Education and Culture DG

Lifelong Learning Programme

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# Ways to improve students achievement in literacy and numeracy skills based by assessment's results

# School No.2

# Independenta, Romania

# Framework objectives sought in the initial testing

## Literacy skills

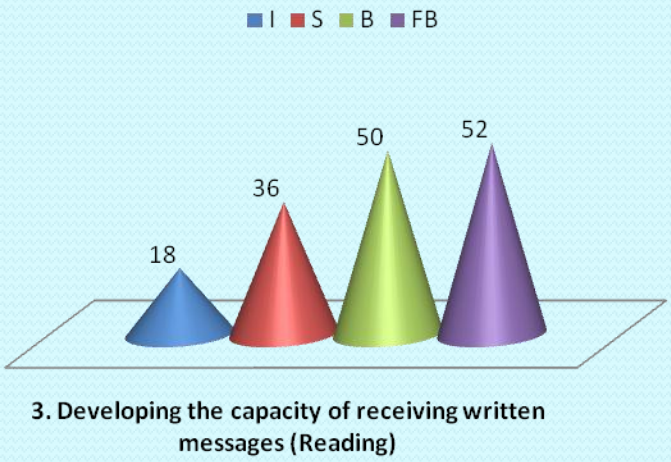
**Framework objective:** *3. Developing the ability of receiving the message in writing (reading)*
**Objectives:**

| | | | | | |
|---|---|---|---|---|---|
| I st Grade | To read knowledge of letters | | | | |
| II nd -IV th Grade | 3.1. to identify letters, groups of letters, syllables, words and statements in a printed text or in a handwritten text | 3.2. to bring about the statements and images that accompany | | | |

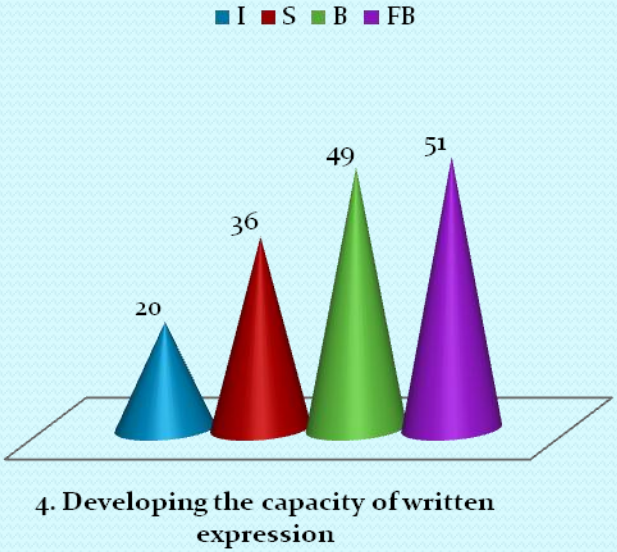
**Framework objective:** *4. Developing the ability of written expression*
**Objectives:**

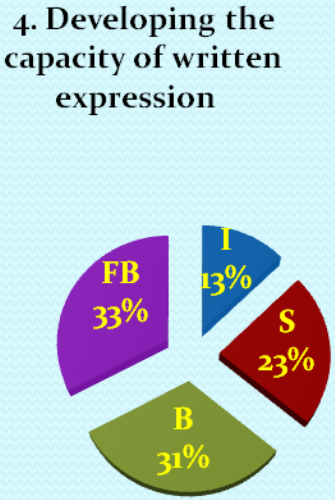
| | | | | | | |
|---|---|---|---|---|---|---|
| I st Grade | To write and to orientate in space specification | | | | | |
| II nd Grade | 4.1.to write correctly letters, syllables and words | 4.2. to write correctly, legibly and neatly short sentences; | 4.3. to use the convention written language | 4.4. to write correctly, clearly and neatly texts | | |
| III rd -IV th Grade | 4.1.to write correctly letters, syllables and words | 4.2. to write correctly, legibly and neatly short sentences; | 4.3. to use the convention written language | 4.4. to write correctly, clearly and neatly texts | 4.4 to use correctly in the texts, the communication elements; | |

# Group for diagnose: 156 students from 1 to 4nd grades
# Framework objectives results for literacy skills to initial tests.







