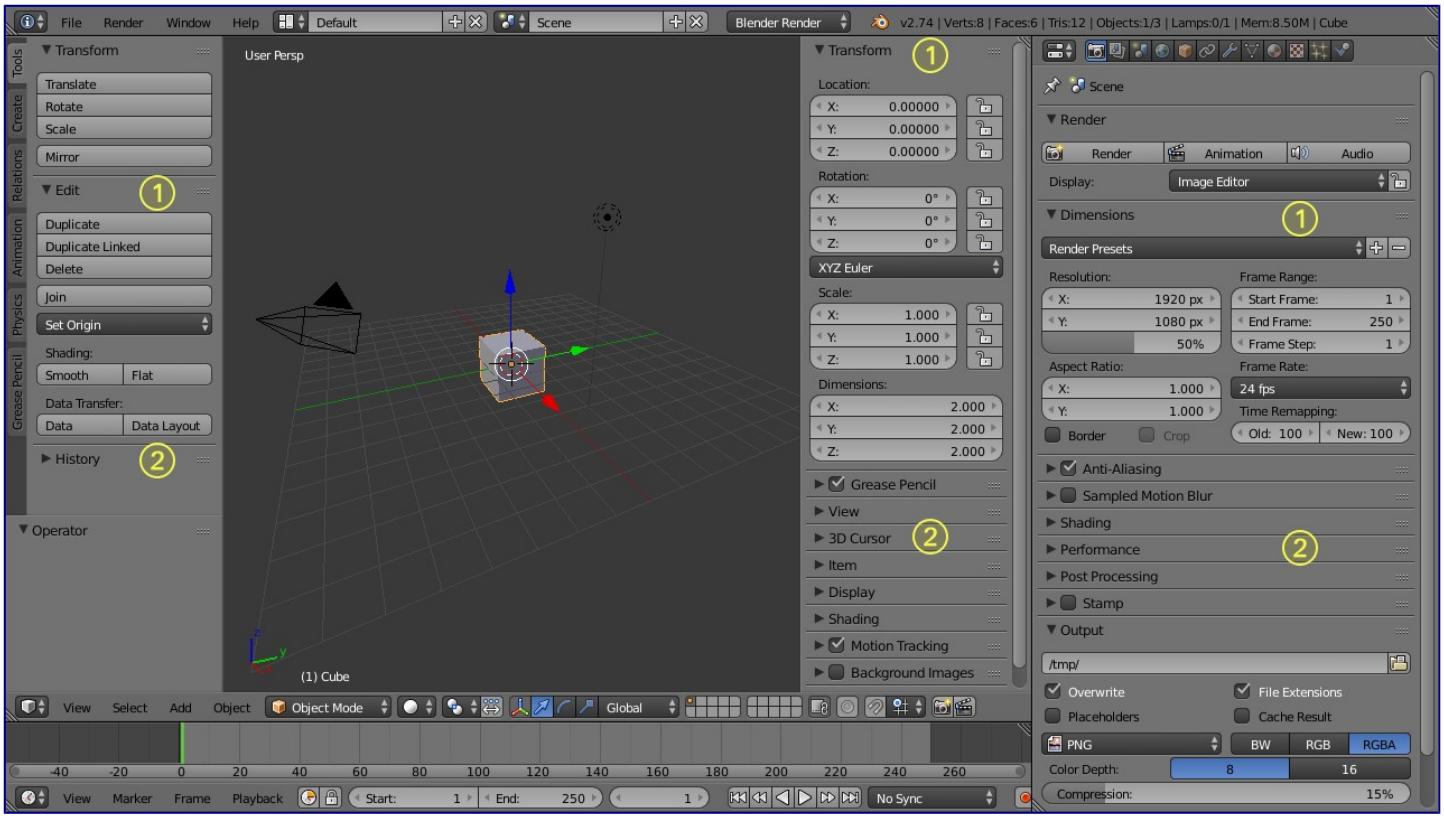
2.3 Interface - Interface Controls

Panels

Panels are collapsible sections within regions to help organize the interface. They are heavily used in the *Properties Editor* but also appear elsewhere (For example: in the *Tool Shelf* or the *Properties Shelf*, available in some editors).

The image below shows panels in different regions in their expanded and collapsed state.



