









Graphics Reference Sheet

SHAPE PARAMETERS

SHAPE PARAMETERS

		fill	border	borderWidth	opacity	rotateAngle	dashes	align	visible	roundness	size	font	bold	italic	lineWidth	arrowStart	arrowEnd	
		default	'black'	None	2	100	0	False	'center'	True	None	12	arial	False	False	2	False	False
	Rect (left, top, width, height)	✓	✓	✓	✓	✓	✓	✓	'left-top'	✓	✗	✗	✗	✗	✗	✗	✗	✗
	Oval (centerX, centerY, width, height)	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Circle (centerX, centerY, radius)	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
	RegularPolygon (centerX, centerY, radius, points)	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Polygon (x1, y1, x2, y2, x3, y3, ...)	✓	✓	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Arc (centerX, centerY, width, height, startAngle, sweepAngle)	✓	✓	✓	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Star (centerX, centerY, radius, points)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
	Line (x1, y1, x2, y2)	✓	✗	✗	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✓	✓	✓	✓
text	Label (value, centerX, centerY)	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	✓	✓	✓	✗	✗	✗	✗

Position keywords: 'center', 'left', 'right', 'top', 'bottom', 'left-top', 'right-top', 'left-bottom', 'right-bottom'

✓ Shape has this property

✗ Shape does not have this property

SHAPE METHODS

```
.toBack()
.toFront()
.hits(x, y)
.contains(x, y)
.hitsShape(shape)
.containsShape(shape)
.addPoint()
```

GROUP METHODS

```
.clear()
.add(shape)
.remove(shape)
.hitTest(x, y)
```

APP METHODS + PROPERTIES

```
.stop()
.group.hitTest(x, y)
.getTextInput()

.stepsPerSecond = 30
.background = None
.group = Group()
.paused = False
```

COMMON COLORS

```
red      rgb(255, 0, 0)
darkRed  rgb(139, 0, 0)
orange   rgb(255, 165, 0)
darkOrange rgb(255, 140, 0)
orangeRed rgb(255, 59, 0)
khaki    rgb(240, 230, 140)
yellow   rgb(255, 255, 0)
gold     rgb(255, 215, 0)
limeGreen rgb(124, 252, 0)
lime     rgb(0, 255, 0)
green    rgb(0, 128, 0)
darkGreen rgb(0, 100, 0)
lightCyan rgb(224, 255, 255)
aquaMarine rgb(127, 255, 212)
skyBlue  rgb(135, 206, 235)
aqua     rgb(0, 255, 255)
turquoise rgb(64, 224, 208)
blue     rgb(0, 0, 255)
navy     rgb(0, 0, 128)
violet   rgb(238, 130, 238)
orchid   rgb(218, 112, 214)
magenta  rgb(255, 0, 255)
blueViolet rgb(138, 43, 226)
darkViolet rgb(148, 0, 211)
purple   rgb(128, 0, 128)
indigo   rgb(75, 0, 130)
pink     rgb(255, 192, 203)
hotPink  rgb(255, 105, 180)
deepPink rgb(255, 20, 147)

burlywood  rgb(222, 184, 135)
sandyBrown rgb(244, 164, 96)
goldenRod  rgb(218, 165, 32)
peru       rgb(205, 133, 63)
chocolate  rgb(210, 105, 30)
sienna     rgb(160, 82, 45)
maroon     rgb(128, 0, 0)

white      rgb(255, 255, 255)
gainsboro  rgb(220, 220, 220)
darkGrey   rgb(169, 169, 169)
gray       rgb(128, 128, 128)
slateGray  rgb(112, 128, 144)
dimGray    rgb(105, 105, 105)
black      rgb(0, 0, 0)
```

EVENT FUNCTIONS

```
onMousePress(mouseX, mouseY)
onMouseRelease(mouseX, mouseY)
onMouseMove(mouseX, mouseY)
onMouseDown(mouseX, mouseY)
onKeyPress(key)
onKeyHold(keys)
onKeyRelease(key)
onStep()
```

MATH FUNCTIONS

```
distance(x1, y1, x2, y2)
angleTo(x1, y1, x2, y2)
getPointInDir(centerX, centerY, angle, distance)
makeList(row, col)
```

MEDIA OBJECTS

```
Image(url, left, top)
track = Sound(url)
track.play(restart=True, loop=True)
track.pause()
```