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### Green Screen & Chroma Key

#### Class description:

Learn the methods used to remove a video's background and replace it with a different image. Participants will learn the process of using a green screen, including the proper video capture and the post-production process known as chroma key.

#### What is chroma key?

##### **Chroma Key**

: a photo/video technique based on the separation of colors in the original image(s) to create a composite image.

##### **Composite Image**

: combining visual elements from separate sources into a single image, often to create the illusion that all those elements are parts of the same.



"Batman v Superman: Dawn of Justice"  
Warner Bros. Pictures

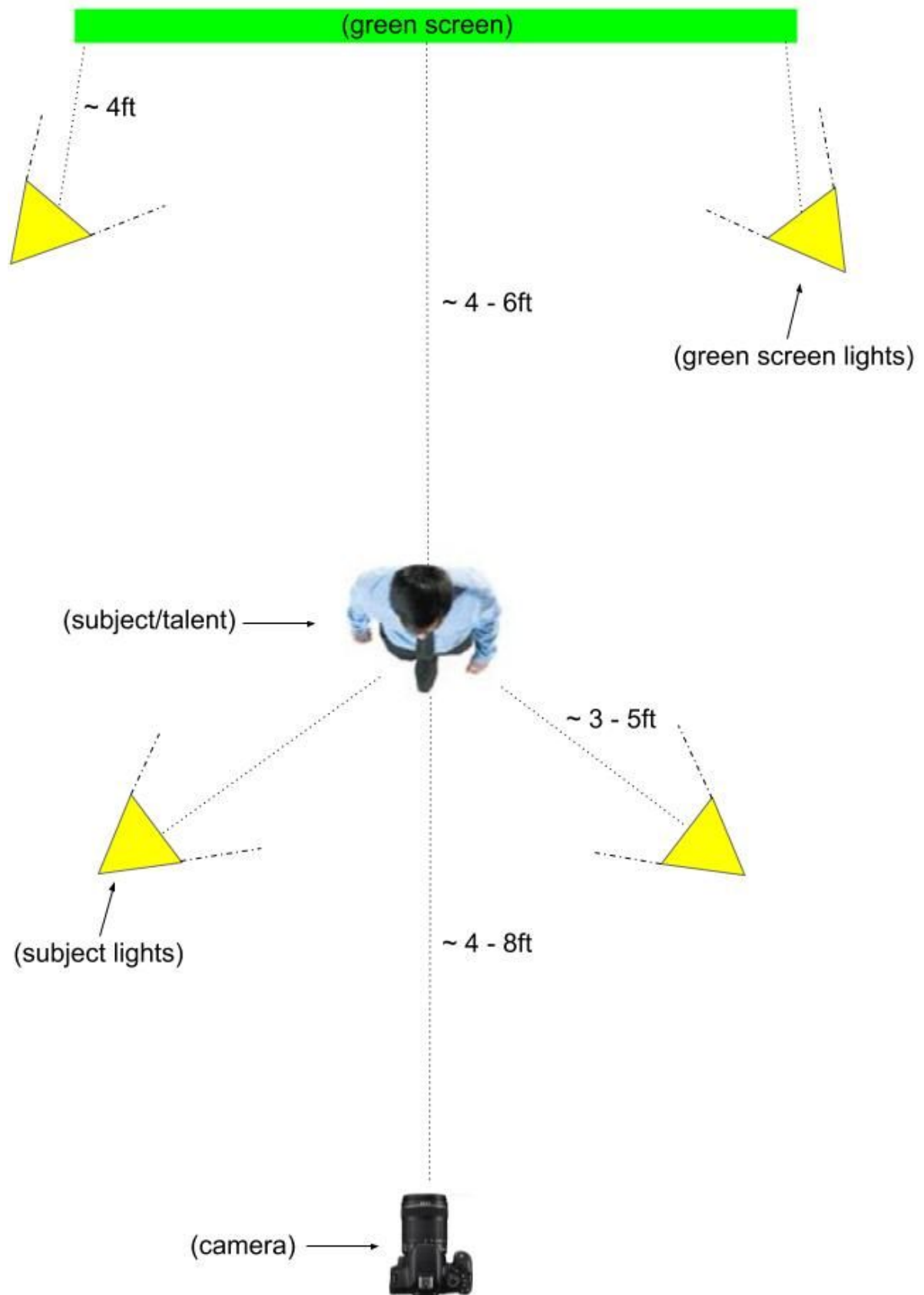


"The Martian"  
Twentieth Century Fox



Captured at the 970West Studio

## Production Setup:



**Green Screen Tips:**

- 1) Make the green screen as smooth as possible. No wrinkles or shadows.
  - a) If your green screen is cloth, you can use a fabric steamer. You can also use clamps or clothespins.

**Lighting Tips:**

- 1) Light the screen evenly. No hot spots or shadows.
  - a) Use diffusers on the lights. Distance can help even the lighting as well.
- 2) Light the green screen BEFORE lighting the subject.
- 3) When lighting the subject, try to choose lighting techniques that would complement the desired scene.
  - a) Lighting may look different depending on the scene. Such as the differences between daylight and street lights at night.

**Subject/Talent Tips:**

- 1) DON'T WEAR GREEN
  - a) Even shades of green can create problems in post.
  - b) If you must wear green, use a blue screen.
- 2) Create distance between the subject and the green screen.
  - a) This will reduce shadows on the green screen.
  - b) Imperfections on the green screen can also be reduced on camera with distance and depth of field. (see camera rules)

**Camera Tips:**

- 1) USE A TRIPOD.
- 2) Position your camera around the subject's eye level, parallel to the ground.
  - a) In other words, don't aim up or down at the subject.
- 3) Set your shutter speed to 1/125 of a second (90° shutter angle).
  - a) This will reduce unwanted green within motion blur.
- 4) Use a telephoto lens with a focal length of at least 50mm.
  - a) Choose a wider aperture/iris. This will naturally help smooth imperfections on the green screen, as it will be more out of focus.
- 5) Choose a "flat" picture profile/style.
  - a) Different picture profiles/styles can enhance certain colors. However, you want the colors to be as accurate as possible for chroma key work.
- 6) Choose a low ISO/gain.

