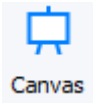
Tips and Tricks

Open new document

Open **File Ribbon** and then select **New Document** or other scripts/language

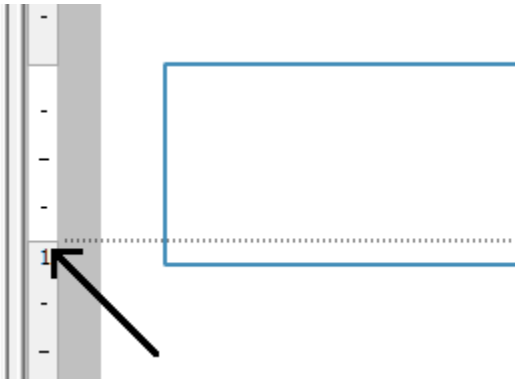
Canvas

Formula themselves must be placed inside a canvas. To do so, open the **Insert Ribbon** tab then select the **Canvas Icon** and **left mouse click** on the document where you want to place the canvas.

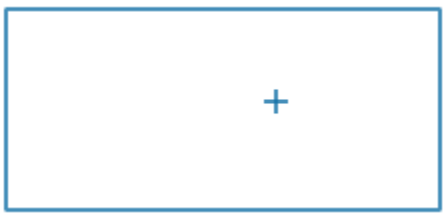


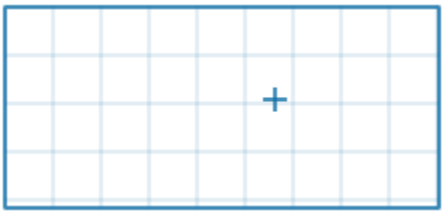
Resizing Canvases

Place the mouse on the edge of the vertical ruler slider and move it towards either the top of the document or the bottom of the document, depending on whether you want to make the canvas smaller or bigger.



Ctrl + **G**– turn on/off grid in canvas;





Math objects

Double left mouse click- when used in a canvas it creates an empty Math object.

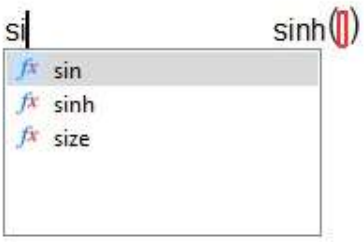
type **a** + **:=** - to assign a value to a variable; or assign a value to an already created a variable;

a:=0
a=4
a=4

= - displaying the variable value; display the value stored in the variable a using the code a =

a:=5 a=5

Alt – continue writing the function name; use Alt to insert multi character commands or to skip auto suggestion and continue with typing; while you type in the canvas auto suggestion will display all functions that contain the inserted combination of characters, to skip it just use Alt and continue with typing;



Alt + **/**- create a fraction;

Alt + **-** - value or expression to become negative; the negative of existing expression or variable value, when the cursor is in front of the variable or expression use Alt – combination to change the sign of it;

a 5
-a -5

Ctrl + **M** – to turn superscript mode on or off; O^2

Ctrl + **B** – to turn subscript mode on or off; O_2

Shift + **6** (**^**) – if Math Style button is down enter a power node in math objects, otherwise XOR operator.

Superscripts and subscripts can be added before or after the pivot letter, just place the cursor on the preferred side and use above key combination.

$$\overset{1}{\underset{2}{O}}\overset{3}{\underset{4}{}}$$

F1 –place the cursor in the function object and press F1 to open help for the selected function on the default internet browser for your computer;

Ctrl + U – make variable unit / make unit variable; the default system state is to show units in math, when you type in a math object it is considered a unit by default, to make it a variable use Ctrl + U combination while cursor is in the math object

$$\mathrm{Ohm} = \mathrm{A}^{-2}\ \mathrm{s}^{-3}\ \mathrm{kg}\ \mathrm{m}^{2} \qquad \mathrm{Ohm} = \mathrm{Ohm}$$

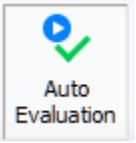
Ctrl + **mouse scroll**–zoom in, zoom out;

***** +***** - to create **multiplying operators** whose sign is not visible; when the cursor is behind the value or variable use * + * combination to create a multiplying operation without a multiplying sign;

Formulas and Equations

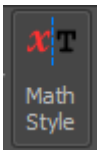
Formulas themselves must be placed inside a canvas. To open or insert a canvas, open the **Insert ribbon** tab, then select the **Canvas icon** and **left click** where on the document you want to place it.

MatDeck formulas will be calculated when they are evaluated. For formulas to be evaluated in real time and while you're typing, select the **Auto Evaluate Icon** in the **Math Tab** ribbon.



Double left click –when used in a canvas, it creates an empty Math object.

To use real formula which can be **evaluated** with operators, switch on the **Math Style Icon** within the **Math Tab ribbon;** or switch it off for a demonstration **text formula**.



