# Quil 2.3.0

Color			
Creating & Reading	alpha blend-color blue brightness color color-mode current-fill current-stroke green hue lerp-color red saturation		
Setting	background background-float background-image background-int fill fill-float fill-int no-fill no-stroke stroke stroke-float stroke-int		
Utility Macros	with-fill with-stroke		

## Data

Conversion binary hex unbinary unhex

# Debugging

debug

#### **Environment**

current-frame-rate current-graphics cursor cursor-image defsketch focused frame-count frame-rate height no-cursor screen-height screen-width sketch target-frame-rate width

## **Image**

	create-image resize
Loading & Displaying	image image-mode load-image
	mask-image no-tint request-image
	tint tint-float tint-int
Pixels	blend copy display-filter
	filter-shader get-pixel
	image-filter pixels set-image
	set-pixel update-pixels
Rendering	blend-mode create-graphics

## Input

Keyboard	key-as-keyword key-code key-coded?	
	key-pressed? raw-key	
Mouse	mouse-button mouse-pressed? mouse-x	
	mouse-y pmouse-x pmouse-y	
Time & Date	day hour millis minute month seconds year	

## Lights, Camera

Camera	begin-camera camera end-camera	
	frustum ortho perspective	
	print-camera print-projection	
Coordinates	model-x model-y model-z screen-x	
	screen-y screen-z	
Lights	ambient-light directional-light	
	light-falloff light-specular	
	lights no-lights normal point-light	
	spot-light	
Material Properties	ambient ambient-float ambient-int	
	emissive emissive-float emissive-int	
	shininess specular	

# Math

Calculation	abs abs-float abs-int ceil constrain	
	constrain-float constrain-int dist exp	
	floor lerp log mag map-range norm pow	
	round sq sqrt	
Random	noise noise-detail noise-seed random	
	random-gaussian random-seed	
Trigonometry	acos asin atan atan2 cos degrees radians	
	sin tan	

# Output

Files	begin-raw end-raw
Image	save save-frame

## Rendering

	hint with-graphics	
Shaders	load-shader reset-shader shader	

Shape			
2D Primitives	arc ellipse line point quad rect triangle		
3D Primitives	box sphere sphere-detail		
Attributes	ellipse-mode no-smooth rect-mode smooth stroke-cap stroke-join stroke-weight		
Curves	bezier bezier-detail bezier-point bezier-tangent curve curve-detail curve-point curve-tangent curve-tightness		
Loading & Displaying	load-shape shape-mode		
Vertex	begin-contour begin-shape bezier-vertex curve-vertex end-contour end-shape quadratic-vertex texture texture-mode texture-wrap vertex		

## State

set-state! state state-atom

#### Structure

delay-frame exit no-loop pop-style push-style redraw start-loop

## **Transform**

apply-matrix pop-matrix print-matrix
<pre>push-matrix reset-matrix rotate rotate-x</pre>
rotate-y rotate-z scale shear-x shear-y
translate
with-rotation with-translation

:title :size :renderer

## **Typography**

Utility Macros

Attributes	text-align text-leading text-mode	
	text-size text-width	
Loading & Displaying	available-fonts create-font	
	font-available? load-font text	
	text-char text-font text-num	
Metrics	text-ascent text-descent	

# Sketch options Config Keywords

	<pre>:output-file :features :bgcolor :display :host :middleware</pre>
Draw Callback Keywords	<pre>:setup :draw :on-close :settings</pre>
Mouse Callback Keywords	<pre>:mouse-pressed :mouse-released :mouse-moved :mouse-dragged :mouse-entered :mouse-exited :mouse-clicked :mouse-wheel</pre>
Keyboard Callback Keywords	<pre>:key-pressed :key-released :key-typed</pre>
Window Callback Keywords	:focus-gained :focus-lost

## Reflection

API Exploration doc-cats doc-fns doc-meths