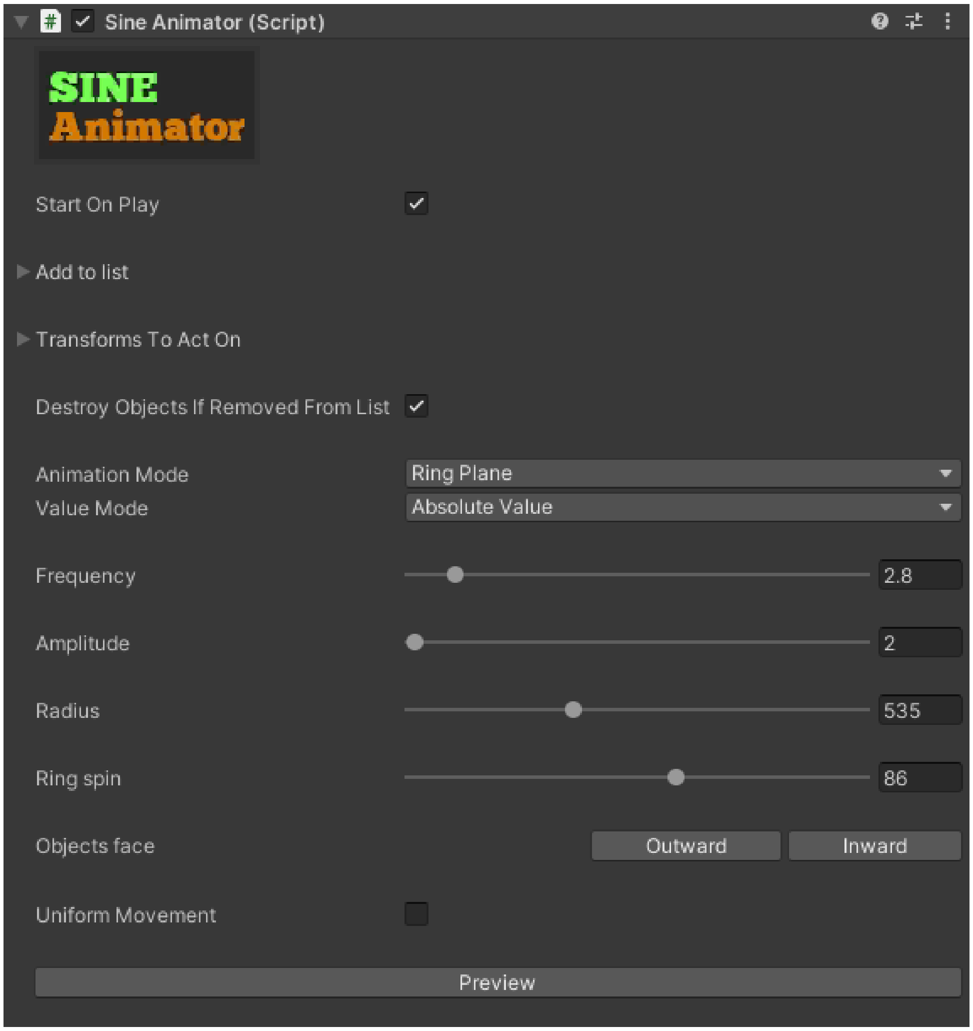
SINE Animator

Introduction

Sine waves are frequently used in game development. One typical use is to scale an object up and down by interpolating between two scales, using the sine wave values between 0 and 1 (e.g. the yellow splash text in the Minecraft main menu).

Another one is to direct the player's attention by animating an arrow, by continuously interpolating between two positions.

The SINE Animator explores different ways of creating continuous animations with a sine wave, in an easy to use inspector interface.



Sine Animator (Script)

SINE Animator

Start On Play ☑

▶ Add to list

▶ Transforms To Act On

Destroy Objects If Removed From List ☑

Animation Mode: Ring Plane

Value Mode: Absolute Value

Frequency: 2.8

Amplitude: 2

Radius: 535

Ring spin: 86

Objects face: Outward | Inward

Uniform Movement ☐

Preview

Features

Start on play

Makes sure the continuous animation starts when you start the game in the scene.

