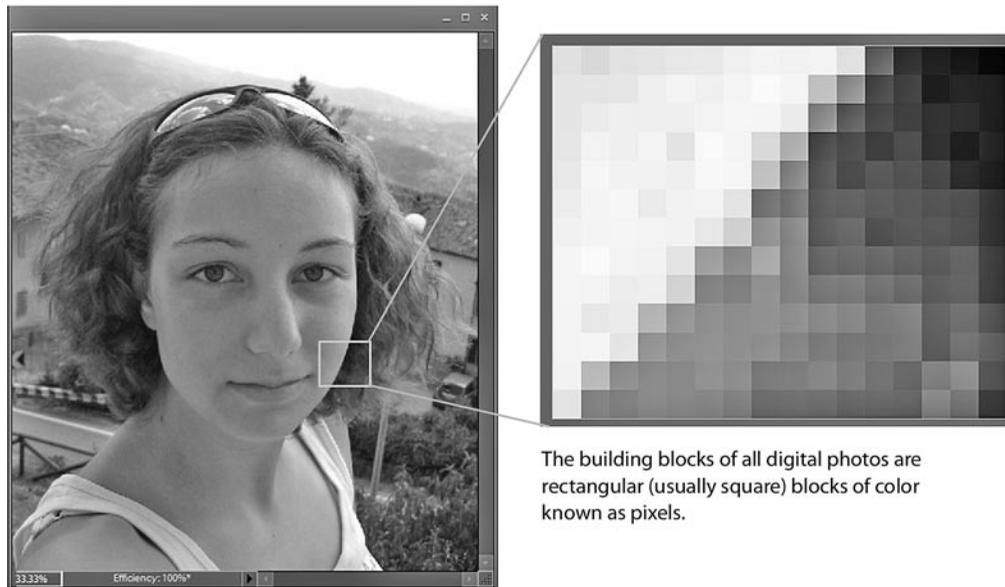Section 1

Adobe Photoshop Elements 13

Chapter 1
Things You Need to Know
Principles of photo and graphic editing

Photoshop Elements is a surprisingly powerful photo and graphics editor that borrows a large number of tools from its big brother, Photoshop, the industry standard for photo and graphics work. In fact, both programs can even open and edit the same types of files.

The few limitations Elements does have, in fact, might well be things you'll never even miss (unless you're preparing files that will ultimately go onto a printing press).

But before we go too deeply into the tool set of this fine program, there are a couple of basic principles you'll need to understand.

The building blocks of all digital photos are rectangular (usually square) blocks of color known as pixels.

Square (photograph) pixels   Narrower NTSC non-square 4:3 pixels   Wider NTSC non-square 16:9 pixels

Pixels

Pixels are the building blocks of all digital graphics and photos. Whether you can see them or not, all digital photos as well as photos and graphics created in Photoshop Elements are made up of these little squares of color. Even a tremendously rich, detailed digital photograph, if you blew it up large enough, would reveal itself to be little more than thousands (or millions) of little squares of solid color, each one some mixture of red, green and blue.

This is easier to see on a low resolution image, such as a graphic created for a web site. Zoom in as far as Photoshop Elements will let you go and you'll soon see that even in the apparently smoothest gradation of color there are actually little blocks of solid color.

An understanding of pixels is vital to developing a deeper understanding of how Photoshop Elements works. In order to fully comprehend how virtually any tool does what it does or how any setting affects your image – or how to measure the relative size of your images – you must learn to see your images not merely as pictures of people, animals and places but as compositions of thousands and thousands of little blocks of color.

Non-square pixels – and more than you probably want to know

Like all digital photo devices, video camcorders paint their on-screen images with pixels. But, unlike in a typical photograph, video pixels often aren't square blocks of color – they're rectangular.

Even more confusing, the shapes of these rectangular pixels vary, depending on the nature of the medium.

