

Projectile Deflection System – User Guide

Hi there! This is a guide for my projectile deflection plugin for Godot. Using this plugin should allow you to implement a deflection mechanic into your game easily, but if you're having any issues or struggling to understand how to take advantage of any of the functionality I've built, this document is here to help you.

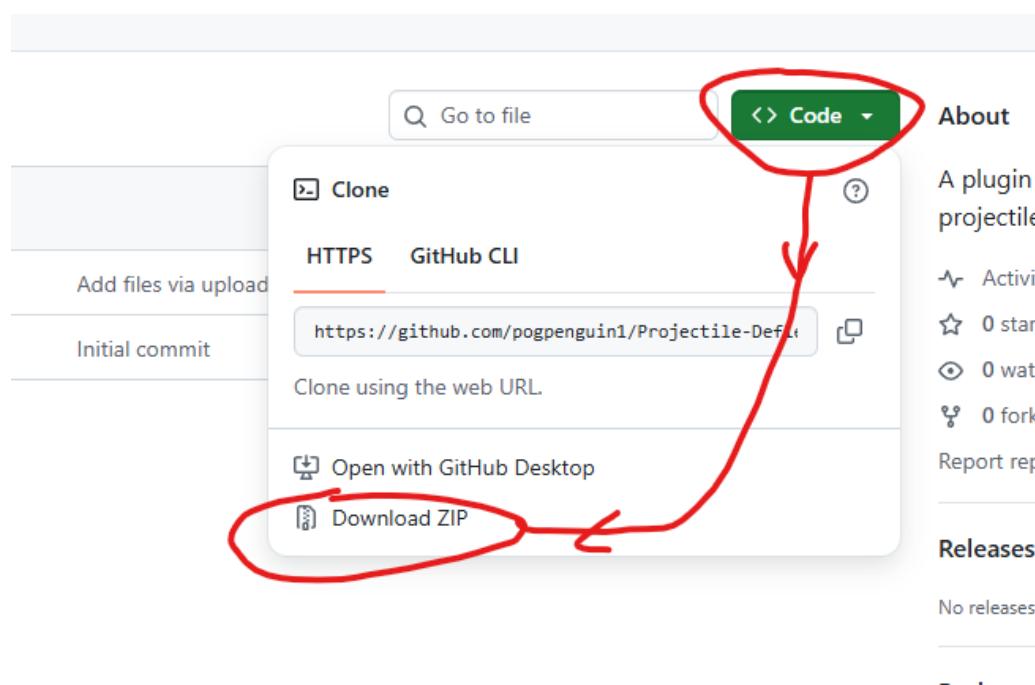
Core Features:

- Custom Nodes “DeflectableProjectile2D” and “Deflector2D” (explained in detail in Section 2)
- Speed/Damage stacking, team colour settings, sprite swaps
- Optional Homing
- Deflect Delay Feature
- Example Demo Scenes for testing purposes

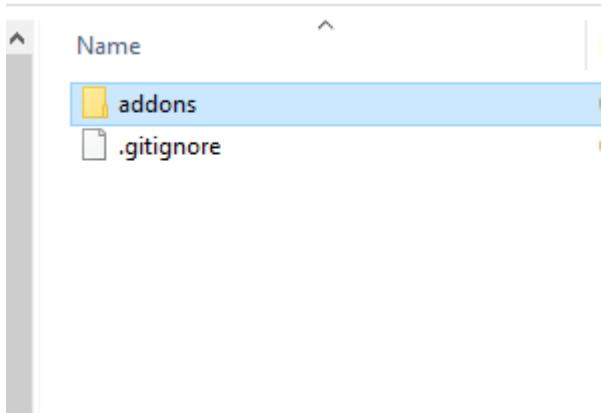
Section 1: Set Up:

In case you somehow got here and missed the GitHub link, here's the link containing the plugin: [Projectile Deflection System Plugin - Github](https://github.com/pogpenguin1/Projectile-Deflection-System)

