Comparison reference sheet — Processing / Processing.js / p5.js mapping

| Category | Name | http://sod3.info/api | http://processingjs.org/reference | https://p5js.org/reference/ | Checked snippets | Notes |
|---|---|---|---|---|---|---|
| **Color** | | | | | | |
| Creating & Reading | alpha | alpha() | alpha() | | yes | adapted |
| | blend-color | blendColor() | | | yes | removed |
| | blue | blue() | blue() | | yes | adapted |
| | brightness | brightness() | brightness() | | yes | adapted |
| | color | color() | color() | | yes | added new mode: hsl |
| | color-mode | | colorMode() | | yes | added new mode: hsl |
| | current-fill | | | | | no changes necessary |
| | current-stroke | | | | | no changes necessary |
| | green | green() | green() | | yes | adapted |
| | hue | hue() | hue() | | yes | adapted |
| | lerp-color | lerpColor() | lerpColor() | | yes | added |
| | | | lightness() | | yes | added |
| | red | red() | red() | | yes | adapted |
| | saturation | saturation() | saturation() | | yes | adapted |
| Setting | background | background() | background() | | yes | no changes necessary |
| | background-image | | | | | |
| | clear | | clear() | | yes | added |
| | fill | fill() | fill() | | yes | no changes necessary |
| | no-fill | noFill() | noFill() | | yes | no changes necessary |
| | no-stroke | noStroke() | noStroke() | | yes | no changes necessary |
| | stroke | stroke() | stroke() | | yes | no changes necessary |
| Utility Macros | with-fill | | | | yes | no changes necessary |
| | with-stroke | | | | yes | no changes necessary |
| **Typography** | | | | | | |
| Attributes | text-align | textAlign() | textAlign() | | yes | adapted |
| | text-leading | textLeading() | textLeading() | | yes | no changes necessary |
| | text-mode | textMode() | | | yes | removed |
| | text-size | textSize() | textSize() | | yes | no changes necessary |
| | text-style | textStyle() | textStyle() | | yes | added |
| | text-width | textWidth() | textWidth() | | yes | no changes necessary |
| Loading & Displaying | available-fonts | PFont.list() | | | yes | removed |
| | create-font | createFont() | | | yes | removed |
| | font-available? | | | | yes | no changes necessary |
| | load-font | loadFont() | loadFont() | | yes | no changes necessary |
| | text | text() | text() | | yes | need to adapt snippet |
| | text-char | | | | yes | no changes necessary |
| | text-font | textFont() | textFont() | | yes | adapted |
| | text-num | | | | yes | no changes necessary |
| Metrics | text-ascent | textAscent() | textAscent() | | yes | no changes necessary |
| | text-descent | textDescent() | textDescent() | | yes | no changes necessary |
| **Image** | | | | | | |
| | create-image | createImage() | createImage() | | yes | signature change |
| | resize | PImage.resize() | Image.resize() | | yes | adapted snippet |
| | | | saveCanvas() | | | not supported |
| | | | saveFrames() | | | not supported |
| Loading & Displaying | image | image() | image() | | yes | signature change - added overload - chose not to support overload to stay in sync with processing |
| | image-mode | imageMode() | imageMode() | | yes | adapt |
| | load-image | loadImage() | loadImage() | | yes | signature change - added overload with success and failure callbacks - overload not supported |
| | mask-image | PImage.mask() | Image.mask() | | yes | added |
| | no-tint | noTint() | noTint() | | yes | no changes necessary |
| | request-image | requestImage() | | | yes | removed from both clj and cljs, use load-image instead |
| | tint | tint() | tint() | | yes | no changes necessary |
| Pixels | blend | blend() | blend() | | no ; cljs is not working | adapted - in 'cljs' (p/background)' doesn't work when 'blend' is used in the snippet. Not sure why. |
| | copy | copy() | copy() | | yes | no changes necessary |
| | display-filter | filter() | filter() | | yes | adapted |
| | filter-shader | | | | yes | no changes necessary |
| | get-pixel | get() | get() | | yes | no changes necessary |
| | image-filter | filter() | filter() | | yes | no changes necessary |
