



CURRICULUM AND ASSESSMENT POLICY STATEMENT GRADES 10–12

SPORT AND EXERCISE SCIENCE



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FOREWORD BY THE MINISTER



Our national curriculum is the culmination of our efforts over a period of seventeen years to transform the curriculum bequeathed to us by apartheid. From the start of democracy we have built our curriculum on the values that inspired our Constitution (Act 108 of 1996). The Preamble to the Constitution states that the aims of the Constitution are to:

- heal the divisions of the past and establish a society based on democratic values, social justice and fundamental human rights;
- improve the quality of life of all citizens and free the potential of each person;
- lay the foundations for a democratic and open society in which government is based on the will of the people and every citizen is equally protected by law; and
- build a united and democratic South Africa able to take its rightful place as a sovereign state in the family of nations.

Education and the curriculum have an important role to play in realising these aims.

In 1997 we introduced outcomes-based education to overcome the curricular divisions of the past, but the experience of implementation prompted a review in 2000. This led to the first curriculum revision: the *Revised National Curriculum Statement Grades R*–9 and the *National Curriculum Statement Grades 10–12* (2002).

Ongoing implementation challenges resulted in another review in 2009 and we revised the Revised National Curriculum Statement (2002) and the National Curriculum Statement Grades 10–12 to produce this document.

From 2012 the two *National Curriculum Statements*, for *Grades R*–9 and *Grades 10*–12 respectively, are combined in a single document and will simply be known as the *National Curriculum Statement Grades R*–12. the *National Curriculum Statement for Grades R*–12 builds on the previous curriculum but also updates it and aims to provide clearer specification of what is to be taught and learnt on a term-by-term basis.

The *National Curriculum Statement Grades R–12* represents a policy statement for learning and teaching in South African schools and comprises of the following:

- (a) Curriculum and Assessment Policy Statements (CAPS) for all approved subjects listed in this document:
- (b) National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R–12; and
- (c) National Protocol for Assessment Grades R–12.

MRS ANGIE MOTSHEKGA, MP

MINISTER OF BASIC EDUCATION

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SECTION 1

INTRODUCTION TO THE CURRICULUM AND ASSESSMENT POLICY STATEMENTS FOR SPORT AND EXERCISE SCIENCE GRADES 10–12

1.1 Background

The National Curriculum Statement Grades R–12 (NCS) stipulates policy on curriculum and assessment in the schooling sector.

To improve implementation, the National Curriculum Statement was amended, with the amendments coming into effect in January 2012. A single comprehensive Curriculum and Assessment Policy document was developed for each subject to replace Subject Statements, Learning Programme Guidelines and Subject Assessment Guidelines in Grades R–12.

1.2 Overview

- (a) The *National Curriculum Statement Grades R–12 (January 2012)* represents a policy statement for learning and teaching in South African schools and comprises the following:
 - (i) Curriculum and Assessment Policy Statements for each approved school subject;
 - (ii) The policy document, National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R–12; and
 - (iii) The policy document, National Protocol for Assessment Grades R–12 (January 2012).
- (b) The *National Curriculum Statement Grades R–12 (January 2012)* replaces the two current national curricula statements, namely the
 - (i) Revised National Curriculum Statement Grades R–9, Government Gazette No. 23406 of 31 May 2002, and
 - (ii) National Curriculum Statement Grades 10–12 Government Gazettes, No. 25545 of 6 October 2003 and No. 27594 of 17 May 2005.
- (c) The national curriculum statements contemplated in subparagraphs b(i) and (ii) comprise the following policy documents which will be incrementally repealed by the *National Curriculum Statement Grades R–12 (January 2012)* during the period 2012–2014:
 - (i) The Learning Area/Subject Statements, Learning Programme Guidelines and Subject Assessment Guidelines for Grades R–9 and Grades 10–12;
 - (ii) The policy document, National Policy on assessment and qualifications for schools in the General Education and Training Band, promulgated in Government Notice No. 124 in Government Gazette No. 29626 of 12 February 2007;
 - (iii) The policy document, the National Senior Certificate: A qualification at Level 4 on the National Qualifications Framework (NQF), promulgated in Government Gazette No.27819 of 20 July 2005;

- (iv) The policy document, An addendum to the policy document, the National Senior Certificate: A qualification at Level 4 on the National Qualifications Framework (NQF), regarding learners with special needs, published in Government Gazette, No.29466 of 11 December 2006, is incorporated in the policy document, National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R–12; and
- (v) The policy document, An addendum to the policy document, the National Senior Certificate: A qualification at Level 4 on the National Qualifications Framework (NQF), regarding the National Protocol for Assessment (Grades R–12), promulgated in Government Notice No. 1267 in Government Gazette No. 29467 of 11 December 2006.
- (d) The policy document, *National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R–12*, and the sections on the Curriculum and Assessment Policy as contemplated in Chapters 2, 3 and 4 of this document constitute the norms and standards of the *National Curriculum Statement Grades R–12*. It will therefore, in terms of *section 6A* of the *South African Schools Act*, 1996 (Act No. 84 of 1996,) form the basis for the Minister of Basic Education to determine minimum outcomes and standards, as well as the processes and procedures for the assessment of learner achievement to be applicable to public and independent schools.