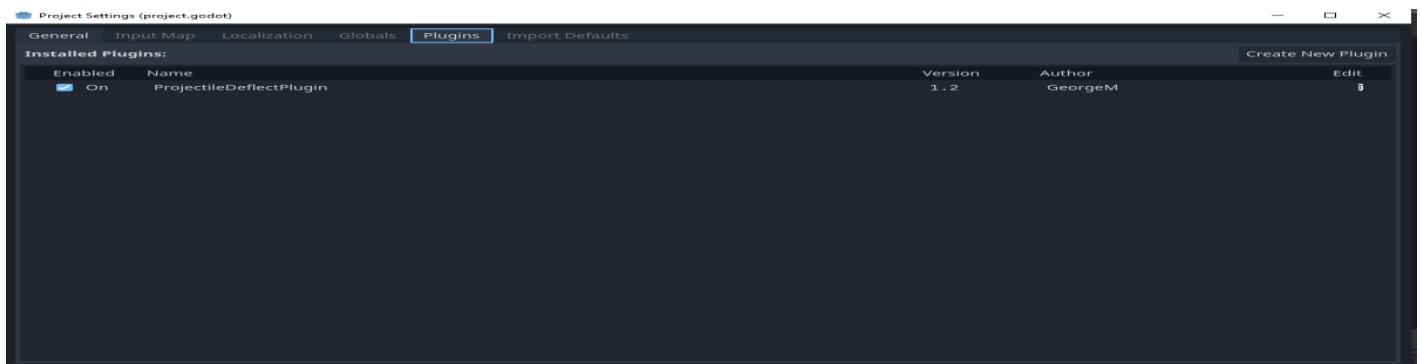
To download the plugin, simply press the green “Code” button, and “Download ZIP”



Next, unzip and copy the addons/projectiledeflectplugin folder into your Godot project root.



Then, in Godot, make sure you enable the plugin in the project settings. You may have to save and restart your project after for compilation.



Section 2: Custom Nodes and Export Variables:

DeflectableProjectile2D

Whenever you want projectiles to be deflectable, you can use this custom node to create those types of projectiles. Just attach a Sprite2D and CollisionShape2D, and make it belong to Group "deflectable" to set it up properly!

There's a multitude of exported variables you can toy around with to alter the behaviour of the projectile.

deflectable_projectile_2d.gd		
Can Be Deflected	<input checked="" type="checkbox"/> On	
Max Deflections	0	
Base Speed	300.0	
Base Damage	1.0	
Enable Speed Stacking	<input checked="" type="checkbox"/> On	
Speed Multiplier per Deflect	1.0	
Max Speed	1000.0	
Deflect Damage Multiplier	1.0	
Damage Increases per Deflect	<input checked="" type="checkbox"/> On	
Damage Bonus per Deflect	10.0	
Enable Homing After Deflect	<input type="checkbox"/> On	
Homing Strength	50.0	
Homing Target Group	& enemies	
Homing Mode	OriginalSource	
Enable Team Tint	<input checked="" type="checkbox"/> On	
Friendly Team ID	0	
Default Tint		
Friendly Tint		
Enable Sprite Swap on Deflect	<input checked="" type="checkbox"/> On	
Deflected Texture		

