

Glossary

add mode A transfer mode type in which the source color component is added to the destination component, but the result is not allowed to exceed the maximum value (0xFFFF).

alignment A style object property. It is the alignment value to use when drawing the text of a shape. Text may be left-aligned, right-aligned, anywhere in the continuum between the two alignments (such as centered), or fully justified. (Layout shapes support continuous justification as well as continuous alignment.)

alpha channel A color component in some color spaces whose value represents the opacity of the color defined in the other components.

alpha-channel transfer modes Transfer mode types in which the result color is achieved by considering the alpha channel values as well as the color-component values of the source and destination.

AND mode A transfer mode type in which the bits of the source color component and destination color component are combined using an AND operation.

angle The angle from horizontal made by the pattern of dots in a halftone.

anti-aliasing The smoothing of jagged edges on a displayed shape by modifying the transparencies of individual pixels along the shape's edge.

application heap or ***application memory*** The part of computer memory directly accessible by an application, and in which its code and data structures reside. Compare ***QuickDraw GX memory***, ***graphics client heap***.

arithmetic transfer modes Transfer mode types in which the result color is achieved by using arithmetic operations on the source and destination color-component values.

atop mode A transfer mode type in which the source color is placed over the destination, but the resulting destination retains the original destination's transparency.

attributes A property of many QuickDraw GX objects. It is a set of flags that control various aspects of that object's behavior.

background color The color of the area between the dots of a halftone.

base family A group of closely related color spaces, across which color conversion can take place without the use of color profiles. RGB and HSV color spaces, for example, are all in the RGB base family.

bitmap shape A shape type that represents a pixel image. The geometry of a bitmap shape includes a ***bitmap structure***.

bitmap structure A data structure that describes a pixel image.

black generation In CMYK color calculation, the substitution of black ink for areas with high intensities of cyan, magenta, and yellow. See also ***undercolor removal***.

blend mode A transfer mode type in which the result is the average of the source and destination color components, weighted by a ratio specified by the operand component.

Boolean transfer modes Transfer mode types in which the result color is achieved by using Boolean operations on the bits of the source and destination color-component values.

cap A style object property. It is the shape (such as an arrowhead, or any other geometric shape) to draw at the start and end of each contour in the shape.

child view port For a given view port, a view port immediately below it in the view port hierarchy.

child view port list A view port object property. A view port's child view port list is an array of references to the child view ports of that view port.

chromaticity An intensity-independent color designation, represented by a pair of values (chromaticity coordinates) for the x and y components in Yxy space.

CIE Commission Internationale d'Eclairage, an organization that carried out experimental work that resulted in the definition of the XYZ and Yxy color spaces.

clip A property of a transform object, view port object, or view device object. It is a primitive shape, bitmap shape, or glyph shape that controls the visibility of a shape object.

clone To create another current reference to an existing object. The effect of cloning an object is to increase its owner count by 1.

closed-frame fill A shape fill that connects the points of the geometry from the start point through the end point and on to the start point again. Same as *hollow fill*.

CMYK color space A color space whose four components measure the cyan, magenta, yellow, and black elements of a color. Used mostly for printing.

Collection Manager A part of system software, related to QuickDraw GX, that manages *collection objects*.

collection object A kind of object, managed by the Collection Manager, that is used to hold any kind of information. Several QuickDraw GX printing objects have properties that are references to collection objects.

color A QuickDraw GX data structure—also a property of an ink object—that specifies a color in terms of a particular color space and the values for each of the color's components within that color space. A color structure can also contain a reference to a color profile object.

color-average tint A halftone tint type in which the tint color is specified by the average of all the components of the input color.

color component An individual dimension, or component, of a color space. For example, RGB space has three components: red, green, and blue.

color-component value A value representing the intensity of a single color component.

color conversion The conversion of a color value from one color space to another. If the color spaces are not in the same base family, accurate color conversion requires *color matching*.

colorimetric matching A color-matching method in which colors common to the gamuts of both devices are maintained across the match. Compare *perceptual matching*, *saturation matching*.