Standard definition NTSC, the television and video format used in North America and Japan, uses pixels that are only 90% as wide as they are tall.
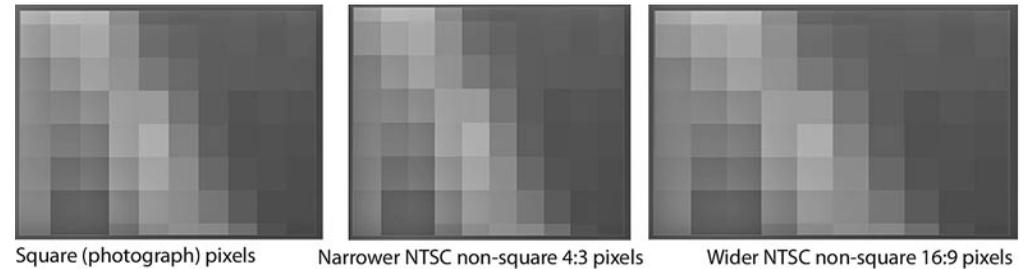
Standard definition PAL, the TV format used in most of Europe, uses pixels that are 107% as wide as they are tall. Because of this, a 720x480 pixel NTSC image and a 720x576 pixel PAL image both produce a video frame that is in the same proportion – a 4:3 ratio!

Widescreen standard definition TV uses the same number of pixels to create a video frame as standard TV. The pixels are just proportioned differently. (The pixels are 120% as wide as they are tall in NTSC and 142% as wide as they are tall in PAL.) In other words, there are exactly the same number of pixels in a 4:3 video frame as there are in a 16:9 video image, as illustrated above.

Even some high-definition video camcorders use non-square pixels. In 1440x1080 hi-def TV, the pixels are 133% as wide as they are tall, so that 1440x1080 pixel image produces a 16:9 image. (Though more and more hi-def camcorders are also shooting in 1920x1080, a square pixel format.)

All of this is related to technology dating back to the origins of television. And, unless you're creating graphics for video, it pretty much falls into the "nice to know" rather than "need to know" category. But it *is* nice to know – in case anyone ever asks you why a 720x480 video file becomes a 640x480 web video.

In most cases, as you're designing artwork for your videos, you won't need to concern yourself with whether your pixels are square non-square. This is because Premiere Elements will automatically adapt your square pixel images to the non-square pixel video environment. Just use these **square pixel** equivalents for creating full-screen graphics:

Standard Definition 4:3 NTSC video	640x480 pixels
Widescreen Standard Def NTSC video	855x480 pixels
Standard Definition 4:3 PAL video	768x576 pixels
Widescreen Standard Def PAL video	1024x576 pixels
High Definition 16:9 video	1920x1080 pixels

Resolution

Resolution means, basically, how many of these pixels are crammed into how much space. Standard definition video, like images created for the Internet, doesn't require a particularly high resolution image. Print, on the other hand, can require a pixel density of two to four times that of an on-screen image.

High resolution photo

Same size photo, at much lower resolution (fewer pixels per inch)

Just as digital photos are made up of pixels, printed images are made up of little dots of color or ink. A good, press-worthy image may need 300 dots of color per inch (or more) in order to appear to the eye as a smooth color image. Home printed pieces, like the kind you'd print off your desktop printer, can have as few as 150 dots or pixels per inch. Graphics that will be used on-screen (for the Web or in a video) are about 72 pixels per inch. This is why, if you download a graphic from a web site and print it out, you'll often find that the picture prints fuzzy, jagged or "pixelated."

In order to get a good, high-resolution print-out of a 4" x 3" photo, you'd need a photo that measures as much as 1200 pixels wide and 900 pixels tall. That's a lot of pixels when you consider that a standard TV frame measures only 640 x 480 square pixels. In other words, that 1200 x 900 photo you used for your print-out has four times as many pixels as an equivalent full-screen image on a standard definition TV set!

And that's why we say video is a relatively low resolution medium. High-definition video needs a bit more image data – but only a fraction of what print artwork requires (and less than half of the resolution produced by a 5 megapixel digital still camera).

Video images are measured in pixels. In other words, as you're working on images for your videos, their dimensions, in pixels, are the only relevant measurement.

The measurements of any graphics and photos you prepare for video are *never* expressed in inches or centimeters. Even the resolution of your images, in terms of pixels per inch, isn't really relevant.

Why doesn't linear measurement (like inches and centimeters) matter in the world of video graphics? Well, basically, it's because you never know how big the TV is your video is going to be shown on!

TVs and computer monitors come in a variety of sizes and screen settings. A graphic may appear to be 2 inches across on a 17" computer monitor, 4 inches across on a 22" TV set and 30" across on a big screen TV! But the graphic itself is always the same number of *pixels* in size. Those pixels are as large or as small as the screen you're viewing them on.

So, when you're creating your graphics for video (or for the web), always think in terms of measurements in pixels. That's the only constant measurement in on-screen graphics.