Expanded (1) and collapsed (2) Panels in the Properties Editor (right area) and in the additional Regions of the 3D View Editor (left area)

- A click with the `LMB` on the title area of a panel expands or collapses it.
- A `LMB` drag motion over the title area will expand or collapse many at once.
- A `Ctrl-LMB` click on the title area of a specific panel will collapse all other panels and make this the only expanded one.

Some panels only show in certain contexts. So for instance the *Tool Shelf* will show different panels depending on the objects mode.

There are some options available to customize panels to your preference:

- You can change the position of a panel within its region by clicking and dragging it with the `LMB` on the little widget in the upper right corner.
- The zoom factor of a whole region with panels can be changed by `Ctrl-MMB` clicking and moving the mouse anywhere within that region or use the `NumpadPlus` and `NumpadMinus` to zoom in and out the contents. Pressing `Home` (Show All) will reset the zooming at the screen/panel focused by the mouse pointer.
- The alignment of the panels in the *Properties Editor* can be changed between vertical and horizontal. To do this click with `RMB` somewhere within the main region of the *Properties Editor* and choose either *Horizontal* or *Vertical* from the appearing menu. Keep in mind though that the panels are optimized for vertical alignment.

Buttons and Controls

Buttons and other controls can be found in almost every *Window* of the Blender interface. The different types of

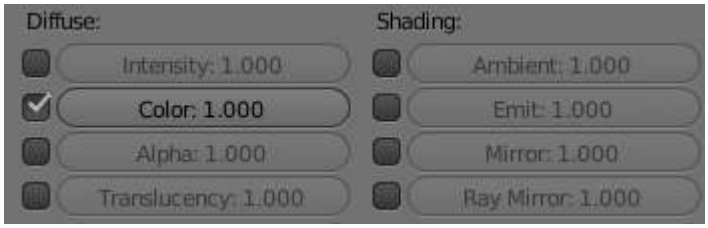
controls are described below.

Operation Buttons

Operation button

These are buttons that perform an operation when clicked with `LMB`. They can be identified by their gray color in the default color scheme.

Toggle Buttons



Toggle buttons

Toggle buttons are typically displayed as check boxes. Clicking this type of button will toggle a state but will not perform any operation.

Toggle Drag

To change many toggle buttons at once, you can `LMB` drag over multiple buttons, This works for check-boxes, toggles in the outliner and layer buttons.

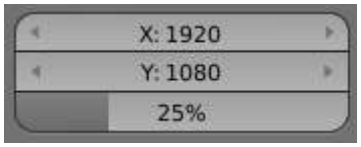
> **Note**
>
> For layer buttons (a type of toggle button) it is often useful to hold `Shift` at the same time, to set or clear many layers at once.

Radio Buttons

Radio buttons

Radio buttons are used to choose from a small selection of “mutually exclusive” options.

Number Buttons



Number buttons

Number buttons can be identified by their labels, which in most cases contains the name and a colon followed

by a number. Number buttons can be edited in several ways:

Incremental Steps
To change the value in steps, click `LMB` on the small triangles on the sides of the button.

Dragging
To change the value in a wider range, hold down `LMB` and drag the mouse to the left or right.

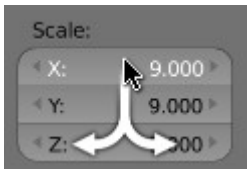
Text Input

Press `LMB` or `Return` to edit the value as a text field.

When entering values by hand, this button works like any other text button.

- Press `Return` to apply the change.
- Press `Esc` will cancel the value.

Multi-Value Editing



Multi-value-editing

It's often useful to edit multiple values at once (object scale or render resolution for example).

This can be done by clicking on the button and dragging vertically to include buttons above/below.

After the vertical motion you can drag from side to side, or release the `LMB` to type in a value.

Expressions

You can also enter expressions such as `3*2` instead of `6`. or `5/10+3`. Even constants like `pi` (3.142) or functions like `sqrt(2)` (square root of 2) may be used.

These expressions are evaluated by Python; for all available math expressions see: math module reference

Expressions as Drivers

You may want your expression to be re-evaluated after its entered. Blender supports this using *Drivers* (a feature of the animation system).

Expression beginning with #, have a special use. Instead of evaluating the value and discarding the expression, a driver is added to the property with the expression entered.

The expression `#frame` is a quick way to access map a value to the current frame, but more complex expressions are also supported `#fmod(frame, 24) / 24` for example.

