Definition of the domain for summative evaluation

BLG-5066-1

Biology Secondary V

The Human Skeletal and Muscular System

Reach for your Dreams

Québec

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The Human Skeletal and Muscular System

Formation professionnelle et technique
et formation continue

Direction de la formation générale
des adultes

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1. Introduction

This definition of the domain for summative evaluation describes and classifies the essential and representative elements of the *Biology* program—specifically, for the course *The Human Skeletal and Muscular System*. It presents an overview of the program, but should by no means replace the program itself. The purpose of defining the domain is to ensure that all the instruments for summative evaluation are consistent with the overall program.

This definition of the domain is organized in the same way as it is in other courses. The content of each section is, however, specific to this course.

The definition of the domain for summative evaluation is used to prepare examinations that are valid from one version to another, from year to year, and from one school board to another, taking into account the responsibilities shared by the Ministère de l'Éducation and the school boards.

2. Program Orientations and Consequences for Summative Evaluation

Orientations	Consequences
The purpose of this program is to help students acquire knowledge of human anatomy and physiology.	Evaluation will test the students' knowledge of anatomical and physiological concepts of the human skeletal and muscular system.
The purpose of this program is to help students understand how the human body functions.	Evaluation will test the students' understanding of how the human skeletal and muscular system functions.
The purpose of this program is to help students understand the causes and effects of the principal health disorders associated with the human body and the factors that contribute to its health.	Evaluation will test the students' ability to establish relationships between acquired anatomical and physiological concepts and the principal health problems associated with the human skeletal and muscular system.

3. Course Content for Purposes of Summative Evaluation

Themes

- **Anatomy of the Skeletal and Muscular System**

  – Description of a long bone:
    - name of components
    - description of components
    - role of components
    - diagram

  – Types of joints:
    - fixed, mobile and semi-mobile

  – Role of joints and related anatomical structures:
    - cartilage, bursa, tendons and ligaments

  – Bones of the skull

  – Spinal column and rib cage

  – Upper and lower limbs

  – Types of muscles

  – Organization of skeletal muscles

- **Physiology of Skeletal and Muscular System**

  – Long-bone formation:
    - stages in long-bone formation and growth
    - essential nutrients and principal food sources

  – Joints of limbs and possible basic movements

  – Functions and properties of muscles

  – Muscle contraction

  – Muscle fatigue and tetanus

  – Forearm flexion and extension

- **Skeletal and Muscular Health and Hygiene**
  - Effects of muscular exercise on the human body
  - Importance of good posture
  - Bone fractures
  - Health disorders associated with the skeletal and muscular system

Skills

- **Describing:** Observing, identifying or recalling the characteristics of a phenomenon or the components of a system.
- **Explaining:** Showing in a structured way the nature and interaction of complex relationships between objects or phenomena.

4. Table of Dimensions

Themes / Skills	Anatomy of the Skeletal and Muscular System 41%	Physiology of the Skeletal and Muscular System 33%	Skeletal and Muscular Health and Hygiene 26%
Describing 70%	Description of long bone (5%) Types of joints (5%) Bones of the skull (5%) Spinal column and rib cage (5%) Upper and lower limbs (5%) Types of muscles (5%) Organization of skeletal muscles (5%) **(1) 35%**	Long-bone formation (5%) Limb joints and possible basic movements (5%) Functions and properties of muscles (5%) **(3) 15%**	Effects of muscular exercise (5%) Bone fractures (5%) Skeletal and muscular disorders (10%) **(5) 20%**
Explaining 30%	Role of joints and related structures **(2) 6%**	Muscle contraction (6%) Muscle fatigue and tetanus (6%) Forearm flexion and extension (6%) **(4) 18%**	Importance of good posture **(6) 6%**

5. Observable Behaviours

Dimension 1

- Name the structures indicated on a diagram of a long bone and associate each of these structures with roles and descriptive elements appearing on a list. (The list should contain more roles and descriptive elements than are required.) (5%)
- Given a diagram of two joints, specify for each of them the type of joints illustrated, its role and its pertinence. (5%)
- Name the bones indicated on a diagram of the skull. (5%)
- Specify the type of ribs and vertebrae indicated on a diagram of the spinal column and rib cage. (5%)
- Name the bones indicated on a diagram of the upper limbs and on one of the lower limbs. (5%)
- Classify various muscles as smooth, skeletal or cardiac, and justify the classification. (5%)
- Given a series of statements, choose those that correctly describe the organization of a skeletal muscle. Correct false statements to make them valid. (5%)

Dimension 2

- Given a series of statements, choose those that correctly explain the role of joints and related anatomical structures. Correct false statements to make them valid. (6%)

Dimension 3

- Given a series of statements, choose those that correctly describe the stages in long-bone formation and growth or that associate essential nutrients with the development and maintenance of good bone structure. Correct false statements to make them valid. (5%)
- Associate a joint of the upper or lower limbs with the basic movements that are possible for this joint. (5%)
- Associate the functions and properties of muscles with their definition and with concrete examples illustrating them. (A list of possible movements is provided for the student.) (5%)

Dimension 4

– Arrange in the correct sequence true statements that explain the process of muscle contraction. (6%)

– Given a series of statements, choose those that adequately explain muscle fatigue or tetanus by relating these statements with the process of muscle contraction. Correct false statements to make them valid. (6%)

– Given true statements about forearm flexion or extension, choose those that pertain to a given movement and arrange these statements chronologically to explain this movement. (6%)

Dimension 5

– Given a series of statements, choose those that adequately explain the effects of muscular exercise on the human body. Correct false statements to make them valid. (5%)

– Given a series of statements, choose those that adequately describe types of bone fractures, the methods used to immobilize them and the repair process of a fracture. Correct false statements to make them valid. (5%)

– Associate certain skeletal and muscular disorders with the following elements of information: symptoms, affected structures, causes and effects. (Elements of information are chosen from a list that contains more elements than are required.) (10%)

Dimension 6

– Given a series of statements, choose those that adequately explain and illustrate the importance of good posture. Correct false statements to make them valid. (6%)

6. Explanation of Content and Weighting

In establishing the relative importance of the themes *Anatomy*, *Physiology* and *Health and Hygiene*, greater weight has been assigned to understanding how the skeletal and muscular system functions and the factors that help maintain its health, than to memorizing anatomical structures.