Just for convenience sake, most people still do use 72 ppi (pixels per inch) as their resolution setting when creating their on-screen graphics. But ultimately the resolution setting makes no difference in this case. When you create an image for video or for the Web, a 640x480 pixel image is still the same size whether it's 72 ppi or 600 ppi.

Raster vs. vector graphics

All computer-created graphics fit into one of two categories – raster graphics or vector graphics – each behaving in its own unique way.

Raster graphics are graphics or photos that are composed of pixels. Digital photos and videos are both composed of pixels. The graphics files you'll be working with and importing into Premiere Elements will be composed of pixels. And, as we've discussed, all raster art requires a certain density of pixels – or resolution – in order for those pixels to be perceived as a smooth blend of colors. If you stretch or enlarge a photograph so much that its pixels show, it will appear jagged and blurry.

Vector graphics, on the other hand, are defined not by pixels but by shape, outlines and fill colors. Programs like Adobe Illustrator, for instance, create graphics in vector. Vector graphics can be as simple as a square or a circle or nearly as complicated as a photograph.

But vector graphics, because they are defined by *outlines and fill colors rather than pixels*, don't have any resolution. They can be resized indefinitely – even scaled to many times their original size – without breaking up into pixels. They remain simply outlines and fills. If you've used a simple drawing tool, such as the one in Microsoft Word, to draw a circle or square, you've worked with vector art.

Photoshop Elements is predominantly a *raster* art program. It is generally concerned with pixels of color. However, there are a few features in the program that behave as if they were vector art:

Shapes. The **Shape Tools** in Photoshop Elements can draw a variety of useful shapes – from circles and squares to lines and arrows and splashes. The shapes it creates, however, have some unique characteristics, as you'll see once you start using them.

Like vector art, these shapes can be easily resized and stretched without concern for resolution. And, if you'll look at a shape layer in the **Layers** panel (as illustrated to the right), you'll notice that they don't even *look* like most Photoshop art. They also won't share their layer with any other graphics. These shapes are *pseudo vector graphics*. They have all of the editing advantages of vector graphics, and they remain as such until you output your Photoshop Elements file as a graphics file or you select the option to manually render or simplify the shape layer.

Text. We usually don't think of text as vector art, but it essentially behaves the same way. You can stretch or resize text as needed in your Photoshop Elements document without concern for resolution. The text will also remain editable until you output your Photoshop Elements document as a graphics file or you select the option to manually render or simplify the text layer.
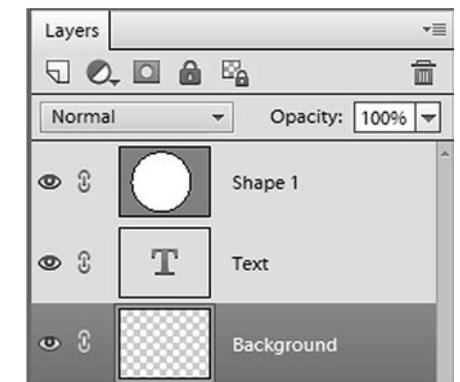
Text and shapes in Photoshop Elements, like vector art, can be resized without regard for the layer's resolution.

Once you output your Photoshop Elements file as a graphics file other than a PSD (a JPEG, TIF or GIF, for instance) or you import the file into Premiere Elements, all of the elements in your graphics file will become raster art. It all becomes pixels. And, because of that, the size (measured in pixels) of your file will determine how large the graphic or photo will be.

Image Size vs. Canvas Size

As you resize your photos or graphics files (under the **Resize** tab, as we'll discuss in **Chapter 7**), it's important to understand the difference between resizing the **Image Size** and the **Canvas Size**.

The distinction is an important one:

