

Boids are flocks of characters that play a few animations. These characters are usually birds, fish, insects, etc.

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You can find out more about setting up Boids in Sandbox here: [Boids Entities](#).



Rigging the Characters

There are few boid requirements:

- Must be a skinned character.
- LOD's (especially LOD1 for the ragdoll).

CRYENGINE 3.5 - LOD's in CHR's

 The skin with LOD's needs to be re-exported from DCC tools as a .skin. LOD's in CHR's are not supported any more.

Animations also need to be re-exported/imported through the [Animation Compression Editor](#) and Animation Importer tool as well.

Simple boids like insects or fish can have one single bone and point to null animations.

Animation

There are three animations boid characters use or require:

- "swim_loop"
- "fly_loop"
- "landing"

Don't forget that each boid character needs a CAL file that points to its animations. As you see below, these three animations will be slightly scaled according to the speed of the boid.

Entity Properties

| | Boid | |
|---|------------------|--|
| n | Count | [FLOAT, 10] - The number of characters in the group |
| n | Mass | [FLOAT, 10] - The mass of one character in kg |
| ? | Model | [RELATIVE PATH] - The CGA model you created |
| n | Size | [FLOAT, 1] - The scale of the characters in the group |
| n | SizeRandom | [FLOAT, 0] - Random size multiplier |
| n | gravity_at_death | [FLOAT, -9.81] - Gravitational impulse applied to a member of the group on death |
| | Flocking | |
| n | AttractDistMax | [FLOAT, 20] - The maximum distance from the boid in meters (radius) wherein it will be attracted to another |
| n | AttractDistMin | [FLOAT, 5] - The minimum distance from the boid in meters (radius) wherein it will repel others |
| ? | EnableFlocking | [BOOL, False] - Enable/Disable flocking, when disabled, every boid will be on his own |
| n | FactorAlign | [FLOAT, 0] - A multiplier effecting the coherency of the aligned direction of the boids |
| n | FactorCohesion | [FLOAT, 1] - A multiplier effecting how strong the attraction is for the group to stay together |
| n | FactorSeperation | [FLOAT, 10] - The strength of the force repelling the boids when they are in another's AttractDistMin radius |

| | | |
|---|--------------------------|---|
| n | FieldOfViewAgle | [FLOAT, 250] - Each boids angle of sight (cone) wherein he can see other boids |
| | Movement | |
| n | FactorAvoidLand | [FLOAT, 10] - How strong of a force is applied for them to avoid land |
| n | FactorHeight | [FLOAT, 0.4] - A lower value means more vertical movement, a higher value, more horizontal movement |
| n | FactorOrigin | [FLOAT, 0.1] - How strong the boids attraction to the origin point of the boids system is |
| n | FactorRandomAcceleration | [FLOAT, 2] - Random acceleration multiplier |
| n | HeightMax | [FLOAT, 20] - Maximum height (meters) boids will travel from the terrain (water clamps fish) |
| n | HeightMin | [FLOAT, 2] - Minimum distance (meters) boids will come to the terrain |
| n | MaxAnimSpeed | [FLOAT, 1.7] - Multiplier, the maximum deviation allowed from the original animation speed. (Anim speed scales based on boid speed) |
| n | SpeedMax | [FLOAT, 8] - Maximum amount (meters/sec) the boids can move |
| n | SpeedMin | [FLOAT, 2] - Minimum amount (meters/sec) the boids can move |
| | Options | |
| ? | Activate | [BOOL, False] - Whether or not the boids system is activated in the game |
| ? | FollowPlayer | [BOOL, False] - When enabled the player will be the origin of the boids system, and it's box the radius |
| ? | NoLanding | [BOOL, False] - When enabled the boids will not attempt to land (above water only) |
| ? | ObstacleAvoidance | [BOOL, False] - The boids will occasionally cast rays in their flight direction to navigate around objects (more resource usage) |
| n | Radius | [FLOAT, 20] - Distance from the origin (meters) that the boids attempt to stay within |
| n | VisibilityDist | [FLOAT, 20] - Distance from the origin (meters) to update boids within, to be safe, should be 2 times the radius they move within |