

Sum machine - DEMO

General description

A tool that enables teachers to quickly generate math problems on their interactive whiteboard for their students to answer in class. The teacher can specify the specifications and range of the math problems in the settings. When using the tool, the problems are shown without an answer. By clicking buttons, the teacher can reveal a single answer or all answers.

Settings (see attached images for updated version)

Settings

Number of problems shown

☐ 1

☒ 10

☐ 2

☐ 15

☐ 3

☐ 20

☐ 5

Extra options

☒ Cross tens in addition and subtraction problems

☐ Use decimal numbers in addition and subtraction problems

☐ Allow division problem with remainders

Type

☐ +

☐ -

☐ ×

☐ ÷

Range

up to 100

▼

up to 100

▼

up to 100

▼

up to 100

▼

Tables

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

☐ 7

☐ 8

☐ 9

☐ 10

☐ 11

☐ 12

☐ Select all

Division tables

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

☐ 7

☐ 8

☐ 9

☐ 10

☐ 11

☐ 12

☐ Select all

Cancel

Save

Number of problems shown

- This determines the number of problems shown in the interface of the tool.

Extra options

- Cross tens in addition and subtraction problems

- Enabled: problems in which it is allowed to cross tens and hundreds (etc)
- Disabled: problems in which it is not possible to cross tens and hundred (etc)
- when disabled do not cross:
 - 10's when up to 20/50/100,
 - 10's & 100's when up to 1000,
 - 10's, 100's & 1000's when up to 10000
- Use decimal numbers... - allows you to generate problems like $25.4 + 12.5$

Type

- When a type is checked, problems of this type can be generated in the tool.
- Checking a type enables the range dropdown for that type.

Range

- Range options are 10, 20, 50 and 100

Tables

- $1 \times \dots$, $2 \times \dots$, $3 \times \dots$, $4 \times \dots$, $5 \times \dots$, $6 \times \dots$, $7 \times \dots$, $8 \times \dots$, $9 \times \dots$, $10 \times \dots$.
- For example table 2: $1 \times 2 = 2$, $2 \times 2 = 4$, $3 \times 2 = 6$, $4 \times 2 = 8$, $5 \times 2 = 10$, $6 \times 2 = 12$, $7 \times 2 = 14$, $8 \times 2 = 16$, $9 \times 2 = 18$, $10 \times 2 = 20$.
- This setting is independent from "Type and Range" settings. E.g. when you select 10 problems for Addition and then "table 7", you will get 5 random problems for addition and 5 random problems for "table 7" multiplication;

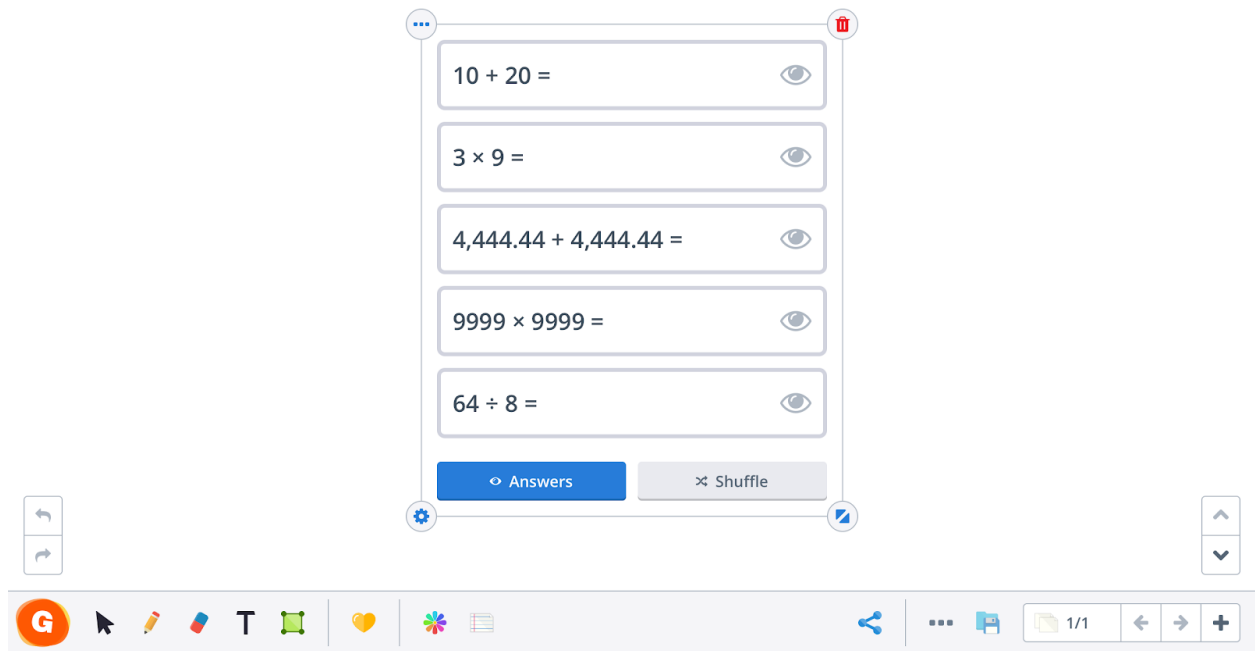
Select all function

- When unchecked, clicking *select all* will check all related options.
- When checked, clicking *select all* will uncheck all related options.
- When at least one, but not all related options are checked, the select all button will get the *indeterminate state* (with a minus icon). Clicking select all in the indeterminate state will check all related options.

Tool interface

General rules

- The solution can never be below zero (no negative numbers).
- Decimal numbers : allowed up to two decimal places.



Behavior of interface elements

- Clicking on a problem (anywhere, not just on the icon) displays the solution.
 - This action can be reversed by clicking on the problem again.
 - Only the eye icon and solution have hover and active states, which can be found on the last page of the inversion prototype.
- Clicking on the *answers* button displays the solution to all problems.
 - This will change the icon of the button to a closed eye.
 - Clicking on the button again will hide all solutions.
- Clicking on the *shuffle* button generates a new set of problems with the same rules (defined in the settings).