If you resize the **Image Size**, the entire image gets bigger or smaller; if you resize the **Canvas Size**, the image remains the same size but you either add more space around the image or, if you size your canvas smaller, you trim the sides off the image, as illustrated below.
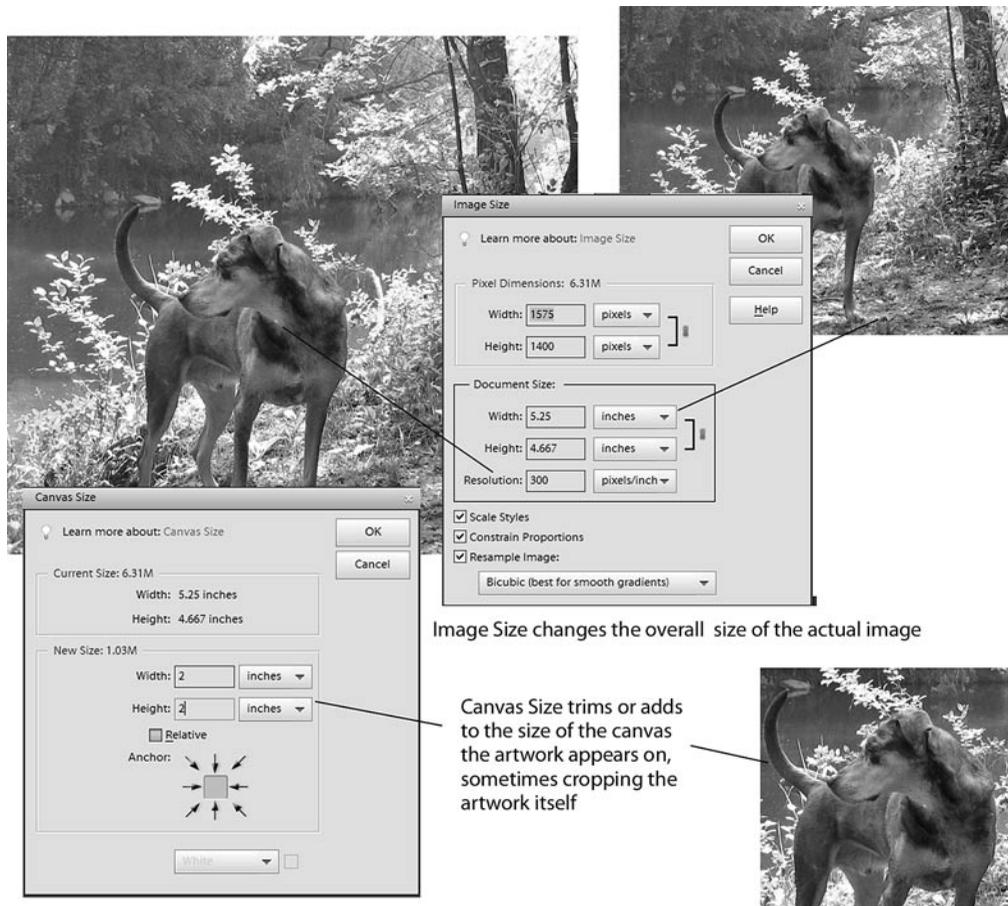

Image Size changes the overall size of the actual image

Canvas Size trims or adds to the size of the canvas the artwork appears on, sometimes cropping the artwork itself

Selections

Selection is a key concept in both Photoshop and Photoshop Elements. A number of the tools in this program are designed to enable you to select – or isolate – areas of your photo or image file and then either remove, add to or add an effect to that area only, without affecting the rest of the image.

Because your photo or graphics work will often involve precise adjustments, understanding how to select areas of your image and then add to, remove from or refine that selection is one of the keys to accessing the program's power.

We'll spend considerable time discussing how to select areas and then use those selections in **Chapter 6, Select and Isolate Areas in Your Photos.**

Many of the tools in Photoshop Elements are designed to allow you to select and isolate areas of your photos so that effects are applied only to your selection.
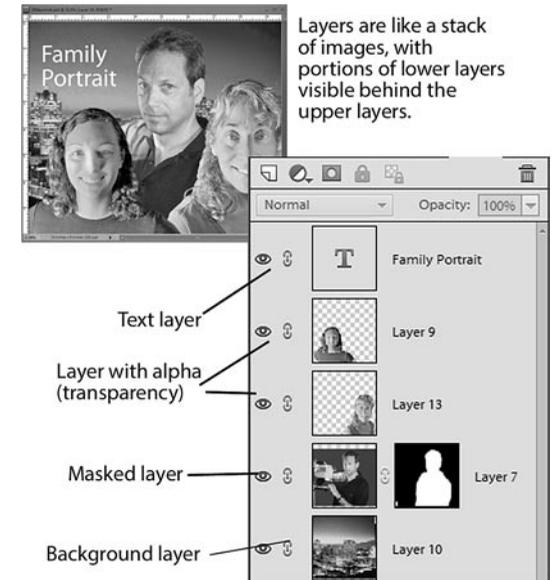
Layers

The biggest difference between a native Photoshop PSD file and virtually all other photo or raster graphic formats is that PSD files can include layers. These layers can include images, text, shapes or effects – some semi-transparent, some opaque – and it's important to understand how their order affects how they interact with each other.

