

## Green Screens for Zoom

If the **Zoom** application says you can use a virtual background only if you have a Green Screen, here are some options.

By John Krout, Potomac Area Technology and Computer Society (PATACS)

By now, you may have seen **Zoom** teleconferences where some of the participant video images seemed to be in the great outdoors. That technique is known as a **Zoom Virtual Background**.

### Why use a virtual background?

In many situations, it is easier to set up a virtual background than it is to clean up a real one.

You can use the virtual background to convey something about yourself, your interests, your family, et cetera. Use a photo of your favorite vacation spot, or some iconic scene in your city, or animals, mountains, landscapes, et cetera.

You can get creative with it.

### How to set up a virtual background?

First you need to install the **Zoom** application for your computer. Thus far, **Zoom** on portable devices (android and iOS), does not yet support virtual backgrounds.

On your computer, go to this web page: [https://zoom.us/download#client\\_4meeting](https://zoom.us/download#client_4meeting)

On that page, the **Zoom Client for Meetings** download button will determine your OS (Windows, Mac, Linux) and download the correct version for your computer. Follow the normal procedure for installing a downloaded application.

Second, read this article about setting up and using virtual background images in the **Zoom for Windows** application:

<https://www.patacs.org/zoom/zoom%20for%20windows%20virtual%20background%20setup%20v1.pdf>

## THE GOTCHA: FOR OLDER WINDOWS COMPUTERS

Some users of older computers, including me, have reported that the **Zoom for Windows** application refused to set up a virtual background unless and until the user installs a Green Screen physical background.

**How old is too old?** I have a Toshiba laptop, purchased in 2015. That computer has a pretty fast Intel core i7 CPU, and 16 GB of RAM.

Nonetheless, Zoom on that laptop told me I need a green screen to implement a Virtual Background. I suspect the primary reason in my laptop is lack of a good graphics card.

My desktop computer has a core i5 CPU and 8 GB of RAM. Its more powerful graphics CPU and larger graphics RAM enables it to do Zoom virtual backgrounds.

If you use a desktop computer with an appropriate slot open, you can add a graphics card, but that purchase may not be the most economical option.

### What is a Green Screen?

A company called Chromakey introduced virtual background tech in the 1960s. Chromakey became a popular way to introduce news video behind a TV anchorman, and for TV weathermen to point at a map "behind" them displaying the cloud cover, fronts, et cetera. For instance, you can see Bill Murry do that at the beginning of the movie **Groundhog Day**.

Chromakey worked by detecting a particular shade of blue in the camera image, and replacing every pixel of that blue shade

with a pixel in the same location of some substitute video image. The TV personalities stood or sat in front of a blue screen.

Later, Chromakey switched to a shade of light green.

Today, the Chromakey company is long gone, but its name as a description of the appropriate green shade lives on.

The trick, for users of the Zoom application on older computers, is to establish that particular shade of green in the physical space behind the Zoom user. It turns out to be relatively inexpensive.

### **FIND WHAT YOU NEED**

First of all, on the web, there are many sellers of green screens. **Search specifically for "green screen"**.

I found several on Amazon.com starting at less than \$20 in April 2020. Major media hardware websites such as bphotovideo.com also sell fabric green screens.

### **EVEN LESS EXPENSIVE: POSTER BOARD**

Later, looking at YouTube videos on green screens, I found that the exact color match to chromakey green is not really needed. Any light green such as neon green or lime green will work. One fellow literally bought **lime green 22x28 inch poster boards**, and placed those on a vertical wall so that the edges of adjacent poster boards overlapped slightly. He made a video recording of himself in front of the green screen. The virtual background worked flawlessly with those poster boards.

The only drawback I can see is that the poster boards might be more complicated to deploy and remove than a simple fabric screen.

That video emphasized correctly that green screens must be flat and featureless. Wrinkles and folds create shadows that the Zoom virtual background system will interpret as insufficiently green.

**How big a screen do you need?** The basic issue is this: the green screen needs to be far enough behind you that *your shadow is not cast onto the screen*. The distance depends on the angle of light illuminating you, and the availability of a surface on which to place the fabric or poster board.

This means a minimum size of 5 feet tall and 7 feet wide seems appropriate. Indirect overhead lighting on your face can minimize shadows cast behind you, because your shadow will fall almost straight down. Indirect lighting for the green screen itself can eliminate shadows too.

**How much light needs to be on the green screen behind you?** This is a tough one to answer because, frankly, I have not needed a screen for myself, so I have no experience. In the 1960s and 1970s, very bright TV studio lights were required. Due to the much greater light sensitivity of modern webcams and substitutes such as SLRs, camcorders and smart phones, I think most modern applications such as **OBS Studio** and **Zoom** do not need much light on the green screen.

However, to make a point, consider an *extreme case*: a green screen in total shadow won't be recognized as a green screen by the Zoom application.

I recommend using the same type of lamp that you use to illuminate your face. Not the *same* lamp of course. Use a second one to flood the green screen with light.

I saw one YouTube video where the illumination was skylight through large windows. That is certainly not practical for Zoom teleconferences at night.

## **ONE LAST TIP**

If your computer requires you to use a green screen for Zoom virtual backgrounds, then do not wear light green clothing while using virtual backgrounds.

On the other hand, if you wear a fluorescent lime green tee, then your bodyless head and arms will appear in the middle of your virtual background.