ZIMBABWE

MINISTRY OF PRIMARY AND SECONDARY EDUCATION

SPORT SCIENCE AND TECHNOLOGY SYLLABUS

FORMS 5 - 6

2015 - 2022

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ACKNOWLEDGEMENTS

The Ministry of Primary and Secondary Education wishes to acknowledge the following for their valued contribution in the production of this syllabus:

- The Sports Science and Technology National Syllabus Panel
- National University of Science and Technology(NUST)
- Zimbabwe Olympic Committee Medical Commission
- Bindura University of Science Education (BUSE)
- Department of Psychomotor Activities in Education
- Ministry of Health and Child Care (MoHCC)
- United Nations Children's Fund (UNICEF)

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1.0 PREAMBLE

1.1 Introduction

This Sport Science and Technology Syllabus is designed for Secondary School learners (Form 5 and 6). It ensures access to the Sports Science and Technology Curriculum regardless of gender, race, religion and handicap.

The syllabus helps to promote the development of scientifically oriented learners, who will contribute to enhanced sport performance underpinned by the application of scientific principles. It also acts as a pathway for entry into tertiary education.

1.2 Rationale

Sports Science and Technology is an anchor to any successful sporting programme as the modern trends put more emphasis on application of scientific knowledge to sport performance. Studying the learning area enables Zimbabwe to produce scientifically informed learners who are not only good administrators, coaches and managers in various sport disciplines, but will also lead to the production of top level athletes.

The syllabus intends to produce learners who are capable of designing and maintaining sporting facilities and equipment that conform to scientific standards and specifications for best sport performance. The innovations will be implemented considering researches conducted in relation to areas such as anatomy and physiology, biomechanics,and other sports science related fields.

1.3 Summary of Content

The Secondary School Sport Science and Technology syllabus covers theory and practical activities for learners in Form 5 and 6. It comprise of the preamble (introduction, rationale, summary of content, methodology, time allocation, assumptions and cross cutting themes), syllabus presentation, aims, objectives, topics, scope and sequence, competence matrix and assessment guidelines.

1.4 Assumptions

The syllabus assumes that learners:

- are interested and motivated to learn Sports Science and Technology
- acquired knowledge and skills related to Sports Science and Technology from their previous learning experience
- have Information and Communication Technology (ICT) knowledge for use in Sports Science and Technology
- engage in project work, volunteerism and self-assessment activities
- have passed Physical Education, Sport and Mass Displays, Mathematics and at least one natural sciences at Form 4

1.5 Cross-Cutting Themes

The inclusion of the following cross-cutting issues seeks to foster competency development through the teaching and learning of Sports Science and Technology.

- Life and Enterprise Skills
- Gender
- Guidance and Counseling
- Children's Rights and Responsibilities
- Disaster Risk Management and Environmental Issues
- Sexuality, HIV and AIDS
- Information and Communication Technology Tools
- Child Protection
- Heritage Studies and Collaboration
- Health and Fitness

2.0 PRESENTATION OF SYLLABUS

The Secondary School Sports Science and Technology Syllabus is in the form of one document, with topics which are further broken into sub topics. The syllabus is set with topics for Form 5 and 6 separately. The content has concepts which are presented progressively from one topic to the other and from one level to the other.

3.0 AIMS

- to produce a competent learner with current knowledge in connection with the science and technology applied to sport
- apply evidence-based practice in sports science and technology with personal accountability, integrity and social responsibility for outcomes, and do it through dynamic work-teams that use resources efficiently
- to produce learners with fundamental theory and methodology of training and sports pedagogy
- create a wider base for development of personnel in various sport related careers

4.0 SYLLABUS OBJECTIVES

By the end of Form 6, learners should be able to:

- demonstrate precise abilities, technical knowledge and skills in sports science and technology in advancing sport performance
- use scientific knowledge on sport facilities and equipment design, handling and maintenance
- apply experimental and investigative skills in sports science and technology
- exhibit an understanding of coaching , group management and leadership theories
- demonstrate knowledge of anatomy and physiology in sports science
- apply exercise physiology and biomechanics concepts in sports training
- select a career based on strengths in sports science and technology competencies

5.0 METHODOLOGY AND TIME ALLOCATION

5.1 Methodology

The methods suggested below overlap and are mutually supportive but not exhaustive.

- Demonstration
- Practice
- Discovery/Guided Discovery
- Problem solving
- Games /Puzzles
- Telling and listening to stories
- Song and Dance
- Role play, Drama and Animation
- Simulation and Questioning
- Group/Individual projects
- Educational tours
- Command style
- Reciprocal
- Task
- Training

Engagement of resource persons and integration of ICT tools/ Braille software/Jaw software is important.

5.2 Time Allocation

Form 5 and 6 learners to receive a minimum of eight 60 minute periods per week.

6.0 TOPICS

6.1 Form 5

6.1.1 Anatomy and Physiology
6.1.2 Biomechanics
6.1.3 Nutrition
6.1.4 Technology and Sport
6.1.5 Pedagogy

6.2 Form 6

6.2.1 Exercise Physiology
6.2.2 Theory and Methodology of Training
6.2.3 Applied Psychology
6.2.4 Sociology in Sport
6.2.5 Sports Facilities and Equipment
6.2.6 Elective Sports Specialty

7.0 SCOPE AND SEQUENCE

7.1 TOPIC 1: ANATOMY AND PHYSIOLOGY

SUB-TOPIC	FORM 5	FORM 6
The Skeletal System	• Anatomical positions • Long, short, flat and irregular bones • Connective tissue - cartilages - ligaments - tendons • Planes and axis • Axial skeleton: - skull - ribs - sternum • vertebral column • Appendicular skeleton: - pectoral girdle - humerus - radius - ulna - carpals - metacarpals - phalanges - pelvic girdle • Functions of the Skeletal System - attachment protection - movement - support • Synovial joint Components: - articular cartilage - synovial membrane - synovial fluid bursae - meniscus ligaments - articular capsule • Types hinge, ball and socket, condyloid, pivot gliding and saddle • Functions (Flexion, extension adduction, abduction pronation, supination,elevation, depression, rotation, circumduction, dorsiflexion, plantarflexion, eversion and inversion)	
The Muscular System	• Types of muscles	