Formula Editor

Use this option to create a formulas that will be excluded from calculations. The formula editor must be selected before being used with any formulas. These kinds of formulas can be used to create various expressions for presentational purpose, without limitations and rules that are used in standard MatDeck mathematical formulas. When inserted, the field for editing will become grey.

$$\sum_{n=}^{} = \lim_{x \to} \int x^5 \cdot \cos(x)\, dx$$

Similar to the Math Style Icon and the Formula Editor, if you type **Ctrl +F** it excludes the math object (formula) from mathematical rules; use this key combination when you want to type full formulas or part of formula for demonstrational purposes, without applying any mathematical rules (there are no operators, variables, fractions, functions, …).

When “Ctrl + F” is active, the text of the Math Object will be **highlighted in grey**. “Ctrl + F” mode can be used in any node, however in order to enter graphical math elements “Ctrl + F” must first be deactivated. The image below shows a graphical demonstration formula.

$$f(x) = \sum_{n=-\infty}^{\infty} x(n)$$

To stop the evaluation of **:=**, use **Ctrl + =** - when used inside a Math object, it stops the selected object from calculating; use this combination when you want to create a

presentational formula that is excluded from calculation; In order to use “Ctrl + =”, “Ctrl + F” mode must first be deactivated. After “Ctrl + =” is used, “Ctrl + F” mode can be activated again.

*** +*** - to create multiplying operators whose sign is not visible; when the cursor is behind the value or variable use the * + * combination to create a multiplying operation without a multiplying sign.

$$2x$$

Alt + **/**- create a fraction; $\frac{x}{y}$

Shift + **6** – enter a power node in math objects;

Ctrl + **M** – to turn superscript mode on or off;

Ctrl + **B** – to turn subscript mode on or off;

Alt + **-** - selected value or expression to become negative; the negative of an existing expression or variable value, when the cursor is in front of the variable or expression use the Alt – combination to change the sign of it;

Use the **Left** and **Right Arrows** to move from node to node.

Right mouse click on a Math/Equation object, then select **Exclude** from evaluation.

$$\int_{-\infty}^{\infty} e^{-x^2}\,dx = \sqrt[2]{\pi}$$

Set style, color, and size of letters in equations independently by using the font editing tools present.

$$f(x) = \sqrt[2]{\left| \sum_{n=-\infty}^{\infty} \frac{y(n)}{x(n)} \right|}$$

Script

To turn script editor on or off in a document use **Ctrl + I**.

```
function()
{
  pom := 0

  for(i := 0; i < n; i += 1)
  {
    pom += i
  }
}
```

Ctrl +**E**–evaluate script shortcut key; use this key combination after you have created or changed the script code to initiate a calculation of it, this key combination is an alternative for pressing 

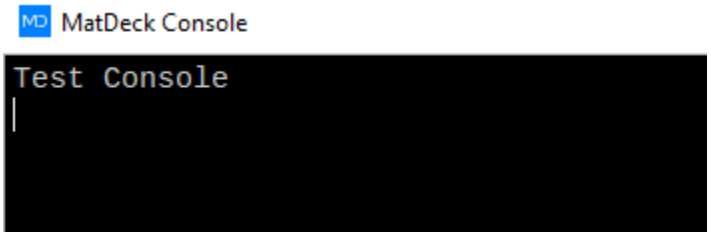
icon;

```
fn( )
{
  int i := 0
  while(i < 10 )
  {
    i++
  }
}
```

Console

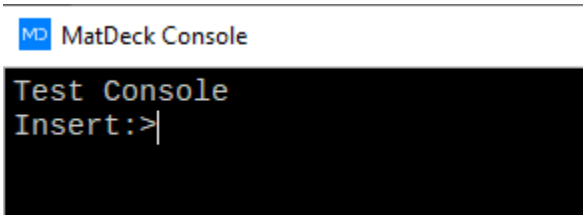
Print – Use print function to present something in console window; function argument will be printed in console window

```
print("Test Console")
```



Getc – Use getc function to open console window and to expect input, function argument is string you want to display (Insert: in this case); you can store inserted input in MatDeck variable and use it in further calculations

```
getc("Insert:")
```



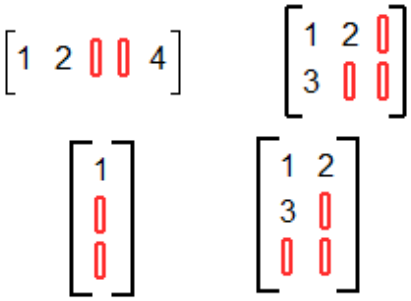
Vectors and matrix

Vector – to create an empty vector with the size 2x1; type command vector (to create empty vector);

Matrix – to create an empty matrix with the size 2x2; type command matrix (to create empty matrix);

Space – while the cursor is in one of the  ields of row vector/matrix use Space to add one column to the right;