Generate objects

Since adding lots of transforms manually to a list is not very fulfilling, these controls let you specify a prefab and add instances of it as children to the object *SINE Animator* is attached to.

Transforms to act on

The list of transforms that can be manipulated by the asset.

NOTE! Since *SINE Animator* is designed to animate any number of transforms, the object you add SINE Animator to is NOT added to the list by default.

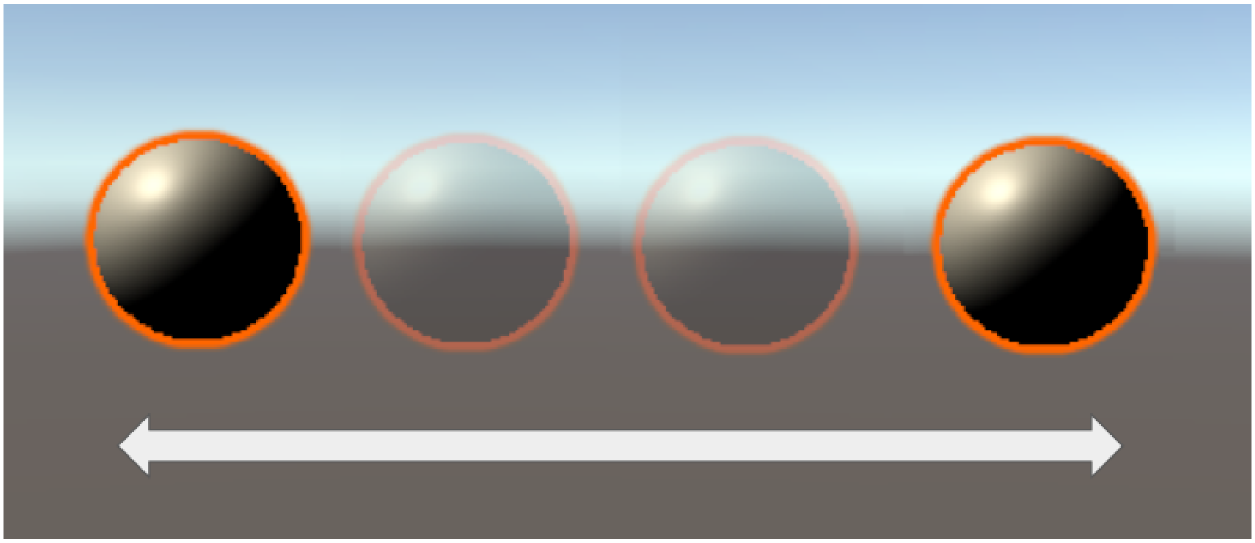
Destroy objects if removed from list

It may be desirable to experiment with different amounts of objects, and if objects are generated and then list count decreased later, it may be cumbersome to have objects in the scene that are no longer part of the animation. This checkbox makes sure these objects are destroyed if you decrease the list count. (Does not apply if you right click on a list element and click “Delete array element”)

Animation modes

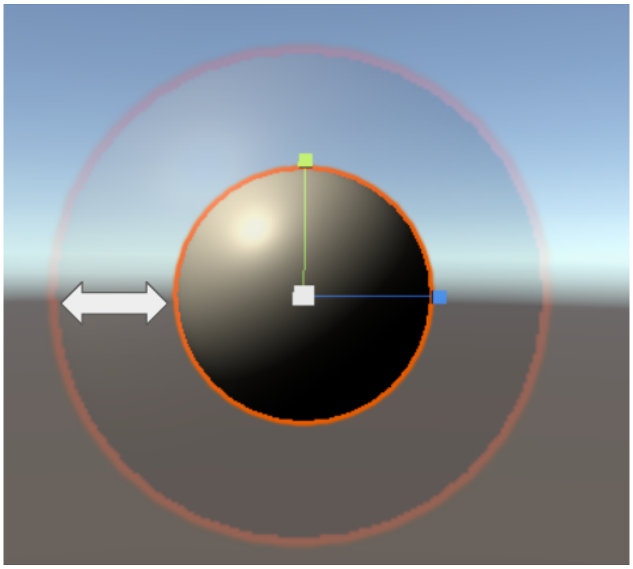
Position bobber

The objects will move back and forth along their own forward vector.