SUB-TOPIC	FORM 5	FORM 6
	- smooth, cardiac and skeletal • Characteristics - contractility, extensibility elasticity, atrophy, hypertrophy • Skeletal muscle tissue - epimysium, perimysium andendomysium • Muscle fibre (cell), myofilament, sarcomere, actin and myosin • Attachments: - origin: the attachment of a muscle tendon to a stationery bone - insertion: the attachment of a muscle tendon to a moveable bone • Anterior major muscles deltoid, pectoralis quadniceps femoris • Posterior major muscles - trapezius, lattismus dorsi, gluteus maximus, gastrocnemius • Muscle contractions - isotonic, isometric, isokinetic, concentric and eccentric • Muscle Actions - agonist, antagonist and synergist	
The Neuromuscular Function	• Components of a neuron - dendrite, cell body, nucleus, axon, motor end plate, synapse and muscle • Acetylcholine and the cholinesterase • Myofibril, myofilament, sarcomere, actin, myosin, H-zone, A-band, Z-line, tropomyosin, troponin, sarcoplasmic reticulum, calcium ions and ATP • Slow twitch (type 1) with fast twitch (type iia and type iib).	
Structure and function of the Ventilatory System	• Components of Ventilatory System - Nose, mouth, pharynx, larynx, trachea, bronchi, bronchioles, lungs and alveoli • Functions of conducting airways - Low resistance pathway and air flow - Defence - Warming and moistening of air	

SUB-TOPIC	FORM 5	FORM 6
	• Actions of the diaphragm and the intercostal muscles • Relationships between volume and pressure • Accessory muscle during strenuous exercise • Effect of pH due to increased carbon dioxide (CO_2) content of the blood • Neural control of ventilation,-lung stretch receptors, muscle proprioceptors and chemoreceptors. • Gaseous exchange process.	
Structure and function of the Cardiovascular System	• Structure of the Cardio Vascular System • Blood composition - cells and plasma • Blood uses - transportation of electrolytes,gases, nutrients, waste products and hormones • The heart - chambers,valves and vessels - pace maker, heart rate and influence of sympathetic and parasympathetic branches of the autonomic nervous system and adrenaline • Coronary Circulation - arteries and their functions - veins and their functions • Sino Arterial node • Cardiac cycle - heart Rate - stroke Volume - cardiac output=Stroke Volume X Heart Rate - males, females, trained, untrained, young, and old. Exclude ***quantintative data*** • Body temperature • Maximal Oxygen Consumptions (VO_2 max)	

7.2 TOPIC 2: BIOMECHANICS

SUB-TOPIC	FORM 5	FORM 6
Biomechanics Principles	• Force - Types of forces - Centre of Mass • Stability • Factors that determine stability - position of c.o.m - base of support - performer **line of gravity** - mass of performer • Newton's laws of motion - law of inertia - law of acceleration - law of reaction • Terms in Biomechanics - gravity - velocity - effort - load - fulcrum/ pivot - acceleration - motion - friction - work - energy - resistance - power • Levers - classification of levers • Mechanical Advantage and Disadvantage • Centre of Mass • Stability • Factors that determine stability - position of c,o.m - mass of performer - base of support - performer line of gravity	

SUB-TOPIC	FORM 5	FORM 6
	• Projectiles - dimension of projectiles - horizontal - vertical - parabolic • Factors affecting projectiles - angle of release - height of release - velocity of release - gravity - air resistance - spin • Mechanical fundamentals of the execution of the movements • Theory of the tests • Biomechanics indicators that characterise the motor capacities. • Biomechanics requirements of the special exercises	

7.3 TOPIC 3: NUTRITION

SUB-TOPIC	FORM 5	FORM 6
General Nutrition	• Nutrition • Macro - fats, carbohydrates, water and proteins • Micro - vitamins, minerals and fiber **(*Specific knowledge of individual vitamins and minerals is not required)*** • Food Pyramid • Condensation reaction • Glycerol and three fatty acids • Saturated and unsaturated fats in relation to bonds and sources • Essential amino acids • Non-essential amino acids • Energy content values per 100g are: carbohydrate 1760kj, lipid 4000kj and protein 1720kj	
Macronutrient Metabolism	• Metabolism • Anabolism • Catabolism • Lipolysis • Glycogenolysis • Insulin • Gluconeogenesis • Glycogen • Glucagon	
Nutrition and Energy Systems	• Ribosomes, rough endoplasmic reticulum, lysosomes, Golgi apparatus, mitochondrion and nucleus • Cristae, inner matrix and outer smooth membrane • Cell respiration – Adenosine triphosphate (ATP) • Glycolysis • Krebs Cycle • Electron transport chain	
Digestion and Absorption	• Mouth, esophagus, stomach, • small intestines, large intestines, pancreas, • liver and gall bladder • PH values: • mouth 5.5 to 7.5	

SUB-TOPIC	FORM 5	FORM 6
	• stomach 1.0 to less than 4.0 • small intestine 6.0 to 8.0 • Enzymes • carbohydrates: salivary amylase, pancreatic amylase • fats: pancreatic lipase,bile • proteins: pepsin, trypsin	
Water and Electrolyte Balance	• Properties of water • Functions of Water in the human body: • Extracellular fluids (blood plasma, lymph, saliva, fluid in the eyes, fluid from glands) • Hypothalamus and the release of Anti-Diuretic Hormone (ADH) • Effect of ADH on the kidneys • Negative feedback	

7.4 TOPIC 4: TECHNOLOGY AND SPORT

SUB-TOPIC	FORM 5	FORM 6
Technologies that support Sport	• Major technological innovations in sport events • Performance enhancement • Equipment • Clothing • Facilities • Use of technology in performance analysis and monitoring • Use of technology in optimizing physiological performance	

7.5 TOPIC 5: PEDAGOGY

SUB-TOPIC	FORM 5	FORM 6
Pedagogy as Science	• Pedagogy and its Importance • Composition and structures of the educational process.	
	• Formulation of Objectives • Content Identification. • Teaching methods. • Media and learning/teaching aids • Organisation of learning experiences in teaching. • Assessment and Evaluation.	
Essence and Dynamics of the Educational Process	• The essence of the educational process: Particularities and Links • Principles of teaching. • Pedagogical ethics	

7.6 TOPIC 6: EXERCISE PHYSIOLOGY

SUB-TOPIC	FORM 5	FORM 6
Energy Systems		• Types of energy - aerobic capacity - anaerobic capacity • Factors affecting aerobic and anaerobic capacity • Adenosine Triphosphate production (ATP)
Energy transfer in Exercise **ATP/PC, Lactic Acid, Aerobic**		• ATP/PC system • Lactic acid system • Krebs cycle • Electron transport chain • Exercise intensity and ATP production • Aerobic,anaerobic systems and athletic performance
System Adaptations to Exercise		• Acute response of systems to exercise • Warm up and cool down • Benefits of exercise to heart and cardiovascular system • Benefits to the respiratory system • Benefits to the muscular system • Changes to the endocrine system • Aerobic benefits • Anaerobic benefits
Regulation of Body Systems during Exercise		• Heart regulation during exercise • Control of breathing during exercise • Ventilatory response to light, moderate and heavy exercise • Hormonal control systems
Fatigue and Recovery Processes - **Delayed onset of muscle soreness (DOMS)** - **Excess Post-exercise Oxygen Consumption (EPOC)**		• Causes of DOMS • Recovering from DOMS • Oxygen debt • EPOC