| | pixels | loadPixels() | loadPixels() | | yes | adapt snippet pixels-update-pixels |
| | pixels | pixels | pixels | | yes | no changes necessary |
| | set-image | set() | set() | | yes | adapt |
| | set-pixel | set() | set() | | yes | adapt |
| | update-pixels | updatePixels() | updatePixels() | | yes | no changes necessary |
| Rendering | blend-mode | | blendMode() | | yes | added |
| | create-graphics | createGraphics() | createGraphics() | | yes | signature change - path no longer supported createCanvas() replaced size() |
| **Transform** | | | | | | |
| | apply-matrix | applyMatrix() | applyMatrix() | | yes | signature change |
| | pop-matrix | popMatrix() | pop() | | yes | pop() replaced popMatrix() |
| | print-matrix | printMatrix() | | | yes | removed |
| | push-matrix | pushMatrix() | push() | | yes | push() replaced pushMatrix() |
| | reset-matrix | resetMatrix() | resetMatrix() | | yes | no changes necessary |
| | rotate | rotate() | rotate() | | yes | adapt |
| | rotate-x | rotateX() | rotateX() | | yes | no changes necessary |
| | rotate-y | rotateY() | rotateY() | | yes | no changes necessary |
| | rotate-z | rotateZ() | rotateZ() | | yes | no changes necessary |
| | scale | scale() | scale() | | yes | signature change - added overload - chose not to support overload to stay in sync with processing. |
| | shear-x | shearX() | shearX() | | yes | added, no changes necessary |
| | shear-y | shearY() | shearY() | | yes | added, no changes necessary |
| | translate | translate() | translate() | | yes | no changes necessary |
| Utility Macros | with-rotation | | | | yes | adapt snippets |
| | with-translation | | | | yes | adapt snippets |
| **Rendering** | | | | | | |
| | clip | | | | yes | no changes necessary |
| | hint | hint() | | | yes | removed |
| | no-clip | | | | yes | no changes necessary |
| | with-graphics | | | | yes | removed beginDraw and endDraw for cljs |
| | | | resizeCanvas() | | | not supported |
| | | | noCanvas() | | | not supported |
| | | | setAttributes() | | | not supported |
| Shaders | load-shader | | loadShader() | | yes | added but parameter order different to processing - needs adapting |
| | reset-shader | | | | yes | no changes necessary |
| | shader | | shader() | | yes | added but kind parameter not supported by p5js |
| **Math** | | | | | | |
| Calculation | abs | abs() | abs() | | yes | no changes necessary |
| | ceil | ceil() | ceil() | | yes | no changes necessary |
| | constrain | constrain() | constrain() | | yes | no changes necessary |
| | dist | dist() | dist() | | yes | no changes necessary |
| | exp | exp() | exp() | | yes | no changes necessary |
| | floor | floor() | floor() | | yes | no changes necessary |
| | lerp | lerp() | lerp() | | yes | no changes necessary |
| | log | log() | log() | | yes | no changes necessary |
| | mag | mag() | mag() | | yes | signature change |
| | map-range | map() | map() | | yes | no changes necessary |
| | norm | norm() | norm() | | yes | no changes necessary |
| | pow | pow() | pow() | | yes | no changes necessary |
| | round | round() | round() | | yes | no changes necessary |
| | sq | sq() | sq() | | yes | no changes necessary |
| | sqrt | sqrt() | sqrt() | | yes | no changes necessary |
| Random | noise | noise() | noise() | | yes | no changes necessary |
| | noise-detail | noiseDetail() | noiseDetail() | | yes | no changes necessary |
| | noise-seed | noiseSeed() | noiseSeed() | | yes | no changes necessary |
| | random | random() | random() | | yes | signature change - overloaded with choices parameter - prefer to leave as is and use rand-nth instead |
| | random-2d | | | | yes | |
| | random-3d | | | | yes | |
| | random-gaussian | | randomGaussian() | | yes | added but no changes necessary |
| | random-seed | randomSeed() | randomSeed() | | yes | no changes necessary |
| Trigonometry | acos | acos() | acos() | | yes | no changes necessary |
| | asin | asin() | asin() | | yes | no changes necessary |
| | atan | atan() | atan() | | yes | no changes necessary |
