

# WEBGL

One of the two render modes in p5.js, used for computationally intensive tasks like 3D rendering and shaders.

**WEBGL** differs from the default **P2D** renderer in the following ways:

- **Coordinate System** - When drawing in **WEBGL** mode, the origin point (0,0,0) is located at the center of the screen, not the top-left corner. See [the tutorial page about coordinates and transformations](#).
- **3D Shapes** - **WEBGL** mode can be used to draw 3-dimensional shapes like `box()`, `sphere()`, `cone()`, and [more](#). See [the tutorial page about custom geometry](#) to make more complex objects.
- **Shape Detail** - When drawing in **WEBGL** mode, you can specify how smooth curves should be drawn by using a `detail` parameter. See [the wiki section about shapes](#) for a more information and an example.
- **Textures** - A texture is like a skin that wraps onto a shape. See [the wiki section about textures](#) for examples of mapping images onto surfaces with textures.
- **Materials and Lighting** - **WEBGL** offers different types of lights like `ambientLight()` to place around a scene. Materials like `specularMaterial()` reflect the lighting to convey shape and depth. See [the tutorial page for styling and appearance](#) to experiment with different combinations.
- **Camera** - The viewport of a **WEBGL** sketch can be adjusted by changing camera attributes. See [the tutorial page section about cameras](#) for an explanation of camera controls.
- **Text** - **WEBGL** requires opentype/truetype font files to be preloaded using `loadFont()`. See [the wiki section about text](#) for details, along with a workaround.
- **Shaders** - Shaders are hardware accelerated programs that can be used for a variety of effects and graphics. See the [introduction to shaders](#) to get started with shaders in p5.js.
- **Graphics Acceleration** - **WEBGL** mode uses the graphics card instead of the CPU, so it may help boost the performance of your sketch (example: drawing more shapes on the screen at once).

To learn more about WEBGL mode, check out [all the interactive WEBGL tutorials](#) in the "Tutorials" section of this website, or read the wiki article ["Getting started with WebGL in p5"](#).

This page is generated from the comments in [src/core/constants.js](#) . Please feel free to edit it and submit a pull request!

## Related References

ADD	ALT	ARROW	AUTO
.	.	.	AUTO allows us to automatically set the width or height of an element (but not both), based on the current height and width of the element.

p5.js

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