Exercise and the Environment - **Exercise in the heat** - **Exercise in the cold**		• Effects of heat on body systems before, during and after exercise • Effects of cold on body systems before during and after exercise
Exercise at Medium and High Altitudes		• Partial pressure and gaseous exchange • Effects of altitude on : - respiratory system - cardiovascular system • Acclimatisation

7.7 TOPIC 7: THEORY AND METHODOLOGY OF TRAINING

SUB-TOPIC	FORM 5	FORM 6
Laws and Principles		• The training as a process of physical development. • Biological laws. • Principles of sports training. • Physical capacities. • Principles of conscience and activity. • Principles of the sensations of perception. • Principles of accessibility and individualisation. • Principles of the systematizing • Principles of the unit between the general and special preparation. • Principles of the cyclic character of the sport training. • Principles of the gradual increase of loads.
Planning and Controlling of Training		• Sports initiation. • Methods of training. • The control of loads. • The unit of training. • Programme of training.

7.8 TOPIC 8: APPLIED PSYCHOLOGY

SUB-TOPIC	FORM 5	FORM 6
Fundamental Psychological Constructs - **Personality**		• Theories of personality • Structure of personality • Trait perspective - introversion and extroversion - neuroticism and stability - type A and type B - character - temperament • Limitation of: - personality profiling in sport - personality tests • Characteristics of gender from the point of view of psychology • Influence of gender on sport training
Attitude		• Nature of attitudes • Component of attitude: - cognitive - affective - behavioural • Links between attitude and behavior in sport situations • Ways of measuring attitudes
Motivation and Arousal		• Theory of achievement motivation(Atkinson and McClelland's) • Sport-specific motivation,that is, competitiveness.
Mental Preparation		• Commitment • Self-control • Concentration • Emotional control
Group Dynamics of Sport Performance - **Group and Teams**		• Group and team formation - Steinner's model of group formation coordination/cooperation (Ringlemann Effect) and motivational (Social loafing)

		factors
Leadership - **Social Facilitation and Audience Effects**		• Characteristics of leadership - autocratic /task-oriented - democratic/social-oriented - laissez-faire • Theories of leadership - trait, - social - interactionist • Models of leadership - Chelldurai's Multi-dimensional - Fieldler's Contigency. • Facilitation and inhibition effects on performance • Combating the effects of social inhibition
Competition Effects on Sport Performance - **Aggression Effects**		• Causes and effects of reactive aggression • Ways of managing aggression • Aggressive and assertive behaviour
- **Psychological Tests in Physical Activity**		• Testing for: - Distance perception - Motor representation - Concentration of attention - Distribution of attention • Chromatic Differentiation

7.9 TOPIC 9: SOCIOLOGY IN SPORT

SUB-TOPIC	FORM 5	FORM 6
Understanding Sociology		• Sport andsocialisation • Social and cultural values in Sport.
Sociological Trends and Social Inequalities		• Reforms and procedures to address gender inequalities for women in sport • Racism in sport • Role model creation • Ability and Disability in Sport • Commercialisation of sport • Role of the media in sport • Impact of globalisation

7.10 TOPIC 10: SPORT FACILITIES AND EQUIPMENT

SUB-TOPIC	FORM 5	FORM 6
Design		• Design and Construction • Facility and equipment usage • Factors influencing design of facilities and equipment • Types of facilities
Maintenance		• Maintenance, care and usage - quality - lifespan • Causes of wear and tear in sport facilities - frequency of usage - traffic

7.11 TOPIC 11: ELECTIVE SPORTS SPECIALITY

SUB-TOPIC	FORM 5	FORM 6
Practical Performance Portfolio		• Physical fitness tests • Skills Tests • Techniques and tactics • Training programme design

8.0 COMPETENCE MATRIX
8.1 FORM 5

8.1.1 ANATOMY AND PHYSIOLOGY

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED RESOURCES MATERIALS
The Skeletal System	• describe the principles of anatomical positioning in relation to human skeletal system. • state the four types of bones • draw and annotate the structure of a long bone • outline the functions of connective tissue • distinguish anatomically between the axial and appendicular skeleton in terms of function • apply anatomical terminology in identifying planes of the body • apply anatomical terminology in identifying location of bones • define the term joint	• Anatomical positions • Long, short, flat and irregular bones • Connective tissue - cartilages - ligaments - tendons • Planes and axis • Axial skeleton: - skull - ribs - sternum - vertebral column • Appendicular skeleton: - pectoral girdle humerus, radius ulna, carpals, metacarpals phalanges, pelvic girdle • Assume anatomical functions attachment, protection, movement and support	• Drawing and labelling the human skeletal system • Identifying types of bones from a human skeleton • Drawing and annotating the structure of a long bone • Watching videos and animations of the human skeleton • Playing interactive games on skeletal system • Demonstrating specified plane movement • Demonstrating movements around specified axis • Demonstrating the anatomical position	• Model human skeleton • Model human bones • Model joints • ICT tools/ Braille software/Jaw software

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED RESOURCES MATERIALS
	• distinguish between types of joints in relation to movement permitted • outline the features of synovial joint • list different types of synovial joints • outline the types of movement of synovial joints	• Articular cartilage, synovial membrane synovial fluid bursae, meniscus ligaments and articular capsule ***Please Note.*** *Consider hinge, ball and socket, condyloid, pivot gliding and saddle* Flexion, extension adduction, abduction pronation, supination ,elevation depression, rotation, circumduction dorsiflexion, plantar flexion, eversion and inversion	• Observing models of synovial joints • Drawing different types of joints	
The Muscular System	• outline the general characteristics common to muscle tissue • distinguish between the different types of muscles • annotate the structure of skeletal muscles • define the terms of origin and insertion of muscles • identify the location of skeletal muscles in each region of the body • outline the types of muscle contraction • explain the concept of reciprocal inhibition	• Contractility, extensibility elasticity, atrophy, hypertrophy • Types of muscle - smooth, cardiac and skeletal • Skeletal muscle tissue - epimysium, perimysium endomysium • Muscle fibre (cell) myofilament, sarcomere, actin and myosin • Origin: the attachment	• Demonstrating muscle characteristics using models of same characteristics • Describing types of muscles • Observing models and animations • Demonstrating location of muscle by palpation • Demonstrating different types of muscle contraction	• Elastic bands • ICT tools/ Braille software/Jaw software • Charts