# NUMERACY SKILLS

**Framework objective** *1. Knowledge and use of specific mathematical concepts*
**Objectives:**

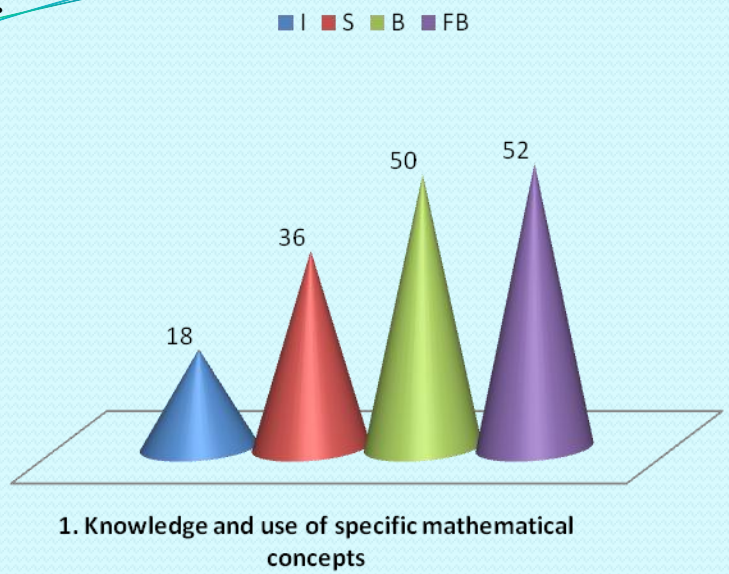
| I st Grade | To be oriented in space | To group objects | To count in concentrat 0-10 | To recognize the figures in concentrat 0-10 | To calculate the oral unit addition and subtraction | To write addition and subtraction in concentrat 0-10 |
|---|---|---|---|---|---|---|
| II nd Grade | 1.1. to understand the decimal system training numbers (in tens and units), using objects justification | 1.2. to write, compare and to order the natural numbers to 0-100 | 1.3. to perform assembly operations and downward<br>- 0-30 in focus, without crossing more notes<br>-0-100 * in focus without crossing orders | | | |
| III rd Grade | 1.1. to understand the decimal system training numbers (in tens and units), using objects justification | 1.2. to write, compare the natural numbers from 0 to 100, compare and order natural numbers less than 1000, using the signs <,>, = | 1.3. to perform assembly operations and decrease:<br>- with from one to 100 nr.naturale without crossing and notes;<br>- by 1 000 nr.naturale from without and crossing orders | | | |
| IV th Grade | 1.1. to understand and use positional of training system of natural numbers less than 1 000 000 | 1.2. to write, compare, order, to make estimations using natural numbers smaller than 1000000 | 1.3. to perform assembly operations and decrease:<br>-with from one to 10 000 nr.naturale without crossing and notes; | 1.4. to make multiplication and division operations with natural numbers less than 100 | | |

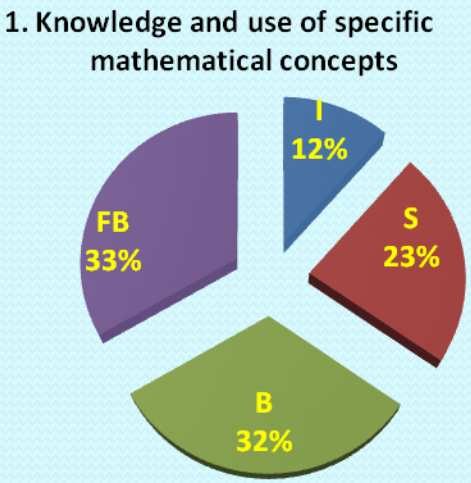
**Framework objective:** *2. Developing capacity of solving problems*

