



## Green Screen for Video Projects

Community Access Media  
142 West 12th Street  
Erie, PA 16501  
814.454.2226  
[www.camerie.org](http://www.camerie.org)

# Green Screen for Video Projects

## Welcome!

Are you looking to add some special effects to your video production? Learn how using the green screen can take your final product to the next level!

## Course Outline

1. What is Chroma Keying and How Do Green Screens Work?
2. What You Need to Remember When Lighting a Green Screen.
3. Basic Workflow in Adobe Premiere Pro.

# What is Chroma Keying and How Do Green Screens Work?

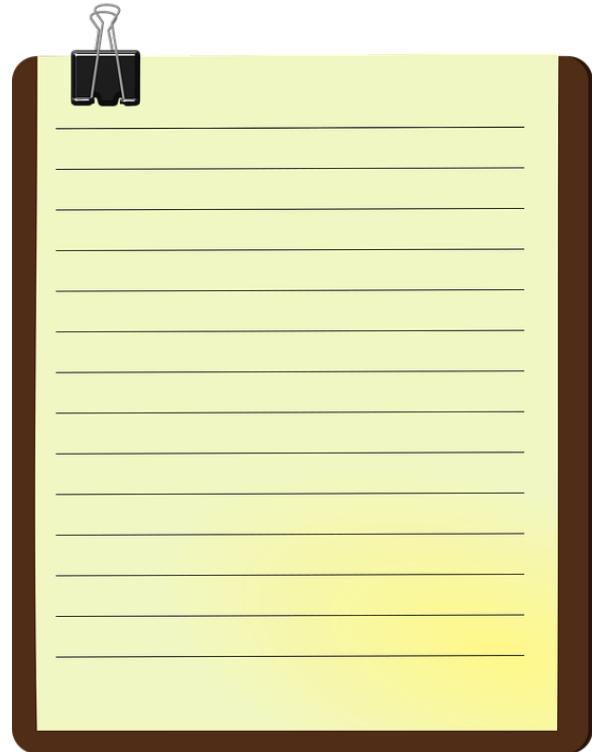
A green screen is just that, a green screen, but without “Chroma Keying” it is not much use. Chroma Keying is the process by which a specific color element (chroma) is removed from a video scene and replaced (keyed) with a different element. Essentially it’s the way video producers remove one background and replace it with another. You will have seen hundreds of examples of this in films, such as the kids cycling across the sky in ET, and in TV, as it’s the process used when you see someone presenting the weather in front of a moving map.

Green or blue screens have become the industry color standard for Chroma Keying since it was invented in the 1940’s. Unlike other bright colors such as Yellow and Red, neither are found within any skin tone and this is very important. For effective Chroma Keying the distinction between what you want to keep (the presenter) and what you want to remove and replace (the green background) has to be made. Therefore using a green or blue screen means there is no chance of the background mixing with the skin tone of the subject. If they did mix the subject's skin would be partly covered by a background as the computer could not distinguish clearly between what to keep and what to remove. There are some more advanced technical reasons why people choose either green or blue screens in their productions, but another simple reason is eye color. Chroma Keying a close up shot of a person with green eyes using a green screen background would remove the green color from their iris and replace it with the content you wanted to place behind them – not an ideal result!

That explanation gives an overview of why a green screen is used in the process, but has not explained how computers actually key out and replace elements within video frames. We will call it “computer magic” as we are happy to accept that it can happen and at the moment that is good enough for us!

From experience the main skill in the art of achieving a perfect Chroma Key effect is lighting. Historically green or blue screens have required a great deal of it in order to be effective. Powerful lights were needed to increase the intensity of the backdrop to give a strong consistent color to work with. Those lights however made the subject look very dark in comparison to the background, so soft lighting aimed towards the subject was needed to overcome this. Further lights were then required to soften the hard edges created by the earlier lighting effects.

As camera technology has progressed, the lighting process has become less involved.