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED RESOURCES MATERIALS
	• analyse movement in relation to joint action and muscle contraction	of a muscle tendon to a stationery bone • Insertion: the attachment of a muscle tendon to a moveable bone - muscles from the anterior such as deltoid, pectoralis quadriceps femoris - the posterior such as trapezius lattismus dorsi, gluteus maximus gastrocnemius • Consider isotonic, isometric, isokinetic, concentric and eccentric • Consider agonist antagonist and synergistic		
The Neuromuscular Function	• label a diagram of a motor unit • explain the role of neurotransmitters in stimulating skeletal muscle contraction • explain how skeletal muscle contracts by the sliding filament theory • explain how fast and slow	• Dendrite, cell body, nucleus, axon, motor end plate, synapse and muscle • Acetylcholine and the cholinesterase • Myofibril, myofilament, sarcomere, actin, myosin, H-zone, A-band, Z-line, tropomyosin, troponin, sarcoplasmic reticulum, calcium ions and ATP	• Drawing a motor unit diagram • Watching videos and animations • Observing myograms • Discussing the relationship between sport performance and muscle fibre type	• Models • ICT tools/ Braille software/Jaw software

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED RESOURCES MATERIALS
	twitch fibre types differ in structure and function	• Slow twitch (type 1) with fast twitch (type IIa and type IIb).		
Structure and Function of the Ventilatory System	• list the principal structures of the system • outline the functions of the conducting airways • define Pulmonary Volume ,Total Lung Capacity, Vital Capacity, Tidal Volume, Expiratory Reserve Volume, Inspiratory Reserve Volume, Residual Volume • explain the mechanics of ventilation in the human lungs • describe the nervous and chemical controls of ventilation during exercise • outline the role of haemoglobin in oxygen transportation	• Nose, mouth, pharynx, larynx, trachea, bronchi, bronchioles, lungs and alveoli • Low resistance pathway and air flow • Defence function • Warming and moistening of air • Actions of the diaphragm and the intercostal muscles • Relationships between volume and pressure • Accessory muscle during strenous exercise • Effect of pH due to increased carbon dioxide (CO_2) content of the blood • Neural control of ventilation , -lung stretch receptors, muscle proprioceptors	• Drawing and annotating the ventilatory system • Measuring all lung volumes and capacities • Demonstrating the mechanics of ventilation using models • Describing the nervous and chemical controls of ventilation during exercise	• Peak flow meter • ICT tools/ Braille software/Jaw software • Models

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED RESOURCES MATERIALS
	• explain the process of gaseous exchange at the alveoli	and chemoreceptors. • Gaseous Exchange Process	• Explaining the process of gaseous exchange and oxygen transportation in the blood system • Watching videos and animations	
Structure and Function of the Cardiovascular System	• state the composition of blood • distinguish between the functions of erythrocytes, leucocytes and platelets • describe the anatomy of the heart with reference to the heart chambers, valves and major blood vessels • describe the intrinsic and extrinsic regulation of heart rate in the sequence of excitation of the heart muscle • outline the relationship between pulmonary and systemic circulation • describe the relationship between heart rate,cardiac output and stroke volume at rest and during exercise • analyse cardiac output, stroke volume and heart rate data for	• Blood is composed of cells and plasma - transport vehicle for electrolytes,, gases, nutrients, waste products and hormones • The heart : - chambers, valvesvessels - coronary arteries and their function - pace maker, heart rate and influence of sympathetic and parasympathetic branches of the autonomic nervous system and adrenaline • Sino Arterial node • Cardiac output=stroke volume X heart rate	• Watching videos and animations	• Blood pressure machine • Heart models • Weighing scale • Measuring tape • ICT tools/ Braille software/Jaw software • V O2 max chart

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED RESOURCES MATERIALS
	different populations at rest and during exercise • explain cardiovascular function • define the terms systolic and diastolic blood pressure • analyse systolic and diastolic blood pressure data at rest and during exercise • discuss how systolic and diastolic blood pressure respond to dynamic and static exercise • explain maximal oxygen consumption	• Cardiac cycle - males, females, trained, untrained, young, and old. Exclude ***quantitative data*** • Body temperature - stroke volume • Maximal oxygen consumptions (V O2 max)	• Describing cardiac cycle • Measuring pulses • Measuring and comparing blood pressures • Measuring and comparing V O2 max • Plotting graphs	

8.1.2 BIOMECHANICS

Sub-Topic	OBJECTIVES: Learners should be able to:	Content	Suggested Activities	Suggested Materials
Biomechanics Principles.	• define terms used in Biomechanics • identify C.O.M when human body is in different stable positions • explain Newton's laws of motion in relation to sport • classify levers • explain the effects of mechanical advantage in relation to levers • define centre of mass	• Force - types of forces - centre of Mass • Stability • Factors that determine stability - postion of c.o.m - base of support - performer **line of gravity** - mass of performer • Newton's laws of motion - law of inertia - law of acceleration - law of reaction • Terms in Biomechanics - *gravity* - *velocity* - *effort* - *load* - *fulcrum/ pivot* - *acceleration* - *motion* - *friction* - *work* - *energy* - *resistance* - *power* • Levers - classification of levers • Mechanical Advantage and Disadvantage • Centre of Mass	• Defining given terms • Demonstrating the application of Newton's laws of motion using various models • Drawing and labeling different classes of levers. • Constructing models of different classes of levers	• Graphic papers. • Video cameras. • Software for analysis of movements • Sticks • Tennis balls • Javelin • Pictures of human body • Shot put • Size 5,4 or 3 balls • Ruler. • Calculator.