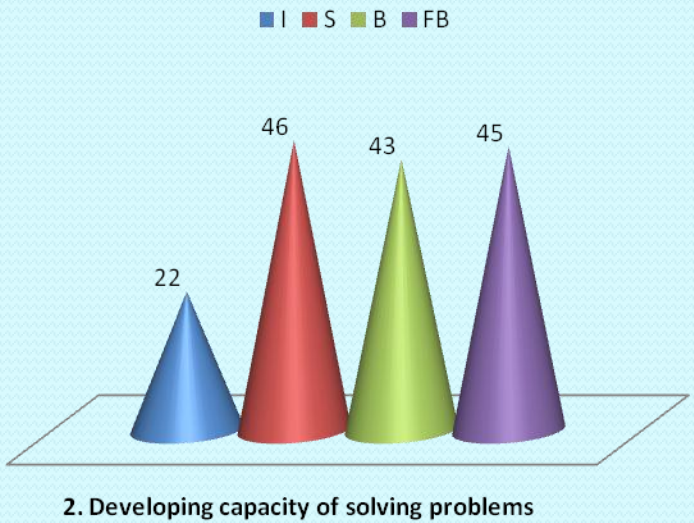
**Objectives:**

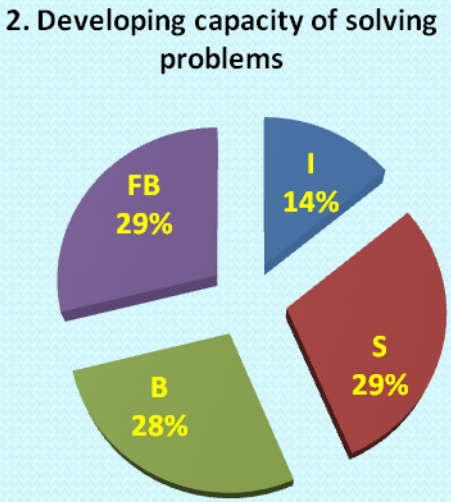
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| I st Grade | | | | | | To solve simple problems to support intuitive | | |
| II nd Grade | 2.1 to determine the relative position objects in space | 2.2. to recognize shapes plan, data sort and classify objects or drawings, as various criteria | 2.3. to observe the association between elements of the two groups objects, drawings, or numbers greater small as 30, on the basis of data; | 2.4. to continue repeating models represented by objects, drawings or numbers less than 10 | 2.5. to explore ways to smaller numbers decomposition as 30 in the sum or difference using objects, drawings or numbers * explore ways to decomposes as 100 smaller numbers in the sum or difference using objects, drawings or numbers | 2.6. to solve problems involving a single operation of the learned | 2.7. to measure dimensions, capacity or mass of objects using metrics nonstandard within reach of a children | |
| III rd Grade | 2.1 to determine the relative position objects in space | 2.2. to recognize shapes plan, data sort and classify objects or drawings, as various criteria | 2.3. to explore various ways of composing and decomposing numbers | 2.4.to find the combination of elements of two categories of objects (strings, no. lower than 1000) based on data rules | 2.5. to solve problems involving a single operation of the learned | 2.6 to use units for time and monetary units | 2.7. to measure and compare length, capacity or mass of objects using the appropriate nonstandard units and standard units: meters and liters | |
| IV th Grade | 2.1 to determine the relative position objects in space | 2.2. to recognize shapes plan, data sort and classify objects or drawings, as various criteria | 2.3. to explore various ways of composing and decomposing numbers | 2.4.to estimate the size of income an operation to limit calculation errors | 2.5. to use symbols for unknown numbers to reveal problem solving | 2.6. to solve problems involving a single operation of the learned | 2.7. to make oral and written exercises and problems are resolved by a single operation | 2.8.to use tools and standard and nonstandard units of length, capacity, mass, time and currency units in various situations |

# Framework objectives for numeracy skills to initial tests.



## After initial tests there have been established these types of performance:

- **Very good level students (performance)**(very good qualification)
- **Middle level students**(well qualification)
- **Minimal level students**(sufficient qualification)
- **Insufficient level students**(insufficient qualification)

## These mistakes, difficulties have been identified:

### LITERACY

- Poor vocabulary
- Inability to draw valuable information from the read texts
- Misunderstanding and misuse of the meaning of words in different contexts
- Writing the wrong ortograme

### NUMERACY

- Misunderstanding and misuse of mathematical specific terminology
- Making the wrong crossing order arithmetic operations
- Wrong applying of the algorithm for finding the unknown number
- Failure to apply policy and failure to perform operations
- Solving the wrong problems with multiple operations due to their misunderstanding of the texts

