

buildGeometry()

Creates a custom **p5.Geometry** object from simpler 3D shapes.

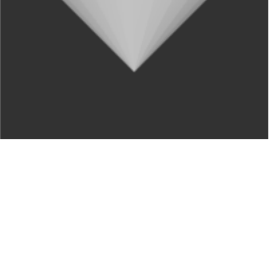
`buildGeometry()` helps with creating complex 3D shapes from simpler ones such as **sphere()**. It can help to make sketches more performant. For example, if a complex 3D shape doesn't change while a sketch runs, then it can be created with `buildGeometry()`. Creating a **p5.Geometry** object once and then drawing it will run faster than repeatedly drawing the individual pieces.

The parameter, `callback`, is a function with the drawing instructions for the new **p5.Geometry** object. It will be called once to create the new 3D shape.

See `beginGeometry()` and `endGeometry()` for another way to build 3D shapes.

Note: `buildGeometry()` can only be used in WebGL mode.

Examples



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```
// Click and drag the mouse to view the scene from different angles.

let shape;

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

  // Create the p5.Geometry object.
  shape = buildGeometry(createShape);

  describe('A white cone drawn on a gray background.');
```



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```
// Click and drag the mouse to view the scene from different angles.

let shape;

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

  // Create the arrow.
  shape = buildGeometry(createArrow);

  describe('A white arrow drawn on a gray background.');
```



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```
// Click and drag the mouse to view the scene from different angles.

let shape;

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

  // Create the p5.Geometry object.
  shape = buildGeometry(createArrow);

  describe('Two white arrows drawn on a gray background. The arrow on the right rotates slowly.');
```



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```
// Click and drag the mouse to view the scene from different angles.

let button;
let particles;

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

  // Create a button to reset the particle system.
  button = createButton('Reset');

  // Call resetModel() when the user presses the button.
  button.mousePressed(resetModel);

  // Add the original set of particles.
  resetModel();

  describe('A set of white spheres on a gray background. The spheres are positioned randomly. Their positions reset when the user presses the Reset button.');
```

Syntax

```
buildGeometry(callback)
```

Parameters

`callback` Function: function that draws the shape.

Returns

p5.Geometry: new 3D shape.

This page is generated from the comments in [src/webgl/3d_primitives.js](#). Please feel free to edit it and submit a pull request!

Related References

calculateBoundingBox Calculates the position and size of the smallest box that contains the geometry.	clearColors Removes the geometry's internal colors.	computeFaces Computes the geometry's faces using its vertices.	computeNormals Calculates the normal vector for each vertex on the geometry.
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