Sub-Topic	OBJECTIVES: Learners should be able to:	Content	Suggested Activities	Suggested Materials
	• identify centre of mass when human body is in different positions • explain the effects of Centre of mass in relation to sport performance • state three dimensions of projectiles • state and explain the factors that affect projectiles • identify factors that affect projectiles in different sport codes • apply Biomechanical analysis processes on different sports techniques. • compare sports techniques of sport persons of the same specialty. • interpret the biomechanics models, that guarantee the technical skill. • solve problems in the practice of the physical exercise, with the application of the biomechanics methods of investigation.	• Stability • Factors that determine stability - *Position of c,o.m* - *Mass of performer* - *Base of support* - *Performer line of gravity* • Projectiles - Dimension of projectiles - *Horizontal* - *Vertical* - *Parabolic* • Factors affecting projectiles - *angle of release* - *height of release* - *velocity of release* - *gravity* - *air resistance* - *spin* • Mechanical fundamentals of the execution of the movements • Theory of the tests • Biomechanics indicators that characterise the motor capacities. • Biomechanics requirements of the special exercises.	• Demonstrating the effects of mechanical advantage in different sport codes in relation to levers • Draw andlabel the centre of mass in human body when in different positions • Experiment with different projectiles in relation to the factors affecting projectiles • Identifying Biomechanical analysis of different sports techniques • Comparing the sports technique of sportspersons of the same specialty. • Designing special exercises for the development or correction of different parameters, capacities, and technical executions. • Identifying special exercises for particular techniques	

8.1.3 NUTRITION

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGEST ACTIVITIES	SUGGESTED RESOURCES MATERIALS
General Nutrition	• define nutrition • list the macronutrients and micronutrients • outline the functions of macro andmicro-nutrients	• Nutrition • Macro - fats, carbohydrates, water and proteins • Micro - vitamins, minerals and fiber (***Specific knowledge of individual vitamins and minerals is not required)***	• Describing nutrition • Identifying food stuffs containing macro and micro nutrients	• Food samples • Food pyramid charts • ICT tools/ Braille software/Jaw software • Test tubes • Reagents
	• describe the food pyramid	• Food Pyramid • Condensation reaction	• Discussing on the uses of the food pyramid • Relating monomers of macro nutrients to sources of different food	
	• describe the chemical composition of the glucose molecule, disaccharides and polysaccharides	• Glycerol and three fatty acids	• Matching chemical composition of the glucose molecule, disaccharides and polysaccharides to food stuffs	
	• state composition of a molecule of triglycerol • distinguish saturated and unsaturated fatty acids	• Saturated and unsaturated fats in relation to bonds and sources	• Identifying food with saturated and unsaturated fats • Carrying out food tests	
	• state the chemical composition of a protein molecule • distinguish between essential and non-essential amino acids • explain the current	• Essential amino acids • Non-essential amino acids	• Identifying food sources of essential and non-essential amino acids	

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGEST ACTIVITIES	SUGGESTED RESOURCES MATERIALS
	recommendations for a healthy balanced diet • state the approximation energy content per 100g of carbohydrate, lipid and protein	• Energy content values per 100g are: carbohydrate 1760kj, lipid 4000kj and protein 1720kj	• Approximating energy content of food portions	
Macronutrient Metabolism	• demonstrate an understanding of metabolism, anabolism, aerobic catabolism and anaerobic catabolism • describe glycogen and state its major storage sites • state the major sites of triglyceride storage • describe the role of insulin in the formation of glucose and the accumulation of body fat • outline glycogenolysis and lipolysis • outline the functions of glucagon and adrenalin during fasting and exercise • explain the role of insulin and muscle contraction on glucose uptake during exercise	• Metabolism • Anabolism • Catabolism • Lipolysis • Glycogenolysis • Glucagon • Insulin • Gluconeogenesis • Glycogen	• Explaining metabolism, anabolism, aerobic catabolism and anaerobic catabolism • identifying anabolic and catabolic reactions • discussing the role of hormones in metabolism • watching videos and animations on macronutrient metabolism	• ICT tools/ Braille software/Jaw software • Resource person • Charts
Nutrition and Energy Systems	• annotate a diagram of the ultra structure of a generalized animal cell • annotate a diagram of the	• Ribosomes, rough endoplasmic reticulum, lysosomes, Golgi apparatus, mitochondrion and nucleus	• Illustrating a generalized animal cell structure • Illustrating the ultra	• ICT tools/ Braille software/Jaw software • Models • Charts

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGEST ACTIVITIES	SUGGESTED RESOURCES MATERIALS
	ultra structure of a mitochondria • define the term cell respiration • explain how adenosine can gain or lose a phosphate molecule • explain the role of ATP in muscle contraction	• Cristae, inner matrix and outer smooth membrane • Cell respiration – • Adenosine triphosphate (ATP) • Glycolysis • Krebs Cycle • Electron transport chain	structure of a mitochondria • Describing the process of cell respiration • Explaining the Krebs cycle • Illustrating the electron transport chain	
Digestion and Absorption	• outline the features of the principal components of the digestive system • state the typical PH values found throughout the digestive system • describe the function of the enzymes in the context of the macronutrient digestion • identify enzymes responsible for the digestion of carbohydrates, protein and fats • describe the absorption of all nutrients	• Mouth , • Esophagus, stomach,small intestines,large intestines, pancreas, • Liver and gall bladder • PH values: - mouth 5.5 to 7.5 - stomach 1.0 to less than 4.0 - small intestine 6.0 to 8.0 • Enzymes - carbohydrates :salivary amylase, pancreatic amylase - fats: pancreatic lipase,bile - proteins: pepsin, trypsin	• Drawing the digestive system • Outlining the functions of each part of the digestive system • Describing the functions of enzymes • Watching videos and animations • Carrying out food tests	• Charts • ICT tools/ Braille software/Jaw software • Test tubes • Reagents
Water and Electrolyte	• explain the functions of	• Properties of water	• Demonstrating	• Test tubes

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGEST ACTIVITIES	SUGGESTED RESOURCES MATERIALS
Balance	water in the human body • state where extra cellular fluid can be located throughout the body • compare water distribution in trained and untrained individuals • explain homeostasis	• Functions of water in the human body: • Extracellular fluids (blood plasma, lymph, saliva, fluid in the eyes, fluid from glands) • Hypothalamus and the release of Anti-Diuretic Hormone (ADH) • Effect of ADH on the kidneys • Negative feedback	movement of water across membrane • Describing the functions of water in the body • Identifying all extracellular fluids • Discussing the different functions of extracellular fluids • Watching videos and animations • Measuring urine osmolarity	• Reagents • Models • ICT tools/ Braille software/Jaw software

8.1.4 TECHNOLOGY AND SPORT

SUB-TOPIC	OBJECTIVE: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED RESOURCE MATERIALS
Technologies that support Sport	• narrate some major historical events in sports science technology • discuss ethical considerations in sports science and technology • explain the use of various categories of technology in sport	• Major technological innovations in sport events • Performance enhancement • Equipment • Clothing • Facilities • Use of technology in performance analysis and monitoring • Use of technology in optimizing physiological performance	• Identifying and discussing the impact of major technological innovations in history. • Discussing the ethical considerations in the use of technologies • Observing and using different forms of technology • Visiting various sport facilities • Identifying various technologies used in optimizing physiological performance	• ICT tools/ Braille software/Jaw software • Resource persons

