EduStat Software

Test preparation
with the use of items banks

This document contains useful information for preparing tests using EduStat software. The databases "**temsBankMaths_6.edu**" be used to carry out the proposed exercises.

Several documents are available when using EduStat. If you wish to obtain further information on the procedure to be followed in order to carry out treatments presented in this document, the following texts part of the documentation can be consulted. To access it, choose the "Documentation" option from the "Help" menu. A window with five options appears. It is possible to open one of the three options allowing to have additional information by choosing the option of his choice: Slideshows, Videos (not available in English), Procedural Documents. It is also possible to consult the "User's Guide" (not available in English). We advise you to read some of these documents before carrying out the presented activities. Here are some references.

User Guide – Not available in English

Viewing slideshows

- Items Banks – Preparing a test

Viewing videos – Not available in English

Viewing procedural documents

- Items Banks – Preparing a test

We will only deal with the preparation of a test. The procedure for creating the items can be found in the EduStat User's Guide, as well as in slideshows, videos, and procedures.
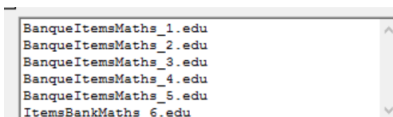
Here is the procedure for preparing a test using one or more items banks. The approach includes the following four components:

1. Selecting the items banks
2. Selection of items
3. Finalization of the structure of the test
4. Production of the test

Selecting the items banks

First, it is necessary to identify the file containing the items to be used for the preparation of the desired test. We will use only one items bank to perform this exercise.
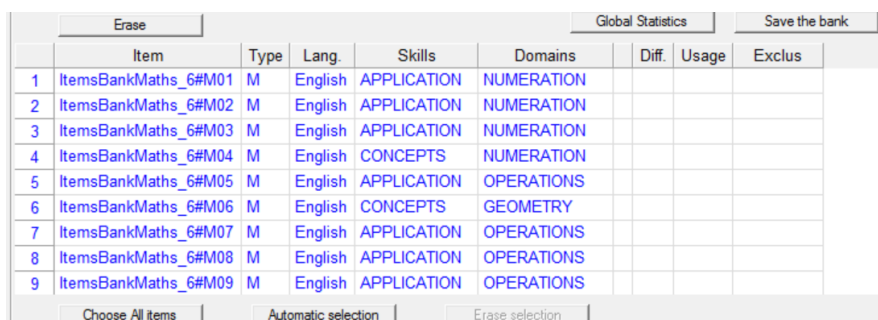
The identification of all the banks present in this folder is displayed.

```
BanqueItemsMaths_1.edu
BanqueItemsMaths_2.edu
BanqueItemsMaths_3.edu
BanqueItemsMaths_4.edu
BanqueItemsMaths_5.edu
ItemsBankMaths_6.edu
```

We note that there are six mathematical items banks, five of which are in French and one in English. The choice of the items bank to use is made by pressing the left mouse button. Please note that we have selected the following items bank: "**ItemsBankMaths_6.edu**". The contents of the bank will then be displayed in the second window displayed. It would be possible to select multiple items banks by selecting them in the desired order. It should be noted that the discipline of the items bank should be taken into account in its choice. If the selected bank is multilingual, it will be necessary to select the language of your choice.

❖ *Selection of items*

The main window displays the content of each selected items bank.

	Item	Type	Lang.	Skills	Domains	Diff.	Usage	Exclus
1	ItemsBankMaths_6#M01	M	English	APPLICATION	NUMERATION			
2	ItemsBankMaths_6#M02	M	English	APPLICATION	NUMERATION			
3	ItemsBankMaths_6#M03	M	English	APPLICATION	NUMERATION			
4	ItemsBankMaths_6#M04	M	English	CONCEPTS	NUMERATION			
5	ItemsBankMaths_6#M05	M	English	APPLICATION	OPERATIONS			
6	ItemsBankMaths_6#M06	M	English	CONCEPTS	GEOMETRY			
7	ItemsBankMaths_6#M07	M	English	APPLICATION	OPERATIONS			
8	ItemsBankMaths_6#M08	M	English	APPLICATION	OPERATIONS			
9	ItemsBankMaths_6#M09	M	English	APPLICATION	OPERATIONS			

Erase — Global Statistics — Save the bank

Choose All items | Automatic selection | Erase selection

This window displays the contents of the selected items bank (s). For each item, the following information may be provided:

a) *Items* - identification of items
b) *Type* - the type of items, ie multiple choice (M) or student response (C)
c) *Lang.* - the language used
d) *Skills* - the first component of the specification table
e) *Domains* - the second component of the specification table
f) If relevant - the third component of the specification table
g) *Diff.* - the difficulty index of the item
h) *Use* - if required, when the item may be used
i) *Excluded* - if required, exclusion of the item at time of selection

It should be noted that fields d), e) and f) bear the identification provided in the database.