1.3 General aims of the South African Curriculum

- (a) The National Curriculum Statement Grades R-12 gives expression to the knowledge, skills and values worth learning in South African schools. This curriculum aims to ensure that children acquire and apply knowledge and skills in ways that are meaningful to their own lives. In this regard, the curriculum promotes knowledge in local contexts, while being sensitive to global imperatives.
- (b) The National Curriculum Statement Grades R–12 serves the purposes of:
 - equipping learners, irrespective of their socio-economic background, race, gender, physical ability or intellectual ability, with the knowledge, skills and values necessary for self-fulfilment, and meaningful participation in society as citizens of a free country;
 - providing access to higher education;
 - facilitating the transition of learners from education institutions to the workplace;
 and
 - providing employers with a sufficient profile of a learner's competences.
- (c) The National Curriculum Statement Grades R-12 is based on the following principles:
 - Social transformation: ensuring that the educational imbalances of the past are redressed, and that equal educational opportunities are provided for all sections of the population;
 - Active and critical learning: encouraging an active and critical approach to learning, rather than rote and uncritical learning of given truths;
 - High knowledge and high skills: the minimum standards of knowledge and skills to be achieved at each grade are specified and set high, achievable standards in all subjects;
 - Progression: content and context of each grade shows progression from simple to complex;

- Human rights, inclusivity, environmental and social justice: infusing the principles
 and practices of social and environmental justice and human rights as defined in
 the Constitution of the Republic of South Africa. The National Curriculum
 Statement Grades R-12 is sensitive to issues of diversity such as poverty,
 inequality, race, gender, language, age, disability and other factors;
- Valuing indigenous knowledge systems: acknowledging the rich history and heritage of this country as important contributors to nurturing the values contained in the Constitution; and
- Credibility, quality and4 efficiency: providing an education that is comparable in quality, breadth and depth to those of other countries.
- (d) The National Curriculum Statement Grades R–12 aims to produce learners that are able to:
 - identify and solve problems and make decisions using critical and creative thinking;
 - work effectively as individuals and with others as members of a team;
 - organise and manage themselves and their activities responsibly and effectively;
 - collect, analyse, organise and critically evaluate information;
 - communicate effectively using visual, symbolic and/or language skills in various modes;
 - use science and technology effectively and critically showing responsibility towards the environment and the health of others; and
 - demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation.
- (e) Inclusivity should become a central part of the organisation, planning and teaching at each school. This can only happen if all teachers have a sound understanding of how to recognise and address barriers to learning, and how to plan for diversity.

The key to managing inclusivity is ensuring that barriers are identified and addressed by all the relevant support structures within the school community, including teachers, District-Based Support Teams, Institutional-Level Support Teams, parents and Special Schools as Resource Centres. To address barriers in the classroom, teachers should use various curriculum differentiation strategies such as those included in the Department of Basic Education's *Guidelines for Inclusive Teaching and Learning* (2010).

1.4 Time Allocation

1.4.1 Foundation Phase

(a) The instructional time in the Foundation Phase is as follows:

SUBJECT	GRADE R (HOURS)	GRADES 1–2 (HOURS)	GRADE 3 (HOURS)
Home Language	10	8/7	8/7
First Additional Language		2/3	3/4
Mathematics	7	7	7
Life Skills	6	6	7
Beginning Knowledge	(1)	(1)	(2)
Creative Arts	(2)	(2)	(2)
Physical Education	(2)	(2)	(2)
Personal and Social Well-being	(1)	(1)	(1)
TOTAL	23	23	25

- (b) Instructional time for Grades R, 1 and 2 is 23 hours and for Grade 3 is 25 hours.
- (c) Ten hours are allocated for languages in Grades R–2 and 11 hours in Grade 3. A maximum of 8 hours and a minimum of 7 hours are allocated for Home Language and a minimum of 2 hours and a maximum of 3 hours for Additional Language in Grades 1–2. In Grade 3 a maximum of 8 hours and a minimum of 7 hours are allocated for Home Language and a minimum of 3 hours and a maximum of 4 hours for First Additional Language.
- (d) In Life Skills Beginning Knowledge is allocated 1 hour in Grades R–2 and 2 hours as indicated by the hours in brackets for Grade 3.

1.4.2 Intermediate Phase

(a) The instructional time in the Intermediate Phase is as follows:

SUBJECT	HOURS
Home Language	6
First Additional Language	5
Mathematics	6
Natural Sciences and Technology	3,5
Social Sciences	3
Life Skills	4
Creative Arts	(1,5)
Physical Education	(1)
Personal and Social Well-being	(1,5)
TOTAL	27,5

1.4.3 Senior Phase

(a) The instructional time in the Senior Phase is as follows:

SUBJECT	HOURS
Home Language	5
First Additional Language	4
Mathematics	4,5
Natural Sciences	3
Social Sciences	3
Technology	2
Economic Management Sciences	2
Life Orientation	2
Creative Arts	2
TOTAL	27,5

1.4.4 Grades 10-12

The instructional time in Grades 10-12 is as follows:

SUBJECT	TIME ALLOCATION PER WEEK (HOURS)
Home Language	4.5
First Additional Language	4.5
Mathematics	4.5
Life Orientation	2
A minimum of any three subjects selected from Group B Annexure B, Tables B1 – B8 of the policy document, National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R–12, subject to the provisos stipulated in paragraph 28 of the said policy document.	12 (3 x 4h)
TOTAL	27,5

The allocated time per week may be utilised only for the minimum required NCS subjects as specified above, and may not be used for any additional subjects added to the list of minimum subjects. Should a learner wish to offer additional subjects, additional time must be allocated for the offering of these subjects.

SECTION 2

INTRODUCTION TO SPORT AND EXERCISE SCIENCE

The subject Sport and Exercise Science involves the holistic and systematic study of the human body which includes inter-alia the physiological, biomechanical, psychological, sociological and motor development aspects of human movement in various contexts. This includes the understanding of core concepts and their application in relevant contexts.

Sport and Exercise Science is a choice subject only offered at Further Education and Training level, i.e. in grades 10, 11 and 12.

The subject is assessed only by the Independent Examinations Board (IEB). Any school wishing to offer the subject should contact the IEB.

In accordance with the regulations pertaining to the National Senior Certificate, learners offering Sport and Exercise Science as a subject must offer either Physical Sciences or Life Sciences.

PURPOSE

The study of Sport and Exercise Science enables learners to explore those concepts that are essential for understanding the human body during different forms of physical activity and the manner in which the physiological, biomechanical, psychological and sociological components of the human being and the environment are interrelated and interconnected. Learners will develop scientific inquiry, problem solving, critical thinking and other skills and use Sport and Exercise Science concepts in explaining and understanding the movement of the human body. They will be able to apply scientific knowledge to their own personal well-being and to the advancement of their performance in sport, exercise, fitness and recreation. Through the study of Sport and Exercise Science, learners can develop an understanding of the influence of ethics and biases, technology, indigenous knowledge, environment and society.