This is simply a convenient shortcut to add drivers which can also be added via the `RMB` menu.

Units

As well as expressions, you can mix units with numbers; for this to work, units need to be set in the scene settings (Metric or Imperial).

Examples of valid units include:

- `1cm`
- `1m 3mm`
- `1m, 3mm`
- `2ft`
- `3ft/0.5km`
- `2.2mm + 5' / 3" - 2yards`

Note that the commas are optional. Notice how you can mix between metric and imperial even though the display can only show one at a time.

Unit Names

Unit names have can be used with both long and short forms, here are listed recognized unit names you can use.

Plurals of the names are recognized too, so `meter` and `meters` can both be used.

Imperial Units

Full Name	Short Name(s)	Scale of a Meter
thou	`mil`	0.0000254
inch	`"`, `in`	0.0254
foot, feet	`'`, `ft`	0.3048
yard	`yd`	0.9144
chain	`ch`	20.1168
furlong	`fur`	201.168
mile	`mi`, `m`	1609.344

Metric Units

Full Name	Short Name(s)	Scale of a Meter
micrometer	`um`	0.000001
millimeter	`mm`	0.001
centimeter	`cm`	0.01
decimeter	`dm`	0.1
meter	`m`	1.0
dekameter	`dam`	10.0
hectometer	`hm`	100.0
kilometer	`km`	1000.0

Menu Buttons

Blender uses a variety of different menus for accessing options, tools and selecting data-blocks.

Menu Shortcuts

- Arrow keys can be used to navigate.
- Each menu item has an underlined character which can be pressed to activate it.
- Number keys or num-pad can be used to access menu items. (Where `1` is the first menu item, `2` the

second... etc. For larger menus `Alt-1` the 11th... up to `Alt-0` the 20th)

- Press `Return` to activate the selected menu item.
- Press `Esc` to cancel the menu.

Header Menus

Header menus are used to configure the editor and access tools.

See *Headers* for header options.

Pop-Up Menus

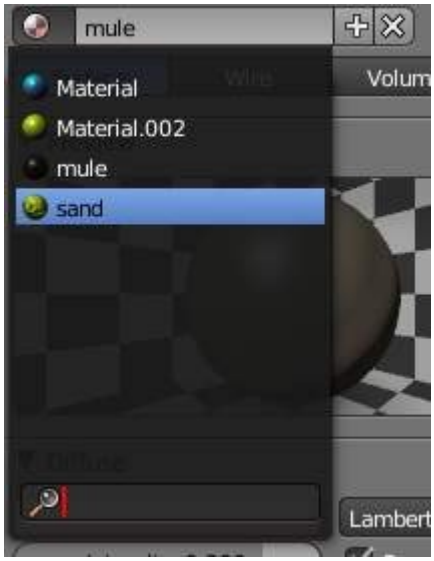
Pop-up menus are displayed as regular buttons, showing a range of options. For example, the *Add Modifier* button will produce a menu with all of the available modifiers.

Modifier options

Data-Block Menus

Menu buttons are used link data-blocks to each other. data-blocks are items like *Meshes*, *Objects*, *Materials*, *Textures*, and so on.

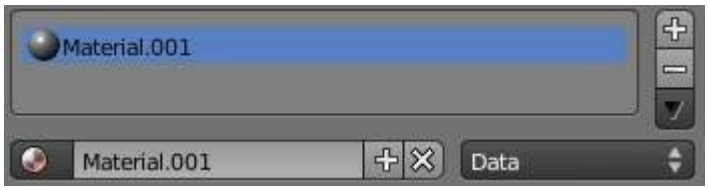
These menu’s may show a preview and allow you to search by name since its common all items wont fit in the list.



Data-block link menu with search

- The first button (with an icon of the data-block type) opens up a menu to select an item by clicking `LMB`.
- The second button displays the name of the linked data-block which can be edited as a regular text field.
- The “+” button duplicates the current data-block and applies it.
- The “X” button clears the link.

Sometimes there is a list of applied data-blocks (such as a list of materials used on the object). See *data-block link buttons* above.



Data-block link buttons

- To select a data-block, click `LMB` on it.
- To add a new section (e.g. material, or particle system), click `LMB` on the “+” button to the right of the list.
- To remove a section, click `LMB` on the “-” to the right of the list.