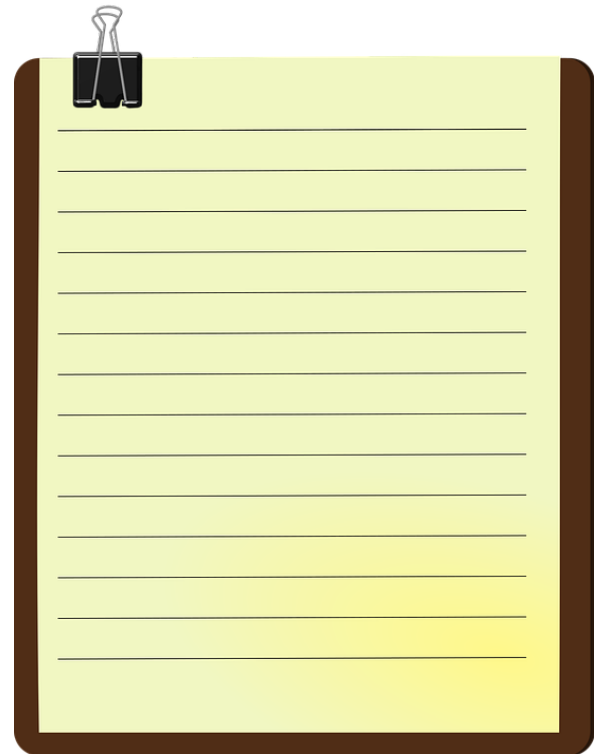
# What You Need to Remember When Lighting a Green Screen

If you're going to be working with a green screen in the near future, one of the most important things you're going to want to learn is how to light it.

Even though there's more to pulling off a good key than lighting it correctly, like picking the right chroma color, exposure, and compression, it's definitely one of the most crucial parts. Without an evenly lit green screen, you can pretty much say goodbye to the prospect of producing a professional looking image.

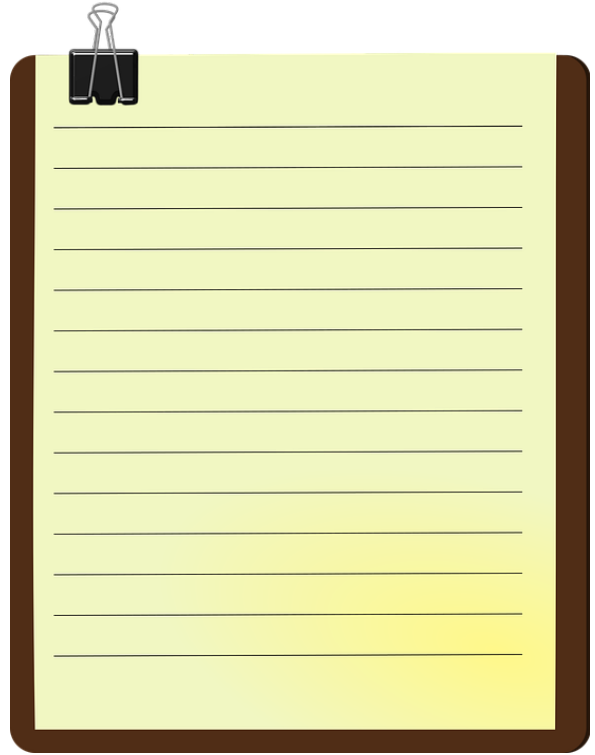
So, when it comes to lighting, keep these things in mind:

- Your green screen must be smooth, clean, and wrinkle-free.
- Properly expose your green screen.
- Put distance between the green screen and your subject so you can light both separately (if possible) and avoid color spill.
- Light your subject for the background they'll be standing in front of. (Don't light them the way you would for an indoor shot if you're going to be putting them in front of a Hawaiian beach background.)
- Use apps to help you pull a better key. (Green Screener is a good one for seeing how even your screen is.)
- Don't try to "fix it in post."
- If you do have to "fix it in post," learn methods that will help you correct the mistakes you made while shooting (i.e. become a color correction magician).

