

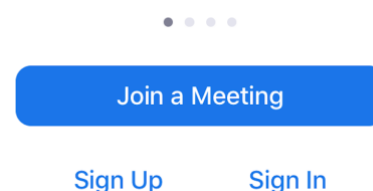
Using your phone as a “document camera” over Zoom


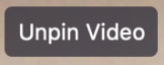
For instructors who wish to give lectures, sections, or office hours in which the primary mode of instruction involves **handwritten teaching or annotation of paper documents**, we suggest the following approach:

1. Get some kind of device that will hold your phone above the writing surface. A “gooseneck” phone holder costs about \$15 on Amazon; see image at right.
2. Install the Zoom app on your phone.
3. Launch a Zoom meeting **from your computer**, as the host. Connect with audio and video.



4. Open the Zoom app on your phone, but **do not sign in**. (If you are signed in, sign out by going to “settings” and signing out from your account.) Then click “**Join a Meeting**.” Enter the 9-digit meeting number from your computer.



5. Join the meeting from your phone but **do not connect audio** on your phone. (You may need to tap “cancel” when asked to join audio.)
6. Tap the screen of your phone and select the icon  to flip to the rear-facing camera. If necessary, tap the small inset image on the phone screen so that the image from the rear camera fills the screen. You might get better results if you rotate your phone to “landscape” orientation.
7. Mount the gooseneck phone holder on a sturdy table or counter. Try to minimize vibrations; if you are using a wobbly table, you might want to mount the phone on an independent object such as a nearby chair.
8. Mount the phone in the holder so that its camera captures the image of the paper that you wish to display. You will probably need to plug in your phone—Zoom drains the battery quickly.
9. On your host computer, you should **pin the video** to display the image from your phone. If the video is pinned, you will see  in the corner of your Zoom screen. Pinning the video will ensure that the video from your phone can be recorded. Your students or colleagues may also need to pin the video to view your handwriting.
9. You can now teach using the paper and pen. All **audio will run through the computer**.
10. Use the Zoom controls **on your computer** to manage the meeting. You can view participants, mute or unmute microphones, type in the chat window, etc. The phone camera acts as an independent participant.
11. If you are interacting with a large number of participants, you might ask a TF to host the meeting on a remote computer while you focus on teaching on paper using the phone camera.

Please send questions/comments to mccarty@fas.harvard.edu. Thanks to Dr. Lu Wang, Preceptor in Chemistry and Chemical Biology, for testing and guidance.