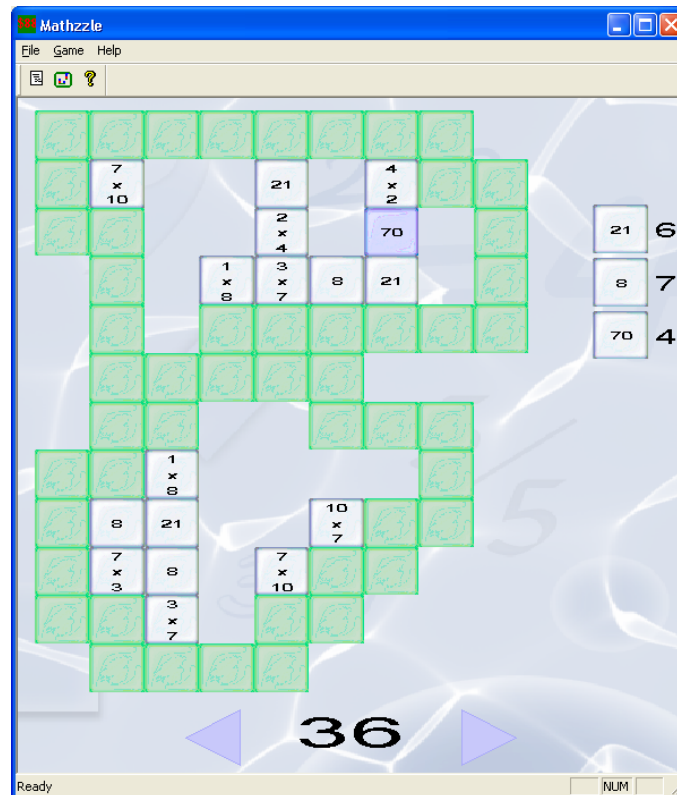


Mathematic puzzle for mental calculation

Presentation

This software is intended to elementary school children, who are learning calculation. Thanks to it they will be able to work and play with the mental calculation through animated puzzles.

The purpose of the game is to empty the panel of its problem tales by grouping equivalent tales.




The level of difficulty can be easily adapted to the level of the child. Extra game panels can be built by the user.

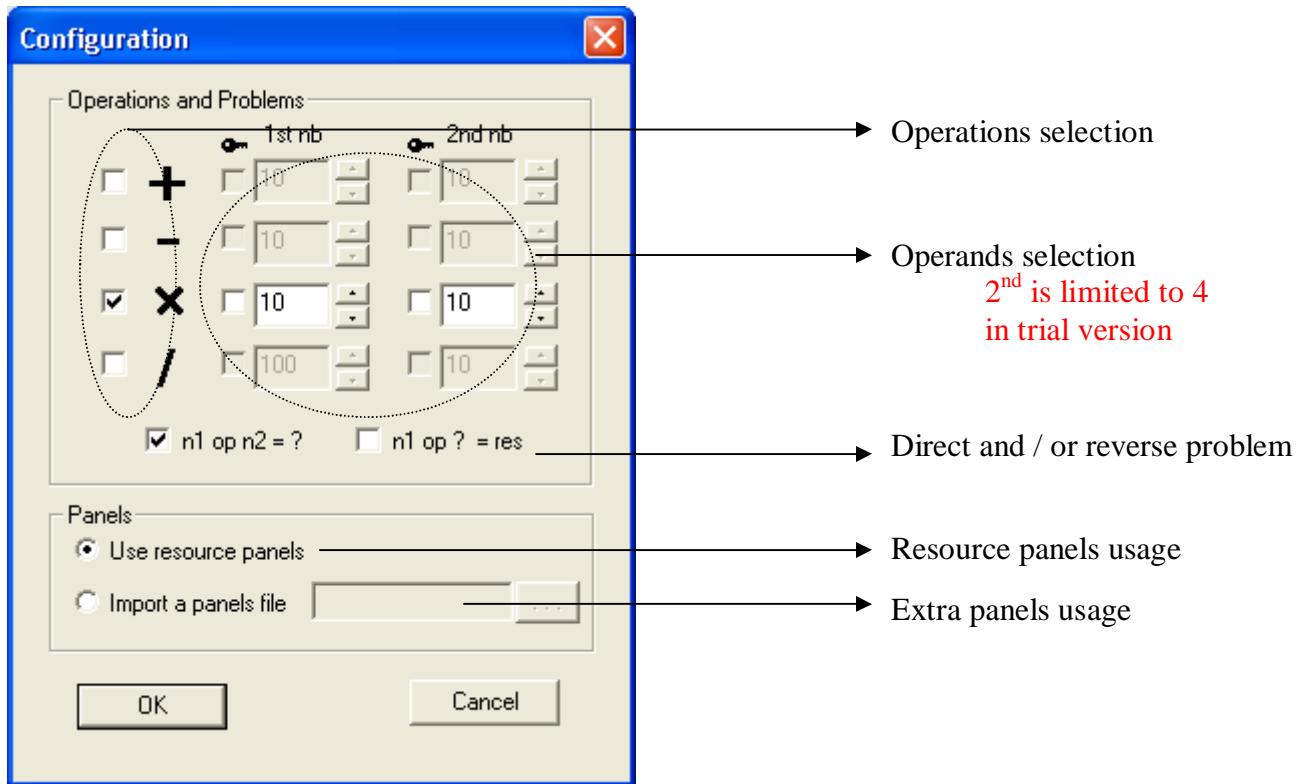
Topics

The following topics are available:

- **Configuration**
This activity allows selecting the kind of operations and the difficulty level that will be used in the puzzle module.
- **Mathzzle game**
This activity allows working the mental calculation in an original way based on animated puzzles.
- **Extra panels creation**
This activity allows creating very easily extra panels via external text files. The way to do that is described at the end of this manual.