For details on the behavior of linking data see *data-block*.

Common Shortcuts

There are shortcuts shared between many button types.

While Hovering

When the cursor is held over a button

- `Ctrl-C` - copy the value of the button.
- `Ctrl-V` - paste the value of the button.
- `RMB` - open the context menu.
- `Backspace` - clears the value (sets to zero or clears a text field).

- `Minus` - negate number values (multiply by `-1.0`).
- `Ctrl-Wheel` - changes the value incremental steps.

  For pop-up option menus buttons this cycles the value.

File Selector Icon:

- `LMB` - select a new file.
- `Shift-LMB` - open the file externally *(using the systems default editor)*.
- `Alt-LMB` - open the directory externally *(using the systems file manager)*.

Animation:

- `I` - insert a keyframe.
- `Alt-I` - clear the keyframe.
- `Alt-Shift-I` - clear all keyframes (removing all F-Curves).
- `D` - assign a driver.
- `Alt-D` - clear the driver.
- `K` - add a keying set.
- `Alt-K` - clear the keying-set.

Python Scripting:

- `Ctrl-C` - over any Operation Buttons copies their Python command into the clipboard.

  This can be used in the Python console or in the text editor when writing scripts.

- `Ctrl-Shift-C` - over property buttons copies their data-path for this property (also available from the right-click menu).

  Useful when writing drivers or scripts.

- `Ctrl-Alt-Shift-C` - over property buttons copies their *full* data-path for the data-block and property.

  Note that in most cases its best to access values based on the context, instead of by name.

While Dragging Numbers

- `Ctrl` - while dragging snap the discrete steps.
- `Shift` - gives finer control over the value.

While Editing Text

- `Home` - go to the start.
- `End` - go to the end.
- `Left`, `Right` - move the cursor a single character.
- `Ctrl-Left`, `Ctrl-Right` - move the cursor an entire word.
- `Backspace`, `Delete` - delete characters.
- `Ctrl-Backspace`, `Ctrl-Delete` - delete words.
- Holding `Shift` - while moving the cursor selects.
- `Ctrl-C` - copy the selected text.
- `Ctrl-V` - paste test at the cursor location.
- `Ctrl-A` - selects all text.

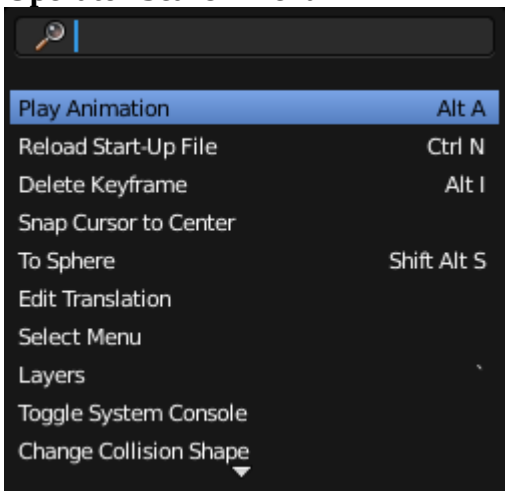
All Modes

- `Esc`, `RMB` - cancels.
- `Return`, `LMB` - confirms.

Extended Controls

This page documents some of the more involved interface controls.

Operator Search Menu



The operator search popup.

A menu with access to all *Blender* commands is available by pressing `Spacebar`. Simply start typing the name of the command you want to refine the list. When the list is sufficiently narrowed, `LMB` on the desired command or navigate with `Down` and `Up`, activate it by pressing `Return`.

Color Picker

All of the Color picker types have the common *RGB*, *HSV* and *Hex* options to show values.

Blender uses `0 - 1.0` values to express colors for *RGB* and *HSV* values.

Some colors also define an alpha value (*A*), below the color sliders.

Note

Blender corrects Gamma by default

for more information about how to disable Gamma correction in Blender, see: *Color Management and Exposure* page.

- Use `Wheel` to change overall brightness.
- Press `Backspace` to reset to the original color.

Color Picker Types

The default color picker type can be selected in the user preferences, see: *System*.

For operations that are capable of using Alpha, another slider is added at the bottom of the color picker.

- 

  Square (SV + H), *Saturation, Value plus Hue.* Colors are adjusted using the a range of brightness of the base color chosen at the color bar in the middle of the picker.