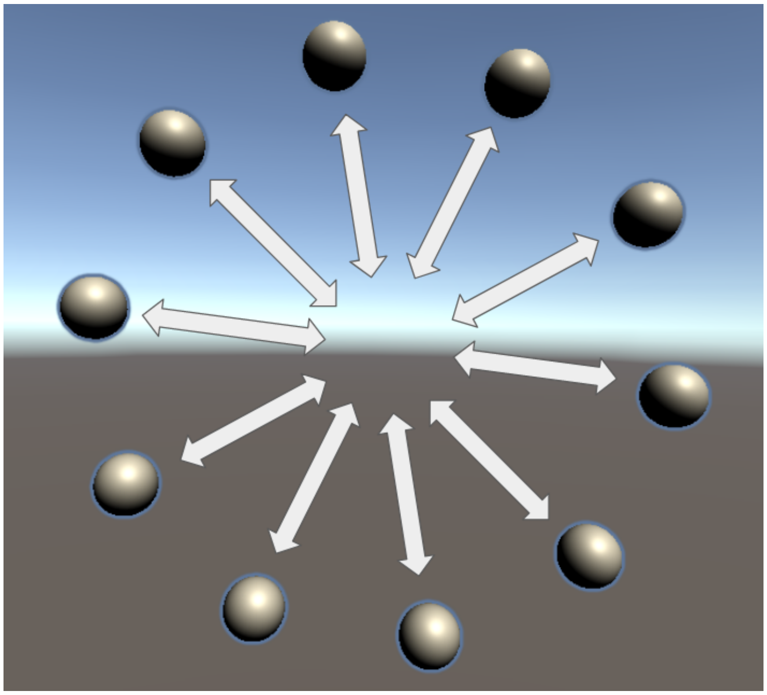
Scale bobber

The object will scale up and down. They will grow maximum twice their original size.



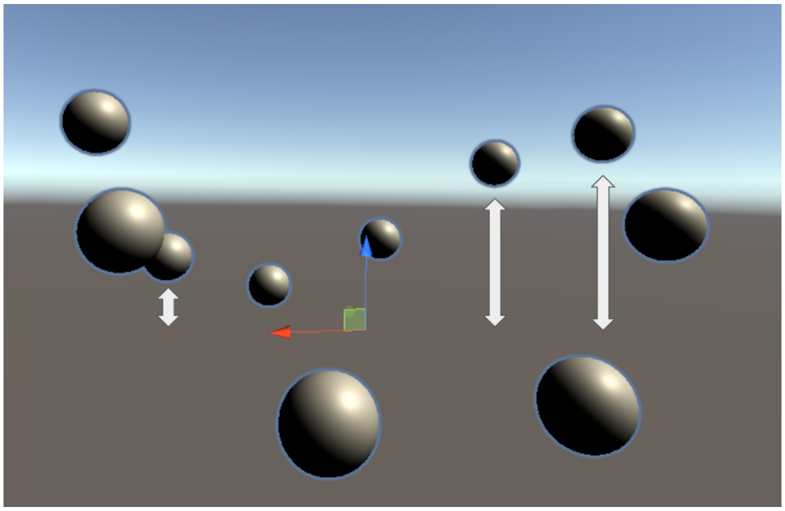
Ring plane

The ring plane mode distributes the objects in a ring around the center, and moves them towards - and away from - the center.