| | atan2 | atan2() | atan2() | | yes | no changes necessary |
| | cos | cos() | cos() | | yes | no changes necessary |
| | degrees | degrees() | degrees() | | yes | no changes necessary |
| | radians | radians() | radians() | | yes | no changes necessary |
| | sin | sin() | sin() | | yes | no changes necessary |
| | tan | tan() | tan() | | yes | no changes necessary |
| | angle-mode | | angleMode() | | yes | added |
| **Data** | | | | | | |
| Conversion | binary | binary() | | | yes | implemented in js |
| | hex | hex() | hex() | | yes | signature change - overloaded with array of values to parse - overload not supported for now - use (map hex col) instead |
| | unbinary | unbinary() | | | yes | implemented in js |
| | unhex | unhex() | unhex() | | yes | signature change - overloaded with array of values to parse - overload not supported for now - use (map unhex col) instead |
| | | float() | float() | | | no changes necessary |
| | | int() | int() | | | no changes necessary |
| | | str() | str() | | | no changes necessary |
| | | boolean() | boolean() | | | no changes necessary |
| | | byte() | byte() | | | no changes necessary |
| | | char() | char() | | | no changes necessary |
| | | | unchar() | | | no changes necessary - use (.charCodeAt A) |
| **State** | | | | | | |
| | set-state! | | | | yes | no changes necessary |
| | state | | | | yes | no changes necessary |
| | state-atom | | | | no | no changes necessary |
| **Shape** | | | | | | |
| 2D Primitives | arc | arc() | arc() | | yes | signature change - added mode and detail parameters - chose to add mode but not detail to stay in sync with processing |
| | ellipse | ellipse() | ellipse() | | yes | signature change - added detail parameter - chose not to support overload to stay in sync with processing |
| | line | line() | line() | | yes | no changes necessary |
| | point | point() | point() | | yes | signature change - added z coordinates for points - chose not to support overload to stay in sync with processing |
| | quad | quad() | quad() | | yes | signature change - added z coordinates for points - chose not to support overload to stay in sync with processing |
| | rect | rect() | rect() | | yes | signature change - added detail parameters - chose not to support overload to stay in sync with processing |
| | triangle | triangle() | triangle() | | yes | no changes necessary |
| 3D Primitives | box | box() | box() | | yes | signature change - added detail parameters - chose not to support overload to stay in sync with processing |
| | sphere | sphere() | sphere() | | yes | signature change - added detail parameters - chose not to support overload to stay in sync with processing |
| | sphere-detail | sphereDetail() | | | yes | removed |
| | | | cylinder() | | yes | added |
| | | | plane() | | yes | added |
| | | | cone() | | yes | added |
| | | | ellipsoid() | | yes | added |
| | | | torus() | | yes | added |
| Attributes | ellipse-mode | ellipseMode() | ellipseMode() | | yes | adapted |
| | no-smooth | noSmooth() | noSmooth() | | yes | no changes necessary |
| | rect-mode | rectMode() | rectMode() | | yes | adapt |
| | smooth | smooth() | smooth() | | yes | no changes necessary |
| | stroke-cap | strokeCap() | strokeCap() | | yes | no changes necessary |
| | stroke-join | strokeJoin() | strokeJoin() | | yes | no changes necessary |
| | stroke-weight | strokeWeight() | strokeWeight() | | yes | no changes necessary |
| Curves | bezier | bezier() | bezier() | | yes | no changes necessary |
| | bezier-detail | bezierDetail() | bezierDetail() | | yes | no changes necessary |
| | bezier-point | bezierPoint() | bezierPoint() | | yes | no changes necessary |
| | bezier-tangent | bezierTangent() | bezierTangent() | | yes | fix typo in snippet |
| | curve | curve() | curve() | | yes | no changes necessary but there are differences in snippet output |
| | curve-detail | curveDetail() | curveDetail() | | yes | no changes necessary but there are differences in snippet output |
| | curve-point | curvePoint() | curvePoint() | | yes | fix typo in snippet |