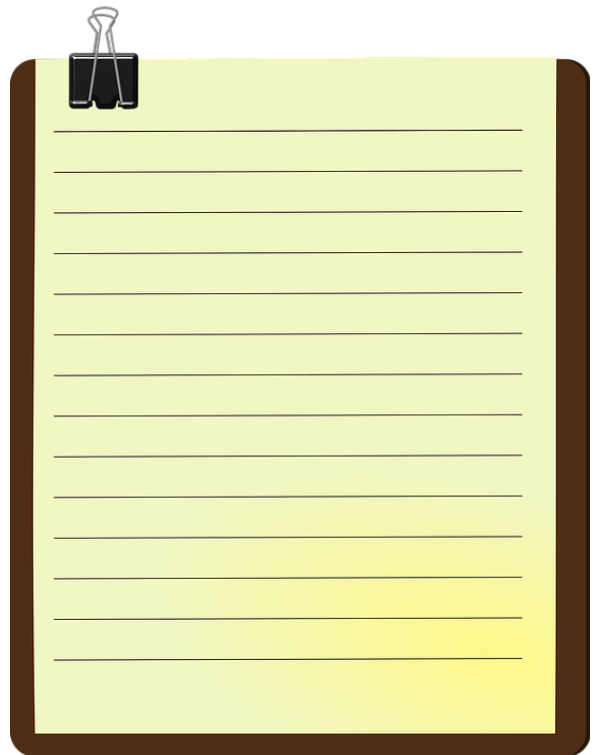


Shooting on a green screen can be a pretty simple and straightforward process. Just remember that lighting your screen evenly will help you avoid the things that are actually difficult and time-consuming, like color correcting an unevenly lit green screen in post!

## Two-Light Set Up Example 1 - Lighting the Subject and the Green Screen



## Two-Light Set Up Example 2 - Lighting the Green Screen Only



# Basic Workflow in Adobe Premiere Pro

The steps you take in editing video, from import or capture through final output, make up your workflow. The basic workflow describes the most general steps you would take with most projects.

Reviewing the entire workflow for a production before creating a project and first sequence can help you optimize Adobe Premiere Pro for the needs of that production. It can also help you plan for the special needs your production has at any particular step. For example, if you learn, before you begin, the parameters of your footage, you can select the best sequence presets for your production.

Whether you use Adobe Premiere Pro to edit video for broadcast, DVD, or the web, you're likely to follow a workflow like the one outlined below.

## Before You Begin Editing

Before you begin editing in Premiere Pro, you need footage to work with. You can either shoot your own footage, or work with footage that other people have shot. You can also work with graphics, audio files, and more.

## Get Started Editing

After you have acquired footage, follow the steps to get started editing with Premiere Pro.

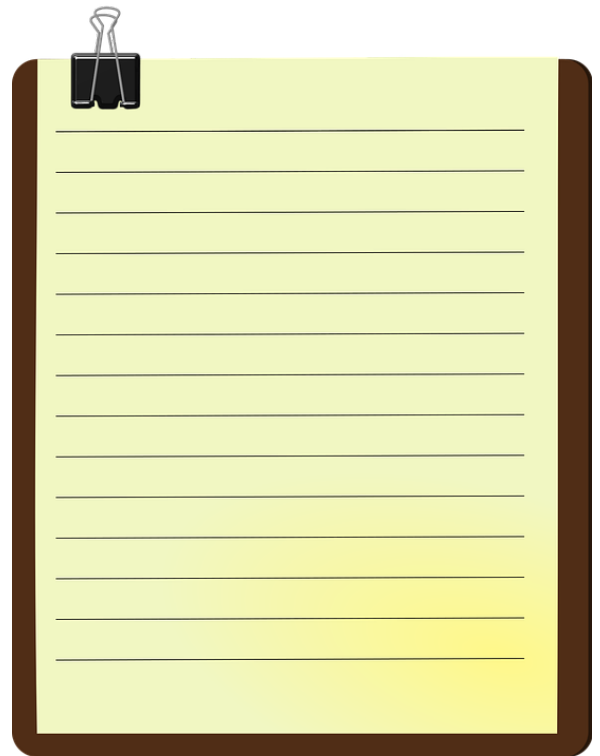
### Start or Open a Project

Open an existing project, or start a new one from the Premiere Pro Start screen.

If you are starting a new project, the New Project dialog launches. From the New Project dialog, you can specify the name and location of the project file, the video capture format, and other settings for your project. After you have chosen settings in the New Project dialog, click OK.