The subject enables learners to understand fitness principles in exercise, fitness, sport and recreation as well as the long-term physiological response of the human body to exercise. Anatomical and biomechanical principles can be applied in movement practice and the role of nutrition in providing energy for participation and in maintaining a balanced lifestyle in explored. The values and attitudes required for dealing with discrimination in society, the natural and manmade environment and technology are considered.

AIMS OF SPORT AND EXERCISE SCIENCE

The subject Sport and Exercise Science develops the following competences:

- Understand and apply sport and exercise physiology as it relates to fitness, health and performance.
- Understand how nutrition relates to fitness, health and performance.
- Apply knowledge of anatomical and biomechanical principles to performance and injuries in exercise and sport.
- Understand the patterns of physical growth and motor development as they relate to changes in the performance capabilities of individuals of different ages, gender and disabilities.
- Understand the effects and influence of the psychosocial aspects of sport and exercise performance.
- Construct ethical considerations in relation to the challenges of the environment during exercise and performance in sport.

Understand and apply sport and exercise physiology as it relates to fitness, health and performance.

These skills will enable learners to understand the difference between exercise and training as well as an understanding of the immediate and long-term physiological response of the human body to exercise. Knowledge of what is meant by fitness and how it is developed, of the muscles and how they work during participation in sport and exercise. The understanding of the role that the heart, lungs, oxygen and energy play in the participation of sport and exercise will be explored and applied. Scientific inquiry and problem solving skills to understand the concepts of nutrition and energy and what this means for exercise will be explored. The learners will be able to differentiate between various sources of energy that become available in the body and know what role nutrients play in sporting performance capabilities.

Apply knowledge of anatomical and biomechanical principles to performance and injuries in exercise and sport.

This knowledge and skill will enable learners to describe anatomical structures and systems of the human body. This will enable the learner to locate anatomical structures and describe their involvement in movement. This knowledge will assist learners to analyse movement practice and to adapt performance as well as being able to conduct biomechanical analyses of movement. The nature and consequences of injuries on sport and exercise are explored.

Understand the patterns of physical growth and motor development as they relate to changes in the performance capabilities of individuals of different ages, gender and disability.

Learners will acquire knowledge pertaining to the major variables of physical growth and motor development that influence sport performance. They will also be able to know how growth patterns influence the development of sport skills at different stages and ages in an athlete's development. The influence of gender and disability on performance will also be addressed.

Understand the effects and influence of the psychosocial aspects of sport and exercise on performance as well as construct ethical considerations in relation to the challenges of the environment during exercise and performance in sport.

This knowledge as well as the underpinning skills, values and attitudes will enable the learner to understand the psychological components of performance and how these contribute to injuries. They will also be able to demonstrate an understanding of the meaning of values and attitudes with regard to the different roles in sport. Understanding multi-cultural diversity in relation to sport and establishing ethical guidelines for promoting the health and safety of performers will therefore be possible.

Educational and career links.

Life Orientation and Natural Science in the GET phase will form a direct link to the subject Sport and Exercise Science. Sport and Exercise Science in the FET band develops the knowledge, understanding and skills preparing young people to realise their expectations in sport at various levels, to access additional and higher education, and to take their rightful place in society.

Sport and Exercise Science broadens the range of career options for learners by being relevant and responsive to the employment prospects, higher education opportunities and entrepreneurship that exist beyond Further Education and Training, Sport and Exercise Science equips learners with the knowledge and skills for success in additional and higher education by preparing them for careers in the following fields: medicine, physiotherapy, biokinetics, occupational therapy, health, the sport and fitness industry, sport coaching, sport and exercise science research and professional athletics in a variety of codes.

SECTION 3

CONTENT OVERVIEW

The following topics are covered in Grades 10, 11 and 12 in a developmental manner:

- Anatomy and Physiology
- Psychology and Ethics
- Nutrition
- **Training and Biomechanics**
- Health and Injuries and Rehabilitation

3.1 **Sport and Exercise Science for Grade 10: Content Overview**

3.1.1 Anatomy and Physiology

- (a) Skeletal system
- (b) Muscular system
- (c) Cardiovascular system
- (d) Respiratory system
- (e) Circulatory system
- ÉcoleBooks Somatotypes and plotting on somatograph (f)
- Anatomical terms (g)
- (h) Sleep and effects of sleep deprivation on performance

3.1.2 Psychology and Ethics

- (a) Personality types
- Sportsmanship (b)
- (c) Aggression
- (d) Nature versus nurture
- (e) Leadership Styles

3.1.3 Nutrition

- (a) Food groups and portion size
- (b) Basal metabolic rate
- (c) Importance and relevance of organic compounds to an athlete:
- Importance and relevance of minerals to an athlete (d)
- (e) Basic cell structure

3.1.4 Training and Biomechanics

- (a) Fitness Components health and skill related
- (b) Core Principles of Training
- (c) Warm ups and all forms of stretching
- (d) Muscular strength
- (e) Fitness

3.1.5 Health and Injuries and Rehabilitation

- (a) Injuries
- (b) Pain Cycle
- (c) Effects of poor health on the body and performance

3.2 Sport and Exercise Science for Grade 11: Content Overview

3.2.1 Anatomy and Physiology

- (a) Skeletal system
- (b) Muscular system
- (c) Cardiovascular system
- (d) Respiratory system
- (e) Thermoregulation ÉcoleBooks
- (f) Vision
- (g) Effects of travel, including diet, on performance

3.2.2 Psychology and Ethics

- (a) Goals
- (b) Gender Stereotypes
- (c) Positive and negative impact of media on sport
- (d) Focus & concentration
- (e) Achievement Motivation
- (f) Communication
- (g) Feedback
- (h) Knowledge of performance
- (i) Information processing
- (j) Performance enhancing ergogenics