# School improvement plan results

| Literacy<br>Examples of activities | | | |
|---|---|---|---|
| **Very good level students (performance)**<br>(very good qualification) | **Middle level students**<br>(well qualification) | **Minimal level students**<br>(sufficient qualification) | **Insufficient level students**<br>(insufficient qualification) |
| ❖Story written texts<br>❖Creation of texts by title<br>❖Competitions specific school | ❖Questions and answers based on texts read<br>❖Creating texts based on differents supports (images, words, plan ideas)<br>❖Vocabulary Exercises<br>❖Active learning methods<br>❖(eg Self checking, Cube, Starbursting) | ❖Reading text input using different techniques (selective reading, the fragments, in pairs, relay, role)<br>❖Educational games<br>❖Drawing on the read texts | ❖Individualized differentiated activities |

| Mathematics<br>Examples of activities | | | |
|---|---|---|---|
| **Very good level students (performance)**<br>(very good qualification) | **Middle level students**<br>(well qualification) | **Minimal level students**<br>(sufficient qualification) | **Insufficient level students**<br>(insufficient qualification) |
| ❖The order of operations using all types of brackets<br>❖Finding the unknown number in an exercise with several different serial operations<br>❖Solving problems with multiple operations and putting them in office, data structures problems after exercise with different serial operations and parentheses<br>❖Contests specific school | ❖Exercises using specific mathematical terminology<br>❖The order of operations with parentheses<br>❖Finding the unknown number in an exercise with many of the same order arithmetic operations<br>❖Solving problems with up to 2-3 operations<br>❖Active learning methods<br>(eg, Puzzle, Cube, Snowballs, Dials) | ❖Exercises with arithmetic operations support elements (Ex. counters, image, sticks, tablets)<br>❖Educational Games Solving problems and structures to support intuitive operation 1-2<br>❖Finding the unknown number in an arithmetic exercise with a single operation | ❖Individualized differentiated activities |

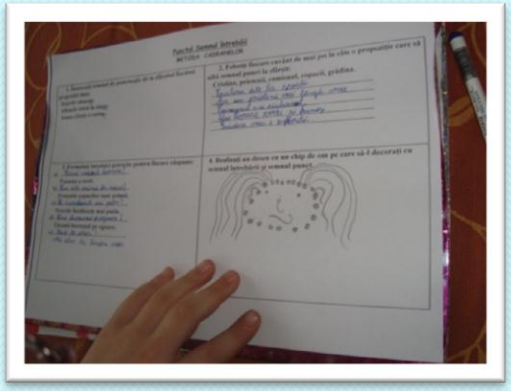
# Sample activities from reading and mathematics classes

## Self checking

## Puzzle

## Drawing on the read texts


## Dials

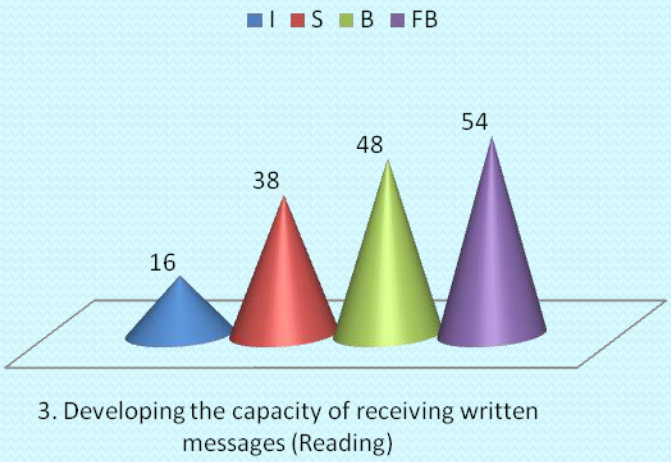


# Reference objectives targeted by the end of semester test

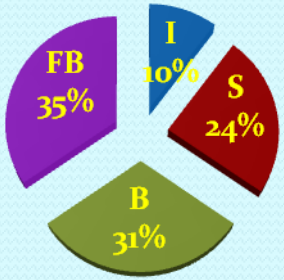
| Literacy skills | | | | | |
|---|---|---|---|---|---|
| **Framework objective:** *3. Developing the ability of receiving the message in writing (reading)* **Objectives:** | | | | | |
| **Ist- IVth Grade** | **3.1. to identify letters, groups of letters, syllables, words and statements in a printed text or in a handwritten text** | **3.2. to bring about the statements and images that accompany** | 3.3. to draw the meaning from a global read text | | |

