

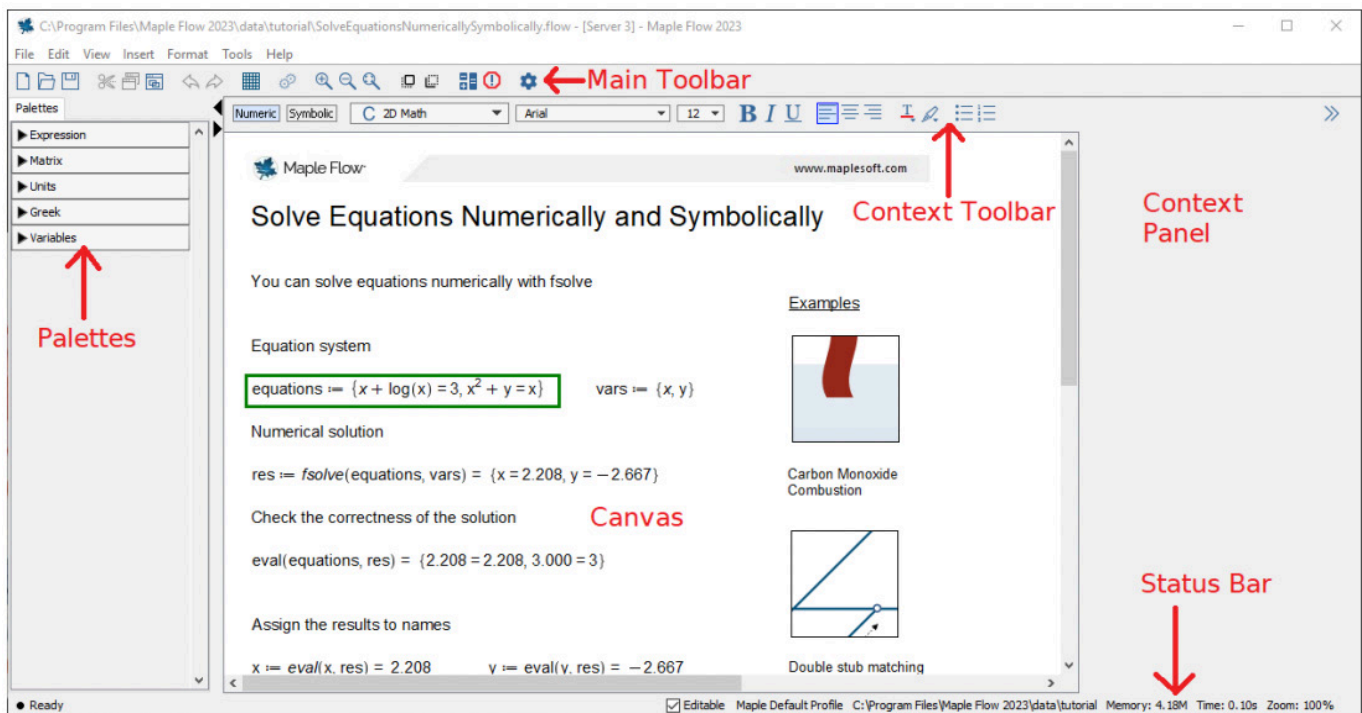
# Getting Started with Maple Flow



If you're a new user

- Explore the in-product Application Gallery for examples across many disciplines or visit [maplesoft.com/applications/flow](https://maplesoft.com/applications/flow) for more.
- Follow the in-product tutorials using *View>Home>Tutorial*
- Reach out with your questions to the Support Contacts below – we're here to help!

## Exploring the Interface



## WORKING WITH A NEW CANVAS


Define a parameter	<code>x := 1</code> (x colon equals 1)
Command completion	Type first few characters of command or variable, then <b>Ctrl+Space</b> e.g. <b>Thermo Ctrl+Space</b>
Insert a units placeholder	<b>Ctrl+Shift+U</b> or Units palette
Convert the units of a result	<ul style="list-style-type: none"> <li>• Click inside the result unit and edit <code>2 ft + 2 in = 0.660 m</code></li> <li>• or click the result and use the Context Panel</li> </ul>
Move a container with the keyboard	<ul style="list-style-type: none"> <li>• Move the grid cursor into a container, then <b>Ctrl+arrow keys</b></li> <li>• Make sure the math container is not surrounded by a border, then click-drag container into position</li> </ul>

Equality between two sides of an equation	<ul style="list-style-type: none"> <li>• Either = (default)</li> <li>• or <b>Ctrl=</b></li> </ul> Change in <i>Tools&gt;Options&gt;Evaluation</i>
Delete a container	Move the grid cursor onto a container, then <b>Ctrl+Del</b>
Current value of variables	Variables palette