3.2.3 Nutrition

- (a) Energy
- (b) Fluids and their effect

3.2.4 Training and Biomechanics

- (a) Types of Training and the advantages and disadvantages of each
- (b) Training zones/heart rate zones
- (c) Core strength and how to train/improve it
- (d) Classification of levers
- (e) Types of forces found in sport
- (f) Velocity
- (g) Acceleration
- (h) Talent identification
- (i) Centre of gravity/mass
- (j) Performance differences between sexes
- (k) Relationship between strength and motor performance and size, physique, body composition and age
- (I) Motor patterns and skills

3.2.5 Health and Injuries and Rehabilitation

- (a) Injuries
- (b) Cardiopulmonary resuscitation (CPR)
- (c) Effects of poor health on the body and performance

3.3 Sport and Exercise Science for Grade 12: Content Overview

3.3.1 Anatomy and Physiology

- (a) Skeletal system
- (b) Muscular system
- (c) Adaptations to exercise/training
- (d) Recovery process following exercise
- (e) Blood redistribution during exercise
- (f) Vision

3.3.2 Psychology and Ethics

- (a) Stress
- (b) Arousal
- (c) Coping techniques:
- (d) Group dynamics
- (e) Factors impacting on growth and motor development and participation
- (f) Methods of controlling aggression

3.3.3 Nutrition

- (a) Energy systems and effects on exercise
- (b) Diet

3.3.4 Training and Biomechanics

- (a) Levers
- (b) Force summation
- (c) Drag and air resistance
- (d) Fluid forces/dynamics
- (e) Spin
- (f) Rotation
- (g) Momentum
- (h) Angular, Linear & General motion
- (i) Effects of Centre of Gravity and Stability in sport
- (j) Newton's Laws in sport
- (k) Reaction time
- (I) Periodisation
- (m) Altitude
- (n) Exercise adherence
- (o) Long term athlete development
- (p) Fatigue; Overtraining; burnout and DOMs

3.3.5 Health and Injuries and Rehabilitation

- (a) Injuries
- (b) Risk management & safety at sports events
- (c) Hyperventilation
- (d) Hypothermia and Hyperthermia
- (e) Technology in sport
- (f) Functional Movement Screening (FMS)

SECTION 4

ASSESSMENT

This chapter must be read in conjunction with the IEB Manual for the Moderation of School Based Assessment available on the IEB website.

In Grades 10 and 11 all assessment is internal. The requirements in this section are mandatory for Grade 12.

A. MEANS OF ASSESSMENT

Paper I: Theory	3 hours	[200]
PAT		[100]
School Based Assessment (SBA)		[100]

400 marks

B. **REQUIREMENTS**

1. **EXAMINATION**

Theory Pap	er:	Sport and Exercise Science					
Time:		3 hours Total Marks: 200					
Structure o	f the	A 20 mark extended writing response will be required.					
paper:		The balance of the paper will consist of a variety of short and longer					
		response type questions.					
		Each topic will be examined.					
	All questions are compulsory.						
Weighting	60% 40%						
of		1070					
Cognitive	30	%	20%	10%	10%	15%	15%
Levels:	Know	edge	Comprehension	Application	Analysis	Synthesis	Evaluation

2. SCHOOL BASED ASSESSMENT (SBA)

SBA Item	Weighting
Preliminary Examination/Trial paper	25
Controlled test #1	15
Controlled test #2 15	
Three tasks chosen from the following options:	
Oral Presentation Visual Task Case Study Media Review Practical task	3 × 15
TOTAL	100

3. PRACTICAL ASSESSMENT TASK

Component	Weighting
One practical assessment task that is externally set,	100 marks
internally marked and externally moderated.	

C. INTERPRETATION OF REQUIREMENTS

1. **EXAMINATION**



The Assessment Syllabus

The purpose of this Assessment Syllabus is to assist IEB teachers in reaching a common understanding of the scope of the topics and therefore support schools in planning their teaching, learning and assessment programmes consistently, as well as to make the IEB examination and SBA requirements at grade 12 explicit for teachers, assessors and moderators.

The document is not meant to be a teaching syllabus. Individual teachers and schools are not restricted to the contents of the Assessment Syllabus; they are free to expand on these in their own curriculum delivery. The teaching and learning programme should be rich, stimulating and challenging, while assessment is focused on the assessment requirements of the subject, in its contribution to the qualification.

The Grade 10 and 11 assessment syllabi are included for information and guidance, but only the Grade 12 assessment syllabus is mandatory. However Sport and Exercise Science is a THREE year course and therefore learners should have an understanding of all terminology and concepts from previous grades where this forms the basis of work in the next grade(s).

The Assessment Syllabus comprises the following 5 topics:

- Anatomy and Physiology
- Training and Biomechanics
- Psychology and Ethics
- Health and Injuries and Rehabilitation
- Nutrition

The Assessment Syllabus follows after the SBA requirements.

2. SCHOOL BASED ASSESSMENT

2.1 Preliminary Examination/Trial Paper (25 marks out of 100)

This component must come from the last major summative assessment to have taken place before the Final NSC Examination period. The examination should mimic the external examination in its design, rigour and format.

2.2 Controlled Tests (two tests: each to count 15 out of 100)

Controlled tests are written by the entire grade (preferably at the same time). These should count at least 50 marks each and must assess deeply within one Topic or across Topics. 60% of the marks should relate to lower order thinking skills (knowledge, comprehension and application) and 40% to higher order thinking skills (analysis, synthesis and evaluation).

2.3 Tasks (three tasks: each to count 15 out of 100)

The tasks must be chosen from the following options and done individually:

2.3.1 Oral Presentation

This task requires a verbal presentation on a sporting or nutritional issue. The topic must require learners to gather and process information and then present it orally. The presentation must include an introduction, body and conclusion. Visual aids such as ®Power Point may be used to assist the learner. The content should be the main focus of attention and count for at least 80% of the mark. The delivery and presentation should not count for more than 20% of the mark. Hard copy evidence of the presentation must be included in the Learner's File. This could be in the form of cue cards or ®Power Point slides for example.