- 

  Circle HSV (Default). A full gamut of colors ranging from center to the borders is always shown; center is a mix of the colors.

- 

  Square (HS + V), *Hue, Saturation plus Value.* Brightness is subtracted from the base color chosen on the square of the color picker moving the slider to the left.

- 

  Circle HSL. A variation of the regular circle select that uses *HSL* for mixing.

- 

  Square (HV + S), *Hue, Value and Saturation*. Brightness is added to the base color chosen on the square of the color picker moving the slider to the left.

-

Hexidecimal Colors

You can optionally use hexidecimal *(Hex)* values, expressed as (`RRGGBB`), a common way to represent colors for HTML and useful quicky copy/paste colors between applications.

Shorthand hex colors are also supported (`RGB`), so dark-yellow (`ffcc00`), can be written as `fc0`.

Eye Dropper

The eye dropper allows you to sample from anywhere in the Blender window.

The eyedropper can be use to select different kinds of data.

Color
: This is the most common usage.

Objects / Object-Data
This is used with object buttons such as parent, constraints or modifiers to select an object from the 3D view.
Camera Depth
Number buttons effecting distance can also use the eye-dropper, this is most useful for camera depth of field.

- `E` will activate the eye-dropper while hovering over a button.
- `LMB` dragging will mix the colors you drag over which can help when sampling noisy imagery.
- `Spacebar` resets and starts mixing the colors again.

Color Ramp Widget

Colorband before

Colorband after

Color Ramps enables the user to specify a range of colors based on color stops. Color stops are similar to a mark indicating where the exact chosen color should be. The interval from each of the color stops added to the ramp is a result of the color interpolation and chosen interpolation method. The available options for Color Ramps are:

Add (Button)
Clicking on this button will add a stop to your custom weight paint map. The stops are added from the last selected stop to the next one, from left to right and they will be placed in the middle of both stops.
Delete (Button)
Deletes the selected color stop from the list.
'F' (Button)
Flips the color band, inverting the values of the custom weight paint range.
Numeric Field
Whenever the user adds a color stop to the custom weight paint range, the color stop will receive an index. This field shows the indexes added (clicking in the arrows until the counter stops), and allows the user to select the color stop from the list. The selected color stop will be shown with a dashed line.
Interpolation Options

Enables the user to choose from **4** types of calculations for the color interpolation for each color stop. Available options are:

B-Spline

Uses a *B-Spline* Interpolation for the color stops.

Cardinal
Uses a *Cardinal* Interpolation for the color stops.

Linear
Uses a *Linear* Interpolation for the color stops.

Ease
Uses a *Ease* Interpolation for the color stops.

Constant
Uses a *Constant* Interpolation for the color stops.

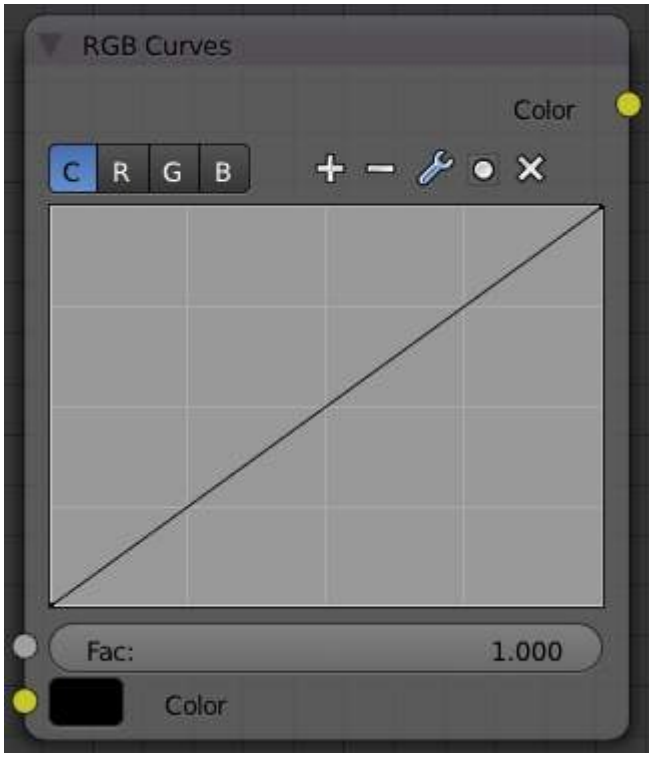
Position
This slider controls the positioning of the selected color stop in the range.