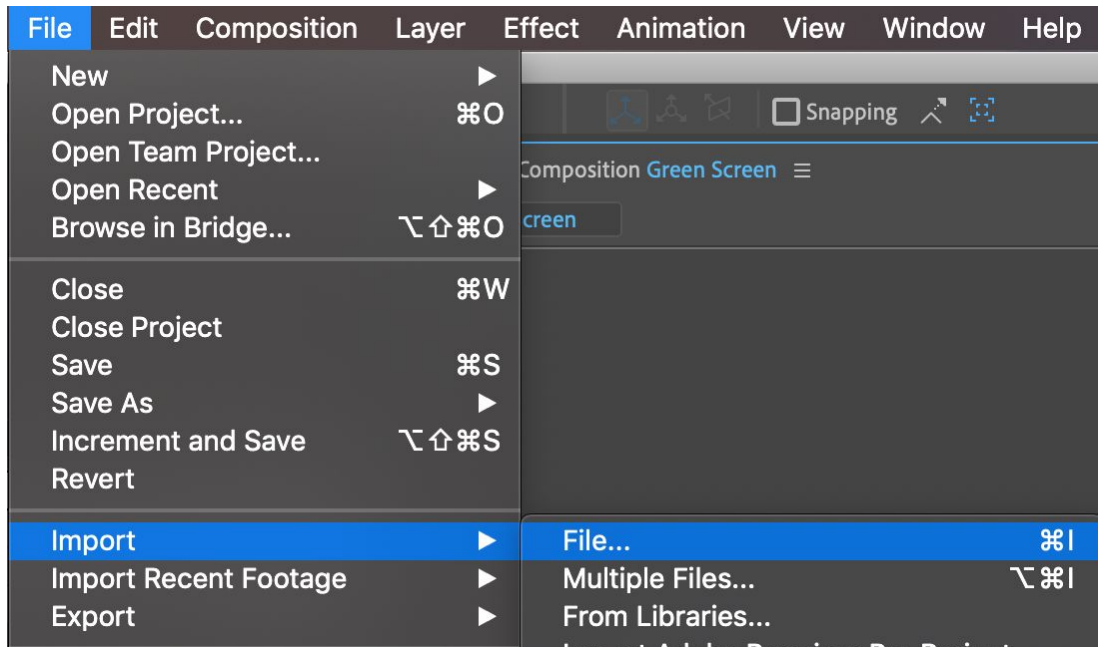
**Additional Tips:**

- 1) Test green screen footage BEFORE a legitimate production. Have an idea of what problems may come up such as subject attire, lighting needs, safety hazards with regard to electrical wiring, etc.
- 2) Resist thoughts of "we'll fix it in post."
- 3) The green screen should be lit with a luminosity value of around 50% IRE (on a waveform monitor). If the green screen is too bright, the green would have more in common with other colors, that commonality being shades of white.

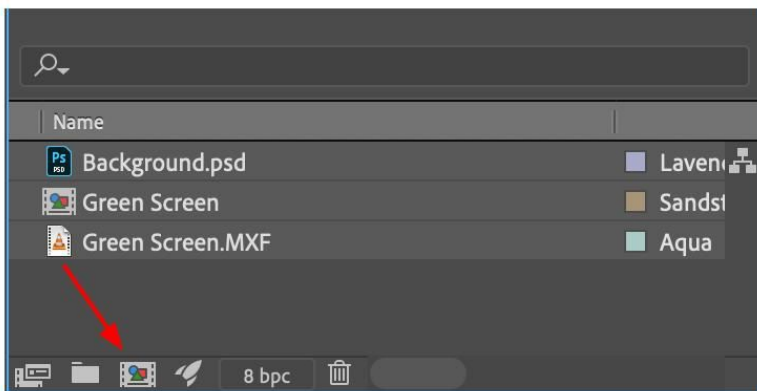
## Post-Production Part 1: Setup

Open Adobe After Effects. (If you are using an Adobe Premiere project, within the sequence/timeline, you can right-click on the clip you wish to chroma key and select “*Replace With Adobe After Effects Composition*.” Premiere has chroma key capabilities, but Premiere doesn’t have all of the same keying tools as After Effects.)

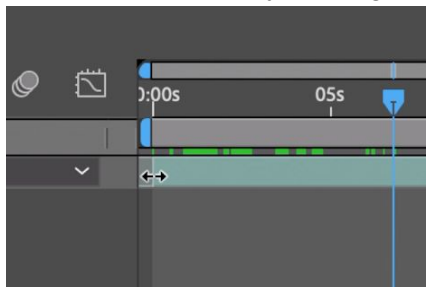
Import clip:



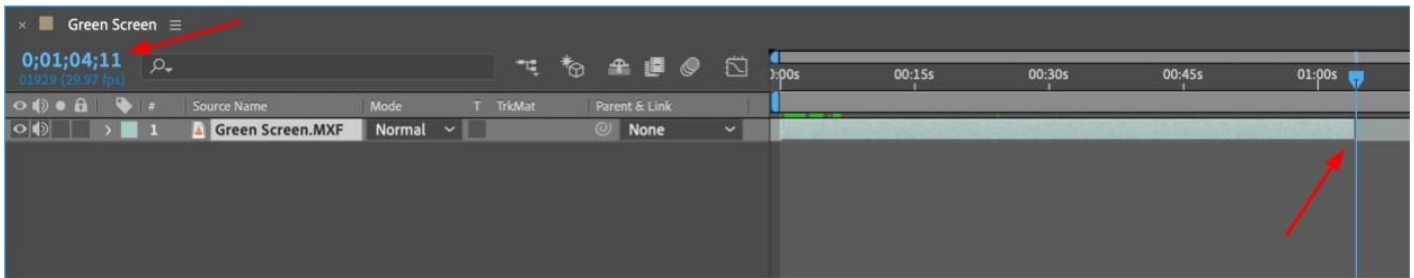
Create a new composition by dragging the video clip to the “*Create a new Composition*” icon.



