, and organs working together form systems, while systems make up an organism. • Stem cells are cells that have the ability to divide and develop into many different cell types. [No detail required.] <p>Activities/Practical tasks</p> <ul style="list-style-type: none"> • Researching and writing about the history of the discovery of the light and electron microscopes. • Tabulating functions of the different parts of a basic light microscope. • Preparing and examining slides of plant and animal cells such as onion cells, cheek cells. Draw and label a few cells from each observation <p style="text-align: center;">AND/OR</p> <ul style="list-style-type: none"> • Examining micrographs of plant and animal cells. • Draw and label cells from at least two different tissue types. • Researching, discussing and writing about stem cell research and ethical issues involved. 		
<p>Practical tasks</p>	<p>Activity 1 P. 15 Activity 1 P. 16 – 17 Case study P. 19 – 20 Practical task 1 P. 21</p>		
<p>Assessment methods</p>	<p>Class test</p>	<p>Control test</p>	<p>Project</p>
	<p>Practical investigation</p>	<p>Class work</p>	<p>Building of models, posters or interviews</p>
<p>Resources</p>	<p>Workbook, Transparencies, Pictures Summary P. 24 Mind maps P. 25</p>		
<p>Homework</p>	<p>Exercise 1 P. 21 – 23</p>		