

LITERACY TRAINING

ARITHMETIC

DEFINITION OF THE DOMAIN FOR SUMMATIVE EVALUATION

STEP 1

DECEMBER 1998

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1 INTRODUCTION

This definition of the domain for summative evaluation describes and classifies the essential and representative elements of the *Guide to Customized Literacy Training*, specifically, for the section on *Arithmetic*. 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 the summative evaluation instrument is consistent with the overall program.

The definition of the domain for summative evaluation is used to prepare examinations that are valid from one version to another, from one year to another, 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 THEIR CONSEQUENCES FOR SUMMATIVE EVALUATION

Orientations

In the program, learning opportunities are created out of everyday situations to help adults become autonomous.

Students learn the basic concepts they will need in order to learn arithmetic and geometry by means of manipulation exercises and concrete situations designed to help them acquire knowledge and skills.

The program is intended to help students improve their understanding of basic concepts related to numeration and the monetary system.

In the program, students must solve problems they may encounter in everyday life.

Using concrete situations, the program enables students to learn concepts by means of drawings, symbols and mathematical expressions.

Consequences

Summative evaluation items will test the students' ability to act autonomously in everyday situations.

Summative evaluation items will measure the students' knowledge and skills with respect to the basic concepts of time, space and quantity. Evaluation tasks must be related to themes or concrete situations.

Evaluation tasks will test the students' knowledge and skills with respect to the basic concepts related to the decimal base and the monetary system.

Evaluation tasks will involve solving problems related to numbers and basic concepts students may encounter in everyday life.

Summative evaluation items will assess the students' ability to work with drawings, symbols and mathematical expressions.

3 CONTENT AND SKILLS COVERED IN THE PROGRAM FOR PURPOSES OF SUMMATIVE EVALUATION

3.1 Content

Numbers

Basic Concepts:

- Time, space, quantity
- Decimal base
- Monetary system
- The four operations

3.2 Skills

Structuring

Students will be familiar with basic mathematical concepts.

Mathematizing

Students will be able to translate a concrete situation into a mathematical model.

Synthesizing

Students will be able to apply their mathematical knowledge and use it to solve problems related to everyday situations.

4 TABLE OF DIMENSIONS

<p style="text-align: center;">CONTENT</p> <p>SKILLS</p>	<p style="text-align: center;">NUMBERS</p>
<p style="text-align: center;">STRUCTURING 60%</p>	<p>Basic Concepts: - Time, space, quantity - Decimal base - Monetary system - Symbols and vocabulary</p> <p>(1) 60%</p>
<p style="text-align: center;">MATHEMATIZING 15%</p>	<p>Basic Concepts: - Decimal base - Monetary system</p> <p>(2) 15%</p>
<p style="text-align: center;">SYNTHESIZING 25%</p>	<p>Basic Concepts: - Decimal base - Monetary system</p> <p>(3) 25%</p>

5 OBSERVABLE BEHAVIOURS

Relative value of the items

↓	Box numbers in the table of dimensions
	↓
4%	(1) Given an everyday situation, students will be able to answer a series of questions that involve: <ul style="list-style-type: none">- locating an element in a drawing;- locating an element in relation to another;- establishing two quantitative equivalences between different elements in the drawing. (1.01-1.05-1.09)¹
6%	Students will be able to: <ul style="list-style-type: none">- arrange the seven days of the week in order;- add five missing months to complete a list of the twelve months of the year. (1.02)
4%	Students will be able to: <ul style="list-style-type: none">- arrange the numbers 0 to 9 in order when they are presented randomly;- write the symbol corresponding to each of three terms, given a list of five symbols. (1.11)
5%	Using the $<$, $>$ and $=$ signs, which will have been defined beforehand, students will be able to compare five pairs of numbers (i.e., one pair of one-digit numbers, two pairs of two-digit numbers and two pairs of three-digit numbers). (1.19-1.26)
5%	Students will be able to indicate the number that comes before three given numbers that are less than 100 and the number that comes after two given numbers that are greater than 100. (1.20-1.27)
2%	Students will be able to match illustrations of banknotes and coins with the amount that each represents. (1.29-1.32)
3%	Using the $<$, $>$ and $=$ signs, which will have been defined beforehand, students will be able to indicate the greater of two amounts for each of three given pairs of values. (1.34)
2%	Students will be able to arrange five amounts of money in ascending order. (1.35)

1. The numbers written in parentheses after each behaviour are the corresponding objectives in the *Guide to Customized Literacy Training, Book 3, Arithmetic*.

- 4% Given an example of a duly completed receipt, students will be able to identify its basic parts by answering four questions. (1.40)
- 2% Students will be able to fill in the blank spaces to complete two sequences of five numbers from 1 to 99. One sequence will be in ascending order and the other will be in descending order. (1.13)
- 4% Students will be able to form a two-digit number and a three-digit number, given the place value of each digit. (1.14-1.22)
- 5% Students will be able to break down a two-digit number and a three-digit number by giving the place value of each digit. (1.15-1.23)
- 9% Given illustrations representing three sums of money, each presented as a specific number of banknotes and coins, students will be able to perform mental calculations in increments of 2, 5, 10, 20, 25 or 50 and to write the total value represented by these banknotes and coins. (1.31)
- 5% Students will be able to round off five sums of money to the nearest dollar. (1.36)
- 10% (2) Given one one-digit number, two two-digit numbers and two three-digit numbers, students will be able to write them as words. (1.38)
- 5% Students will be able to write a cheque by providing the following five pieces of essential information: date, payee, amount in words, amount in numbers, signature. (1.39)
- 12% (3) Given everyday situations, students will be able to:
- compare six two-digit numbers; (1.21)
 - arrange six three-digit numbers in order; (1.28)
 - identify the place value of a digit.
- 13% Given everyday situations, students will be able to:
- match three sums of money with five given items;
 - compare two sets of five sums of money representing different prices;
 - count a sum of money in increments of 2, 5, 10, 20, 25 or 50 when that amount is presented as a specific number of banknotes and coins. (1.37)

6 JUSTIFICATION OF CONTENT, SKILLS AND THEIR WEIGHTING

Since the program focuses on helping students to become autonomous and to use their acquired knowledge and skills in everyday situations, most of the objectives regarded as prerequisites (P) in Step 1 have been taken into account in the definition of the domain for summative evaluation.

However, the objectives pertaining to the use of a calculator and to the writing of numbers have not been taken into account, because these aspects are difficult to assess using a summative evaluation instrument. It is assumed that these skills will have been assessed by means of formative evaluation.

Since all the prerequisites (P) in Step 1 of the program are related to numbers, the entire examination will focus on numbers.

In Step 1, it is essential that students know and understand the basic mathematical concepts related to numbers. However, summative evaluation will be used to ensure that students are able to apply acquired knowledge to solve problems related to everyday situations. Note that the ability to perform operations will not be assessed in Step 1, since students will not learn to perform the basic operations until Step 2.

As a result, the skills have been weighted as follows:

- Structuring 60%
- Mathematizing 15%
- Synthesizing 25%

7 DESCRIPTION OF THE EXAMINATION

7.1 **Type of Examination**

Each student will take a written examination for purposes of summative evaluation.

7.2 **Duration**

The examination is written in a single session lasting no more than 90 minutes.

7.3 **Materials**

Students **ARE NOT PERMITTED** to use a calculator or any other materials.

7.4 **Pass Mark**

To successfully complete Step 1, students must obtain 60 out of 100 on this examination.

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