

# VRML: Three Dimensions for the World Wide Web

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*The Virtual Reality Modeling Language (VRML) is a standard for describing three-dimensional, virtual scenes and environments that can be served via the World Wide Web.*

*A rapidly emerging communication medium, VRML may soon become a technology used by technical communicators in many industries where 3D information truly enhances a message.*

*This overview for technical communicators with little or no 3D computer graphics experience covers the features of VRML and presents many real-world applications to reinforce how VRML can be used to deliver certain kinds of information.*

## WHY VRML?

VRML enables authors to construct realistic, interactive virtual environments for many purposes. The many features of this powerful language provide authors with the ability to build environments similar to those seen in interactive games and CD-ROM multimedia.

Unlike other technologies, which are typically packaged in complex binary formats creating very large files, VRML is text based. This text format is perfect for downloading via the constrained bandwidth of the Web.

## How Does It Work?

The VRML text file describes the scene, which is rendered by a viewer-user's browser. Free browsers—both stand-alone and Web-browser plug-in varieties—are available for multiple platforms: Macintosh, PC, and UNIX.

A scene's functionality is achieved by creating and defining VRML nodes. A node is a bit of scene information, like a piece of 3D geometry, which typically has attributes, like size, defined using the node's fields.

Because VRML is text based, authors can create environments using text editors or 3D modeling software like that used by 3D artists or CAD operators.

Three-dimensional graphics hardware, lots of RAM, and super-powerful CPUs make rendering faster but are not necessary to view and navigate within VRML worlds.

## VRML's Authoring Features

VRML provides many features for building virtual environments, making those environments visually and aesthetically pleasing, and adding interactivity and navigation assistance for viewers, including:

- Predefined geometry for primitive shapes, like spheres, and more complex geometry
- Environment enhancers for creating backgrounds and fog, providing sound, and enhancing users' navigation through scenes
- Syntax for sensing the viewer, creating triggers to start animation and sound, and providing an interface to scripts that act on the VRML scene but are stored outside the VRML file

## WHAT'S IN IT FOR TECHNICAL COMMUNICATORS?

Just as interactive multimedia is an often-used medium for communicating some technical information, VRML may become even more widely used due to its association with the World Wide Web.

The more we, as communicators, are familiar with the medium, the better we can use VRML to convey the specialized messages that may require or be significantly enhanced by a 3D communication mechanism. By understanding the features, constraints, and considerations of VRML, we can use it more wisely and communicate better with it.

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