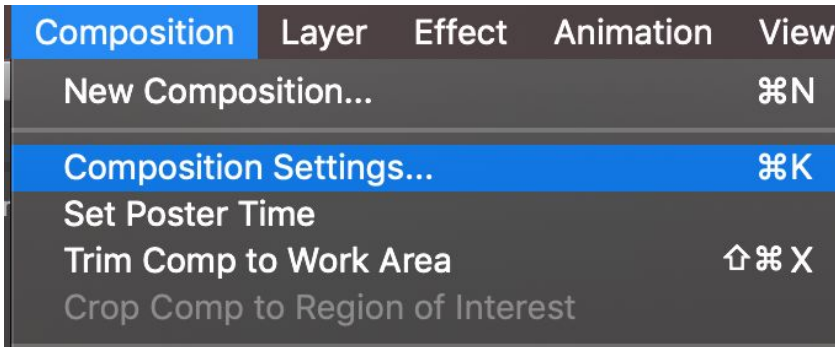
By default, the entire duration of the clip will be within the composition timeline. You can adjust the start and end of the clip by clicking and dragging the edge of the clips within the timeline.



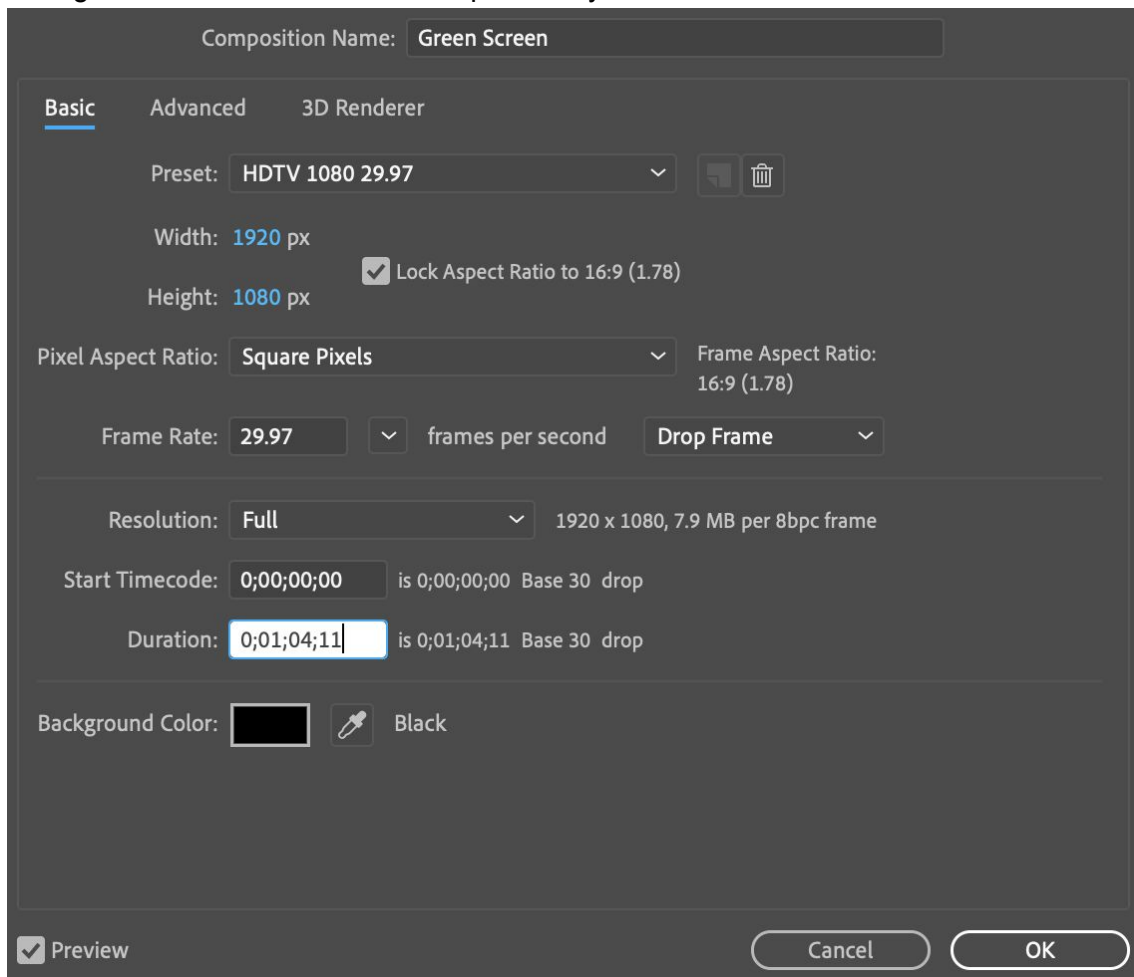
If you do change the original duration of the clip within the timeline, make sure that the beginning of the clip starts at the beginning of the timeline. Use your playhead as a ruler and hold shift to use the program’s “snap” feature. You will then want to adjust the end of your composition. Place the playhead at the end of the clip and note the timecode displayed on the top-left corner of the timeline panel...



