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| **Date** | **Lesson plan** |  |  | **Content** |
| **16/03 – 20/03**  Gr.10  What 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 |
| **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 molecules  Influence of temperature and pH on enzyme action  Lock and key model of how enzymes work  Enzymes 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 |
| **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 functions  Differences 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 |