color-mixture tint A halftone tint type in which the tint color is specified by the mixture of dot color and background color closest to the input color.

color matching A method of accurately converting colors in one color space to another color space, or from display on one device to display on another device. Color matching requires the use of *color profiles* and a *color-matching method*.

color-matching method A specific algorithm for matching colors. Different algorithms have different purposes. See, for example, *colorimetric matching*, *perceptual matching*, *saturation matching*.

color packing The storing of colors in formats that are smaller than the unpacked formats. Whereas unpacked colors may require 48 or 64 bits to describe a color value, packed formats may require only 16 or 32 bits.

color profile A QuickDraw GX object associated with a transfer mode, color, or bitmap data structure and used for color matching. A color profile usually describes the color response curve of a display device in terms of an objective standard.

color set A QuickDraw GX object associated with a transfer mode or bitmap data structure. A color set defines the individual colors available for drawing a shape.

color space A specification of a particular method for color representation, such as RGB or HSV. QuickDraw GX recognizes over 30 different color space definitions.

ColorSync Utilities A part of Macintosh system software that manages color matching, color profiles, and the drawing of matched colors. QuickDraw GX color profile objects contain ColorSync color profiles, and QuickDraw GX uses the Color Sync Utilities to perform its color matching.

color value A structure that holds the full specification of a single color in a particular color space. For example, an RGB color value consists of three *color-component values*: one each for red, green, and blue. A color value is itself a component of a *color* structure.

color-value array A property of a color set object; it is the array of color values that constitute the colors of the color set.

component See *color component*.

component mode A transfer mode type, as applied to a single color component. It is the specification of the kind of transfer mode—such as copy mode or XOR mode—to apply to that color component when drawing a shape or pixel.

component tint A halftone tint type in which the tint color is specified by the value of one component of the input color.

concatenate To add (through matrix multiplication) the effects of one mapping matrix to another, as when the mappings of view ports in a view port hierarchy are concatenated to convert from local space to global space.

constructive geometry Mathematical operations, such as intersection and union, that construct new shape geometries out of input shape geometries.

coordinate plane See *coordinate space*.

coordinate space or **coordinate system** A planar region defined by all possible values for a pair of fixed-point coordinates. The coordinate spaces supported by QuickDraw GX include *geometry space*, *local space*, *global space*, and *device space*.

copy mode A transfer mode type in which the source color component is copied to the destination, and the destination component is ignored.

curve error A style object property. It is the allowable error for operations such as converting a path shape to a polygon shape.

curve shape A shape type that represents a quadratic Bézier curve.

dash A style object property. It is the appearance of dashed lines or contours in a shape. The dashing capability is very general in QuickDraw GX; you can specify any geometric shape, or even a sequence of glyphs, for a dash.

direct mode A fast printing mode that uses information built into the printer.

default object (1) For most kinds of objects, an object with the properties of a newly created object. When it creates an object, QuickDraw GX assigns it the default properties for that kind of object. (2) For color sets, the color set to assign as the default to a bitmap shape of a given pixel depth. (3) For color profiles, the profile to use for color matching when no profile is specified.

desktop printer A printer accessible through an icon on the user's desktop. The user prints to a desktop printer by dragging the icon of a document to the printer icon.

despool To open a print file and send its data to a device for printing. Compare *spool*.

destination color The preexisting color of the destination onto which a shape or pixel is to be drawn. Compare *source color*, *result color*.

destination color limits In a transfer mode, limits on the permissible values for destination color to use in transfer-mode calculations. Compare *source color limits*, *result color limits*.

destination profile The color profile attached to the device on which a color is to be drawn. Compare *source profile*.

device coordinates Paired values that specify a size or location in device space.

device matrix A 5×4 matrix, part of the transfer mode structure, that allows you to manipulate the components of the destination color.

device space The coordinate system that defines the position and scale (pixel size) of a specific view device. Compare *geometry space*, *local space*, *global space*.

direct memory Memory directly addressable by an application or by QuickDraw GX. Compare *remote memory*.

dispose To delete a reference to an object. When an application no longer needs an object, it disposes of the object. That action deletes the object from memory if there are no other current references to the object; otherwise, disposing of an object merely decreases its owner count by 1.

