



# SVG Quick Reference



## CORE SVG DEFINITIONS

### Core SVG File Setup

Element	Attribute Pattern/Options	Notes
<b>&lt;svg&gt;</b>	Use in a standalone file	<pre>&lt;svg   xmlns:xlink="http://www.w3.org/1999/xlink"&gt;  &lt;/svg&gt;</pre>
<b>&lt;svg&gt;</b>	Use in an HTML5 file	<pre>?html &lt;html&gt; &lt;svg&gt;&lt;/svg&gt; &lt;/html&gt;</pre>
	With external CSS stylesheet.	<pre>&lt;?xml-stylesheet type="text/css" href="svg-stylesheet.css" ?&gt; &lt;svg   xmlns:xlink="http://www.w3.org/1999/xlink"&gt;  &lt;/svg&gt;</pre>

### Viewport **<svg>**

Attribute	Value
<b>x</b>	0
<b>y</b>	0
<b>width</b>	400
<b>height</b>	400
<b>viewBox</b>	0 0 400 400
<b>preserveAspectRatio</b>	xMin   xMid   xMax   YMin   YMid   YMax  xValue+yValue Eg. xMinYMin  meet   slice   none

### Units

Unit	Description
<b>em</b>	The default font size
<b>ex</b>	The height of the character x
<b>px</b>	Pixels
<b>pt</b>	Points (1 / 72 of an inch)
<b>pc</b>	Picas (1 / 6 of an inch)
<b>cm</b>	Centimeters
<b>mm</b>	Millimeters
<b>in</b>	Inches

# SVG SHAPES AND STYLING

## Basic Shapes

Element	Attribute Pattern/Options
<b>&lt;rect&gt;</b>	<b>x="0" y="0" width="200" height="100"</b> <b>rx="10" ry="10"</b>
<b>&lt;circle&gt;</b>	<b>cx="0" cy="0" r="50"</b>
<b>&lt;ellipse&gt;</b>	<b>cx="0" cy="0" rx="50" ry="100"</b>
<b>&lt;polygon&gt;</b>	<b>points="x1,y1 x2,y2 x3,y3 x4,y4 x5,y5"</b>
<b>&lt;line&gt;</b>	<b>x1="0" y1="0" x2="100" y2="0"</b>
<b>&lt;polyline&gt;</b>	<b>points="x1,y1 x2,y2 x3,y3"</b>
<b>&lt;image&gt;</b>	<b>&lt;image x="0" y="0" width="200" height="100"</b>  <b>xlink:href="http://infogridpacific.com/images/logo.png" /&gt;</b>
<b>&lt;a&gt;</b>	<b>&lt;a xlink:href="/svg/index.html" target="replace"&gt;</b>

Note: <path> is treated separately.

The core style attributes cannot be applied to <svg>.

These can be applied to any rendered object.

These can be applied to <g> and any nested elements will inherit the properties.

## Core Style Attributes

Attribute	Value
fill	color. #000000   rgb(0, 0, 0)
fill-opacity	1.0
fill-rule	nonzero   evenodd
marker	See Definitions
marker-start	url(#markerID)
marker-mid	url(#markerID)
marker-end	url(#markerID);
stroke	color. #000000   rgb(0, 0, 0)
stroke-dasharray	10, 5
stroke-dashoffset	10
stroke-linecap	round   butt   square
stroke-linejoin	miter   round   bevel
stroke-miterlimit	1   2   3   etc
stroke-opacity	1.0
stroke-width	4

## SVG TEXT

### Text <text>

Attributes	Value
x	0
y	0
font-size	16
font-style	normal   italic
font-weight="bold"	normal   bold
text-anchor	start   middle   end
text-length	200
alignment-baseline	
baseline-shift	
dominant-baseline	

Attributes	Value
glyph-orientation-horizontal	
glyph-orientation-vertical	

### Text <tspan>, <tref>, <tpath>

Attributes	Value
tspan	dy="10"   dy="5 10 15"
tspan	dx="20"   dx="5 10 15"
tspan	x="20"   y="10"
tref	<tref xlink:href="#theText" />
tpath	<textPath xlink:href="#myTextPath" >