Think of your layers as a stack of images and other elements. The topmost layers will be entirely seen, while the layers below will be seen "behind" the upper layers or quite possibly obscured completely by them.

Layers can be rearranged. They can also be hidden or made partially transparent or even made to react to certain qualities of the layers below them. And, when the background layer is removed, you can even produce non-rectangular graphics that import into Premiere Elements.

Editable text is always on its own layer. Likewise, shapes, until rasterized, are always on their own layers. Layers also give you the advantage of working on your image files in portions, which you can combine, adjust and position in a variety of ways.

In addition, layers and layer groups play a vital role in creating and customizing Movie Menu templates for Premiere Elements, as we'll discuss in **Chapter 13, Advanced Photoshop Elements Tools**.

Layers are like a stack of images, with portions of lower layers visible behind the upper layers.

Text layer

Layer with alpha (transparency)
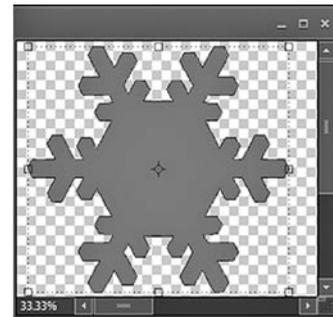
Masked layer

Background layer

Alpha

Alpha means, essentially, transparency. However, in order for your graphic file to communicate from one program to another that an area of your image file is transparent, it needs to do so using an "alpha channel." An alpha channel is sort of like a color channel except that, in this case, the color is transparent.

Transparent GIFs (see **Chapter 9**) use an alpha channel so that, unlike JPEGs, when used on a web site, GIF graphics can be an other-than-a-square shape, allowing the background of the site to display through them.

Transparency, represented by default as a checkerboard background in Photoshop Elements, can be carried with the PSD file to Premiere Elements as an "alpha" channel.

Likewise, alpha allows you to create graphics for your videos that have non-rectangular shapes or are text only, with no background.

Some graphics formats can carry alpha channels and some can not. We'll show you how to use alpha channels and which graphics file formats can carry alpha channel information in **Create non-square graphics** in **Chapter 9, Work with Photoshop Elements Layers**.

RGB Color

Virtually every graphic or photo you work with in Photoshop Elements will use either the **Grayscale** (black & white) or **RGB** color mode – meaning that every pixel in that image is a mixture of levels of red, green and blue, the three primary colors in video.
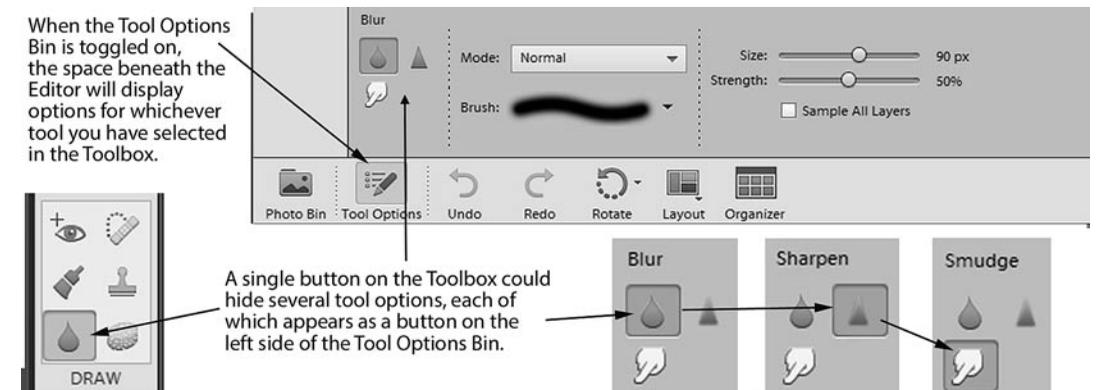
Each red, green and blue in each of those pixels is one of 256 levels of intensity, mixing together to produce a total of 16,777,216 possible color combinations. As we work with colors (**Foreground/Background Colors** in **Chapter 5, The Photoshop Elements Toolbox)**, you'll see the R, the G and the B and those 256 levels of each at work.
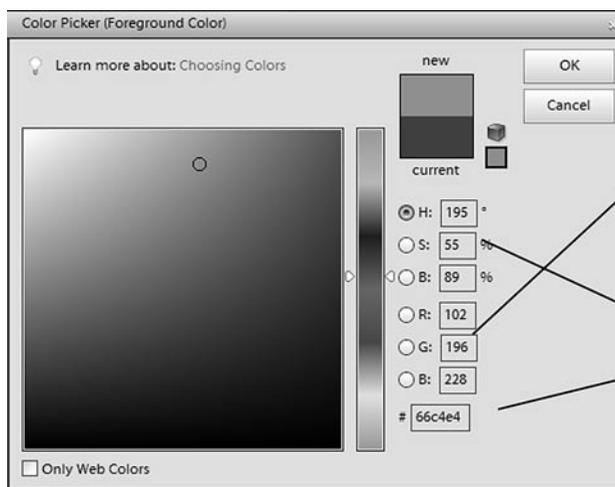
No matter how "real" a digital photo looks, it is merely composed of pixels, each pixel a mix of one of 256 levels of red, green and blue.

