# Technotes

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## Decomposing a QuickDraw GX Mapping

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A QuickDraw GX mapping, being a 3-by-3 matrix, can specify any 2D linear transformation. It is easy enough to build up such a transformation from a sequence of *primitive transformations* , namely translations, scalings, rotations, skews and perspective distortions -- GX provides calls to construct nearly all of these components (the exception is perspective, for which there is library code in the GX SDK). Sometimes there is a need to go the other way: given an arbitrary linear transformation, can you break it into a sequence of pure translations, scalings, skews and perspective distortions? This Technote will show you how.

This Technote is aimed at those who already have some basic understanding of QuickDraw GX graphics, including how to make use of GX mappings. The exposition will take more of an intuitive, hand-waving approach, with little pretense at rigorous derivation.

This Technote is heavily dependent upon mathematical derivation, which HTML does not yet adequately support. In order to ensure the mathematical integrity of the text, we are not publishing the body of the Technote as an HTML file. You can download the Technote, in its entirety, either as an Adobe Acrobat or a AppleWorks document, by clicking on one of the icons that appear at the top of this page.

## Further References

- *Inside Macintosh: QuickDraw GX Environment and Utilities* , "QuickDraw GX Mathematics" chapter.
- Mac OS SDK CD, ":QuickDraw(TM) GX:Programming Stuff:GX Libraries:" folder, MappingLibrary.c, the PolyToPolyMap routine.