After you have exited the New Project dialog, the New Sequence dialog appears. Choose the sequence preset in the dialog that matches the settings of your footage. First, open the camera type folder, then the frame rate folder (if necessary), and then clicking a preset. Name the sequence at the bottom of the dialog, and then click OK.

To open an existing project, click a link under Open A Recent Item in the Premiere Pro Start screen. After clicking a link, the project launches.



## **Capture and Import Video and Audio**

For file-based assets, using the Media Browser you can import files from computer sources in any of the leading media formats. Each file you capture or import automatically becomes a clip in the Project panel.

You can also import various digital media, including video, audio, and still images. Premiere Pro also imports Adobe® Illustrator® artwork or Photoshop® layered files, and it translates After Effects® projects for a seamless, integrated workflow. You can create synthetic media, such as standard color bars, color backgrounds, and a countdown.

In the Project panel, you can label, categorize, and group footage into bins to keep a complex project organized. You can open multiple bins simultaneously, each in its own panel, or you can nest bins, one inside another. Using the Project panel Icon view, you can arrange clips in storyboard fashion to visualize or quickly assemble a sequence.

## **Assemble and Refine a Sequence**

Using the Source Monitor, you can view clips, set edit points, and mark other important frames before adding clips to a sequence. For convenience, you can break a master clip into any number of subclips, each with its own In and Out points. You can view audio as a detailed waveform and edit it with sample-based precision.

You add clips to a sequence in the Timeline panel by dragging them there or by using the Insert or Overwrite buttons in the Source Monitor. You can automatically assemble clips into a sequence that reflects their order in the Project panel. You can view the edited sequence in the Program Monitor or watch the full-screen, full-quality video on an attached television monitor.

Refine the sequence by manipulating clips in the Timeline panel, with either context-sensitive tools or tools in the Tools panel. Use the specialized Trim Monitor to fine-tune the cut point between clips. By nesting sequences—using a sequence as a clip within another sequence—you can create effects you couldn't achieve otherwise.

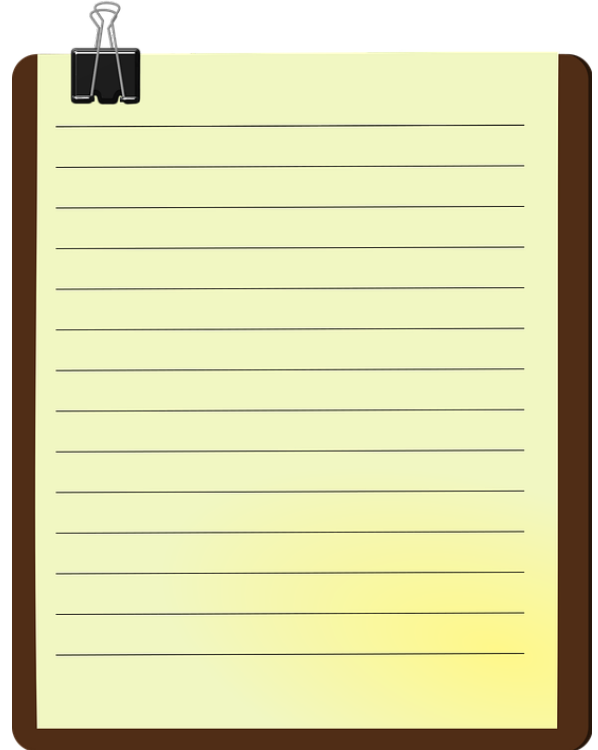
## **Add Transitions and Effects**

The Effects panel includes an extensive list of transitions and effects you can apply to clips in a sequence. You can adjust these effects, as well as a clip's motion, opacity, and Variable Rate Stretch using the Effect Controls panel. The Effect Controls panel also lets you animate a clip's properties using traditional keyframing techniques. As you adjust transitions, the Effect Controls panel displays controls designed especially for that task. Alternatively, you can view and adjust transitions and a clip's effect keyframes in a Timeline panel.

## Chromakey with the Ultra Key Effect

The Ultra Key effect is GPU accelerated, for improved playback and rendering performance, in computers with a supported Nvidia card.