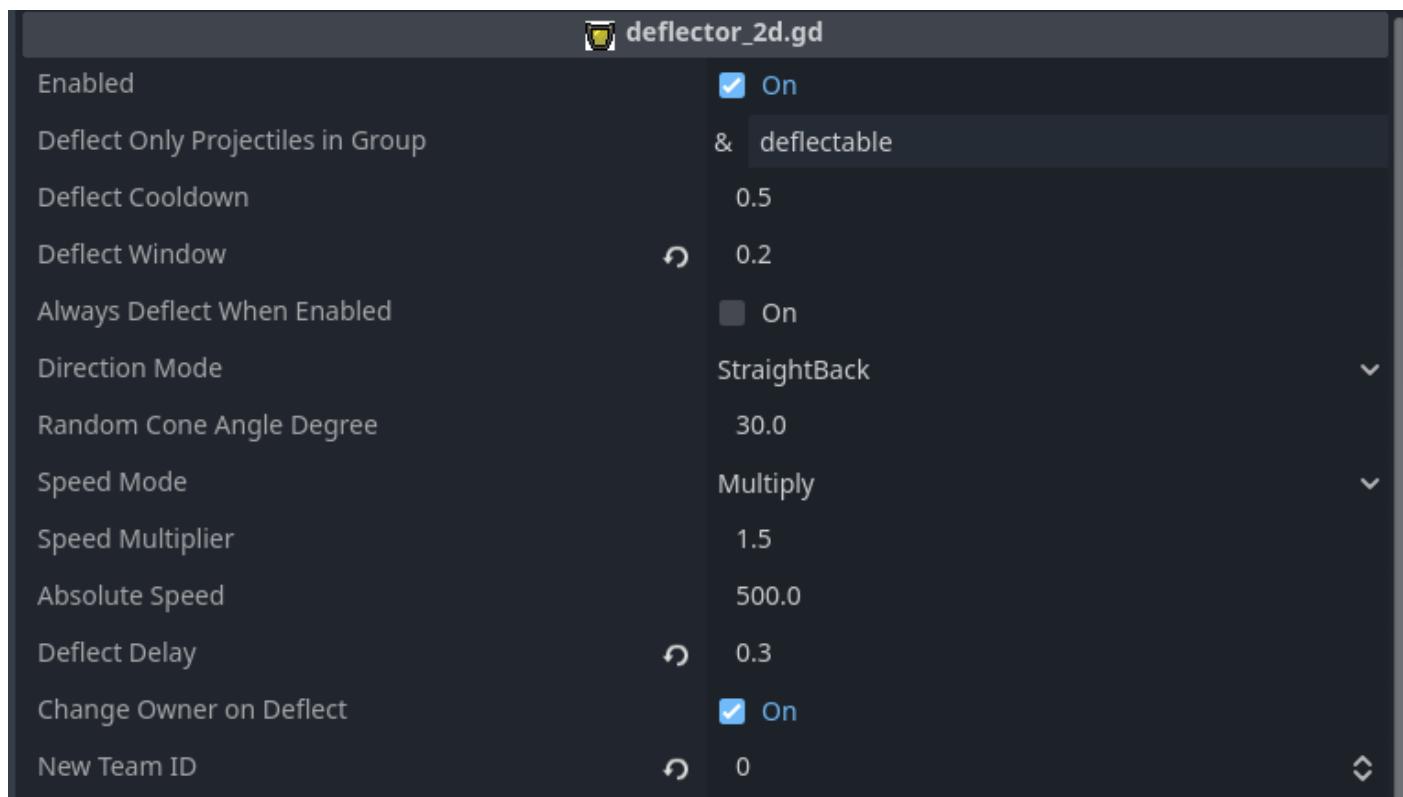
- Can Be Deflected: dimly turn on or off depending on if you want this projectile to deflect!
- Max Deflections: how many deflections can occur before projectile is destroyed? (0 = Infinite)
- Base Speed: the normal speed of the projectile before deflections have happened.
- Base Damage: the normal damage of the projectile before deflections have happened.
- Enable Speed Stacking: does the projectile speed up on every deflect?
- Speed Multiplier per Deflect: and by how much does that speed increase?
- Max Speed: what's the cap on the speed before it stops increasing?
- Deflect Damage Multiplier: by how much does damage increase after each deflect?
- Damage Increases per Deflect: does damage stay the same after deflection?
- Damage Bonus per Deflect: add a flat damage bonus instead (or alongside) a multiplier.
- Enable Homing: Do the projectiles home in towards enemies?
- Homing Strength: How strong projectiles can turn and move during a homing deflect.
- Homing Target Group: which Group should it home in on?
- Homing Mode: Original Source = whoever fired the projectile
 - Nearest Target = whoever is nearest (within homing target group)
- Enable Team Tint: add a colour tint to deflected projectiles once they're owned by you
- Default Tint: Default Colour

- Friendly Tint: the colour it changes to
- Enable Sprite Swap on Deflect: does the sprite change or stay the same after deflection?
- Deflected Texture: add a new sprite if you wish!

