Resources for Education

Maple 2022 includes numerous of improvements to support teaching and learning of STEM concepts.

▼ New and Improved Plot Builder

The Plot Builder was completely rewritten in Maple 2022 to make it even easier for new users, especially students, to visualize their 2-D and 3-D expressions.

The new plot builder:

- **Supports multiple expressions**
  In previous versions of the plot builder, it was only possible to plot a single version. The new plot builder has been enhanced to allow users to plot multiple expressions.

- **Returns a plot instantly**
  The plot builder in Maple 2022 will automatically select an initial choice of plot type. Previous iterations of the plot builder required you to specify plot type before a plot was returned.

- **Creates animations**
  If your expression contains parameters, the new plot builder will enable you to create an animation with a few clicks.

Learn more about the enhancements made to the Plot Builder in Maple 2022.

▼ More Solution Steps

By popular demand, Maple 2022 includes even more solutions steps to help students solve a variety of problems.

The new **SimplifySteps** command in Maple 2022 provides students with support when solving problems involving:

- Fractions
- Radicals
- Exponents
- Logarithms
- Trig
- Calculus

Access the step by step solutions using the command or via the Context Panel. To do this through the Context Panel, first load the **Student:-Basics** package. Then, click on an expression and select **Student Basics > Simplify Steps** in the Context Panel.

In addition, Maple 2022 includes a new command, **CurveSketchSteps**, to support students needing help sketching curves.

Learn more about the latest in [Step by Step Solutions](#).

▼ Build and Share Interactive Content

Maple 2022 greatly extends the tools for creating Canvas-based documents and interactive applications programmatically. These tools can be used to develop Maple Learn content or to create applications in Maple itself.

Learn more about what's new in [Build and Share Interactive Content](#).

▼ Improvements to the Student:-ODEs subpackage

The **Student:-ODEs** subpackage, which was introduced in Maple 2021, was designed to help teachers present and students understand the basic material of a standard first course in [ordinary differential equations](#). The subpackage has been extended so that context panel operations appear when the package is loaded. This change ensures that students can start using the package without having to know any of the commands.

$with(Student:-ODEs)$:

$ode1 := t^2 (z(t) + 1) + z(t)^2 (t - 1) \left(\frac{d}{dt} z(t) \right) = 0 \xrightarrow{\text{solve ODE}}$

$\frac{z(t)^2}{2} - z(t) + \ln(z(t) + 1) = -\frac{t^2}{2} - t - \ln(t - 1) + \_C1$

$ode2 := x^2 (y(x) + 1) + x - 1 + \frac{d}{dx} y(x) = 0 \xrightarrow{\text{test if linear}} true$

$ode2 = x^2 (y(x) + 1) + x - 1 + \frac{d}{dx} y(x) = 0 \xrightarrow{\text{linear form}} \frac{d}{dx} y(x) = -x^2 y(x) - x^2 - x + 1$

Student ODEs
Change Variables
Differential Order >
Integrating Factor >
Isolate Highest Derivative >
Linear Form >
Separate Variables >
Solve >
Test Candidate Solution >
Type >