## SVG PATHS

Paths have the syntax and variations `<path p="x,y x,y">`

Control	Attribute Pattern/Options
<b>p</b>	Points M 0,0 L 100,100 L 50,50
<b>M m</b>	Move. Always first M x,y m x,y
<b>L l</b>	Line L x,y l x, y
<b>A a</b>	(Arches) r1 r2 0 0 0 x y r1 r2 x-axis-rotation large-arch-flag sweep-flag x y
<b>H h</b>	x Horizontal line-to
<b>V v</b>	y Vertical line-to

Control	Attribute Pattern/Options
<b>C c</b>	cubic Bezier Curve to x1,y1 x2,y2 x,y Eg: M50,50 C75,80 125,20 150,50
<b>S s</b>	shorthand /smooth curve-to Same as cubic Bezier Curve
<b>Q q</b>	quadratic Bezier curve-to x1,y1 x,y Eg M50,50 Q50,100 100,100
<b>T t</b>	shorthand / smooth quadratic Bezier curve-to x,y
<b>Z z</b>	Close path (Not case sensitive)

Move (M m) must always be the first command.

Capital letter is absolute position, lowercase letter relative position.

`<path p="M 0,0 L 100,100 L 50,50"></path>`

## SVG TRANSFORMS

### Transforms

Attribute	Value
<b>transform</b>	translate(x, y)
	rotate(deg cx cy)
	scale(xy   x, y   -1, -1) -1 is mirror
	skewX(45) in degrees
	skewY(45) in degrees
	matrix(a, b, c, d, e, f)

Sequence is important. Transforms are executed in attribute value sequence for any element to which they are applied. Different sequences can have radically different results.

Multiple transform functions can be put into a transform attribute.

`<shape transform="scale(0.5) translate(50,50)"></shape>`

Transforms can be inherited from `<g>` by child elements.

# ANIMATION

## Basic Animation Elements

Element	Attribute Pattern/Options
<set>	to="x" begin="0"
<animate>	Animate a shape
<animateColor>	Animate color
<animateTransform>	Animate transform
<animateMotion>	Animate motion

## Animation Attributes

Attribute	Value
attributeName	any valid attribute in the target element
attributeType	XML   CSS
from	attributeName value (co-ord   color )
to	attributeName value (co-ord   color )
begin	0s   id.begin   id.end   id.begin+5   id.end-5   id.end
dur	5s
fill	remove   freeze
repeatCount	indefinite   5 (count)
repeatDur	10s
type	rotate   scale
rotate	auto   45 (degrees)
additive	sum

## Interactive begin="x"

Attribute	Value
cursor	auto   crosshair   default   pointer   move   text   wait   help   e-resize   ne-resize   nw-resize   n-resize   se-resize   sw-resize   s-resize   w-resize
pointer	visiblePainted   visibleFill   visibleStroke   visible   painted   fill   stroke   all   none   inherit
begin	focusin   focusout   activate   click   mousedown   mouseup   mouseover   mousemove   mouseout   DOMSubtreeModified   DOMNodeInserted   DOMNodeRemoved   DOMNodeRemovedFromDocument   DOMNodeInsertedIntoDocument   DOMAttrModified   DOMCharacterDataModified   SVGLoad   SVGUnload   SVGAbort   SVGError   SVGResize   SVGScroll   SVGZoom   beginEvent   endEvent   repeatEvent.
begin	"accessKey(x)"

## Links <a>

Attribute	Value
xlink:href	"link-path.html"
xlink:show	new   replace   _blank   _top

# SVG DEFINITIONS

## Definitions <defs>

Attribute	Value	Notes
style	<style type="text/css"> <![CDATA[ .selector { property:value; } ]]> </style>	Must be declared in [[CDATA]] block
marker		See marker syntax example
symbol		
pattern		See pattern syntax example