At the top of the screen select: *Composition, Composition Settings...*



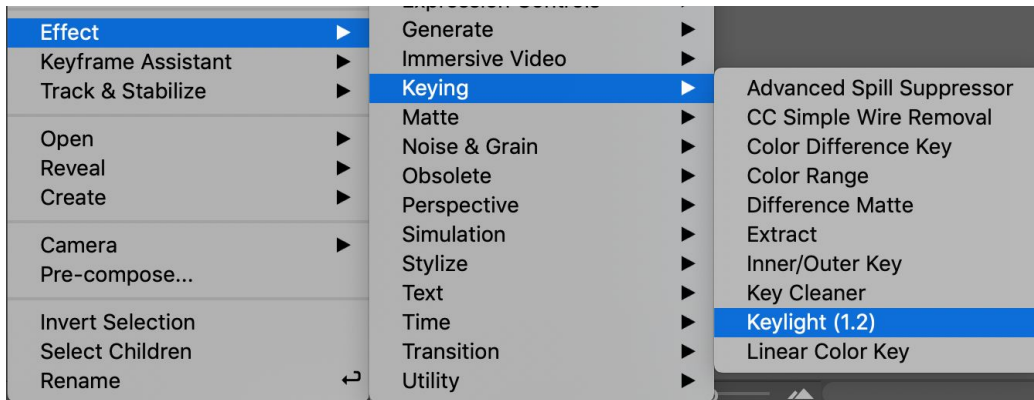
Change the “*Duration*” to match the previously noted timecode.



Note: The “*Start Timecode*” may vary. With the previous example, if the Start Timecode was something other than 0;00;00;00, you would’ve had to add 01;04;11 to whatever the start timecode was. It’s best to change Start Timecode to 0;00;00;00 to make things easier.

## Post-Production Part 2: Chroma Key

Within the composition, right-click on the clip. Go to *Effect>Keying>Keylight (1.2)*. You can also apply Keylight using the *Effects* menu at the top of the screen.