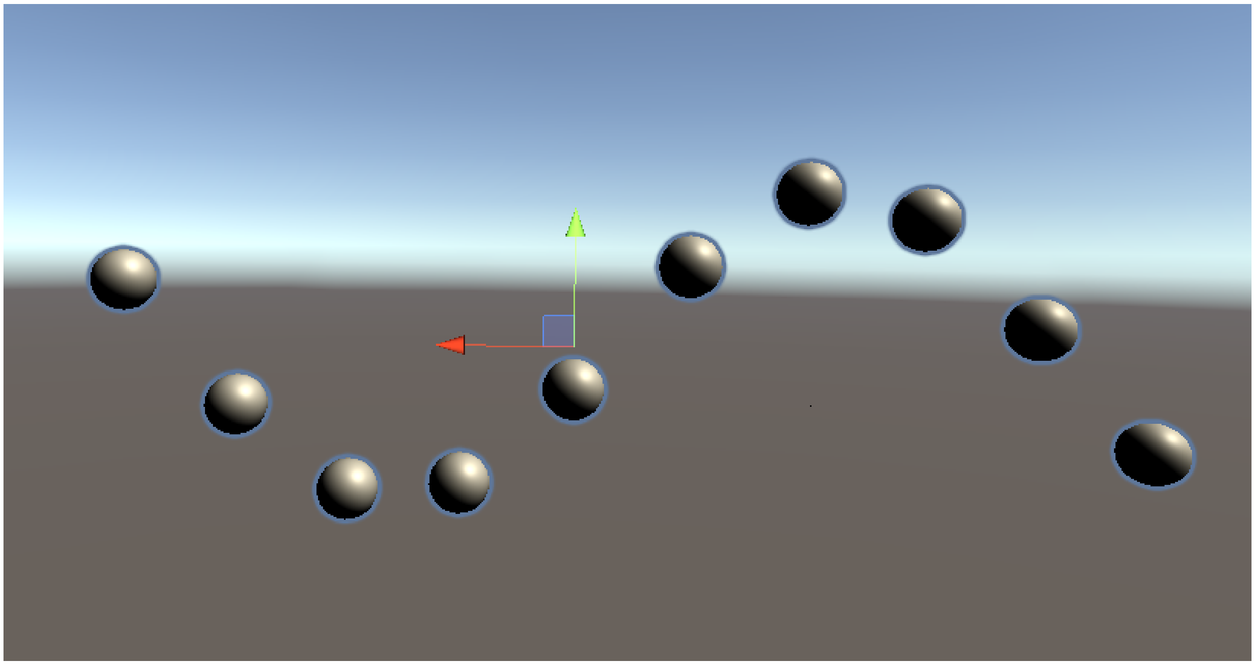
Ring carousel

The ring carousel mode distributes the objects in a ring around the center, and moves them back and forth along the parent object's forward vector.



Wall

The wall mode will align the objects on a plane, stretched out horizontally along the parent object’s right direction vector



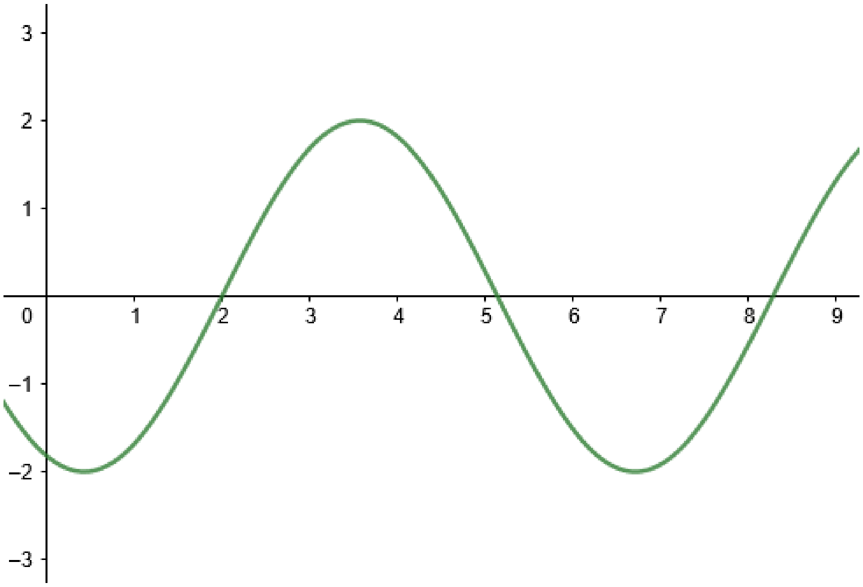
NOTE! Some animation modes require that the objects to be animated must be a child of the object that SINE Animator is attached to. This is because their position is calculated based on an offset to the parent object. If a non-child object is added to the list, and current mode requires objects to be a child, it will automatically be parented to the object SINE Animator is attached to.

