

## 12.1.37 Editors - Geometry Nodes Editor - Header - Add Menu - Utilities - Vector

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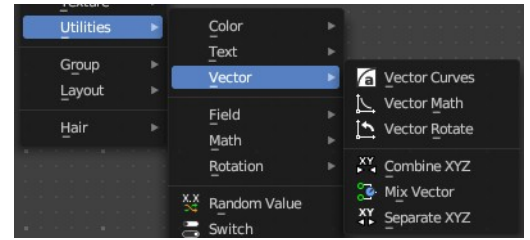
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## Add menu - Vector

Vector nodes are for calculating vector operations.



## Vector Curves

The Vector Curves node maps an input vector components to a curve.

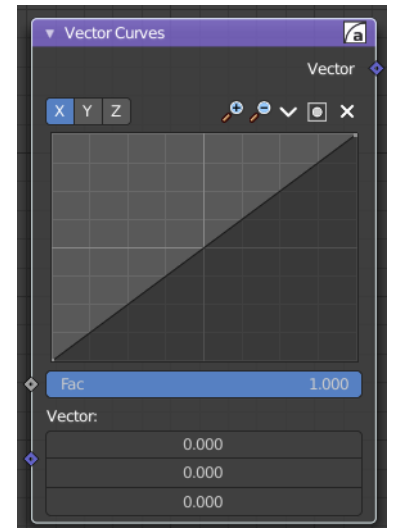
### Inputs

#### Factor

Standard vector input.

#### Vector

Standard vector input.



### Properties

#### Channel

#### Channel buttons

X, Y, Z. Clicking on one of the channels displays the curve for each.



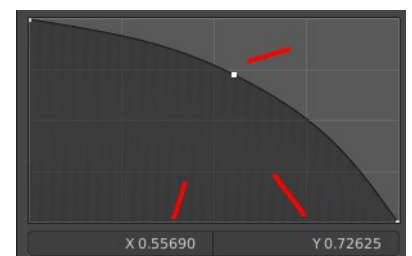
#### Curve edit field

Create and tweak a Bezier curve that varies the input levels (X axis) to produce an output level (Y axis).

#### Selecting Points

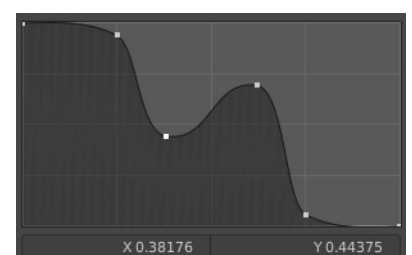
You can select curve points. This reveals two edit boxes for the x and y coordinate of this point.

Selected points can be moved around. Left click at them, hold the mouse button down and move them to a new location.



#### Adding Points

You can add new curve points by simply left clicking at the curve. Move the mouse to position them where you need it.



## Navigation elements

The navigation elements at the top are described from left to right.



### ***Zoom in and out***

The two buttons with the magnifying glass at it zooms in and out in the curve window.

## Tools

Tools is a menu where you can find some curve related tools.

### ***Reset View***

Resets the curve windows zoom.

### ***Vector Handle***

Set handle type to Vector.

### ***Auto Handle***

Set handle type to Auto.

### ***Auto Clamped Handle***

Set handle type to Auto Clamped.

### ***Extend horizontal***

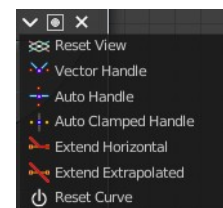
Extends the curve before the first curve point and behind the last curve point horizontally.

### ***Extend extrapolated***

Extends the curve before the first curve point and behind the last curve point extrapolated.

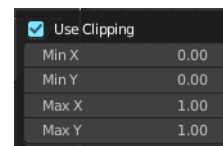
### ***Reset Curve***

Resets the curve to the initial shape.



## Use Clipping

Clipping options. Set up clipping for the stroke.



## Delete Points

Deletes selected curve points.

## Outputs

### ***Vector***

Standard vector output.

## Vector Math

The Vector Math node performs the selected math operation on the input vectors.

