Welcome to the documentation and thank you for purchasing *Dynamic Grass FX*!

For any questions, don't hesitate to contact me at: maxilevi77@gmail.com

Please consider rating the package in your asset downloads or leave a review on the asset page. This will help the growth of this asset.

Getting Started

Setup

Setting up the asset is really intuitive, just follow this steps:

1. Create an empty `GameObject`.
2. Add a `MeshFilter` and a `MeshRenderer` to the newly created `GameObject`.
3. Configure the `MeshFilter` to use the mesh you want the grass surface to have.
4. Create a new material and assign the `Bytesized/Grass` shader.
5. Select the material and configure the shader parameters.
6. Apply the material to the previously created `GameObject`.
7. Enjoy your GPU generated grass!

How it works

The main shader is divided in 2 main stages, the tesselation shader and the geometry shader:

- The `tesselation shader` is in charge of subdividing the mesh into smaller triangles the closer it is from the camera, allowing the geometry shader to output less grass blades the farther the distance from the camera is, making it more performant; This shader is located `GrassTessellation.cginc` and included via a directive.

- The `geometry shader` is in charge of processing each vertex and outputing a grass blade with the specified parameters in that position. When generating it all the uniforms described below are applied, the wind factor, the width, the height, the stiffness and many others are all calculated foreach vertex on each generated segment.

`Bytesized/Grass` Shader Reference

Property	Type	Description	Default Value
Top Color	Color	Top color of the grass blade	(0.57, 0.84, 0.32, 1.0)
Bottom Color	Color	Bottom color of the grass blade	(0.0625, 0.375, 0.07, 1.0)
Translucent Gain	Range(0.0001, 1)	Strength of the glow effect	0.3
Wind Strength	Range(0, 1)	Strength of the wind effect	0.3
View Radius	Float	Distance from the camera of when to start reducing the amount of grass to improve performance	48

Property	Type	Description	Default Value
Max Stages	Range(2, 64)	Maximium amount of tessellation steps that can be done. (The hardware limit is 64)	7
Base Stages	Range(-64, 64)	Stages to add by default to the calculation. Useful for tweaking the out-of-radius grass rendering.	-0.5
Blade Width	Range(0, 0.4)	Target width of the grass blade	0.05
Blade Width Random	Range(0, 0.4)	Max amount of width that can deviate from the target width	0.02
Blade Height	Float	Target height of the grass blade	0.5
Blade Height Random	Float	Max amount of height that can deviate from the target height	0.5
Blade Stiffness Amount	Range(0, 1)	Stiffness of the grass blades	0.38
Blade Curvature Amount	Range(1, 4)	Amount of curvature to apply to the grass blades	2
Bend Rotation Random	Range(0, 1)	Strength of the glow effect	0.2