dither or dither level A property of a view port object. It specifies the number of colors that can be dithered together when drawing a shape to that view port.

dithering A color-display technique in which different colors are placed in adjacent pixels to achieve the affect of a single color intermediate between the displayed colors.

dot color The color of the dots of a halftone.

dot type The shape of dot employed in a halftone pattern, such as round, line, or triangle.

empty shape A shape type that has no geometry, no contents, and no bounds.

encoding A style object property. It is the type of character encoding used to represent the text of a shape, as well as its script and language.

error A diagnostic message posted by QuickDraw GX when a function cannot complete successfully.

error diffusion A process of dithering for bitmaps in which the error (the difference between the computed color of a given pixel and the nearest color available on the view device) is passed to adjacent pixels.

even-odd fill A shape fill that follows the even-odd rule. Same as *solid fill*.

exclude mode A transfer mode type in which the destination color remains visible only where the source is transparent, and the source color is copied anywhere the destination is transparent.

fade mode A transfer mode type in which the source is blended with the destination, using the relative alpha values as the ratio for the blend.

fill See *shape fill*.

flatten To convert the private, object-based description of an object or set of objects into a public-format data stream suitable for file or clipboard storage. Compare *unflatten*; see also *stream format*.

font A style object property. It is the reference to the font to use in drawing the text of a shape.

font variations A style object property. It is the list of font variations—stylistic variations built into the font—available for drawing the text of a shape.

format object A printing object that specifies page-formatting characteristics.

framed fill See *open-frame fill*.

frequency The size of cells in a halftone pattern, in cells per inch.

full shape A shape type that represents a shape that encompasses all of coordinate space.

fully justified See *justification*.

gamut The limits of the colors that a device can produce. Different devices have different gamuts, so color matching is necessary when converting colors from one device to another.

geometric operations Mathematical operations on the geometries of shape objects. See also *constructive geometry*.

geometry A property of a QuickDraw GX shape object. It is the specification of the actual size, position, and form of the shape. For example, for a rectangle shape, the geometry specifies the locations (in local coordinates) of the rectangle's upper-left and lower-right corners.

geometry coordinates Paired values that specify a size or location in geometry space.

geometry space The coordinate system represented by the geometry of a shape object. Compare *local space*, *global space*, *device space*.

global coordinates Paired values that specify a size or location in global space.

global space The coordinate system, used by a view group, resulting from the application of the view port mapping shape dimensions measured in local space. A view port's location, for example, is described in global coordinates. Compare *geometry space*, *local space*, *device space*.

glyph justification overrides array A style object property used only by layout shapes. It is an array that redefines the justification priorities and behaviors for individual glyphs.

glyph shape A shape type that represents a set of characters or glyphs, each of which is drawn with independent style, location, and orientation.

glyph substitutions array A style object property used only by layout shapes. It is an array specifying substitute glyphs for those that would normally be displayed in a style run.

GraphicsBug A tool for debugging QuickDraw GX applications; its mode of use and command set are analogous to those of MacsBug.

graphics client A reference to a block of memory (the graphics client heap) used for an application's objects.

graphics client heap The part of computer memory in which QuickDraw GX allocates its objects and data structures. Compare *application heap*.

grayscale Consisting entirely of shades of gray.

gray space A color space whose single component is the lightness or brightness of a color. Same as *luminance color space*.

hairline The thinnest possible line that can be drawn on a device.

halftone A QuickDraw GX data structure—also a property of a view port object—that specifies a pattern and a set of colors. A halftone is used to achieve a greater range of colors than may be available on a display device. See also *angle*,

background color, *dot color*, *dot type*, *frequency*, *tint type*.

hierarchy See *view port hierarchy*.

highlight mode A transfer mode type in which the source component and operand component are swapped in the destination. Other component values in the destination are ignored.

hit point In hit-testing, the point (commonly corresponding to a mouse-down location) to be tested for coincidence with a shape or part of a shape.

hit-test info structure A structure, filled out by a hit-testing function, that contains the results of a hit-test.

hit-testing The conversion of a specific geometric location, such as pixel position in a view port, to logical location (part, control point, or glyph) in the geometry of a shape object. Hit-testing is used to highlight or activate parts of geometric shapes or to highlight or draw a caret within the displayed text of a typographic shape.

hit-test parameters A property of a transform object. They consist of a shape-parts mask and a tolerance that together specify the conditions of a hit-test.

