DEFINITION OF THE EVALUATION DOMAIN FOR CERTIFICATION AND RECOGNITION

Course

Geometric Representations and Transformations

MTH-2102-3

Common Core Basic Education Program

Mathematics

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Introduction

The Definition of the Evaluation Domain (DED) ensures consistency between a course and the related evaluation instruments. It serves to select, organize and describe the essential and representative elements of the course. The DED is based on the program of study and on the course, but should by no means replace these in the planning of instructional activities.

The DED is the reference document that ensures the validity of examinations across the province[1]. This document serves as a framework for developing multiple equivalent versions of an evaluation instrument.

The DED for each ministerial examination is developed by the *ministère de l'Éducation, du Loisir et du Sport* (MELS). The DED for other types of examinations is developed either by MELS or, at the request of the school boards, the Société GRICS (BIM). For ethical reasons, only those responsible for developing Definitions of the Evaluation Domain can modify their content.

Examinations developed by the MELS conform to the content of their respective DEDs. It is recommended all other examinations be in agreement with the DEDs.

[1] Québec, Ministère de l'Éducation du Québec, *Policy on the Evaluation of Learning* (Québec: Gouvernement du Québec, 2003), 47.

Evaluation Content

General Information

Broad Areas of Learning

- Health and Well-Being
- Environmental and Consumer Awareness
- World of Work
- Citizenship

Subject Area

- Mathematics, Science and Technology

Class of Situations

- Representing the Physical Environment and its Transformations

Program of Study

- Mathematics

Course

- Geometric Representations and Transformations MTH-2102-3

Essential Elements Targeted by the Evaluation

Competency

- To deal with a real-life situation pertaining to the class of situations targeted by the course.

Categories of Essential Knowledge

- Plans
- Geometry of transformations
- Plane figures
- Solids
- Measurements
- Arithmetic
- Proportional relationship

Evaluation Criteria and Weighting

Evaluation Criteria for the Competency

Forms an appropriate and realistic perception of the physical environment and its transformations (25 %)

Produces clear and appropriate representations of the physical environment and its transformations (25 %)

Accurately determines measurements and ratios (30 %)

Proficiency in Mathematical Knowledge

Proficiency in mathematical knowledge presupposes its acquisition, understanding, application and mobilization, and is therefore linked with the evaluation criteria for the competency*.

* Explicit evaluation of mathematical knowledge (20 %)

Explanation of the Evaluation Content

Evaluation Criteria

The evaluation criteria are formulated exactly as in the course.

Information Clarifying the Evaluation Criteria

Forms an appropriate and realistic perception of the physical environment and its transformations

This criterion measures the adult's ability to:

- decode the symbols, notations and terms associated with arithmetic and geometric language;
- deduce implicit information in the representations of the physical environment and its transformations;
- identify shapes, quantities, alterations and movements in geometric representations.

Produces clear and appropriate representations of the physical environment and its transformations

This criterion measures the adult's ability to:

- use the symbols, notations and terms associated with arithmetic and geometric language;
- construct geometric figures and transformations suited to the situation;
- use mathematical models to structure their message.

Accurately determines measurements and ratios

This criterion measures the adult's ability to:

- select the appropriate arithmetic operations as a function of the situation under study;
- determine unknown measurements, scale factors or similarity rations, or the scale of a plan;
- deduce measurements based on the properties of congruent and similar figures;
- check the plausibility and consistency of their conclusions.

Proficiency in Mathematical Knowledge

Proficiency in mathematical knowledge is assessed through the evaluation of the competency using tasks related to the evaluation criteria.

For this course, the evaluation of some mathematical knowledge is done explicitly.

Weighting

The weighting for the evaluation of the competency is 80 %. The weighting assigned to the explicit evaluation of mathematical knowledge is 20 % (see the distribution of these percentages in the table).

These weightings were established in order to emphasize the competency while acknowledging the importance mathematical knowledge plays in its development.

Knowledge

Essential knowledge targeted for the evaluation of the competency are many, in the course MTH-2102, under the label *New compulsory knowledge* for the following categories:

- Plans
- Geometry of transformations
- Plane figures
- Solids
- Measurements
- Arithmetic
- Proportional relationship

It is recommended that approximately half of the essential knowledge be the object of evaluating mobilized knowledge, and that approximately one quarter of the essential knowledge be the object of explicit evaluation.

Specifications for the Evaluation Instruments

Examination: Number of Parts, Sections, Procedures and Duration

The examination is comprised of one part, divided into two sections. These sections are included in the same booklet and may be administrated over two sessions.

Should the examination take place over the course of two sessions, it is imperative to separate it into two distinct booklets in order to preserve its confidentiality.

Total length of the evaluation: 2 hours and 30 minutes
Section – *Explicit Evaluation of Mathematical Knowledge*: 30 minutes
Section – *Evaluation of Mobilized Mathematical Knowledge*: 2 hours

Section – *Explicit Evaluation of Mathematical Knowledge*
The tasks to be performed by the adult learner in the section *Explicit Evaluation of Mathematical Knowledge* consist of answering questions leading to short answers or more developed answers.

Section – *Evaluation of Mobilized Mathematical Knowledge*
The tasks to be performed by the adult learner in the section *Evaluation of Mobilized Mathematical Knowledge* are problems to be solved. They are presented in one or more real-life situations associated with Representing the Physical Environment and its Transformations.

Information-Gathering Tools

Section – *Explicit Evaluation of Mathematical Knowledge*
The adult learner answers questions which lead to short answers or more developed answers.

Section – *Evaluation of Mobilized Mathematical Knowledge*
The adult learner solves problems contextualized in real-life situations

Authorized Materials

For both sections of the examination

- Regular or scientific calculator
- A geometry set
- A ruler graduated according to the Imperial system
- A formula sheet appended to the *Adult's Booklet*
- A memory aid

  Specifications:

  - The memory aid, prepared by the adult learner, must not exceed one $8\frac{1}{2} \times 11$ inch single-sided sheet of paper. It may be handwritten or typed (minimum 12-point font; single-spaced) and must be approved by the teacher.
  - Mathematical formulas and examples prepared by the adult learner are permitted on the memory aid.

Assessment Tools

Section – *Explicit Evaluation of Mathematical Knowledge*

- An answer key

Section – *Evaluation of Mobilized Mathematical Knowledge*

- An answer key
- A rubric for the competency, based on criterion-referenced examples of adult learners' reasoning that uses a descriptive scale with five levels

Pass Mark

The pass mark is 60 % for the examination as a whole.

Retakes

The adult learner must retake another version of the entire examination.