2.3.2 Visual Task

This task should be a product that communicates information visually, for example a brochure, booklet, poster, blog/vlog or YouTube clip. The product should be based on an issue related to sport or sport performance. The assessment of the content should supersede attractiveness. The content should count at least 80% of the mark. This means that the presentation should not count for more than 20% of the overall mark. Hard copy evidence of the task, for example photographs of the brochure, booklet or poster must be included in the Learner's File.

2.3.3 Case Study

This task involves the analysis and interpretation of a suitable text / article published or reported on in a credible source. The information should relate to a real-life issue / problem in the field of Sports Science, e.g. Stretching before exercise can cause injury. The text / article must be accessible to Grade 12 learners and highlight authentic scientific information or research related to the Assessment Syllabus for Sport and Exercise Science. The article should include some form of data handling (analysis, interpretation, translation and critique) and/or ethics. Learners are required to analyse the provided information and present their interpretations and opinions / solutions, supported by reasoning and assumptions.

The task must be completed under controlled conditions, in either one or two lessons (the suggested time being 1,5 hours) and count at least 50 marks. If the answers are written across more than two consecutive lessons, the answers that have been completed must be taken in so that they cannot be modified.

2.3.4 Media Review

This task involves the critique of a source in order to report on its quality. It provides opportunity for learners to examine, evaluate and provide a substantiated opinion on information available to the public relating to Sports Science. Teachers must ensure that the sources are of appropriate context and rigour.

Learners must read/watch one of the following:

- Book, e.g. an autobiography or biography on an athlete
- Magazine / Newspaper Article, e.g. article in Sports Illustrated
- Film, e.g. Concussion
- Episode/s from a TV Series, e.g. Science of Stupid
- Internet Site, e.g. Youtube

The task around reviewing whichever form of media is chosen must include:

- A summary of the storyline and context.
- A detailed review which includes reference to the text, personal opinion and links to the appropriate Topics in the Sport and Exercise Studies
- · Assessment Syllabus.
- A 40% HOT component showing insight, critique, comparisons or any other appropriate format.
- · Appropriate referencing.

2.3.5 Practical Task

This task gives learners the opportunity to carry out a practical activity/ies that demonstrate their applied knowledge and skills in the subject. The task may be set on any topic EXCEPT the one that the PAT is based on for that year. Teachers must ensure that the context and rigour of the task are appropriate for Grade 12. The task must involve some research and evaluation.

Moderation at School Level

It is expected that moderation of the assessment process has taken place at school level to ensure that assessment is valid, fair and reliable. This includes moderation of assessments before they are done by learners, moderation of the marking of the learner evidence by the teacher/assessor and checking of the calculations of learners' results. Evidence of this having taken place must be included in both the Teacher's and Learner's Files.

Compilation of the Teacher's SBA File

The Teacher's SBA File is to be set out in the following way and must be submitted for national moderation in a suitable soft covered file.

Cover Sheet for Teacher's File	Refer to D 1.1
Mark Schedule	Refer to D 1.3
Rank Order List	Refer to D 1.4
List of candidates selected by IEB (if applicable)	Sent to schools by IEB/DBE
All SBA items with marking guidelines and design grids	
(for tests and exams) in the following order:	
Preliminary Examination	
Two Controlled Tests	
Three tasks chosen from the available options	
In cases where the learner's best pieces of work have	
been selected, the full range of assessments must be	
included in the Teacher's File.	
Evidence of school moderation	
List of Omissions (if applicable)	

Compilation of the Learner's SBA File

The Learner's File is to be set out in the following way and must be submitted for national moderation in a suitable soft covered file.

Cover Sheet for Learner's File Cole Books	Refer to D 1.2
Statement of Authenticity	Refer to D 1.7
Marked SBA items with feedback in the following order	
Preliminary Examination	
Two Controlled Tests	
Three tasks from of the available options	
Declaration of Omissions (if applicable)	Refer to D 1.8

3. PRACTICAL ASSESSMENT TASK

The purpose of the PAT is for learners to apply their theoretical knowledge and understanding of Sports and Exercise Science to a series of practical activities based in a real-life context. The PAT must be done individually by the learners.

The IEB sets the PAT each year and it is made available to schools at the beginning of the year.

Management of the conduct of the PAT is the responsibility of the school and the assessment must take place in accordance with the instructions provided with the PAT.

Learners submit a Portfolio of Evidence which is moderated nationally by a panel.

Operational Plan:

- In January each year, the IEB sends instructions to schools for the conduct of the PAT including the scenario and the skills / techniques candidates will be required to demonstrate.
- The PAT should run in accordance with the individual programmes of schools.
- Schools will be required to submit evidence of the PAT in Teacher and Learner Files to the IEB by the end of September. National moderation will take place ahead of the December marking session.
- 10% or 5 or all (if there are less than 5 learners) of the Learner Files must be submitted for national moderation. Teachers must select files that show a range of marks.



SPORT AND EXERCISE SCIENCE ASSESSMENT SYLLABUS

TOPIC 1: ANATOMY AND PHYSIOLOGY

Grade 10	Grade 11	Grade 12	
Skeletal system Structure and type of bones Long Short Irregular Flat Functions of bones Protect Support Movement Blood production Axial and appendicular skeletons Muscular system Smooth, cardiac & skeletal Names of muscles (see below) Cardiovascular system Function (transport, temp control, protection) Systemic circuit Pulmonary circuit Structure and function of blood vessels Arteries Veins Capillaries Structure of the heart and cardiac cycle	Skeletal system Structure & function of joints Fixed Partly moveable Freely moveable/synovial Tendons Ligaments Bone growth: ossification Basic structure of bone tissue: Spongy bones Compact bones Muscular system Structure of muscles – fibres Slow versus fast twitch (structure and function) Type 1 Type 2a Type 2b Agonist versus antagonist Structure of muscle spindles Types of muscular contractions isotonic concentric contraction isometric contraction Sistematic isotonic eccentric contraction Sistematic isotonic eccentric contraction Sistematic isotonic eccentric contraction Bisotonic expectation Sistematic isotonic eccentric contraction Sistematic isotonic eccentric entraction entraction Sistematic isotonic eccentric entraction en	Skeletal system	

