

How to use Google Earth

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🔊 [0:00]

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Welcome to the Teacher Tech Google Earth presentation.

I'm Mike Senise and I'm one of the instructors here at Teacher Tech.

And tonight basically I want to go into a Google Earth.

And talk about a few of the things that you can do with Google Earth will basically be building a little bit of contents on your own and so you'll know how to make a, make some contents that you can kind of take away with you, and put up on the web or put up on the web for students or not.

And so just to get started I wanted to talk a little bit about, just you know introducing what Google Earth is and kind of give a quick overview of what it does.

So one of things that you'll probably notice when you look at Google Earth is that it really gives you a lot of information.

And over its kind of revolution it's really turned into kind of I guess you kind of say little bit of database, kind of web engine whatnot, where it's really kind of connecting you to a lot of resources, a lot of information, whatnot, that's out on the web connected through you know databases whatnot on the Google Earth.

And it's really kind of way to kind of geographically see what details, what information we've actually got out there that we can kind of connect you to.

So first of all, I'd like to talk a little bit about where you can go to get a help from Google Earth.

Okay? And what really nice is up on the help menu in Google Earth.

So up on the help menu there're actually some resources that it points you to on the web.

So the one that pretty much encompasses a lot of different things is this user guide.



And so I'm just selecting the user guide.

It's going to launch my web browser.

And there is a wealth of information here.

For somebody who wants to learn some different features about how to use Google Earth.

And so there are lots of resources that are available there.

🔊 **[3:00]**

That folks at Google have actually written and that are really really well done.

Okay?

So I want to make sure that you, knew where those were, and that way you can always access those whether you're in a course or not.

Okay? So now I want to kind of talk about, just looking at Google Earth.

And so let me start by talking about the way that we can actually search for locations in Google Earth.

So what I'm going to do is I'm going to just go out to this fly to area.

That's this area right up here in the corner.

Okay?

And I'm going to actually use an example of Mt. St. Helens in a kind of demonstration of different layers, tools, stuff that we're going to be able to do.

So I'm going to just quickly do a search for that and I've already searched for the past so kind of knew that and it came right out for me.

So as you can see, that you go ahead and put that in, you'll notice that it really, it automatically kind of honed in on that area that I was looking for.

So it's actually zoomed in on its own.

That's pretty close-up view of the Mt. St. Helens' crater.

So what I'd like to do is I'd like to kind of show the different ways we can navigate, look around, and kind of change our perspective on the view that we have here.



So up in the corner, the right hand corner of the screen, there are these different navigation tools.

And so one of the navigation tools, this slider which has a plus and a minus on it, I'm actually going to go over there and I'm going to click on the minus sign.

And what that's going to allow me to do is, it's going to allow me to zoom out on Mt. St. Helens.

I can also grab this little slider bar right in the center.

And I could very slowly pull that slider bar down in order to kind of zoom out Mt. St. Helens as well.

Okay?

Now let's say that for example I wanted to move, let's say, left to right or kind of up or down on my screen.

So what I could do then is this middle icon right over here has four different arrows on it.

And what I can do, for example, if wanted to move this way I'm going to click the up arrow, down arrow does the opposite.

We've got a right arrow that moves this screen, what looks like to the left but we're gaining ground on the right.

Same here.

But I can also actually take that and I can kind of move it around a circle and you'll notice that as I move it, it kind of starts moving around the screen in the way in which I'm moving my arrow.

🔊 **[06:02]**

Okay?

The other option is this one right at the top and that one will allow us to turn north, south, east, or west.

And so as you might see up at the top, we've got a little N for north.

And so I can either grab this circle and kind of zoom it around like this or I could click on it and it actually moves for me.

I can kind of click on these corners here and there.



And It'll kind of zoom, rotate, and that sort of thing with that tool as well.

Now an additional way you can actually move is you can actually use your mouse to do the zooming in and out, you can move it from side to side.

For example if I take my mouse and I click and hold them on my left mouse button.

And I drag it to the right it actually it's going to pull it to the right for me.

I can do the same to the left.

I can do the up and down.

So I can kind of move in all different ways with that mouse button.

What I can also do, and this is the case you've got a scrolling of feature on your mouse, If I scroll on my mouse I can zoom in and out with that feature as well.

That will allow you to kind of move contents around and get a better visual on that.

Because often times when you kind of start in, we were a little lucky that when I put in Mt. St. Helens that went right to the crater, Because it's got a little marker, right there, that it already knows about and that's why it was able to get there.

So we've got, as we're kind of honing in and navigating on our crater here.