HLS color space A color space whose three components measure the hue, lightness, and saturation of a color.

hollow fill See *closed-frame fill*.

HSV color space A color space whose three components measure the hue, saturation, and value (similar to lightness) of a color.

identity mapping A mapping matrix in which all elements are 0 except those along the diagonal, which are 1.0. An identity mapping leaves unchanged whatever it is applied to.

indexed color space A color space whose single component defines an index into a list of color values in a *color set*.

ink A QuickDraw GX object associated with a shape object. An ink object contains information that affects the color of a shape and the transfer mode with which it is drawn.

inverse even-odd fill A shape fill that is the inverse of *even-odd fill*.

inverse fill See *inverse even-odd fill*.

inverse solid fill See *inverse even-odd fill*.

inverse winding fill A shape fill that is the inverse of *winding fill*.

job object A printing object that holds the primary printing information for a document.

join A style object property. It is the appearance (such as rounded or sharp, or any other geometric shape) of corners where a shape's lines or contours meet.

justification The process of adding space or otherwise increasing the spacing of glyphs to align text with both its left and right margins. Justification is a form of alignment, and is incremental; text that completely fills the space between both margins is *fully justified*.

Kerning adjustments array A style object property. It is an array specifying changes to the font-specified kerning for pairs of glyphs in a style run. (This property is used by layout shapes only.)

$L^*a^*b^*$ space A universal color space, designed to create perceptually linear gradations between colors, that is a nonlinear transformation of the Munsell color-notation system.

layout shape A shape type that represents a line of text that can be drawn using sophisticated typographic formatting and glyph substitutions.

line shape A shape type that represents a straight line.

load To return an unloaded QuickDraw GX object from external storage to memory. QuickDraw GX automatically and transparently loads and unloads objects in the course of managing memory; an application need never know whether an object it accesses is currently loaded or unloaded.

local coordinates Paired values that specify a size or location in local space.

local space The coordinate system, interior to a view port, resulting from the application of the transform mapping to the geometry of a shape object. Compare *geometry space*, *global space*, *device space*.

lock To prevent an object in the QuickDraw GX heap from being moved. You can lock some QuickDraw GX objects and manipulate their properties directly, instead of using functions to copy them into and out of application memory. See also *unlock*.

luminance color space A color space whose single component is the lightness or brightness of a color. Same as *gray space*.

luminance tint A halftone tint type in which the tint color is specified by the luminance of the input color.

$L^*u^*v^*$ space A universal color space, designed to create perceptually linear gradations between colors, that is a nonlinear transformation of XYZ space.

mapping A 3×3 matrix—a property of a transform object, view port object, and view device object—that specifies the translation, rotation, or distortion to be applied to a shape when it is drawn.

maximum mode A transfer mode type in which the source component replaces the destination component only if the source component has a larger value.

message A command sent by QuickDraw GX to accomplish printing-related tasks.

Message Manager A part of system software, related to QuickDraw GX, that manages *messages*.

method See *dot type*.

migrate mode A transfer mode type in which the destination color component is moved toward the source component by the value of the step specified in the operand component.

minimum mode A transfer mode type in which the source component replaces the destination component only if the source component has a smaller value.

notice A diagnostic message posted by QuickDraw GX when a function is called unnecessarily.

object A private QuickDraw GX data structure. An object has specific *properties* and is accessed through a *reference*.

object sharing The use of the same object by several owners, such as application variables or other objects. Many QuickDraw GX objects can be shared. See also *owner count*, *clone*.

offscreen drawing The process of drawing into an offscreen buffer in preparation for later transfer of the drawn image to the screen.

onscreen view group The view group, created by QuickDraw GX, that includes all view devices for physical display devices.

open-frame fill A shape fill that connects the points of the geometry from start point to end point (but not back to the start point again). Same as *framed fill*.

operand A numerical value used with some transfer mode types (such as blend mode) to affect the outcome of the transfer-mode operation.

