

Whiteboard Training (2021)

Pre-Training Poll

- Did you use whiteboards in the classroom? [yes/no]
- How much? [scale]
- Writing, drawing, or equations? [check all that apply]
- Do you have a pen-ready device already? [yes/no]

Introduction

We all know about whiteboards in classrooms and conference rooms. You have a white erasable board and some colored pens. You can write and draw. Students can see what you're doing more or less and take notes.

We write and draw on the whiteboard to get across key points or things that benefit from being seen. Maybe we're solving math problems, breaking down the structure of a poem, looking at programming code. Lots of things benefit from writing and drawing.

And then we were all swept away out of the classroom and into Zoom and we need a new kind of whiteboarding that we can share digitally. And altho we are returning to the classroom, we still need these tools to allow remote students to see what we're writing and drawing.

Requirements

What do you need to whiteboard digitally? Two things:

- First, a device with a touch sensitive screen. Like this small tablet computer.
- Second, an app that supports drawing and writing on the screen.

Devices for Whiteboarding

In our new redesigned classrooms, you will find a large touch screen computer. It's positioned so you can move it up and down and large enough so you can have multiple apps open. When you present and draw, the image can be projected in the room and shared with remote students at the same time.

At home, one of these tablet computers works well. There are a variety of tablets available that work well for whiteboarding. Even phones can do it, but their small size tends to make them less useful.

Q&A

Writing

OneNote

The first thing we'd like to demonstrate is writing with a stylus. The program we'll use for this demo is Microsoft OneNote. OneNote is part of the Office 365 suite of tools and so it is available to you and your students free of charge. It has lots of useful features, works on many different kinds of devices, and can be accessed via an app or online in a browser. The things I will show you using OneNote are mostly applicable to other apps should you decide use something else.

This is what OneNote looks like when you first open it. OneNote allows you to organize your content into sections and pages within sections - rather like a spiral notebook with tabs.

New Blank Page

Right now we are in a section I have named Training. Let's create a new page by clicking on the Add Page button at the bottom. Like most whiteboard apps, we get a nice new blank canvas to write on. Let's change that up by adding some ruled lines to the page, by clicking on View at the top and choosing Rule Lines. Standard Ruled looks good. Now we have some nice lines to keep our writing straight.

Draw Menu

Now here's the magic - click on the Draw menu at the top and here are all of our drawing tools. Let's take a look at these. It's not drawing, but by selecting this tool and clicking on the page, we can use the keyboard to type text.

Next here is a Lasso tool to let us round up items so we can move them or delete them.

And now we get to the fun part. We have a variety of pens, pencils, highlighters, erasers. More than most of us would ever have in a classroom AND they never run out of ink! Let's try them out.

Let's click on the black pen. When I do, it pops up the controls for the pen. At the top I can choose the pen thickness. Below I can choose the color for the pen. We'll leave it black and a bit thinner and start writing.

Working with a Tablet (cut to webcam)

When I switch to writing mode, I can reconfigure my tablet computer. I can fold the screen all the way around, so the keyboard is out of the way and I can lay it down flat. You will notice as I do this that the computer asks me if I want to switch to tablet mode. We'll say "Yes". This uses the full screen so you have room to write and draw, and hides all the other apps. If you need to get a different app, you can click on the arrow at the bottom left to get to the Start menu, or the Task button here to get to the windows that are already open.

Writing (continued)

So here I am writing with my pen, using the lines as a guide to keep things tidy. When I get to the bottom of the screen, I can use my finger to scroll up or down. I could draw with my finger, but a stylus is much more accurate.

[writing example - *Do not go where the path may lead, go instead where there is no path and leave a trail. - Emerson*]

Now that I have written what I set out to write, I'm done. Or I could choose to have OneNote turn this handwritten text into editable typed text with the Ink To Text tool. First I have to choose the lasso tool and select the text. Then I can click on the Ink to Text tool and OneNote will have a go at making it editable text. How it does will depend on how tidy your handwriting is.

Importing Text

You can also import text for annotation. Let's say for example that I wanted to mark up this document. I can select the text, copy and paste it into a OneNote page. Now I can use the pen tools to mark it up.

[have copy/paste example open in browser]

I can use different colors for different points. I can grab the eraser tool and erase any mistakes or edits. I can use different colors of highlighter to highlight different sections.

Now let's try something a little fancy. We'll go to the Insert menu. Here we find a variety of things we can import. Right now we're mostly concerned about text, so I'll click on File. One of the file formats we often encounter is the PDF. Let's choose a PDF to import. When we do we get some choices – we can upload to OneDrive and just embed a link, or Insert as an Attachment, this keeps the file where it is locally, but the one we want is the bottom choice – Insert As Printout – this bring the document into our page where we can annotate once again.