Enter – while cursor is in one of the empty fields of column vector/matrix use Enter to add one row under the selected row;



Ctrl + **Space**–while cursor is in one of the empty fields of row vector/matrix use Ctrl + Space combination to delete the selected column;

Ctrl + **Enter** –while cursor is in one of the empty fields of column vector/matrix use Ctrl + Enter combination to delete the selected row;

[-to create a subscript function to return the element of current inputted vector/matrix in current position; when the cursor is behind the vector/matrix use [character to create a subscript function and enter the position you want to extract the value from;

$$\begin{bmatrix}1\\2\end{bmatrix}[1]=2 \qquad \begin{bmatrix}1 & 2\\3 & 4\end{bmatrix}[2]=3$$

Comparison operators

Alt + **=** + **=**– to create a comparison operator equal to; when the cursor is behind the value or variable use Alt + = + = combination to create equal operator;

a ==[]

< + **=** - to create a comparison operator less than or equal to; when the cursor is behind the value or variable use < + = combination to create less than or equal to operator;

a <=[]

> + **=** - to create comparison operator greater than or equal to; when the cursor is behind the value or variable use < + = combination to create greater than or equal to operator;

a >=[]

< + **Space**–to create comparison operator less than; when the cursor is behind the value or variable use < + Space combination to create less than operator;

> + **Space**–to create comparison oper a <[] eater than; when the cursor is behind the value or variable use > + Space combination to create greater than operator;

a >[]

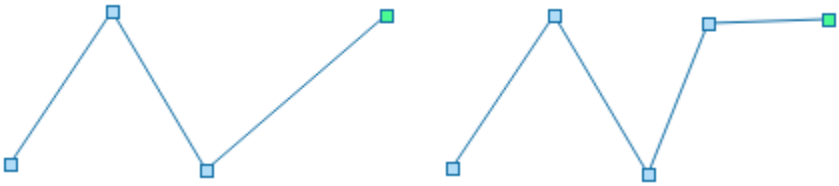
Drawing and shapes

Ctrl + **Left mouse press** – when you want to change the position of dots without making an additional line; use this combination while you draw the lines (poly-lines and arc)

Right mouse press – use it when you want to delete one line dot; just press right mouse click on the dot you want to delete;

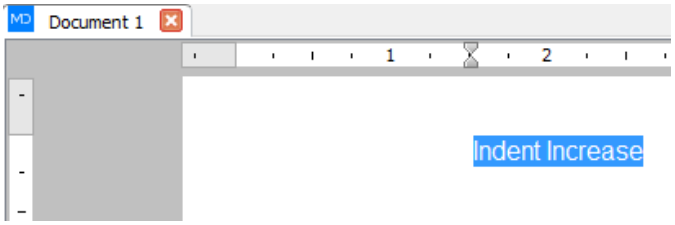
Left mouse pres   aphical object when only one of the lines is selected;

Left mouse press and hold – select the whole graphical object by left mouse pressing over the line as shown above then, **to create two dots from one** by selecting on of the blue dots and moving the cursor you can create a new dot between existing dots or when you want **to add a new dot on one of the ends of the line** by selecting on of the green dot end of line and moving the cursor.

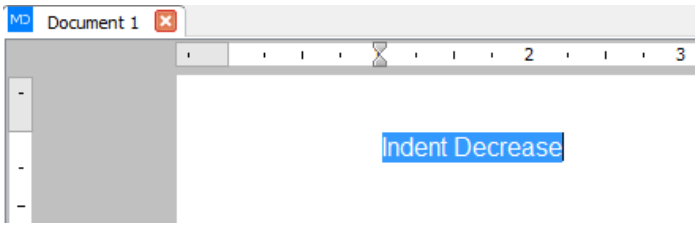


Text

Tab - To increase text indent select text and press Tab key



Shift + **Tab** – To decrease text indent select text, hold Shift key and press Tab key



Chemistry

When you type a chemical equation use **Ctrl** + **=** combination to create equal sign and start typing right side of equation

$$Mg + O_2 =$$

To transform equal sign to arrow sign, position mouse cursor above the sign and use **Right mouse button.**

$$Mg + O_2 \rightarrow \qquad Mg + O_2 \leftrightarrows$$

When your chemical formula contains brackets, use **Ctrl** + **F** combination when you start to type compound. Don't forget to use the same combination after compound is typed, elsewhere formula parsing won't be correct.

$$Al(NO)_3 + NO \qquad Fe(SCN)_3$$

Global Keyboard Shortcut

Keyboard combination	Action	MatDeck icon
Ctrl + N	Create new document	

Ctrl + O	Open document	
Ctrl + S	Save current document	
Ctrl + W	Close current document	
Ctrl + P	Print current document	
Ctrl + A	Select all document items	
Ctrl + Z	Undo	
Ctrl + Y	Redo	
Ctrl + C	Copy	
Ctrl + V	Paste