### Inputs

The inputs of the node are dynamic. Some inputs are only available in certain operations. For instance, the Scale input is only available in the Scale operator.

#### **Vector**

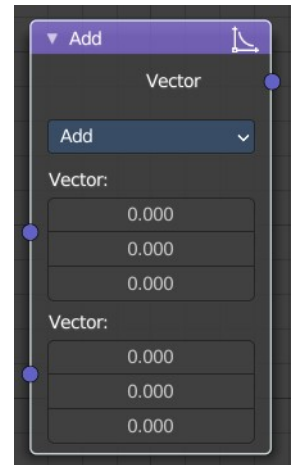
Input vector A.

#### **Vector**

Input vector B.

#### **Scale**

Input Scale.



### Properties

#### **Operation**

The vector math operator to be applied on the input vectors.



### Outputs

The output of the node is dynamic. It is either a vector or a scalar depending on the operator. For instance, the Length operator have a scalar output while the Add operator have a vector output.

#### **Vector**

Output vector.

#### **Value**

Output value.

## Vector Rotate

The Vector Rotate node allows rotations by a vector.

### Inputs

The inputs of the node are dynamic. Some inputs are only available in certain operations. For instance, the Angle input is just available with the Axis Angle type.

### Vector

Input vector.

### Center

Input Center

### Axis

Input Axis.

### Angle

Input Angle

## Properties

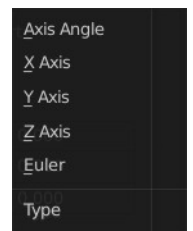
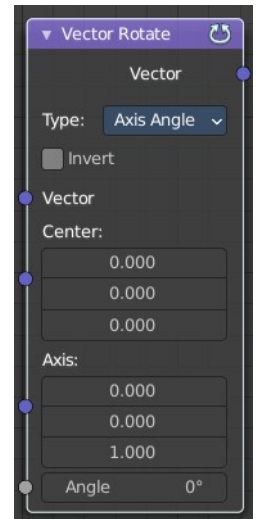
### Type

The rotation type.

## Outputs

### Vector

The Output vector.



## Combine XYZ

The Combine XYZ Node combines a vector from its individual components.

### Input

### X Y and Z

X, Y and Z values.



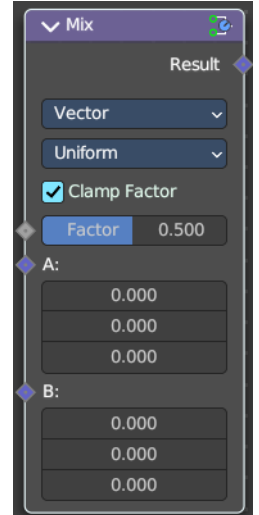
## Output

### Color

Color output.

## Mix Vector

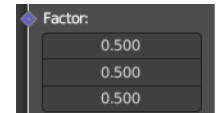
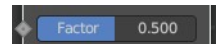
Allows to mix values and vectors in various ways. The node has three different modes. Float, Vector and Color. This here is the node in Vector mode.



## Input

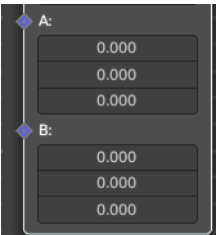
### Factor

The mix factor. With mode Uniform it is a single value. With mode Non Uniform it is a vector.



### A

Vector A input.



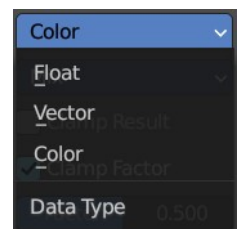
### B

Vector B input.

## Properties

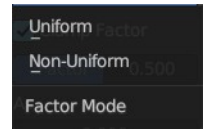
### Data Type

Which mode to use. We cover here the Vector mode.



## **Factor Mode**

Use a single value or a vector for the factor.



## **Output**

### **Result**

The output value or vector.

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## **Separate XYZ**

The Separate XYZ Node splits a vector into its individual components.

## **Input**

### **Vector**

The Input vector.



## **Output**

### **X, Y and Z**

The output vectors for X, Y and Z.