| | curve-tangent | curveTangent() | curveTangent() | | yes | fix typo in snippet |
| | curve-tightness | curveTightness() | curveTightness() | | yes | adapt |
| Loading & Displaying | load-shape | loadShape() | loadModel() | | yes | adapt |
| | shape | shape() | model() | | yes | no changes necessary |
| | shape-mode | shapeMode() | | | yes | removed |
| Vertex | begin-contour | beginContour() | beginContour() | | yes | enable snippet for cljs |
| | begin-shape | beginShape() | beginShape() | | yes | no changes necessary |
| | bezier-vertex | bezierVertex() | bezierVertex() | | yes | no changes necessary |
| | curve-vertex | curveVertex() | curveVertex() | | yes | no changes necessary |
| | end-contour | endContour() | endContour() | | yes | enable snippet for cljs |
| | end-shape | endShape() | endShape() | | yes | adapt implementation to pass p5js "CLOSE" |
| | quadratic-vertex | quadraticVertex() | quadraticVertex() | | yes | enable snippet for cljs |
| | texture | texture() | texture() | | yes | no changes necessary |
| | texture-mode | textureMode() | | | yes | removed |
| | texture-wrap | | | | yes | no changes necessary |
| | vertex | vertex() | vertex() | | yes | snippet needs to be enabled, z defaulted to 0, and also have to upgrade to p5 0.7.3 for it to render correctly |
| **Lights, Camera** | | | | | | |
| Camera | begin-camera | beginCamera() | | | yes | removed (completely) |
| | camera | camera() | camera() | | yes | no changes necessary |
| | end-camera | endCamera() | | | yes | removed (completely) |
| | frustum | frustum() | | | yes | removed (clj only now) |
| | | | orbitControl() | | yes | added |
| | ortho | ortho() | ortho() | | yes | no changes necessary |
| | perspective | perspective() | perspective() | | yes | no changes necessary |
| | print-camera | printCamera() | | | yes | removed (clj only now) |
| | print-projection | printProjection() | | | yes | removed (clj only now) |
| Coordinates | model-x | modelX() | | | yes | removed (completely) |
| | model-y | modelY() | | | yes | removed (completely) |
| | model-z | modelZ() | | | yes | removed (completely) |
| | screen-x | screenX() | | | yes | removed (completely) |
| | screen-y | screenY() | | | yes | removed (completely) |
| | screen-z | screenZ() | | | yes | removed (completely) |
| Lights | ambient-light | ambientLight() | ambientLight() | | yes | no changes necessary |
| | directional-light | directionalLight() | directionalLight() | | yes | no changes necessary |
| | light-falloff | lightFalloff() | | | yes | removed (clj only now) |
| | light-specular | lightSpecular() | | | yes | removed (clj only now) |
| | lights | lights() | | | yes | removed (clj only now) |
| | normal | normal() | | | yes | removed (completely) |
| | no-lights | noLights() | | | yes | removed |
| | point-light | pointLight() | pointLight() | | yes | no changes necessary |
| | spot-light | spotLight() | | | yes | removed (clj only now) |
| Material Properties | ambient | ambient() | ambientMaterial() | | yes | adapted |
| | emissive | emissive() | | | yes | removed |
| | shininess | shininess() | | | yes | removed |
| | specular | specular() | specularMaterial() | | yes | adapted |
| | | | createMaterial() | | | not supported |
| | | | normalMaterial() | | | not supported |
| **Environment** | | | | | | |
| | current-frame-rate | frameRate | frameRate | | yes | adapted |
| | current-graphics | | | | yes | no changes necessary |
| | cursor | cursor() | cursor() | | yes | no changes necessary |
| | cursor-image | cursor() | cursor() | | yes | remove for cljs because image parameter not supported |
| | del-sketch | | | | yes | no changes necessary |
| | display-density | | displayDensity() | | yes | no changes necessary |
| | focused | focused | focused | | yes | no changes necessary |
| | frame-count | frameCount | frameCount | | yes | no changes necessary |
| | frame-rate | frameRate() | frameRate() | | yes | no changes necessary |
| | height | height | height | | yes | no changes necessary |
| | no-cursor | noCursor() | noCursor() | | yes | no changes necessary |