It is possible to produce a report providing some statistics on the items in the selected bank (s). Activating the "Global Statistics" button allows the production of statistics displayed either on the screen or in a file. Here is the table produced from the active database.

EduStat Software   Micro Centre Pythagore Inc.

We see that the items bank has 36 questions. These items are divided into five areas of mathematics and four skills.

It is also possible to view the items included in the items bank. After selecting an item by placing the cursor on one of the line numbers (presence of an arrow), it is possible to retain one option: i) see the item; or (ii) add the item to the future test. If you select to view the item, it is displayed. As for the option to add to the test, we will discuss this possibility below.

It is possible to select the items to be included in a test in relation to two techniques:

- Manual selection
- Automatic selection

Manual selection is made by selecting each item and clicking on the "Add to the test" option. When selecting the items, it is possible to take into account their attachment to the specification table and, if available, the difficulty index. It will be possible to change the order of the items in the test in the later stage.

For **automatic selection**, this function can be accessed by pressing the "Automatic selection" button. After activating this button, a table is displayed.

This table reproduces the statistics relative to the item groupings (here in relation to the domains of mathematics and the skills involved). In relation to each column, there is the number of items and a space to indicate the number of items to be chosen. The software will randomly select the number of items per cell in the table. As an illustration, we will choose ten items distributed according to the choices made in the following table.

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Automatic Selection

Skills	NUMERATION		FRACTIONS		MEASUREMENT		OPERATIONS		GEOMETRY		Total	
	Stats	Nb	Stats	Nb	Stats	Nb	Stats	Nb	Stats	Nb	Stats	Nb
APPLICATION	3	1	2	1	0	0	4	2	1	0	10	4
CONCEPTS	1	1	0	0	0	0	1	0	4	2	6	3
PROCEDURES	0	0	2	1	0	0	1	0	2	0	5	1
SOLVING	0	0	2	0	5	1	6	1	2	0	15	2
Total	4	2	6	2	5	1	12	3	9	2	36	10

Compute   Erase

As we can see, this test will consist of 2 numeration items, 3 items dealing with fractions, 1 measurement item, 3 items on operations and 2 items of geometry.

After pressing the "Compute" button, the identification of the selected items can be found in the following table.

❖ *Finalization of the structure of the test*

As can be seen, the identification of the selected items is found in this table.

We found that all items were chosen in the "ItemsBankMaths_6" bank. Items were numbered from Q01 to Q6 (the other items are lower in the list). However, it is possible to know the item identification in relation to the items bank. These are items with the following numbers: 03, 10; 08; 07; 04; 19.

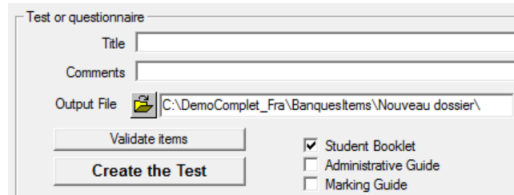Buttons on the right make the following options available:

1. *Open a structure* - if a structure has been saved, it is possible to open it directly
2. *Save the structure* - if we want to use this structure later, it can be saved
3. *Remove an item* - it is possible to remove items that are part of this structure
4. *Choose / Sort items* - items can be ordered differently or selected
5. *Clear* - this option deletes the contents of the structure
6. *Statistics* – producing statistics on the test.

Here is the table showing statistics on the distribution of items in this test.

Booklet statistics

Skills\Domains	Numeration	Fractions	Measurement	Operations	Geometry	Total
Application	1	1	0	2	0	4
Concepts	1	0	0	0	2	3
Procedures	0	1	0	0	0	1
Problem Solving	0	0	1	1	0	2
Total	2	2	1	3	2	10

1-2 \ 1-3 \ 2-3 \ Diff \ Skills \ Domains

❖ *Production of the test*

The final step of the production of a test prepared with the help of items banks makes it possible to provide certain information and to retain the sections to be included in the test. The next window allows to make choices.

The following information may be provided:

1. *Title* - a title can be indicated (it will be possible to modify it later)
2. *Comments* - if desired, comments may be made
3. *Output file* - this is to identify the Word file that will contain the test
4. *Validate items* - it is possible to validate the items that are part of the test
5. *Selection of sections* - each item may include information on these aspects
   - Student Booklet - the text of the items will be given to the student
   - Administrative Guide - these are the instructions given to the student during the administration of the test
   - Marking Guide - these are the instructions for the markers.

After pressing the "Create the test" button, the test is prepared and saved in a Word format file ("RTF" extension).