Deflector2D

Whenever you want an actor to be capable of deflecting projectiles, you can add this custom node to its scene! (make sure you add an Area2D as a child of this node to make a collision mask!).

Theres a multitude of exported variables you can toy around with to alter the behaviour of the projectile.



- Enabled: is the Custom Node enabled or not?
- Deflect Projectiles in Group: can specifise what group you want to make deflectable
- Deflect Cooldown: add a cooldown before the deflection happens
- Deflect Window: how long the actors window of opportunity is for deflection.
- Always Deflect when Enabled: can be turned on to make the actor technically invincible
- Direction Mode: Straightback = mirrored back along the incoming path
TowardsOrigin = send back to whoever started it
TowardsCrosshair = deflect towards players crosshair position
RandomCone = deflect randomly within a cone of influence
- Random Cone Angle Degree: used for RandomCone. How large is the angle?
- SpeedMode: Keep = dont touch the speed, let projectile logic decide completely
Multiply = when deflecting, make it 1.5x faster (for example)
- SetAbsolute: When Deflector2D deflects, overrides whatever projectile settings were prior.

- Absolute Speed: What is the new speed set through the speed mode?
- Deflect Delay: Time between a deflection occurring and projectile firing back,
- Change owner on deflect: does the projectile now belong to this actor?
- New Team ID: used for ownership settings

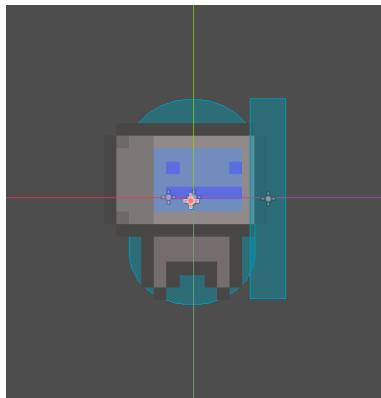
Section 3: Demo Assets

Also within the Plugin is some demo assets, showing an example of how you could take the two custom nodes and apply them to a player and an enemy.

Demo_player (uses the Deflector2D)

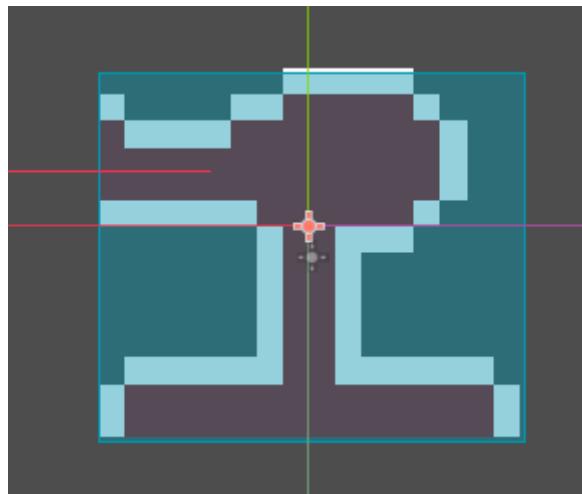
A simple playable character with a deflect ability bound to the Q key and Right Mouse Button.
Also has some basic 2D movement (A/D and Left/Right Arrow keys for movement and Space for jump)

Through the player code, you can see how to call start_deflect_window(), swap animation and sprite frames when deflects active, and how a Deflector2D custom node is added as a child.



Demo_turret (uses DeflectableProjectile2D)

A stationary turret that shoots deflectable projectiles at the player. (A variant exists that can deflect back at the player AND be destroyed)



Demo_Level 1+2

A level containing a normal turret and a deflecting turret that can be used as a sandbox arena to test out the deflection system and its variables before using them for your own projects.