8.1.5 PEDAGOGY

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED MATERIALS
Pedagogy as science	• describe pedagogy as a science • identify components of the educational process • establish the differences and relationships among components of educational process considering laws that govern it	• Pedagogy and its Importance • Composition and structures of the educational process. - formulation of objectives - content identification. - teaching methods. - Media and learning/teaching aids organization of learning experiences. Assessment and Evaluation .	• Analysing Pedagogy as a science considering laws, categories, and principles that govern it. • Describing components of the educational process, establishing their relationships and differences starting from the laws that govern it. • Observing classes keeping in mind the components of the educational process and their relationships. • Formulating objectives for classes of sports training. Carrying out evaluation of planned training sessions.	
Essence and Dynamics of the Educational Process	• assess the dynamics of the educational process in one's development • identify methodological-ethical principles	• The essence of the educational process: - Particularities and Links - Principles of teaching - Pedagogical ethics	• Analysing the execution of principles of teaching. • Discussing professional ethics in the educational process. • Applying the educational methods in given educational situations • Analysing aspects of pedagogical ethics and their importance to a Sport teacher	

8.2 FORM 6

8.2.1 EXERCISE PHYSIOLOGY

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED MATERIALS
Energy Systems	• explain chemical, potential and kinetic energy • describe the role of adenosine triphosphate (ATP) in the body in energy transfer. • explain aerobic and anaerobic capacity	• Types of energy • Aerobic capacity • Anaerobic capacity • Factors affecting aerobic and anaerobic capacity • Adenosine Triphosphate production	• Discussing different types of energy • Observing animations and charts on ATP • Explaining aerobic and anaerobic capacity • Engaging in aerobic and anaerobic activities.	• ICT tools/ Braille software/Jaw software • Fitness training equipment
Energy transfer in Exercise - **ATP/PC** - **Lactic Acid** - **Aerobic**	• define energy transfer • describe the ATP/PC system, the lactic acid system and the Krebs Cycle. • relate the ATP/PC system, the lactic acid system and the Krebs Cycle to exercise intensity and athletic performance	• ATP/PC system • Lactic acid system • Krebs cycle • Electron transport chain • Exercise intensity and energy ATP production • Aerobic, anaerobic systems and athletic performance	• Describing energy systems • Relating sports activities to energy systems. • Watching animations of energy systems	• ICT tools/ Braille software/Jaw software
System Adaptations to Exercise	• outline morphologic and metabolic adaptations of the cardiovascular, muscular and respiratory systems • explain the effects of warm up and cool down on body systems • distinguish between aerobic	• Acute response of systems to exercise • Warm up and cool down • Benefits of exercise to heart and cardiovascular system • Benefits to the respiratory system • Benefits to the muscular	• Discussing the effects of warm up and cool down to body systems • Measuring pulse rate and discussing results • Discussing benefits of	• ICT tools/ Braille software/Jaw software • Physical fitness testing facilities and equipment • Models

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED MATERIALS
	and anaerobic adaptations of the cardiovascular, muscular and respiratory systems • explain adaptations of the endocrine system to aerobic and anaerobic exercise • conduct physical fitness tests	system • Changes to the endocrine system • Aerobic benefits • Anaerobic benefits	exercise to the cardiovascular, muscular and respiratory systems • Participating in aerobic and anaerobic exercise programs • Evaluating aerobic and anaerobic exercise programmes • Conducting physical fitness test	
Regulation of Body Systems during exercise	• explain the regulation of the cardiovascular, respiratory and hormonal systems during exercise.	• Heart regulation during exercise • Control of breathing during exercise • Ventilatory response to light, moderate and heavy exercise • Hormonal control systems	• Discussing regulation of body systems during exercise. • Engaging in light, moderate and heavy exercise routines • Watching animations and videos on exercise and body systems.	• ICT tools/ Braille software/Jaw software • Fitness training equipment
Fatigue and Recovery Processes -	• identify causes of delayed onset of muscle soreness (DOMS) • describe ways of managing DOMS • explain delayed onset of muscle soreness and excess post exercise oxygen consumption. • relate DOMS and EPOC to exercise	• Causes of DOMS • Recovering from DOMS • Oxygen debt • EPOC	• Discussing fatigue in the context of DOMS and EPOC • Relating DOMS and EPOC to type of exercise and exercise intensity	• ICT tools/ Braille software/Jaw software

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED MATERIALS
Exercise and the Environment	• explain the effect of high temperatures and low temperatures on body systems • analyse the adaptation of body systems to temperature	• Effects of heat on body systems before during and after exercise • Effects of cold on body systems before, during and after exercise	• Discussing the effects of high and low temperatures on body during exercise. • Watching animations on body reaction to temperatures	• ICT tools/ Braille software/Jaw software
Exercise at Medium and High Altitudes	• explain the effects of altitude on body systems • relate sports performance to high altitudes.	• Partial pressure and gaseous exchange • Effects of altitude on : - respiratory system - cardiovascular system • Acclimatization	• Discussing the effect of altitude on body systems. • Locating high altitude countries in in Africa,Europe ,Asia and Latin America	• ICT tools/ Braille software/Jaw software

8.2.2 THEORY AND METHODOLOGY OF SPORTS TRAINING

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED MATERIALS
Laws and Principles.	• interpret sports training as a long-term process. • Identify the relationship of the sports training with other sciences. • Describe the application of biological laws and pedagogic principles in sports training.	• The training as a process of physical development. • Biological laws. • Principles of sports training. • Physical capacities. • Principles of conscience and activity. • Principles of the sensations of perception. • Principles of accessibility and individualisation. • Principles of the systematising. • Principles of the unit between the general and special preparation. • Principles of the cyclic character of the sport training. • Principles of the gradual increase of loads.	• Describing principles of training. • Describing the different biological laws that have influence in the sports training. • Engaging in exercise routines that develop physical capacities. - speed. - endurance. - strength. - flexibility. - agility. • Watching Videos and Animations	• Stop Watches • Cones • ICT tools/ Braille software/Jaw software • Resource Persons
Planning and Control of Training	• plan a sports training session • demonstrate the main methods and means of training used by children and adolescence	• Sports initiation. • Methods of training. • The control of loads. • The unit of training.	• Describing methods used in sports training sessions • Planning a unit of training	

		• Programme of training.	and a program of training. • Executing developed plans of training • Evaluating executed plans • Applying different tests used in the control of the sports training to interpret the results.	