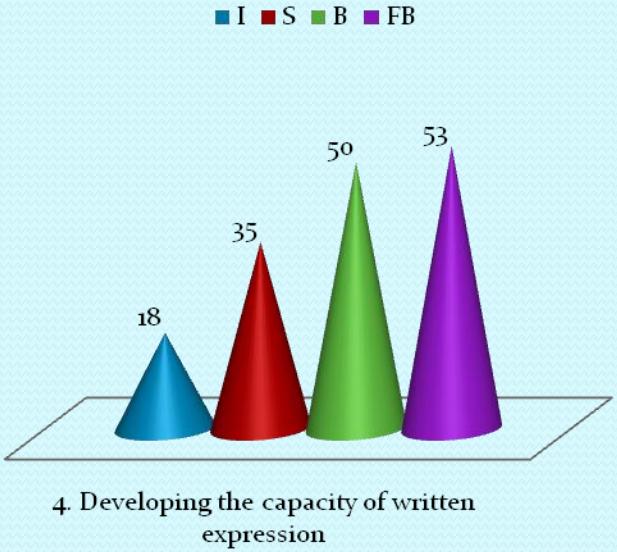
| | | | | | | |
|---|---|---|---|---|---|---|
| **Framework objective:** *4. Developing the ability of written expression* **Objectives:** | | | | | | |
| **Ist Grade** | **4.1.to write correctly letters, syllables and words** | **4.2. to write correctly, legibly and neatly short sentences;** | **4.3. to use the convention written language** | | | |
| **IInd -IVth Grade** | **4.1.to write correctly letters, syllables and words** | **4.2. to write correctly, legibly and neatly short sentences;** | **4.3. to use the convention written language** | **4.4.to write correctly, clearly and neatly texts** | **4.5. to show interest and care for the correct version of text composition and special purpose** | |

# Group for diagnose: 156 students from 1 to 4nd grades
# Framework objectives results for literacy skills by the end of semester test