1. Apply Ultra Key to a clip or clips.
2. In the Timeline, place the current-time indicator over a frame containing a key color.
3. In the Effect Controls panel, select the desired options from the Output and Setting menus.
4. Do one of the following:
  - Click the Color Picker box to open the Color Picker. Then select a key color and click OK.
  - Click the Eye Dropper, and select a key color.
  - Set the other parameters as desired.



### Ultra Key Effect Parameters for Matte Generation

**Transparency** - Controls the transparency of the source when keyed over a background. Values range from 0 through 100. 100 is fully transparent. 0 is opaque. The default value is 45.

**Highlight** - Increases the opacity of light areas of the source image. You can use Highlight to extract details like specular highlights on transparent objects. Values range from 0 through 100. The default value is 10. 0 does not affect the image.

**Shadow** - Increases the opacity of dark areas of the source image. You can use Shadow to correct a dark element that became transparent because of color spill. Values range from 0 through 100. The default value is 50. 0 does not affect the image.

**Tolerance** - Filters out colors in the foreground image from the background. Increases tolerance to variation from the key color. You can use Tolerance to remove artifacts caused by color shift. You can also use Tolerance to control spill on skin tones and dark areas. Values range from 0 through 100. The default value is 50. 0 does not affect the image.

**Pedestal** - Filters out noise, often caused by grainy or low light footage, from the alpha channel. Values range from 0 through 100. The default value is 10. 0 does not affect the image. The higher the quality of your source image, the lower you can set Pedestal.



## Ultra Key Effect Parameters for Matte Cleanup

**Choke** - Shrinks the size of the alpha channel matte. Performs a morphological Erode (fractional kernel size). Choke Level Values range from 0 through 100. 100 represents a 9x9 kernel. 0 does not affect the image. The default value is 0.

**Soften** - Blurs the edge of the alpha channel matte. Performs a box blur filter (fractional kernel size). Blur Level values range from 0 through 100. 0 does not affect the image. The default value is 0. 1.0 represents a 9x9 kernel.

**Contrast** - Adjusts the contrast of the alpha channel. Values range from 0 through 100. 0 does not affect the image. The default value is 0.

**Mid Point** - Chooses the balance point for the contrast value. Values range from 0 through 100. 0 does not affect the image. The default value is 50.

## Ultra Key Effect Parameters for Spill Suppression

**Desaturate** - Controls the saturation of the color channel background color. Desaturates colors that are close to being fully transparent. Values range from 0 through 50. 0 does not affect the image, The default value is 25.

**Range** - Controls the amount of spill that is corrected. Values range from 0 through 100. 0 does not affect the image. The default value is 50.

**Spill** - Adjusts the amount of spill compensation. Values range from 0 through 100. 0 does not affect the image. The default value is 50.

**Luma** - Works with the alpha channel to restore the original luminance of the source. Values range from 0 through 100. 0 does not affect the image. The default value is 50.

## Ultra Key Effect Parameters for Color Correction

**Saturation** - Controls the saturation of the foreground source. Values range from 0 through 200. A setting of zero removes all chroma. The default value is 100.

**Hue** - Controls the hue. Values range from -180° to +180°. The default value is 0°.

**Luminance** - Controls the luminance of the foreground source. Values range from 0 through 200. 0 is black. 100 is 4x. The default value is 100.

## **Add Titles**

You can easily create titles directly on your video using the Essential Graphics panel in Adobe Premiere Pro. You can add text, shapes, and so on, to layers that you can rearrange and adjust. The title can also be saved as a Motion Graphics template which can be reused and shared.

## **Mix Audio**

For track-based audio adjustments, the Audio Track Mixer emulates a full-featured audio mixing board, complete with fade and pan sliders, sends, and effects. Premiere Pro saves your adjustments in real time. With a supported sound card, you can record audio through the sound mixer, or mix audio for 5.1 surround sound.

## **Export**

Deliver your edited sequence in the medium of your choice: tape, DVD, Blu-ray Disc, or movie file. Using Adobe Media Encoder, you can customize the settings for MPEG-2, MPEG-4, FLV, and other codecs and formats, to the needs of your viewing audience.