Configuration

The configuration is available via the menu item: Gameà Configure or via the icon . It allows configuring the game module.



Operation selection

The child can select *zero, one or more operations*. The mathzzle game will use only the selected operations.

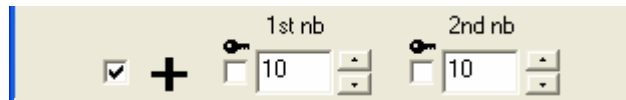
If no operation is selected, the game is played with the letters found in the panels' description.

Operands selection

For each selected operation the child can tune *the maximum value* of each of the *two operands*. This allows tuning the complexity of the problems that will have to be solved. The bigger the operands, the more complex the operations.

If the maximum value for an operand is set to 'x' then this operand will randomly take a value up to 'x'.

For instance the following figure shows a tuning to work with *additions* of numbers between 0 and 10.



Moreover, a checkbox  beside the operand maximum value input allows fixing the operand to this value exactly. [This allows focusing on a particular table.](#)

For instance the next choice leads to work *the multiplication table by 7*:
 $7 \times 0, 7 \times 1, \dots 7 \times 10$



Selection of direct and / or reverse problem

The software allows posing two kinds of problems:


- Direct: the program gives two operands and the child has to find the solution
- Reverse: the program gives one operand and the solution, and the child has to find the second operand. This mode allows introducing the symmetric operation.

It is possible to use one or both kinds simultaneously.

Selection of the panels to play with

The software comes with many predefined panels. It is very easy to create extra panels in text files and to play with them; (Cf. dedicated paragraph at the end of this manual).

Mathzzle, the game

This activity is started via the menu item Mathzzleà Play or via the icon 

The software proposes the available panels, one after the other. For each panel it ensures that all the tales representing the same letters are associated to equivalent problems and all the other letters are representative of other class of problems.

The following figure shows four tales representative of the same class of problem:



The problems are selected randomly according to the choices made in configuration. Note that the third one in the example above is a reverse one.

On the right of the screen a summary of the remaining tales and their number helps the user to determine its strategy. Note that odd numbers of remaining tales need some particular attention. Indeed these class will require at least to make 3 tales disappear at a time.

The purpose of the game is to group equivalent tales in order to make them disappear. The following figures show examples of equivalent tales that will disappear because they are grouped:



There are different reasons for the tales to move on the puzzle:





- Tales or piles of tales with empty space below them fall down.
- The user selects a tale and strikes one horizontal arrow key to move it right or left.
- Tales or piles of tales that are on a vertical or horizontal lift move with the lift.

To play with a panel the user actions are:

- Move the selection cursor on the panel with the arrows keys.
- Select / deselect a problem tale with the space bar or directly by the mouse double click
- Move horizontally the selected tale with key arrows

Once all the problem tales of the current panel have vanished a music jingle is played and the next panel is proposed.

Anytime it is possible to

- return to the configuration module, via the icon .
- restart the current panel via the icon .
- Move to the previous or next panel with the arrows  .

Panels creation

The creation of new panels is done via text files creation. The extension of these files must be “.panels”. The following figure shows an example of beginning of the file describing the panels embedded within the software resources.

```

44           è Number of panels
.#####    è Panel N°1
##.....#
#.....#
#.....#
#.....#
#.....#
#.....A..#
#.#####
#...B...#
#...5...#
##.#.#...#
##.#B#A.##
#####.

.#####    è Panel N°2
##.....#
#.....#
#.#D...#
#D..C...#
#C..D...#
#D..C...#
#C..A...#
##..5...#
##.#....#
##.#.A.##
#####.

...

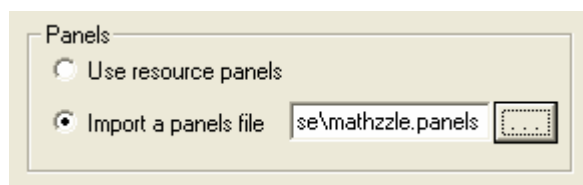
```

Each panel shall consist in 12 lines of 10 characters each:

The characters' meanings are the following:

- # è Fixed bloc (wall)
- . è Empty zone
- 0,2,4 è Vertical lift starting upward
- 1,3 è Vertical lift starting downward
- 5,7,9 è Horizontal lift starting to the right direction
- 6,8 è Horizontal lift starting to the left direction
- A,B...H è Problem tales (that will be eventually associated to classes of problems at play time)

Text files can then be imported thanks to the configuration panel:



P.S. In trial version the 2nd operands are limited to 4 in the configuration module. This limitation disappears in the full version.