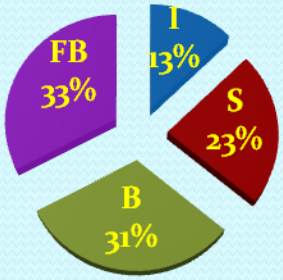



3. Developing the capacity of receiving written messages (Reading)




4. developing the capacity of written expression



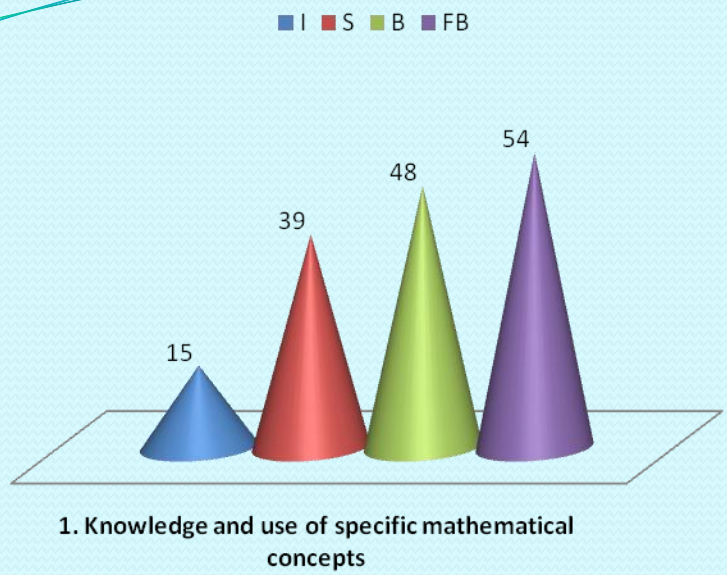
| NUMERACY SKILLS | | | | |
|---|---|---|---|---|
| **Framework objective:** *1. Knowledge and use of specific mathematical concepts*<br>**Objectives:** | | | | |
| I$^{st}$ Grade | 1.1. to understand the decimal system<br>training numbers (in tens and units), using objects justification | 1.2. to write, compare and to order the natural numbers to 0-100 | 1.3. to perform assembly operations and downward<br>- 0-30 in focus, without crossing more notes<br>-0-100 * in focus without crossing orders | |
| II$^{nd}$ Grade | 1.1. to understand the decimal system<br>training numbers (in tens and units), using objects justification | 1.2. to write, compare the natural numbers from 0 to 100, compare and order natural numbers less than 1000, using the signs <,>, = | 1.3. to perform assembly operations and decrease:<br>- with from one to 100 natural numbers without crossing and notes;<br>- by 1 000 natural numbers from without and crossing orders | |
| III$^{rd}$ Grade | 1.1. to understand the decimal system<br>training numbers (in tens and units), using objects justification | 1.2. to write, compare, order, to make estimations using natural numbers lower than 1 000 000 | 1.3. to perform assembly operations and decrease in numbers less than<br>10 000:<br>- without crossing over order<br>- by crossing the order | 1.4. to perform multiplication and division operations with whole numbers less than 100 |
| IV$^{th}$ Grade | 1.1. to understand and use positional of training system of natural numbers less than<br>1 000 000 | 1.2. to write, compare, order, to make estimations using natural numbers lower than 1 000 000 | 1.5. to perform operations of addition, and subtraction of natural numbers using computer algorithms and property operations | 1.6 to perform multiplication and division operations with the rest of the natural numbers, operations and properties using calculation algorithms |

**Framework objective:** *2. Developing capacity of solving problems*

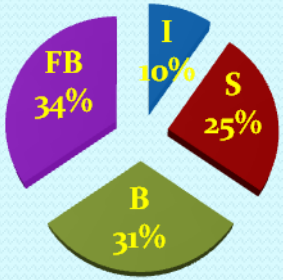
**Objectives:**

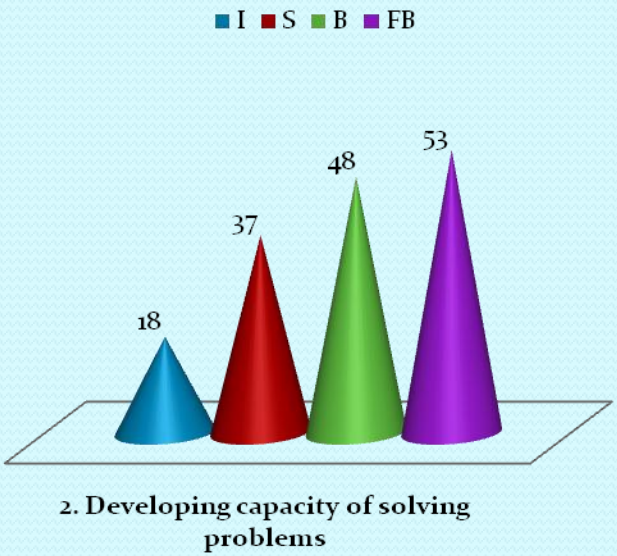
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| I st Grade | 2.1 to determine the relative position objects in space | 2.2. to recognize shapes plan, data sort and classify objects or drawings, as various criteria | 2.3. to observe the association between elements of the two groups objects, drawings, or numbers greater small as 30, on the basis of data; | 2.4. to continue repeating models represented by objects, drawings or numbers less than 10 | 2.5. to explore ways to smaller numbers decomposition as 30 in the sum or difference using objects, drawings or numbers * explore ways to decomposes as 100 smaller numbers in the sum or difference using objects, drawings or numbers | 2.6. to solve problems involving a single operation of the learned | | |
| II nd Grade | 2.1 to determine the relative position objects in space | 2.2. to recognize shapes plan, data sort and classify objects or drawings, as various criteria | 2.3. to explore various ways of composing and decomposing numbers | 2.4.to find the combination of elements of two categories of objects (strings, no. lower than 1000) based on data rules | 2.5. to solve problems involving a single operation of the learned | | | |
| III rd Grade | 2.1 to determine the relative position objects in space | 2.2. to recognize shapes plan, data sort and classify objects or drawings, as various criteria | 2.3. to explore various ways of composing and decomposing numbers | 2.4.to estimate the size of income an operation to limit calculation errors | 2.5. to use symbols for unknown numbers to reveal problem solving | 2.6. to solve problems involving a single operation of the learned | 2.7. to make oral and written exercises and problems are resolved by a single operation | |
| IV th Grade | 2.1. to observe and describe simple properties of planar and spatial forms and recognize simple symmetry properties of designs | 2.2. to discover, recognize and use in different contexts simple correlation and succession of objects or numbers assigned by the rules given | 2.3.să estimate the size of the result of a year at most two operations by rounding numbers to limit calculation errors | 2.4. to explore ways of performing multiplication and division using various ways of working | 2.5. to resolve problems and to write using significance arithmetic operations in problem solving situations | 2.6. to use symbols for unknown numbers to reveal problem solving | | |