Colors can also be designated with hue, saturation and brightness or with a six-digit, alpha-numeric "hex" code.

The **Color Picker** (illustrated on the bottom of the facing page), which launches when you select the option to create a color, builds colors by mixing **red** (R), **green** (G) and **blue** (B) values; or by setting its **hue** (H), **saturation** (S) and **brightness** (B); or by designating the color's six-digit **Hex** value – a color format most often employed when with working with HTML and Web site design.

When the Tool Options Bin is toggled on, the space beneath the Editor will display options for whichever tool you have selected in the Toolbox.

A single button on the Toolbox could hide several tool options, each of which appears as a button on the left side of the Tool Options Bin.

The Tool Options Bin

The **Tool Options Bin** shares the space below the Editor workspace with the **Photo Bin**. To view your **Tool Options** in this area, click on the button in the lower left of the interface, as illustrated above, or simply select a tool.

Virtually every tool you will use in Photoshop Elements is customizable. When you select a tool in the **Toolbox** panel, its settings and options will appear in the **Tool Options Bin**.

Even something as simple as a line drawing tool can include a myriad of options. The line drawing tool, for instance, includes settings for the width of the line and options for adding arrowheads on either or both ends.

Drop-down menus along this bar allow you to select colors and even unusual textures, like glass, plastic and chrome for your shape.

In addition to settings for each tool, the panel also includes options for switching to other tools, so that more than one tool is available under each button on the **Toolbox** panel.

In other words, as illustrated above, when the **Blur** tool is selected in the **Toolbox** panel, the left side of the **Tool Options Bin** displays not only the **Blur** tool but also the **Sharpen** and **Smudge** tools.

Most buttons on the **Toolbox** access two, three or more tools.

The **Tool Options Bin**, then, greatly extends the function and versatility of every tool. And, in **Chapter 5**, we'll discuss the many options available in this bin for each of the individual tools.

What is a native PSD file?

The basic working file for both Photoshop and Photoshop Elements is the **PSD file** (so named, of course, because that's the suffix the file is assigned on your computer).

There are unique characteristics to PSD files – namely that they can include layers, editable text and pseudo vector shapes. (The word "native" simply means that it's in a native state, the format that all Photoshop files are saved in.)

Photoshop and Photoshop Elements can also export or save your photos and graphics files in a number of other graphics formats, from TIFs to JPEGs to GIFs to PNGs (and a dozen others). These formats, however, don't allow for re-opening layers and text for further editing, as PSDs do.

In the ancient days of technology (like, 15 years ago), Photoshop users had to export their image files to one of these graphics formats in order to import them into another program. But, as Adobe has become the leader in pretty much all facets of print and video production, it's become possible to move graphics files from program to program in their native Photoshop (PSD) state.

In other words, you can import your native PSD files directly from Photoshop Elements into your Premiere Elements project. All of the artwork becomes flattened and the shapes and text become rasterized once the file is added to your video. But any transparent areas in the PSD will remain transparent in your video (which makes them the ideal format for bringing unusually-shaped graphics into Premiere Elements, as we discuss on page 121).

Just as importantly, the original, native PSD file – including the text and layers – remains editable in Photoshop Elements. And , if you are using a PSD file in your Premiere Elements project, whenever you save the file, any updates you've made to the photo or graphic file in Photoshop Elements will automatically be reflected in your graphic in Premiere Elements.