The relative importance of each skill to be developed has been determined by adding up the weightings given to the observable behaviours pertaining to that skill.

On the basis of the tasks prescribed by the terminal objectives of the program, the weighting of the themes and skills has been established as follows:

Dimensions related to the theme *Anatomy*	41%
Dimensions related to the theme *Physiology*	33%
Dimensions related to the theme *Health and Hygiene*	26%
Dimensions related to the skill *Describing*	70%
Dimensions related to the skill *Explaining*	30%

7. Description of the Examination

A. Type of Examination

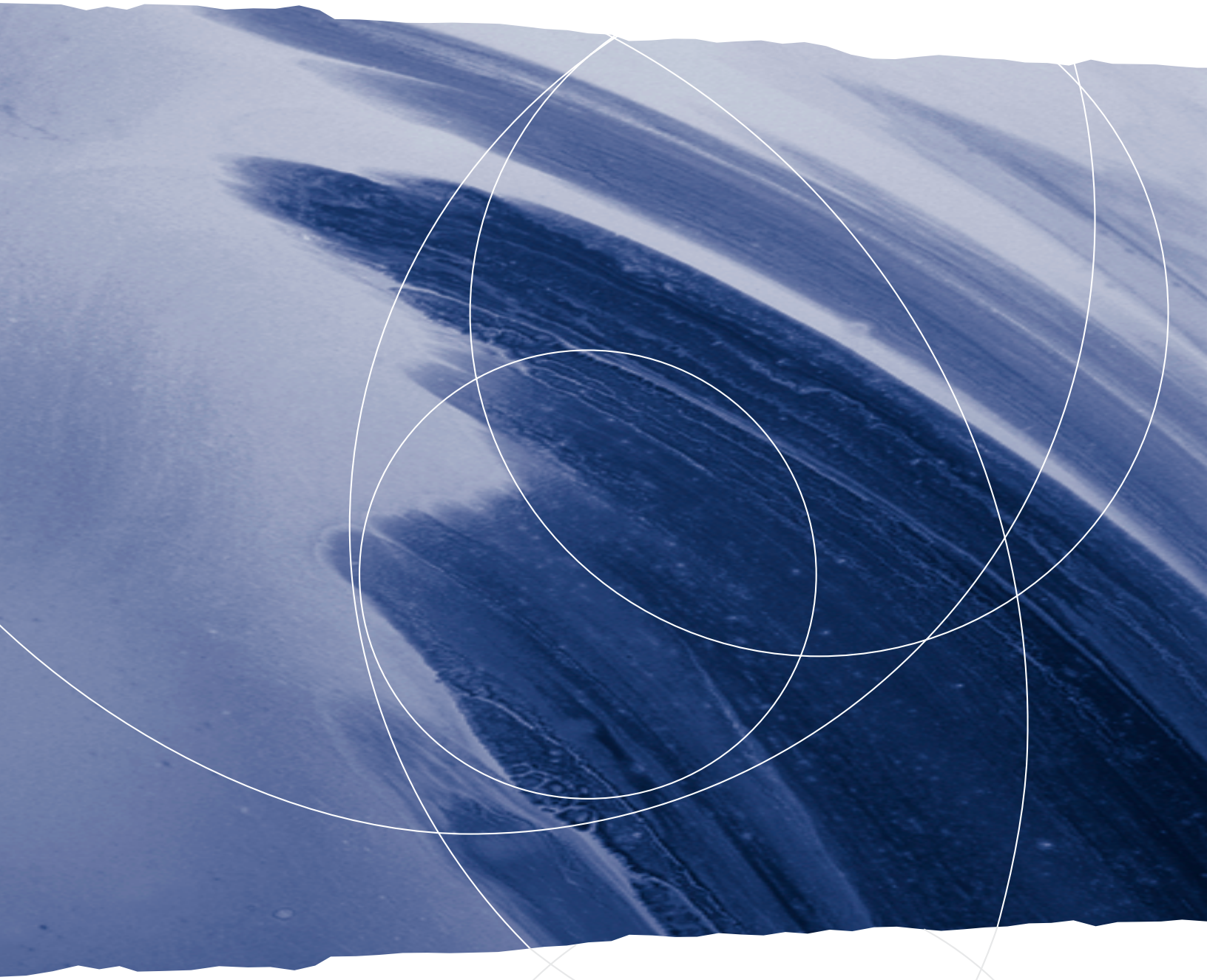
The summative examination is a written examination administered at the end of the course. It is designed to measure all of the dimensions and counts for 100% of the final mark. It consists of structured-response and short-response items.

B. Characteristics of the Examination

The examination is written at the end of the course in a single session lasting no more than 120 minutes.

C. Pass Mark

The pass mark for the entire examination is 60%.



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