Mode	Animated objects must be children
Position bobber	No
Scale bobber	No
Ring plane	Yes
Ring carousel	Yes
Wall	Yes

Value modes

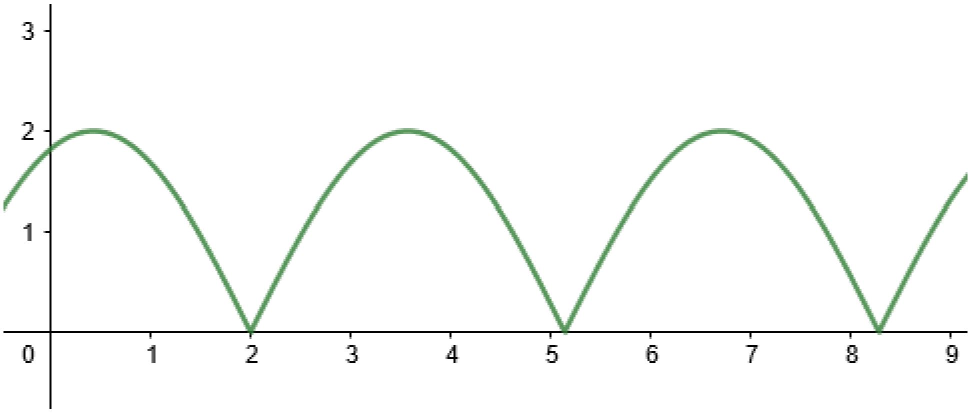
Value

The value mode uses the actual value - both positive and negative - to produce movement, resulting in smooth movement patterns.



Absolute value

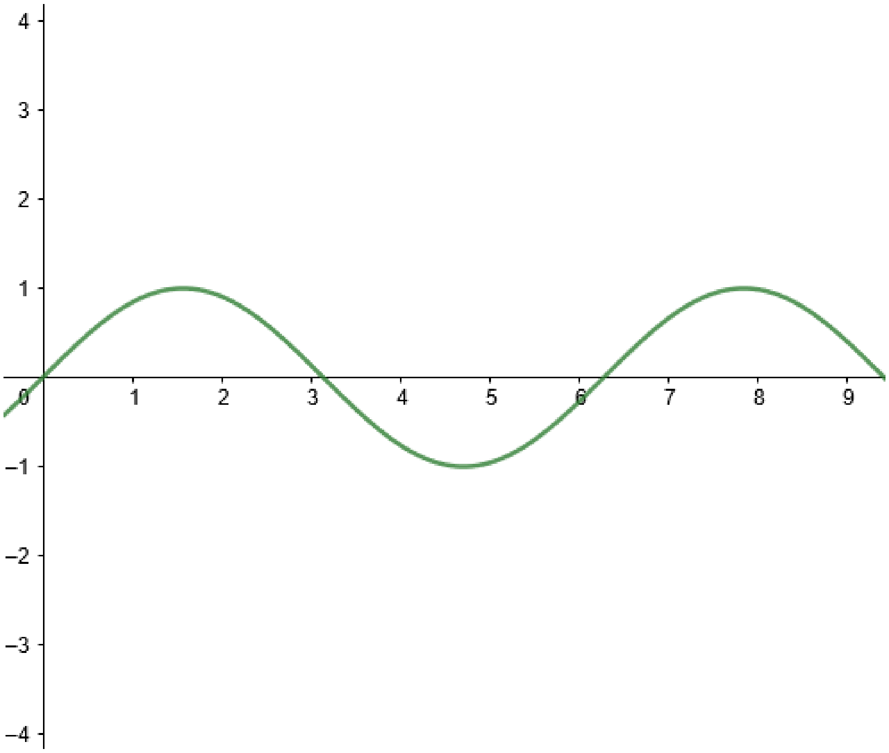
The absolute value mode turns all the negative values into positive ones, resulting in bouncy movement patterns.