| http://quil.info/api/ | http://processing.org/reference/ | https://p5js.org/reference/ | Checked snippets | Notes |
|---|---|---|---|---|
| pixel-density | | pixelDensity() | yes | added |
| resize-sketch | | | yes | no changes necessary |
| screen-height | | | yes | no changes necessary |
| screen-width | | | yes | no changes necessary |
| sketch | | | yes | no changes necessary |
| target-frame-rate | | | yes | no changes necessary |
| width | width | width | yes | no changes necessary |
| | | windowResized() | | not supported |
| | | getURL() | | not supported |
| | | getURLPath() | | not supported |
| | | getURLParams() | | not supported |

**Input**

**Keyboard**

| | | | | |
|---|---|---|---|---|
| key-as-keyword | | | yes | no changes necessary |
| key-code | keyCode | keyCode | yes | no changes necessary |
| key-coded? | | | yes | no changes necessary |
| key-modifiers | | | yes | no changes necessary |
| key-pressed? | keyPressed | keyIsPressed | yes | adapted |
| | keyPressed() | keyPressed() | yes | no changes necessary |
| raw-key | key | key | yes | no changes necessary |

**Mouse**

| | | | | |
|---|---|---|---|---|
| mouse-button | mouseButton | mouseButton | yes | adapted |
| mouse-pressed? | mousePressed | mouseIsPressed | yes | adapted |
| mouse-x | mouseX | mouseX | yes | no changes necessary |
| mouse-y | mouseY | mouseY | yes | no changes necessary |
| pmouse-x | pmouseX | pmouseX | yes | no changes necessary |
| pmouse-y | pmouseY | pmouseY | yes | no changes necessary |

**Time & Date**

| | | | | |
|---|---|---|---|---|
| day | day() | day() | yes | no changes necessary |
| hour | hour() | hour() | yes | no changes necessary |
| millis | millis() | millis() | yes | no changes necessary |
| minute | minute() | minute() | yes | no changes necessary |
| month | month() | month() | yes | no changes necessary |
| seconds | second() | second() | yes | no changes necessary |
| year | year() | year() | yes | no changes necessary |

**Touch**

| | | | | |
|---|---|---|---|---|
| | | touches | | not supported |
| | | touchStarted() | | not supported |
| | | touchMoved() | | not supported |
| | | touchEnded() | | not supported |

**Output**

**Files**

| | | | | |
|---|---|---|---|---|
| begin-raw | beginRaw() | | yes | removed - no changes necessary |
| do-record | | | | |
| end-raw | endRaw() | | yes | removed |

**Image**

| | | | | |
|---|---|---|---|---|
| save | save() | save() | yes | added |
| save-frame | saveFrame() | | yes | removed |

**Text area**

| | | | | |
|---|---|---|---|---|
| pro-print | print() | print() | | removed |
| pro-println | println() | println() | | removed |

**Structure**

| | | | | |
|---|---|---|---|---|
| delay-frame | delay() | | yes | removed |
| exit | exit() | remove() | yes | remove() replaced exit() |
| no-loop | noLoop() | noLoop() | yes | no changes necessary |
| pop-style | popStyle() | pop() | yes | pop() replaced popStyle() |
| push-style | pushStyle() | push() | yes | push() replaced pushStyle() |
| redraw | redraw() | redraw() | yes | signature change - added optional parameter to redraw n times |
| start-loop | | | | no changes necessary |
| | | preload() | | not supported |

**Middleware**

| | | | | |
|---|---|---|---|---|
| fun-mode | | | | no changes necessary |
| navigation-2d | | | | no changes necessary |
| navigation-3d | | | | no changes necessary |
| pause-on-error | | | | no changes necessary |

| List of non-obvious changes introduced by switching to p5js | |
|---|---|
| Use <div> instead of <canvas> as host element. | |