8.2.3 APPLIED PSYCHOLOGY

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED RESOURCE MATERIALS
Fundamental Psychological Constructs **- Personality**	• describe theories of personality • discuss structure of personality • conduct personality tests • discuss how trait perspective influences behavior in sport • identify the key limitations of personality profiling	• Theories of personality • Structure of personality • Trait perspective • Introversion and extroversion • Neuroticism and stability • Type A and type B • Character • Temperament • Limitation of : • Personality profiling in sport • Personality tests	• Listing major theories of personality • Researching on the structure of personality • Drawing of the personality structures • Discussing trait perspectives in reference to real sports situations for example, watching a match in a stadium. • Identifying limitations of personality • Playing games depicting different personality traits • Conducting and interpreting personality test results obtained from using the given test instrument/tool.	• ICT tools/ Braille software/Jaw software • Personality Test Instruments • Resource Person

	• explain the influence of gender differences in sport training	• Characteristics of gender from the point of view of psychology • Influence of gender on sport training	• Explaining characteristics of gender in view of psychology • Analysing differences of gender and its influence on sport practice	
-Attitude	• distinguish between different attitudes • relate attitude to behavior in sport or vice-versa • apply methods of measuring attitudes	• Nature of attitudes • Component of attitude: - cognitive - affective - behavioural • Links between attitude and behavior in sport situations • Ways of measuring attitudes	• Observing different attitudes being displayed. • Role-playing different characters depicting different attitudes. • Conducting case studies on the link between attitude and behavior	• ICT tools/ Braille software/Jaw software • Attitude Measuring Instruments • Resource persons
-Motivation and Arousal	• explain the need to achieve and avoid failure • describe types of motivation • analyse factors that stimulates participation in any sport activity • formulate goals and targets for achievement	• Theory of achievement motivation(Atkinson and McClelland's) • Sport-specific motivation, that is competitiveness	• Conducting Case studies on the need to achieve or avoid failure • Setting goals to achieve set standards • Researching on factors that stimulate participation in sport • Presenting findings of research	• ICT tools/ Braille software/Jaw software • Resource person
- **Mental Preparation**	• apply commitment, self-control, concentration, emotional control in sport situations • give reasons for the use of short/intermediate/long-term goals • apply process/performance/product goals to improve performance	• Commitment • Self-control • Concentration • Emotional control	• Playing games that enhance concentration, self and emotional-control for example chess • Playing teasing games and puzzles that shows commitment	• ICT tools/ Braille software/Jaw software • Puzzles

Group Dynamics on Sport Performance - **Group and Teams**	• explain group formation • identify factors that bond group members together to form a team. • explain coordination/cooperation and motivational factors in relation to team cohesion	• Group and team formation - Steinner's model of group formation • Coordination/cooperation (Ringlemann Effect) and motivational (Social loafing) factors	• Discussing group formation • Making presentations on factors that influence team cohesion • Reading, selecting and extracting from appropriate sources relevant information on Ringlemann Effect and Social loafing factors	• ICT tools/ Braille software/Jawa software
- **Leadership** **Social Facilitation and Audience Effects**	• describe types of leadership styles • explain the theories of leadership. • judge the leadership models (multidimensional and Contingency) from given case studies. • relate facilitation and inhibition effect of others on performance • discuss the effects of level of arousal on performance • describe the cause and effect of evaluation apprehension • apply strategies to combat the effects of social inhibition,especially attention and mental rehearsal	• Characteristics of leadership - autocratic /task-oriented - democratic/social-oriented - laissez-faire • Theories of leadership - trait, - social - interactionist • Models of leadership - Chelldurai's Multi-dimensional - Fieldler's Contingency. • Facilitation and inhibition effects on performance • Combating the effects of social inhibition	• Reading,selecting,extracting and collating information from appropriate sources on leadership theories and models • Reviewing case studies on leadership styles • Role-playing the three leadership styles. • Conducting team performance case study in different audience setup, that is, home and away situations • Debating on effects of arousal on performance giving concrete examples from a sport situations • Engaging in observational experiment using distractions	• ICT tools/ Braille software/Jaw software • Resource person

Competition Effects on Sport Performance - **Aggression Effects**	• describe theories of aggression in relation to sport • identify the causes of aggressive behavior • distinguish between aggressive and assertive behaviour • identify reasons for success and failure • explain Weiner's model of attribution • justify the use of attributional retraining	• Causes and effects of reactive aggression • Ways of managing aggression • Aggressive and assertive behaviour	• Reading, selecting, extracting and making presentations on the key elements of theories and causes of aggression. • Dramatising aggressive and assertive characters in sport situations. • Debating on the use of attributional retraining	• ICT tools/ Braille software/Jaw software • Resource Person
- **Psychological Tests in Physical Activity**	• administer psychological tests in physical activity • interpret psychological test results	• Testing for: - distance perception - motor representation - concentration of attention - distribution of attention • Chromatic Differentiation	• Administering psychological tests • Interpreting psychological test results • Evaluating test results	• ICT tools/ Braille software/Jaw software • Stop watches • Resource person • tools

8.2.4 SOCIOLOGY IN SPORT

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED MATERIALS
Understanding Sociology	• define sociology, theory sciences, social relationships, society, culture, values and ethics • explain the connection between behaviour and the social/cultural context	• Sport and socialisation • Social and cultural values in Sport as a carrier of social and cultural values of economic development, conformity, accepting orders and hierarchical, accepting defeat, subordination and accepting arbitration • Connection between behaviour and the social/cultural context	• Discussing the relationship of sport to socialisation • Identifying structural properties of sport as a social institution • Outlining the effect of sport on values and culture and the effect of values and culture on sport • Discussing the role of sport as a vehicle of socio-economic transformation	• Resource person • ICT tools/ Braille software/Jaw software
Sociological Trends and Social Inequalities	• explore the relationship between nature and nurture • explain the gendered history of sport, • outline roles of women in society • describe race as physical characteristics of an individual • explain racism in sport • demonstrate that sport and recreation concerns the whole society • explore the relationships among sport, politics, media and economics • define the role of	• Reforms and procedures to address gender inequalities for women in sport • Racism in sport • Role model creation • Ability and Disability in Sport • Commercialisation of sport • Role of the media in sport • Impact of globalisation	• Carrying out surveys on participation of women in sport • Debating on inequalities in sport • Outlining current and past intervention on racism in sport • Classifying differently abled persons in sport • Interacting with communal, national, regional, continental and international role models • Discussing the role of media • Analysing medical	• ICT tools/ Braille software/Jaw software • Resource person

SUB-TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED MATERIALS
	globalisation in the world of sport		perspectives of differently abled persons • Watching videos of social activities by sports persons	

