ortho()

Sets an orthographic projection for the camera.

In an orthographic projection, shapes with the same size always appear the same size, regardless of whether they are near or far from the camera.

`myCamera.ortho()` changes the camera's perspective by changing its viewing frustum from a truncated pyramid to a rectangular prism. The frustum is the volume of space that's visible to the camera. The camera is placed in front of the frustum and views everything within the frustum. `myCamera.ortho()` has six optional parameters to define the viewing frustum.

The first four parameters, `left`, `right`, `bottom`, and `top`, set the coordinates of the frustum's sides, bottom, and top. For example, calling `myCamera.ortho(-100, 100, 200, -200)` creates a frustum that's 200 pixels wide and 400 pixels tall. By default, these dimensions are set based on the sketch's width and height, as in `myCamera.ortho(-width / 2, width / 2, -height / 2, height / 2)`.

The last two parameters, `near` and `far`, set the distance of the frustum's near and far plane from the camera. For example, calling `myCamera.ortho(-100, 100, 200, -200, 50, 1000)` creates a frustum that's 200 pixels wide, 400 pixels tall, starts 50 pixels from the camera, and ends 1,000 pixels from the camera. By default, `near` and `far` are set to 0 and `max(width, height) + 800`, respectively.

Examples

```
// Double-click to toggle between cameras.

let cam1;
let cam2;
let isDefaultCamera = true;

function setup() {
  createCanvas(100, 100, WEBGL);

  // Create the first camera.
  // Keep its default settings.
  cam1 = createCamera();

  // Create the second camera.
  cam2 = createCamera();

  // Apply an orthographic projection.
  cam2.ortho();

  // Set the current camera to cam1.
  setCamera(cam1);

  describe('A row of white cubes against a gray background.
The camera toggles between a perspective and an orthographic
projection when the user double-clicks.');
}

function draw() {
  background(200);

  // Translate the origin toward the camera.
```

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// Double-click to toggle between cameras.

let cam1;
let cam2;
let isDefaultCamera = true;

function setup() {
  createCanvas(100, 100, WEBGL);

  // Create the first camera.
  // Keep its default settings.
  cam1 = createCamera();

  // Create the second camera.
  cam2 = createCamera();

  // Apply an orthographic projection.
  cam2.ortho();

  // Set the current camera to cam1.
  setCamera(cam1);

  describe('A row of white cubes slither like a snake against
a gray background. The camera toggles between a perspective
and an orthographic projection when the user double-clicks.');
}

function draw() {
  background(200);

  // Translate the origin toward the camera.
```

Syntax

```
ortho([left], [right], [bottom], [top], [near], [far])
```

Parameters

left	Number: x-coordinate of the frustum's left plane. Defaults to `-width / 2`.
right	Number: x-coordinate of the frustum's right plane. Defaults to `width / 2`.
bottom	Number: y-coordinate of the frustum's bottom plane. Defaults to `height / 2`.
top	Number: y-coordinate of the frustum's top plane. Defaults to `-height / 2`.
near	Number: z-coordinate of the frustum's near plane. Defaults to 0.
far	Number: z-coordinate of the frustum's far plane. Defaults to `max(width, height) + 800`.

This page is generated from the comments in src/webgl/p5.Camera.js. Please feel free to edit it and submit a pull request!

Related References

camera
Sets the position and orientation of the camera.

centerX
The x-coordinate of the place where the camera looks.

centerY
The y-coordinate of the place where the camera looks.

centerZ
The y-coordinate of the place where the camera looks.