## DOCUMENTATION

Write text	Click in a blank part of the canvas, then press <b>Space</b> and start typing
Format Text	Click in text and use the Context Bar and Text Styles
Insert a section	<i>Insert&gt;Section</i>
Export a PDF	<i>File &gt; Export As...</i>
Command completion	<b>Ctrl+Space</b>
Viewing the extents of a printed page	<i>View &gt; Print Extents</i>
Go to the Home page	<i>View &gt; Home</i>
Background color of math container	Right click on container and click <i>Background color</i>
Greek Letters	<ul style="list-style-type: none"> <li>• Greek palette</li> <li>• Roman transliteration followed by Command Completion e.g <b>alpha Ctrl+Space</b> or <b>Delta Ctrl+Space</b></li> </ul>
Page Break	<ul style="list-style-type: none"> <li>• <i>Insert &gt; Page Break</i></li> <li>• or <b>Ctrl+Enter</b></li> </ul>

## EVALUATION

Evaluate math and display results	<ul style="list-style-type: none"> <li>• Either <b>=Enter</b> at the end of math (default)</li> <li>• or = anywhere in math</li> </ul> Change in <i>Tools&gt;Options&gt;Evaluation</i>
Prevent floating point approximation	Click inside the math container, then click <i>Symbolic</i> in the Context Bar or <b>Alt+S</b> . You may need to make several preceding math containers symbolic as well
Disable/enable automatic evaluation of worksheet	
Disable evaluation for individual math	Right click on math and select <i>Disable Evaluation</i>

## BASIC MATH

Solve equations numerically	<b>fsolve</b> ({equations},{initial values}) e.g. <b>fsolve</b> ({x+y=1,x^2+y=1},{x=1,y=1})
Solve equation symbolically	<b>solve</b> ({equations},{unknowns}) e.g. <b>solve</b> ({x+y=1,x^2+y=1},{x,y})
Piecewise expressions	<ul style="list-style-type: none"> <li>• Expressions palette &gt; </li> <li>• <b>piecewise</b> followed by command completion to typeset</li> <li>• <b>piecewise(x&gt;1,1,x&lt;= 1,0)</b></li> </ul>
Booleans	<ul style="list-style-type: none"> <li>• <b>&lt;=, &gt;=, &lt;, &gt;</b> (&lt;= and &gt;= typeset to ≤ and ≥ )</li> <li>• <b>and/or</b> (followed by command completion to typeset to <math>\wedge/\vee</math>)</li> </ul>

Create a simple plot	<code>plot(sin(x),x=0..10)</code> See <i>Home&gt;Tutorials&gt;Plots</i> in-product for more
Substitute numerical values into an expression	<code>eval(x+y,[x=1,y=2])</code>

## MATRICES AND VECTORS

Create a Matrix or Vector	<ul style="list-style-type: none"> <li>Matrix palette</li> <li><code>Matrix([[1,2,3],[3,4,5]])</code></li> <li><code>Vector([3,4,5])</code> or <code>Vector([3,4,5], orientation =row)</code></li> </ul>
Index into a matrix, vector, list or expression sequence	Square brackets e.g. <code>L[index]</code> or <code>M[rowIndex, columnIndex]</code>
Adding all the values in Vector or Matrix	<code>add(M[i],i=1..N)</code>
Number of rows and columns in a Vector or Matrix	<code>upperbound(M)</code>
Extract rows or columns from a Matrix	<code>M[..,columnIndex]</code> or <code>M[rowIndex, ..]</code>
Matrix Math	Inverse: $M^{-1}$ Multiplication: $M.M$ (i.e. $M$ period $M$ ) Transpose: $M^{*T}$

## Further Resources

The Maple Flow Help system allows you to browse and search for help on specific topics as you add mathematics, data analysis and add plots and graphics – select **Help > Maple Flow Help**

Maple Flow User Guide

[https://www.maplesoft.com/documentation\\_center/](https://www.maplesoft.com/documentation_center/)

Maple Flow Training Resources

<https://www.maplesoft.com/support/training/>

MaplePrimes (Maplesoft User Community Forum)

<https://www.mapleprimes.com/>

Maplesoft Product Information

<https://www.maplesoft.com/products/>

## Support

Our Online Support webpage shows various ways to connect with Maplesoft for questions and help.

<https://www.maplesoft.com/support/>

You can also email:

Sales and Licensing Support: [custservice@maplesoft.com](mailto:custservice@maplesoft.com)

Technical Support: [support@maplesoft.com](mailto:support@maplesoft.com)