Finishing

When we're done. We don't have to do anything because OneNote automatically saves while you're working. So you can just close the laptop lid, or log out of the classroom computer. When you return to OneNote, that page will be there with all of your annotations and writing intact.

Also these notebooks are searchable. Just click on the little magnifying glass icon on the left to open a search field type in something to search for and press the enter key. All of the occurrences of that text will be displayed – another thing you can't do with a real whiteboard.

Q&A

Drawing

Now let's take a look at DRAWING with a pen. We've been drawing, just letters and words. Now let's try some diagrams. It basically works the same. This time let's set the background to a nice engineering grid. Now if I wanted to graph this function. I can do so like this. Just choose a pen, choose a color, and start drawing. Use the eraser to edit things out.

The Shapes menu allows me to draw some basic shapes. There's also this handy Ink to Shape button that will smooth out shapes you draw.

As with writing, you can import images and annotate them. For example, I could bring in this diagram showing parts of a cell and discuss them.

Or this one of a suspension bridge.

I can stage several different diagrams from top to bottom and use OneNote as my live presentation tool, annotating as I go. And all of my annotations are preserved.

The tablet interface supports the usual pinching with two fingers we are used to on phones. I can zoom in and out of my document simply by using the two finger pinch.

You can use your existing PowerPoints. Let's import a PowerPoint. Here are all of my presentation pages I can pinch to view more and zoom in, and I can annotate these pages.

Drawing and writing with a stylus takes some practice. Your physical relationship with the writing surface is different than a real whiteboard – more like writing on a pad of paper. So take some time to practice what you want to do.

Q&A

Equations

Equations are a special kind of writing and drawing, incorporating elements of both. If you're used to writing equations, then learning to do it on a tablet should be pretty easy for you. Some programs like OneNote have special features for equation writing. I can write an equation and ask OneNote to turn it into an editable equation. Just use the lasso tool to select it, click on the Math button, and you'll see what it thinks you were trying to write. If it's wrong, you can fix it by editing. If it's right just click on Ink To Math, and you have an editable equation. Of course, this only works for math – if you have physics or chemical equations, you'll have to do them on your own.

Q&A

Sharing the Show: Whiteboarding

We've seen how to use a whiteboarding tool to present, to write, to draw, to annotate, even to create equations. But the point is to be able to share this experience with your students. There are a bunch of different ways to do this.

Sharing a Link In CC

The easiest method is to share a link to the OneNote notebook in Cougar Courses. Just click on the Share button in the upper right corner. This opens a box with some settings. The default setting is People you specify can edit. You don't want that. Instead change it to People in CSUSM with the Link. And turn off editing. Note that you're sharing the whole notebook, so you want to make sure that the notebook you are sharing is specifically for this class. Click on Apply, and click on Copy Link. The link to the Notebook is now in the clipboard and can be placed in a Cougar Course like any other link. Since this Notebook contains all the pages associated with the course, you just have to do this once. *Students need to drop the cougars. When signing in to office.

Q&A

Broadcasting Live

You can also broadcast live using Zoom or Teams by sharing your screen. [need to have screenshots of Zoom and Teams for sharing]

Zoom

Just click on the Share Screen button at the bottom of the Zoom window and choose the OneNote window in the screen that pops up. Now you're sharing OneNote with the rest of the class. You can use OneNote as your presentation tool with all of the images and text you need, AND annotate, write, and draw too. When you're done, click on Stop Sharing.

Teams

Teams works much the same way. You click on the Share Content button in the upper right corner, and then choose what you want to share – in this case we can click on Window and then choose the window you want to share. When you're done, click on Stop Sharing.

Q&A

Recording

You can also record what you're sharing so that students can review later. When we share the finished document, students will have the notes, but be missing the context of how you presented the information. By recording the sessions, you can provide that.

Both Zoom and Teams meetings can be recorded to capture audio, video, and screen sharing activity. The recordings happen in the cloud, and they're saved so you can share them securely across your organization.

Zoom

[share web instructions]

In Zoom click on the Record button and choose Record to Cloud. We have other resources to help you manage your recordings and share them.

Teams

[share web site instructions]

In Teams you can click on this little ellipsis icon Microsoft calls the More button. This pops up a menu and you can choose Start Recording and Transcription. Recordings made with Teams will end up in your account for another Microsoft product called Stream, which is like a private YouTube for CSUSM. We also have materials to help you with managing your Stream account.

Q&A

Collaborative Whiteboarding

We've seen how to share whiteboards. Those shared whiteboards could be used to collaborate on writing and drawing. If I share a Notebook with a person or a team we can mark up a page together. We could work together solving a problem, designing something, brainstorming, whatever. As usual, whatever we write and draw is saved automatically. We could record the session and turn it in as part of an assignment.