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| **Date** | **Lesson plan** |  |  | **Content** |
| **16/03 – 20/03**Gr.10What to study in term 2 | **Term 4****p.36 - 51** | 10 |  | * **Fossil formation and methods of dating**

e.g. radiometric dating and relative dating* **Key events** in the life’s history for which there is evidence from southern Africa.

**-**origins of the earliest forms of life: evidence of single-celled fossilized bacteria (stromatolites) from many parts of South Africa.**-**Soft-bodied animals in Namibia, Northern  Cape**-**Early land plants in the Grahamstown area**-**Forests of primitive plants such as Glossopteris near Mooi River and Escourt |
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| **TERM 2** |
| **31/03 – 03/04****(4 days)** | **Term 4****p.52 - 67** | 11 |  ***Diversity*** | **Key events**, continue* -Location of coal deposits in South Africa (map only)

-The Coelacanth as a “living fossil” of the group that is ancestral to amphibians (Northern KZN coast)-Mammal-like reptiles in the Karoo (e.g. *Lystrosaurus* and *Thrinaxodon*)-Dinosaurs (Drakensberg and Maluti mountains) (*Euskylosaurus* from Ladybrand in the Free State) and cone-bearing plants-First mammals (Eastern Cape and Lesotho)-Humans and pre-humans (Gauteng, North West, Free State, KwaZulu-Natal, Limpopo)* Scientists use deductive reasoning (inference) to understand fossils and the history of life on Earth.
* The impact of humans on biodiversity and the natural environment
* Fossil tourism: source of income and employment in some fossil localities.

**SBA Practical task**  |
| **06/04 – 09/04** **(4 days)** | **Term 1****p.9 – 29** | 12 | ***Life at the molecular, cellular and tissue level*** | **Molecules for life**:Organic molecules made up of C, H, O and N, P. Cells are made up of proteins, carbohydrates, lipids, nucleic acids and vitamins. (only basic structural detail required)Inorganic compounds* Water : 2 H and 1 O
* Minerals: e.g. Na, K, Ca, P, Fe, I, nitrates, phosphates. Macro and micro elements. Main functions and deficiency diseases
* Need for fertilizers in over utilized soils, e.g. where crops are grown and regularly harvested, problem of fertilizers washed into rivers, and eutrophication
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| **14/04 – 17/04****(4 days)** | **Term 1****p.30 - 71** | 13 | Organic compounds* Carbohydrates – monosaccharide’s (single sugars) e.g. glucose, fructose; disaccharides (double sugars ) e.g. sucrose, maltose; polysaccharides (many sugars) e.g. starch, cellulose, glycogen
* Lipids (fats and oils) – 1glycerol and 3 fatty acids: unsaturated and saturated fats. Cholesterol in foods. Heart disease
* Protein – amino-acids (C, H, O and N and some have P, S, Fe). Proteins are sensitive to temperature and pH; loss of structure and function.

Role of enzymes in breaking down/synthesizing moleculesInfluence of temperature and pH on enzyme actionLock and key model of how enzymes workEnzymes in everyday life, e.g. washing powders.* Mention of Nucleic acids: DNA and RNA – Consisting of C, H, O, N and P (No details of structure required).
* Vitamins e.g. A, one of B vitamins, C,D and E

*Practical Work Session I, Worksheets 1,2,3,4,5* |
| **20/04 – 24/04** | **Term 1****p.72 - 96** | 14 | **Cell structure*** Molecular make-up : Cells are mostly made of proteins, carbohydrates, lipids, nucleic acids and water

**Cell structure and function : roles of organelles*** Cell wall – support structure in plant cells only.
* Cell membrane – fluid mosaic model, boundaries and transport: movement across membranes: diffusion, osmosis and active transport.
* Nucleus, chromatin material, nuclear membrane, nucleopores, nucleolus: the control centre, heredity.
* Cytoplasm- storage, circulation of materials

*Practical Work Session I, Worksheets 6,7,8* |
| **28/04 – 30/04****(3 days)** | **Term 1****p.97 - 102** | 15 | * Mitochondria – release of energy during cell respiration
* Ribosomes – protein synthesis
* Endoplasmic reticulum (rough and smooth) transport systems
* Golgi –body – assemble secretion
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| **04/05 – 08/05** | **Term 1****p.103 - 123** | 16 | * Plastids – production and storage of food, pigments
* Vacuole, lysosomes, vesicles – storage, digestion, osmoregulation

Relate structure and location of organelles to their functions.Cells differ in size, shape and structure in order to carry out specialized functionsDifferences between plant and animal cells |
| **11/05 – 15/05** | **Term 1****p.124 - 140** | 17 | **Cell division – mitosis**Cell cycles including mitosis: interphase, mitosis (with names of phases) cytokinesis, growth.Continuous process of mitosis: division of cell to form two identical cells* Difference in telophase between plant and animal cells
* **Chromosomes**: in nuclei of all cells, two chromatids, centromere
* **Role of mitosis**: growth and repair. Reproduction in some simple organisms
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