# Framework objectives for numeracy skills by the end of semester test.

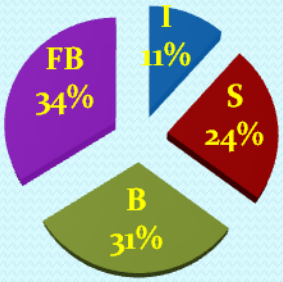



1. Knowledge and use of specific mathematical concepts

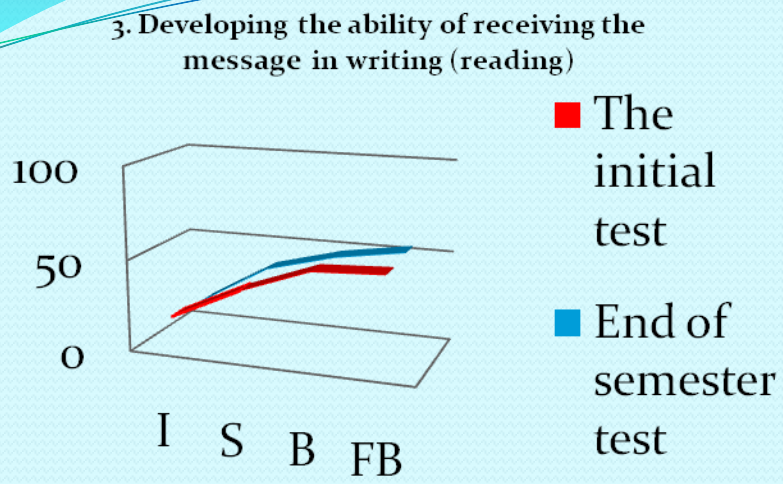


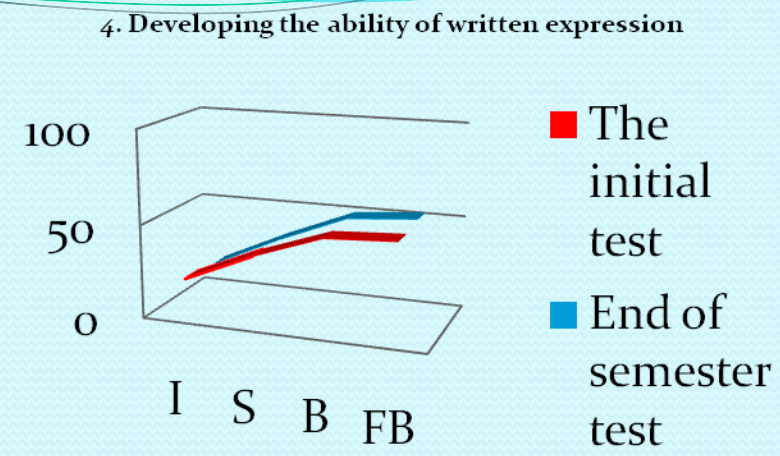




2. Developing capacity of solving problems



# Chart comparative with initial test results and end of semester test Literacy




# Chart comparative with initial test results and end of semester test Numeracy