Attribute	Value	Notes
gradient		See gradient syntax example

## SVG PRIMITIVE CSS REFERENCE

### Definitions <defs>

Attribute	Value	Notes
style	<pre>&lt;style type="text/css"&gt;   &lt;![CDATA[     .selector {       property:value;     }   ]]&gt; &lt;/style&gt;</pre>	Must be declared in [[CDATA]] block
marker		See marker syntax example
symbol		
pattern		See pattern syntax example
gradient		See gradient syntax example

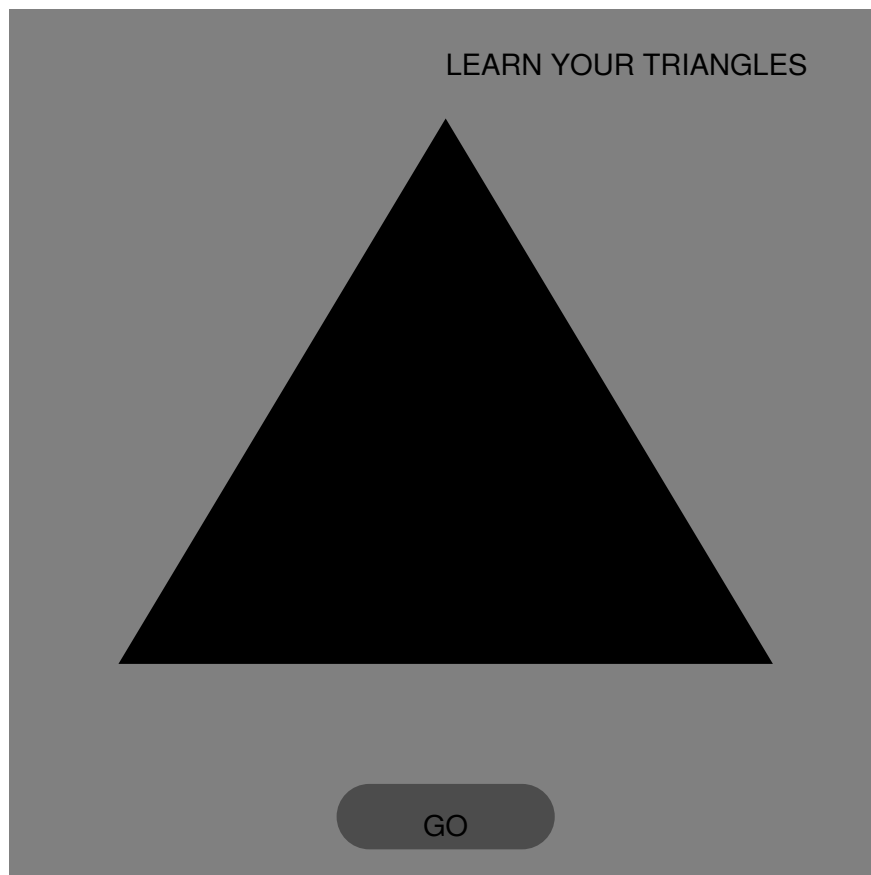
Start your text here...

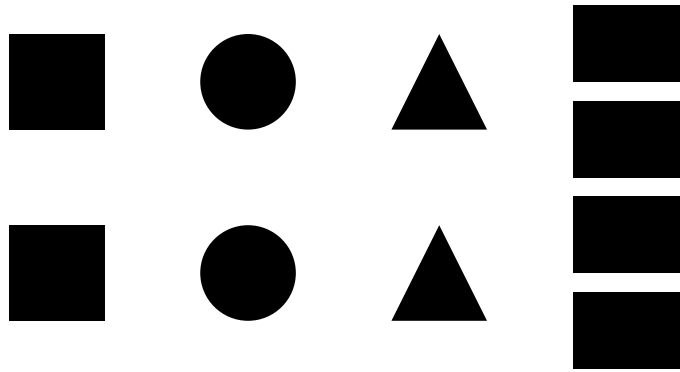
[illegible]

Table xx Your Caption

# HTML CSS Examples

SVG Colours and Shapes





1 2 3 4 5 6 7 8

Default CSS Styles

Label-left  
Label-mid  
Label-right

The SVG above resizes itself in proportion to the screen.