OR mode A transfer mode type in which the bits of the source color component and destination color component are combined using an OR operation.

out of gamut Said of a color that cannot be represented on a given device.

over mode A transfer mode type in which the source color is copied to the destination, and the source transparency controls where the destination color shows through.

owner A variable, structure, or QuickDraw GX object that references an object. Many objects can be referenced by more than one variable, and can thus have multiple owners.

owner count A property of some QuickDraw GX objects; it is the number of current references to the object.

paper-type object A printing object that specifies the type and dimensions of the paper printed to.

parent view port A property of a view port object. A view port's parent is that view port immediately above it in the view port hierarchy.

path shape A shape type that represents one or more path contours, each of which is a set of contiguous line segments that can be curved or straight.

pattern A style object property. It is the pattern (actually, any geometric shape, glyph shape, or bitmap shape) to use in filling the geometry of the shape.

pen width A style object property. It is the width of the pen used to draw the shape.

perceptual matching A color-matching method in which all colors produced on the source device are shifted to fit the gamut of the destination device, even those already within the gamut of the destination device. Compare *colorimetric matching*, *saturation matching*.

perspective The altering of a two-dimensional image to give the impression of a third dimension. A mapping can be used to alter the perspective of a shape.

picture shape A shape type that represents a collection of other shapes.

point shape A shape type that represents a single point.

polygon shape A shape type that represents one or more polygon contours, each of which is a set of contiguous straight-line segments.

portable digital document (PDD) A specialized print file that contains all information, including font information, needed to reconstruct and draw the shapes it contains.

post For an error, warning, or notice, to place in an accessible location. QuickDraw GX posts an error, for example, when a function cannot complete successfully.

primitive shape A shape in which the stylistic information is incorporated into the shape's geometry.

printer driver A software module that controls how the contents of a document are spooled, rendered, and sent to a specific output device.

printer object A printing object that represents the capabilities of a physical printer.

print file The spooled version of a QuickDraw GX shape or set of shapes that is the intermediate stage in printing. A print file consists of a stream of flattened QuickDraw GX objects. See also *portable digital document*.

print-file object See *print file*.

printing extension A software module that extends the printing capabilities of QuickDraw GX applications and printer drivers.

printing objects QuickDraw GX objects used for printing. Printing objects include the *job object*, *format object*, *paper-type object*, and others.

priority justification override A style object property used only by layout shapes. It is a structure that redefines the justification priorities and behaviors for whole classes of glyphs.

profile chromaticities A set of color values in a color profile, giving the device-independent colors representing the full intensities of the primary colors on the device.

profile data A property of a color profile object; it consists of a ColorSync color profile structure.

profile response curves A set of curves in a color profile representing the color response of a device as the color intensity ranges from zero to maximum.

property An item or set of data in a QuickDraw GX object. A property of an object is analogous to a field (or member) of a data structure; however, a field is accessed through its name, whereas a property is accessed through a function.

pseudo-Boolean transfer modes Transfer mode types in which the result color is achieved by normalizing the source and destination values and performing simple arithmetic operations whose results are analogous to 1-bit Boolean operations.

QuickDraw GX A sophisticated graphics programming system that is based on objects and provides powerful graphic and typographic capabilities, as well as convenient and flexible printing features.

QuickDraw GX memory The parts of computer memory used by QuickDraw GX, including the *graphics client heap*. Compare *application heap*.

ramp-AND mode A transfer mode type in which the source and destination color components are normalized, and their product (source \times destination) is the result.

ramp-OR mode A transfer mode type in which the source and destination color components are normalized, and the result of (source + destination – source \times destination) is the result.

ramp-XOR mode A transfer mode type in which the source and destination color components are normalized, and the result of (source + destination – 2 \times source \times destination) is the result.

rectangle shape A shape type that represents a single rectangle.

reference A longword value, neither a pointer nor a handle, through which an application accesses a QuickDraw GX object. References are created by QuickDraw GX and passed to applications.

reference white point See *white point*.

remote memory Memory, such as that on an accelerator card, that is not directly addressable. Compare *direct memory*.

result color The color of the destination after drawing has occurred. Compare *source color*, *destination color*.

result color limits In a transfer mode, limits on the permissible values for result color to achieve in transfer-mode calculations. Compare *source color limits*, *destination color limits*.

result matrix A 5×4 matrix, part of the transfer mode structure, that allows you to manipulate the components of the result color after it is calculated.