8.2.5 SPORT FACILITIES AND EQUIPMENT

SUB TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED RESOURCE MATERIALS
Design	• identify factors that influence design and construction of sport facilities • illustrate the usage of facilities and equipment • classify sport facilities • construct a mini-model of a sport facility or equipment	• Design and Construction • facility and equipment usage • Types of facilities • Factors influencing design of facilities and equipment	• Discussing considerations in sport facilities and equipment design • Making presentations using diagrams, pictures, videos, architectural plans • Classifying facilities and equipment according to characteristics and use • Designing and constructing mini-models of a sport facility or equipment	• ICT tools/ Braille software/Jaw software • Models • Animations
Maintenance	• explain causes of wear and tear in facilities and equipment • describe ways of care and maintenance of facilities and equipment	• Maintenance, care and usage • quality • lifespan • Causes of wear and tear in sport facilities • frequency of usage • traffic	• Embarking on Educational tours to sport facilities making observations and judgment on design, usage, standard and maintenance • Selecting equipment for analysis based on standard, quality, usage, design and storage. • Producing materials such as pictures, videos, art on	• ICT tools/ Braille software/Jaw software • Models • Art media materials

	• formulate rules for safe use and storage of equipment		facilities and equipment with labels • Formulating rules on usage and storage of equipment	

8.2.6 ELECTIVE SPORTS SPECIALITY

SUB TOPIC	OBJECTIVES: Learners should be able to:	CONTENT	SUGGESTED ACTIVITIES	SUGGESTED RESOURCE MATERIALS
Practical performance portfolio	• design and implement a training programme • undertaken an internship for the chosen sport • administer skills physical fitness tests	• Physical fitness tests • Skills Tests • Techniques and tactics • Training programme design • Training programme implementation, monitoring and evaluation • Internship	• Identifying a sport • Administering baseline tests (skill and physical fitness) • Designing a training programme • Implementing, monitoring and evaluating a training programme • Writing reports • Under going one month elective internship	• ICT tools/ Braille software/Jaw software • Sports facility

9.0 ASSESSMENT

9.1 ASSESSMENT OBJECTIVES

Learners will be assessed on their ability to:

9.1.1 Inter-relate, plan, perform and evaluate whilst undertaking sports science and technology activities
9.1.2 Apply the knowledge of anatomy and physiology in sport and related activities
9.1.2 Explain the effects of exercise on the functioning of body systems
9.1.3 Apply biomechanics knowledge and techniques in enhancing performance
9.1.4 Design training programmes for various sport activities
9.1.5 Analyse and improve self and others' performance
9.1.6 Identify career opportunities in sports science based on individual areas of strength
9.1.7 Demonstrate enterprising skills through facilities, equipment and apparel design and related fields
9.1.8 Display knowledge and understanding of safety aspects in the study of sports science
9.1.10 Apply the techniques acquired through studying sport science and technology for skills execution.

9.2 SCHEME OF ASSESSMENT

The assessment will be both continuous and summative. It will be based on achieving the learning outcomes for each topic and form level. Learner profiling must inform where the learner has made progress and areas for future development in relation to the objectives. The Learner Profile Record states the learner's entry abilities and potential at every level in addition to concepts, skills and knowledge the learner has acquired or developed (NOTE: In the absence of learner profile record, refer to the assessment guide on how to determine entry level ability and potential).

In sport science and technology, the assessment follows the principle of progression. Learners will be assessed on their in depth understanding of basic knowledge of sport science before graduating for the next level. For example, anatomy and physiology has to be comprehended thoroughly for the learner to study the next topics like exercise physiology and biomechanics and the same connection for biomechanics and theory and methodology of training or sports facilities and equipment. Mastery of background knowledge is critical for movement to the next level in the same topic or next topic hence assessment has to be carried out continuously and the learner profiling has to be carried out regularly.

The assessment will be based on 60% continuous assessment and 40% summative assessment. The two assessment models constitute practicals, theory and projects. The syllabus' scheme of assessment is grounded in the principle of equalisation of opportunities hence does not condone direct or indirect discrimination of learners.

Arrangements, accommodations and modifications must be visible in both continuous and summative assessments to enable learners with special needs access assessment and receive accurate performance measurement of their abilities. Access arrangements must neither give these learners an undue advantage over others nor compromise the standards being assessed. Learners who are unable to access the assessments of any component or part of component due to disability (transitory or permanent) may be eligible to receive an award based on the assessment they would have taken.

NOTE For further details on arrangements, accommodations and modifications refer to the sports science and technology assessment procedure booklet.

A. Continuous Assessment
Continuous assessment for Form 5 and 6 will consist of practical tasks, theory tests and projects:
i. Practical Tasks
These are activities that teachers use in their day to day teaching. These may include individual, pair and group tasks.
ii. Theory Tests

These are tests set by the teacher to assess the learners on concepts covered on taught topics. The tests should consist of multiple choice, closed and open questions as well as structured questions.

iii. Projects

iv. These are guided projects, which will be carried out by learners during the course of the study.

Summary of Continuous Assessment Tasks

In Terms 1 to 6, candidates are expected to have done the following recorded tasks per term:

- 2 Practical tasks
- 2 Theory tests
- 1 Project.
- 1 End of term practical assessment
- 1 End of term written assessment

Form of assessment	Weighting
Continuous	**60**
Summative	**40**
Total	**100**

Continuous assessment

Level	Assessment tasks	weighting
Form 5	One practical test per month One end of term practical test Two theory tests per term One end of term theory test One project per year	**30%**
Form 6	One practical test per month One end of term practical test Two theory tests per term One end of term theory test One project per year	**30%**
Total		**60%**

NB: Each assignment, test and project is marked out of 100 %. Soft skills are assessed as learners do the continuous assessment tasks.

B. Summative Assessment

Paper	Paper type	Duration	Marks	Weighting
Paper 1	Structured	2hrs 30mins	**100**	**15%**
Paper 2	Practical	10 minutes per candidate	**100**	**25%**
Total				**40%**

Paper Description

Paper 1

The paper will consist of structured questions covering syllabus content from the selected five areas namely Anatomy and Physiology, Biomechanics, Nutrition, Sports and Technology and Pedagogy as section ‘A’. Section ‘B’ will constitute of elective questions that allows learners to choose five out of ten questions. Questions will be set and these will cover all the skill levels from recall to evaluation.

Paper 2

The paper will be a practical paper testing practical skills acquired by learners. Learners will be tested on variety of skills, tactics and techniques.Advance question papers will be sent to centres for candidates to prepare prior to the examination

Specification Grid

Skill	Paper 1	Paper 2
Knowledge and Understanding	30%	----------
Application	30%	----------
Problem Solving	40%	----------
Practical	----------	100%
Total	**100%**	**100%**