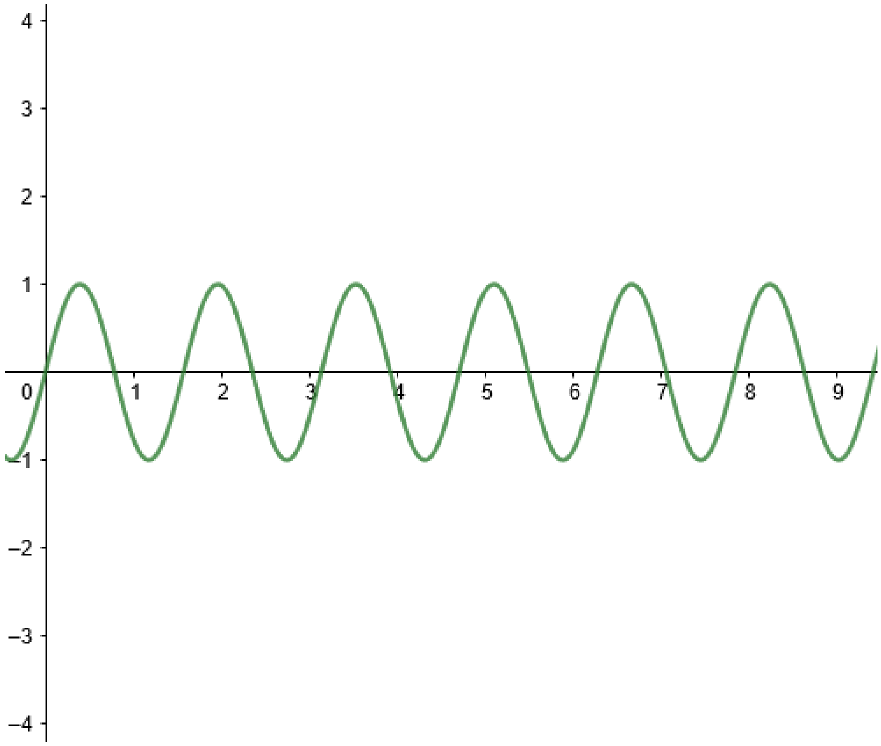
Controls

Frequency and amplitude

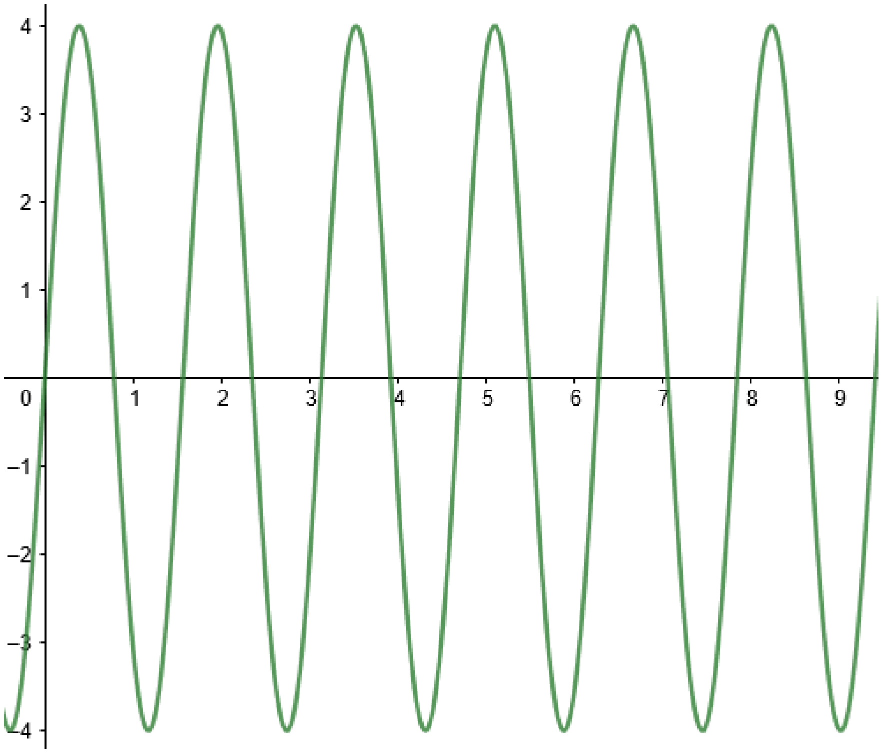
All animation modes contain the *Frequency* and *Amplitude* controls, as they are central to the sine wave itself. Frequency determines the speed and shape of the movements, while amplitude determines the distance traveled.



Default function of time

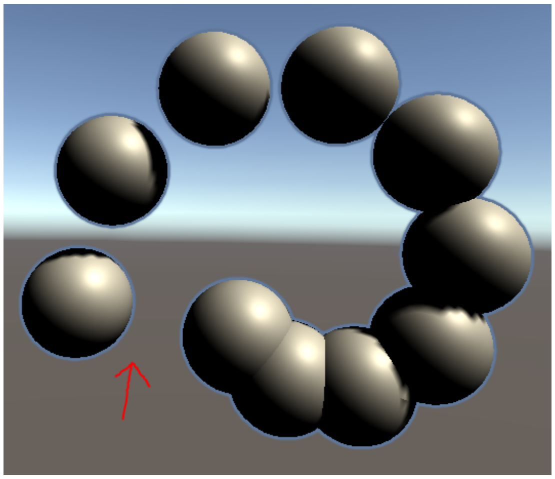


Increased frequency



Increased amplitude

NOTE! For *Ring plane* and *Ring carousel*, setting the frequency to a non whole number - a number with decimals - will create a disconnect between the first and last object in the list. In other words, keep it to integer numbers for a completely uniform balanced pattern.



Radius

Controls the object’s distance from the center (Ring modes only)

Ring spin

Spins the objects around the parent object’s forward vector. (Ring modes only)

Objects face

Sets the animated objects to be faced away from or towards the center of the ring. (Ring modes only)

Uniform movement

Makes the objects move identically, opposed to being placed on different parts of the sine wave (Ring modes + wall)

Wall width

Increases the space between objects on the wall (Wall only)

FAQ

Nothing is animating!

Did you actually add the transforms to the TransformsToActOn list? Adding the Sine Animator component won't add the transform for that object to the list by default.

How do I trigger the animation through code?

Get a reference to the particular *SineAnimator* component, and call the public function *StartAnimation()* to start the continuous animation.

Can I have the same transform present in multiple Sine Animator's?

Yes you can, but it's up to you to make sure they aren't running at the same time during playback.

Can I change the slider control's default min and max values?

Yes! In the SineAminatorEditor.cs file, in the OnInspectorGUI function, search for "EditorGUILayout.Slider" and you will find all the sliders in the inspectors. The two last parameters are min and max values.

Support contact

Please send support requests to spheroidgamestudio@gmail.com