Respiratory system

Structure & function of:

- Trachea
- Bronchi
- Bronchioles
- Lungs
- Alveoli

Circulatory system

- Function of blood
- Blood composition
- Function of:
 - Red cells
 - White cells
 - Platelets
 - Plasma

Somatotypes and plotting on somatograph

Anatomical terms

- Anterior, posterior
- Medial, lateral
- Proximal, distal
- Deep, superficial
- Prone, supine
- Flexion, extension
- Dorsiflexion, plantarflexion
- Adduction, abduction
- Supination, pronation
- Rotation, circumduction

Sleep and effects of sleep deprivation on performance

Respiratory system

Ventilation during exercise

- Tidal volume
- Frequency
- Minute ventilation
- Gaseous exchange
- Anticipatory Rise

Thermoregulation

Vision

- Structure and function of the eye, including binocular vision and accommodation
- Eye-hand co-ordination, depth perception, peripheral vision

Effects of travel, including diet, on performance

- Circadian rhythms
- Jet lag
- Travel fatigue
- Sleep loss and sports performance

Blood redistribution during exercise

- Vascular shunt
- Venous return

Vision

- Dynamic visual acuity
- Eye tracking
- Visual concentration
- Visual reaction time

Muscles to study:

Pectoralis major; rectus abdominus, gluteal muscle, internal & external obliques, erector spinae, trapezius, latissimus dorsi, serratus anterior, triceps, biceps, quads, hamstring, ilioposoas, soleus, tibialis anterior, gastrocnemius

Bones to study:

Cranium, clavicle, scapula, sternum, ribs, humerus, radius, ulna, ilium, sacrum, pubis, carpals, metacarpals, phalanges, femur, patella, tibia, fibula, tarsals, metatarsals, vertebral column, differentiate between lumbar, thoracic and cervical bones in spine

TOPIC 2: PSYCHOLOGY AND ETHICS

Grade 10	Grade 11	Grade 12
Personality types	Goals	Stress
A and B and their impact on sport	Types: short, medium, long	Causes of stress and eustress and the impact on
Motivation: intrinsic and extrinsic	Goal setting	performance
Definition & symptoms of:	SMARTER	
Cognitive anxiety	- SWARTER	Arousal
Somatic anxiety	Gender Stereotypes	 Positive and negative effects of arousal in spor
State anxiety		– Hull
Trait anxiety	Positive and negative impact of media on sport	 Yerkes and Dodson inverted U
 Competitive anxiety 		 Different sports/skills
	Focus & concentration	Catastrophe theory
portsmanship including		
Code of Conduct	Achievement Motivation	Coping techniques:
Ethics	 High need to achieve (Nach) 	Self talk
Morals	Low Nach	Imagery
Etiquette	High need to avoid failure (Naf)	Visualisation
Every least of upothical haboviour as a cladding hall	Low Naf	 Relaxation methods: progressive relaxation,
xamples of unethical behaviour, e.g. sledging, ball ampering, rule violation		breathing control
ampening, rule violation	Communication	Crave demande
aggression	Verbal communication	Group dynamics
Types of aggression	Non-verbal communication	Group size, Ringelmann effect, Social loafing Formion of the state of the sta
Hostile aggression		Forming, storming, norming, performing
 Channelled aggression/assertive behaviour 	Feedback	Team cohesion: social, task
	Positive feedback	Factors impacting on growth and motor
Causes of aggression	Negative feedback	development and participation
 Social learning 	General feedback	Socio-economic status, nutrition, family size,
 Instinct theory 	Intrinsic feedback	climate, quota system, race discrimination, sex
 Frustration aggression 	Extrinsic feedback	discrimination, disability
 Aggressive cue 		disonifination, disability
eadership styles	Knowledge of performance	Disabled sport
Autocratic		Sensory:
Democratic		Visual impairment and Hearing impairment
Laissez-faire		Physical disability
Task-centered		Intellectual disability
Relationship-centered		Special Olympics

Matu	ırΔ	Vareue	nurture

- Different theories
 - Interactional approach
 - Trait theory

Information processing

- Input
- Decision making
 - Limited channel capacity
 - Selective attention: short term memory and long term memory
- Output
- Feedback

Performance enhancing drugs

- Effects on the body and performance
- Stimulants, beta-blockers, diuretics, steroids, blood doping and EPO

Drug testing process

Methods of controlling aggression

- Cognitive
- Somatic



TOPIC 3: NUTRITION

Grade 10	Grade 11	Grade 12
Food groups and portion size Basal metabolic rate Importance and relevance of each of the following organic compounds to an athlete: • Fats - Saturated - Monounsaturated - Polyunsaturated • Carbohydrates - Simple - Complex • Protein Importance and relevance of each of the following minerals to an athlete • Iron • Calcium • Magnesium • Sodium • Potassium • Zinc Basic cell structure covering • Nucleus • Mitochondria • Cell membrane • Cytoplasm	Energy Role of ATP as an energy-carrier in the cell Types of energy systems ATP/PC or Alactic system Lactic Acid system or Glycolytic Aerobic or Oxidative Ino biochemical detail of glycolysis, Krebs cycle or oxidative phosphorylation is required Types of energy drinks Fluids and their effect Hydration Dehydration Over-hydration Interpreting food labels for an athlete Appropriate quantities of essential nutrients Understanding ingredients in supplements Determining whether food is healthy or not by correctly interpreting data on label Determining whether food Is sport specific by correctly interpreting data on label	Energy systems and effects on exercise How the various energy systems are used in sport Energy output per system Thresholds Types of training that affect energy system/s Onset Blood Lactate Accumulation (OBLA) Diet Effects of diet on the body and performance: Pre-, during- and post-exercise/performance, including hydration Low versus High GI foods for an athlete Eating disorders and impact on performance: Anorexia, Bulimia Obesity