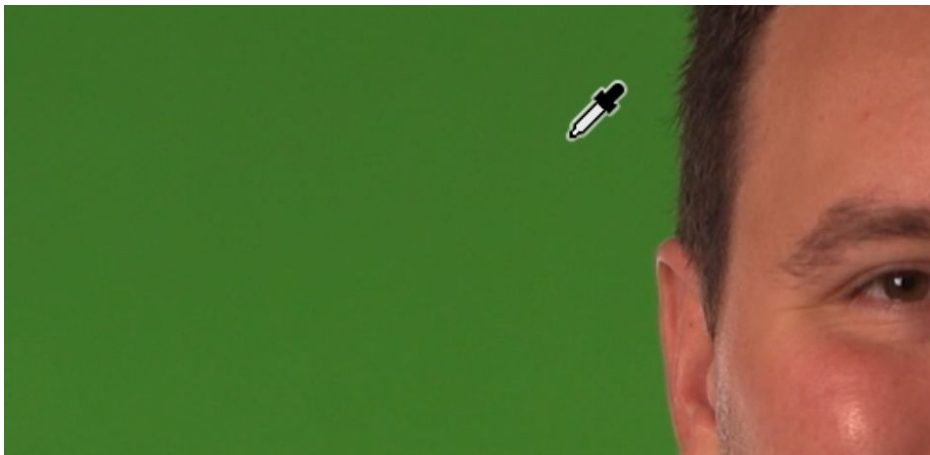
Make sure that your clip is selected within the composition. Navigate to the *Effects Controls* panel located near the top left portion of the screen by default.

You should see the following within the Effects Control Panel. If not, click on the clip again.



Use the eyedropper at the *Screen Colour* line...

Select the green near the subject.





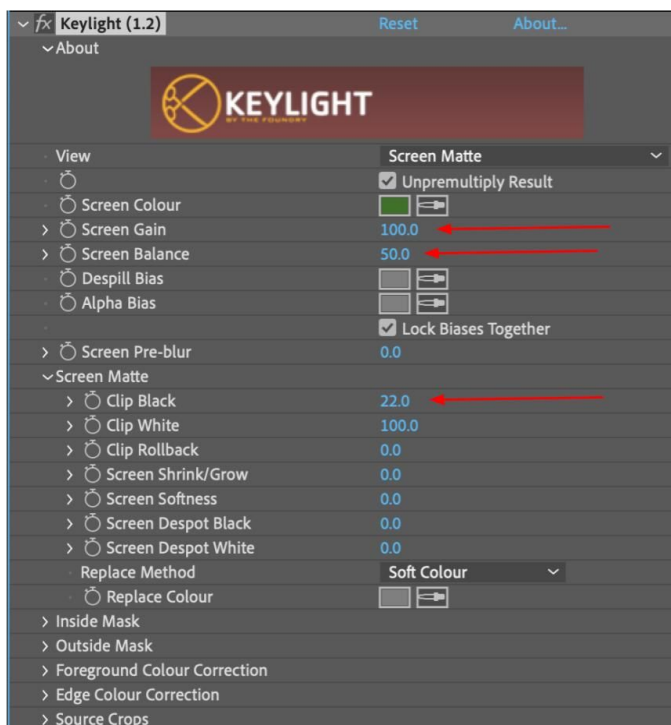
Your screen should look something like this:



It's close. But it's not perfect. Within the effects panel, change the view from *Final Result* to *Screen Matte*:



Make fine adjustments by changing the *Screen Gain*, *Screen Balance*, and, within the *Screen Matte* pulldown options, *Clip Black*. The goal is for the subject to be completely white and the background to be completely black. Make small changes until it's just right. Do NOT overcompensate with these adjustments.



Switch View to *Final Result*.

Import and place a background layer BELOW the subject layer.

**Before:**



**After:**



**Library Resources:**

Lynda.com  
970West Studio Q&A

**Additional Resources:**

How to Light a Green Screen by B&H Photo Video (YouTube)  
BASICS OF GREEN SCREEN - Everything You Need To Know by Basic Filmmaker (YouTube)



Green Screener App (iOS & Android)