RGB color space A color space whose three components measure the intensity of red, green, and blue. Used mostly for color video.

rotate To turn about a point. A mapping can be used to rotate a shape about a fixed origin.

run controls A style object property used only by layout shapes. It is a set of values and flags that control various aspects of how the text in a style run is displayed.

run features array A style object property used only by layout shapes. It is an array specifying the set of font features—typographic capabilities as defined by the font—to apply to the text of a style run.

saturation matching A color-matching method in which colors from the source device are shifted to fit the gamut of the destination device in such a way that their saturation (vividness) is preserved. Compare *colorimetric matching*, *perceptual matching*.

scale To proportionally enlarge or shrink. A mapping can be used to scale the geometry of a shape, about a fixed origin, either horizontally or vertically.

shape (1) A graphic or typographic item (such as a geometric shape, a bitmap, or a line of text) created and drawn with QuickDraw GX. (2) A set of QuickDraw GX objects that, taken together, describe the type and characteristics of such a graphic or typographic item. A shape consists of a shape object, a style object, an ink object, and a transform object.

shape cache A cache created and maintained by QuickDraw GX for storing the results of intermediate calculations made prior to drawing a shape.

shape fill A property of a shape object. The shape fill specifies whether and how QuickDraw GX fills in the outlines of a shape that it draws.

shape object A QuickDraw GX object that, along with several other objects, describes a QuickDraw GX shape. A shape object specifies the fundamental type and contents of a shape.

shape part A designation of a part of a shape or its geometry (such as bounding rectangle or corner point) that can be considered in hit-testing. See also *tolerance*.

shape-parts mask For hit-testing, the list of shape parts to be tested against the hit point. See also *tolerance*.

shape type A property of a shape object. The shape type specifies the classification (such as point, line, bitmap, or text) of a particular shape.

sharing See *object sharing*.

skew To progressively distort in a shearing manner. A mapping can be used to skew a shape, about a fixed origin, either horizontally or vertically.

solid fill See *even-odd fill*.

source color The color of a shape or pixel that is to be drawn. Compare *destination color*, *result color*.

source color limits In a transfer mode, limits on the permissible values for source color to use in transfer-mode calculations. Compare *destination color limits*, *result color limits*.

source matrix A 5×4 matrix, part of the transfer mode structure, that allows you to manipulate the components of the source color.

source profile the color profile attached to a color that is to be drawn or converted. The source profile reflects the characteristics of the device on which the color was originally created. Compare *destination profile*.

spool To flatten a QuickDraw GX shape or collection of shapes, and save it to a print file in preparation for printing. Compare *despool*.

spool block A data structure used in conjunction with a *spool function* for flattening and unflattening QuickDraw GX objects.

spool function An application-supplied function that uses a *spool block* to accept flattened data from QuickDraw GX or prepare flattened data for unflattening into objects.

stream format The public format available for describing QuickDraw GX objects. Objects in stream format are considered flattened, and can be interpreted or reconstructed by parsing. Flattened objects are unflattened when they are converted back to object format.

style A QuickDraw GX object associated with a shape object. It contains information that affects the visual appearance of a shape when it is drawn.

synonym A particular kind of tag object, used by QuickDraw GX to provide an alternate representation of an object for printing.

tag list A property of many QuickDraw GX objects. It is an array of references to tag objects associated with the object.

tag object A QuickDraw GX object whose purpose, structure, and content are entirely controlled by the application creating it. Tag objects exist to allow custom information and behavior to be attached to standard QuickDraw GX objects. Tag objects are classified by **tag type**; objects reference their tag objects through a **tag list**.