Color Bar
Opens a color Picker for the user to specify color and Alpha for the selected color stop. When a color is using Alpha, the Color Bar is then divided in two, with the left side showing the base color and the right side showing the color with the alpha value.

Shortcuts

- `LMB` (drag) moves colors.
- `Ctrl-LMB` (click) adds a new control point.

Curve Widget



RGB Curves node

The *Curve Widget* is found in several places throughout Blender, such as:

- RGB Curves node
- Vector Curves node
- Paint/Sculpt brush falloff
- Color Management curves

The purpose of the *Curve Widget* is to allow the user to modify an input (such as an image) in an intuitive

manner by smoothly adjusting the values up and down using the curve.

The input values are mapped to the X-axis of the graph, and the Y-axis is mapped to the output values.

Control Points

Like all curves in Blender, the curve of the *Curve Widget* is controlled using *control points*.

By default there are two control points: one at `0.0, 0.0` and one at `1.0, 1.0`, meaning the input is mapped directly to the output (unchanged).

To move a control point
: Simply click and drag it around.

To add a new control point
: Click anywhere on the curve where there is not already a control point.

To remove a control point
: select it and click the  button at the top right.

Controls

Above the curve graph is a row of controls. These are:

Node curve controls

Channel selector

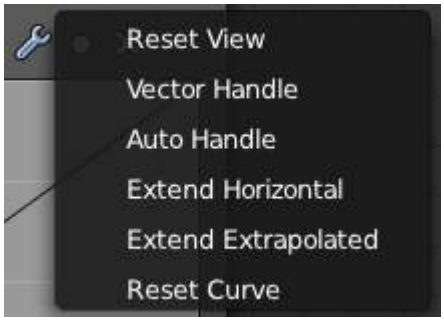
: Allows to select appropriate curve channel.

Curve channel selector

Zoom In
: Zoom into the center of the graph to show more details and provide more accurate control. To navigate around the curve while zoomed in, click and drag in an empty part of the graph.

Zoom Out
: Zoom out of the graph to show less details and view the graph as a whole. You cannot zoom out further than the clipping borders (see *Clipping* below).

Tools



Advanced tools for curve

Reset View

Resets view of the curve.

Vector Handle
Vector type of curve point's handle.

Auto Handle
Automatic type of curve point's handle.

Extend Horizontal
Extends the curve horizontal.

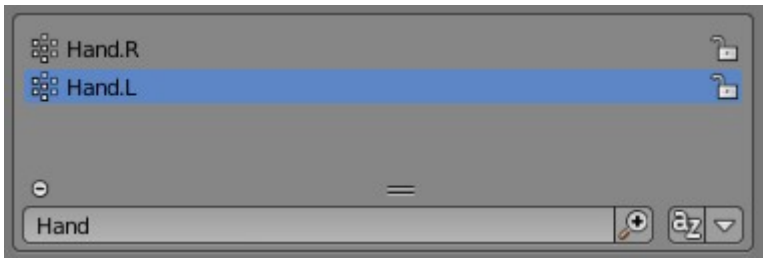
Extend Extrapolated
Extends the curve extrapolated.

Reset Curve
Resets the curve in default (removes all added curve's points).

Clipping
Enable/disable clipping and set the values to clip to.

Delete
Remove the selected control point.

List View



At the bottom of a list view (like the ones found in the object data properties) there are controls for filtering and sorting and resizing.

Rename
By pressing (`Ctrl`, `LMB`) over an item's name, you can edit the text-field. This can also be achieved by double clicking.

Resize
The list view can be resized to show more or less items. Hover the mouse over the handle then click and drag the handle to expand or shrink the list.

Filter

Click the *Show filtering options* button to toggle filter option buttons.

Type part of a list item's name in the filter text box to filter items by part of their name.

Filter Include
When the magnifying glass icon has a `+` sign then only items that match the text will be displayed.

Filter Exclude
When the magnifying glass icon has a `-` sign then only items that do not match text will be displayed.

Sort

Sort list items.

Alphabetical
This button switches between alphabetical and non-alphabetical ordering.

Inverse
Sort objects in ascending or descending order. This also applies to alphabetical sorting, if selected.