TOPIC 4	: TRAINING	AND BIO	MECHANICS

Grade 10	Grade 11	Grade 12
Fitness Components Health related Cardiorespiratory endurance Muscular endurance Muscular strength Body composition Flexibility Skill related Power Speed Agility Co-ordination Reactions Balance Neuromuscular skills Core Principles of Training Frequency Intensity Duration Overload Specificity Adaptation Regularity Reversibility Rest and recovery	Types of Training and the advantages and disadvantages of each Cardiovascular Continuous training Interval training Fartlek training Strength Weight training (isotonic, isokinetic, isometric); Core training Plyometric training Resistance training Speed and Agility: Assisted and Colebooks Resisted Circuits, Training zones/heart rate zones Cardio Strength Core strength and how to train/improve it Classification of levers Types of forces found in sport Internal External forces – horizontal & vertical	Levers Effects of levers and lever length in sport Force summation and timing of body segments Fluid forces and influences in sport Drag Surface drag; Form drag Buoyancy Lift Bernoulli principle Air resistance and friction Aerodynamics in sport Spin Magnus effect Top spin Side spin Back spin Back spin Back spin Bricts of playing surfaces on an object Rotation Implication in sport Vertical rotation Transverse rotation Antero posterior rotation Momentum
Warm ups and all forms of stretching Ways to improve flexibility • Static stretching Active Passive	Net force, balanced force, unbalanced force Action & reaction forces Velocity	 Linear momentum Angular momentum Transfer of momentum Angular, Linear and General motion
Isometric PNF	Acceleration	Effects of Centre of Gravity and Stability in sport

- Dynamic stretching Ballistic Active isolated Resistance /loaded
- Myofascial release

Muscular strength

- Static
- Dynamic
- Explosive

Fitness

- Definition
- Factors that affect fitness
 - Age
 - Sex
 - Somatotype
 - Strength, power, flexibility, stamina
 - Diet
 - Neuromuscular skill
 - Heredity
 - Drug use
 - Environment
- Fitness training process: warm up, fitness phase, skill phase, warm down
- Fitness testing
- Different tests for different fitness components
- Reliability of fitness testing

Motor patterns and skills

Types of skills

- Motor
- Cognitive
- Perceptive

Classification of skills

- Muscular involvement gross vs fine
- Environmental influence open vs closed
- Pacing internal vs external
- Difficulty simple vs complex

Three phases of learning skills

- Cognitive / planning
- Associative / practice
- Autonomous / perfection

Transfer of skills

- Visual
- Verbal
- Manual
- Whole part whole Books
- Mass
- distributive

Talent identification

Centre of gravity/mass

Performance differences between sexes

Relationship between strength and motor performance and:

- Size
- Physique
- Body composition
- Age

Newton's Laws in sport

Define and apply in sport

Reaction time

- Movement time
- Response time
- Factors impacting on reaction time
- Ways to improve reaction time

Periodisation – including undulating periodisation Taper and Peak

Altitude

• Effects of altitude and various types of altitude training on performance

Exercise adherence

Long term athlete development

- Managing focus, volume and type of training applied to athletes as they develop through adolescence into adulthood.
- 7 stages of LTAD

Fatigue; Overtraining; Burnout and DOM's

- Definition
- Causes
- Signs and Symptoms (mental & physical)
- Prevention
- Treatment

TOPIC 5: HEALTH, INJURIES AND REHABILITATION

Grade 10	Grade 11	Grade 12
Injuries Causes and treatment of: Blisters Cramps Nose bleeds Asthma Fractures Strains Sprains Contusions Concussion Shin splints Stitch Osgood Schlatter disease Sever's disease Patellofemoral Pain syndrome Pain Cycle RICER/R (Rest, Ice, Compression, Elevation and Referral) Hyperventilation Causes and treatment Effects of the following on the body and performance: Smoking Tuberculosis Alcohol	Injuries Causes and treatment of: Ligament damage, Dislocations, Joint injury, Tendon damage, Muscle tears Strategies to avoid above injuries Cardiopulmonary resuscitation (CPR) Effects of the following on the body and performance: Blood pressure EcoleBooks Cholesterol Diabetes Cardiovascular diseases, e.g. atherosclerosis and arteriosclerosis Bone disorders that will impact on movement, e.g. osteoporosis	Injuries

D. ADMINISTRATIVE DOCUMENTS AND APPENDICES

1. ADMINISTRATIVE DOCUMENTATION FOR SBA

- 1.1 Cover Sheet for Teacher's File
- 1.2 Cover Sheet for Learner's File
- 1.3 Teacher's Record of SBA Marks
- 1.4 Rank Order List
- 1.5 National Moderation Tool
- 1.6 Final Moderation Feedback form to IEB
- 1.7 Example of Letter of Authenticity
- 1.8 Example of Declaration of Omissions

2. APPENDICES

2.1 Appendix A: Example of a Design Grid





NATIONAL SENIOR CERTIFICATE EXAMINATION SPORT AND EXERCISE SCIENCE COVER SHEET FOR TEACHER'S SBA FILE

School:	
Teacher's Name:	

SUPF	PORTING DOCUMENTATION	Evidence provided
1	IEB Moderation Selection List (where Learner Files have been requested)	
2	Teacher's Record of SBA Marks	
3	Rank Order List for ALL Learners in the grade	
4	Evidence of School (or External if one person department) Moderation	

EVIDENCE OF SBA ITEMS

This Section must contain:

- All assessments done by learners. Where Learners have a choice of tasks to include, copies of ALL Tasks and Marking Guidelines must be available in the Teacher's File.
- Design grids for the exams and tests
- Marking Guidelines for each assessment (Memoranda, Rubrics, etc.)