tag type A longword data type (equivalent to `OSType`) that can be represented by four 1-byte characters, such as 'appl'. Tag types specify the formats of **tag objects**.

text face A style object property. It is the text face—the constructed stylistic variation from plain text—to apply when drawing the text of a shape.

text shape A shape type that represents a line of characters drawn in a single font and style.

text size A style object property. It is the size, in typographic points (72 per inch), to draw the text of a shape.

tint The area ratio of dot color to background color that describes the **tint color** in a halftone.

tint color The actual resultant color produced by a halftone; it is a mixture of the dot color and the background color, in proportions specified by the **tint** ratio.

tint space The color space used by a halftone.

tint type The calculation method, such as luminance tint or color mixture tint, used to determine the **tint color** and the **tint** in a halftone.

tolerance For hit-testing, a value that specifies how close to a **shape part** a hit point must be for the hit-test to be considered successful.

transfer mode A QuickDraw GX data structure—also a property of an ink object—that controls the interaction between the color of a shape and the colors of the background at the location where the shape is drawn.

transfer mode type A specification of the kind of transfer mode—such as copy mode or XOR mode—to apply when drawing a shape or pixel. In QuickDraw GX, same as **component mode**.

transform A QuickDraw GX object associated with a shape object. A transform object contains information that affects the visual appearance of a shape when it is drawn and specifies how the associated shape objects' geometries will be represented in a view port.

translate To move an item. A mapping can be used to translate, or move, a shape by a given amount or to a given location.

tristimulus values The three components of XYZ space, designed to mimic the three kinds of light response of the human retina.

type See **shape type**.

undercolor removal In CMYK color calculation, the removal of some or all of the cyan, magenta, and yellow inks where black ink is to be substituted. See also **black generation**.

unflatten To convert the public, stream-based description of an object or set of objects into the private, native QuickDraw GX object-based format. Compare **flatten**; see also **stream format**.

universal color spaces Color spaces whose colors are device-independent. Universal colors can be compared without the use of color profiles.

unload To move a QuickDraw GX object from memory to temporary external storage. QuickDraw GX automatically and transparently loads and unloads objects in the course of managing memory; an application need never know whether an object it accesses is currently loaded or unloaded.

unlock To free a previously locked object in the QuickDraw GX heap so that it can be moved. See also **lock**.

view device A QuickDraw GX object associated with a view port object. It describes the characteristics of a given physical display device such as a monitor or a printer.

view group A QuickDraw GX object that consists of a grouping of view ports and view devices.

view port A QuickDraw GX object associated with a transform object. It describes the characteristics of the drawing environment for individual QuickDraw GX shapes.

view port hierarchy An ordered arrangement of view ports that allows for such features as windows within windows, including multiple windows within a single window.

view port list A property of a transform object. It is an array of references to the view ports that the shapes associated with that transform can be drawn to.

visible region In a Macintosh window, the part of a window that can be drawn into; defined by the `visRgn` field in the graphics port record. In view ports attached to windows, QuickDraw GX restricts drawing to the window's visible region.

warning A diagnostic message posted by QuickDraw GX when a function completes successfully but may have produced an unexpected result.

white point A specific definition of what is considered white light, represented in terms of *Yxy*, and usually based on the whitest light that can be generated by a given device. Colors in some color spaces are defined in comparison to a reference white point. See also *Yxy color space*.

winding fill A shape fill that follows the winding-number rule.

XOR mode A transfer mode type in which the bits of the source color component and destination color component are combined using an exclusive-OR operation.

XYZ color space A universal color space whose three components (the *tristimulus values* X, Y, and Z) are means to reflect the fundamental response of the human eye to color.

YIQ color space A universal color space, used for color television transmission, whose components are Y, I, and Q. Y represents luminance and the other two components carry color information.

Yxy color space A universal color space whose three components (the chromaticity coordinates Y, x, and y) are derived from XYZ color space.

zero-length profile A color profile object that contains no profile data. You can specify a zero-length profile in situations in which you do not want color matching to occur.