Preliminary Examination	
Controlled Test 1	
Controlled Test 2	
Tasks: Indicate options included	
Option 1: Oral Presentation	
Option 2: Visual Task	
Option 3: Case Study	
Option 4: Media Review	
Option 5: Practical Task	

1.2 CANDIDATE'S SBA COVER SHEET



NATIONAL SENIOR CERTIFICATE EXAMINATION SPORT AND EXERCISE SCIENCE COVER SHEET FOR LEARNER'S SBA FILE

(To be filled in by the candidate and controlled by the teacher)

		/25
		/15
		/15
ÉcoleBo	ooks	
		/15
		/15
		/15
	Total (100)	
	ÉcoleBo	Total (100)



NATIONAL SENIOR CERTIFICATE EXAMINATION SPORT AND EXERCISE SCIENCE TEACHER'S RECORD OF SBA MARKS

EXAM NO.	NAME	PRELIMINARY EXAMINATION		OLLED STS	TASK 1	TASK 2	TASK 3	TOTAL
		25	15	15	15	15	15	100
			Écol	eBooks				

O: -	nature of Teacher:	D-1	Olava a transport Dala alia a la	D - 1
\sim 10	inatilità ot i pachar.	Date:	Signature of Principal:	Date:
\mathbf{c}	mature of reaction.	Date.	Olymature of Frincipal.	Daic.

1.4 SBA RANK ORDER SHEET



25

NATIONAL SENIOR CERTIFICATE EXAMINATION SPORT AND EXERCISE SCIENCE SBA RANK ORDER LIST

asse	essment r	matters															
CENT	RE NO)															
CANDIE	DATE	S LIS	TED	IN R	ANK	ORD	ER O	F MA	RKS	(HIG	HEST	гто	LOWE	ST)			
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NATIONAL SENIOR CERTIFICATE EXAMINATION SPORT AND EXERCISE SCIENCE NATIONAL MODERATION TOOL FOR SBA

SCHOOL	DATE
TEACHER'S NAME	CENTRE NO:
MODERATOR	

Compliance	Completed Teacher's SBA Cover Sheet included	IEB / DBE Selection List included	Mark Schedule completed correctly and signed by the Principal	Completed Rank Order List included Books	Proof of School/External Moderation provided	Irregularities clearly documented
Сощр	This row applies to Learner's SBA only	Suitable file used	Completed and correct Learner's SBA Cover Sheet included	Declaration of Authenticity provided	Declaration of Omissions provided (if applicable)	

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	Rating Scale 1. Does not meet	the require	ments at	all 2 S	ome impo	rtant omiss	ions 3	Some minor omissions. 4. Meets the requirements fully.
		Clear instructions/ question papers provided	Task of required	Completed Grid to justify design	Appropriate and clear Marking Cuidelines	Consistent assessment against marking guidelines	Φ _	Comments with regards to compliance with SAGs
	Preliminary Examination							
Quality	Controlled Test							
ď	Controlled Test 2						coleBo	oks
	Task 1							
	Task 2							
	Task 3							
Mode	rator's Signatur	e:					Date:	

1.6 FINAL MODERATION FEEDBACK FORM TO IEB



NATIONAL SENIOR CERTIFICATE EXAMINATION SPORT AND EXERCISE SCIENCE FINAL MODERATION FEEDBACK FORM FOR SBA

To be completed and retained by the IEB

Examination Cen	tre Number:					
The candidates red	quired to submit Learner Fil	es for moderati	ion (candidates	supplied	d by IEB)
	Examination number	School Mark (%)	Moderated Mark (%)			
	Ga					
		:coleBooks				
Comments:						
Recommendation	ıs:					
SBA MARKS SHO	ULD BE ACCEPTED WITH	OUT ALTERA	TION		Yes	No
Change recommer	nded by moderator:					
Characta ha issal						
Change to be imple	ementea:					
00414			_			
SBA Moderator's s	signature		Date:	<u> </u>		

1.7 LETTER OF AUTHENTICITY



NATIONAL SENIOR CERTIFICATE EXAMINATION SPORT AND EXERCISE SCIENCE LETTER OF AUTHENTICITY

School Letter	head
DECLARATION BY THE CANDIDATE	
I hereby declare that all the work contained in this S I have made use of any source, I have acknowledged this	
LEARNER NAME	DATE
I agree that, if it is determined by the competent authori activities whatsoever in connection with the contents marks gained for this assessment.	
LEARNER NAME	DATE
DECLARATION BY THE CANDIDATE'S TEACHER	
As far as I know, the above statement by the candidate i his/hers.	is true and I accept that the work offered is
TEACHER	DATE



NATIONAL SENIOR CERTIFICATE EXAMINATION SPORT AND EXERCISE SCIENCE DECLARATION OF OMISSIONS

To be included in place of a missing SBA piece

	SCHOOL LET	TERHEAD
Learner Nam	e:	Grade:
SBA Task: _		
The learner ha	as failed to include the set SBA task f	or the following reason:
	Illness. Doctor's note attached.	Books
	The completed task is lost, but a ma	rk is recorded.
	complete my Sport and Exercise Sc	have failed to report on an alternate date to ience SBA Task. This means I will receive 0% ne for my own failure to complete the task on
		have failed to hand in a Sport and Exercise Il receive 0% for the task. I am completely to the task on time or not at all.
	Other:	
The learner w	ill have the following assessment refl	ected on the mark sheet for the task
Teacher's Sig	nature	DATE
Learner's Sigr	nature	DATE

2. EXAMPLE OF A DESIGN GRID

			SPORT AN	D EXERCISE S	CIENCE D	ESIGN G	RID						
Question Number		Topics (insert	√ in appropr	iate column)		Cognitive Levels (insert marks)							
	Anatomy and	Training and	Psychology	Health and Injuries and	Nutrition	1	2	3	4	5	6		
	Physiology	Biomechanics	and Ethics	Rehabilitation	Tuti iii	30%	15%	15%	10%	15%	15%		
				École	Books								
OTALS		ı	ı	ı	1								
ARGET VEIGHTING							60%			40%			
CTUAL VEIGHTING													