One of the neat features I really like about Google Earth is we get three dimensional view of what the terrain might look like in this particular area.

So what I'm going to do now is to make sure down in the bottom corner here, where the layers are, that I've actually turned on my terrain layer.

So I'm going to put it little check mark as you see I've got my terrain layer checked.

I'm going to make sure that's on.

And what that's going to do is it's going to give me a three dimensional look of the land for whatever I'm looking at.

What I'm going to do now is I'm actually zoom in on this and I'm going to kind of show you how we're going to see that three dimensional look.

Now just so you know in advance this is going to take me moving in around a bit because I have to zoom in and kind of pull back, zoom in and pull back, so that I'm gonna end up looking kind of straight on to the mountain in the end.

🔊 [08:58]



So what I'm going to start with is I'm just going to move up this a little bit and I'm going to use the plus sign on my slider over here and I'm going to zoom in on this crater Okay?

So I'm going to zoom.

I'm going to move a little bit.

The reason why I'm moving it is because I know it's going to be kind of out of the realm of where I wanted to be.

Now what's going to happen as I zoom in is the earth starts to tilt up at me and the view start to flatten out, so as if I were standing on the ground looking at Mt. St. Helens.

So the farther I go down, the further it actually tilts.

Okay?

Now one of the things that you'll notice as we start working with this is that this is essentially a live streaming database of information which is going to kind of adjust as we go.

Now I can use some other controls I can adjust my view here and I can kind of move along.

Again I'm going to make some of adjustments so that I'm not getting stuck in the land here.

And then I can kind of follow the contour of the land that I see here.

So as I'm looking out I see valleys and hills and whatnot and I'm approaching the crater as if I were kind of hovering right on top of the land.

Okay?

So I think that is to me especially you know if you're really trying to get people to understand you know land features and land forms that's sort of thing.

That sounds really cool thing that we'll be able to do.

So now that we've kind of taking a look at the navigation.

We're going to use that whole a lot more tonight in what we're going to be doing.

I want to talk a little bit about how we might actually put some pieces together to create a little bit of contents of our own.



So one of the things that point out when we do a search we've got this information right up here.

So if you search from Mt. St. Helens and it's going to kind of appear in this upper box under the fly to area.

As we kind of end up adding contents to what we're doing, we're going to get some content that we're going to end up putting in this places area and then as we must around with the layers and kind of add and take away some of the layers.


All that stuff is going to go in that area right there.

So the piece of content that I want to demonstrate for you on how to make is I'm actually going to take what I have here and we're going to add some features to it.

Okay?

So I've got this little, what I'm just naming 'volcano demo' that I've kind of put together, that I want to show you how to make.

And we're going to actually do that showing how to use some various tools and then we'll actually take some hands-on time and actually make that.

 **[12:03]**

So I'm just actually going to turn this on, this one that I made before and I'm going to zoom back out to a higher level and kind of how do you take a look at this from the top view.

So one we did original search we had one item that was on here, it was just this square with kind of the plus sign in the middle that just described where Mt. St. Helens was.

It's kind of place marker.

And so what I want to have in the end is I added this little pin which has some information on it.

And I also have this path for the lava flow or volcanic material mud whatever kind of flow.

So what I want to do is I want to kind of demonstrate and kind of walk through how I did that and then we're going to take some time to build that.

Okay?

So part of what I was able to do is I used couple of tools that were on the tool bar.



So for example, for this little pushpin and I have just some information on the pushpin.

We got a link to a website where we have a picture of before Mt. St. Helens picture.

So that's there.

And then I added a kind of title on to that.

And then the additional thing that I was able to do is I actually created this yellow path that kind of shows you where the path of the flow that volcanic material would have been.

So now what I want to do is I want to go ahead and just basically walk through how we went ahead and did that.

So once I did initial search for Mt. St. Helens, we basically have this picture of the information that I want.

So what I'm going to do is I'm going to right click on this fly-to search that I've already done.

And I'm going to actually tell it that I want it to save it to my places.


Okay?

Now when I bring it on to my places is, you may notice that it came in right in this area in the listing of my places.

In the my places folder though, I want to basically kind of create a folder where I can put all this information, kind of contained in there and be able to use that as we move forward.

So I'm gonna go ahead right click in this area here, gonna right click on my places, and I'm gonna add a folder.

Okay?

 **[15:01]**

And just generate a folder.

Let's say I'm going to call it 'volcano demo 2' and I'm just going to click.

Okay.



So, now I've created this folder, right here, called 'volcano demo 2' and I'm actually going to take the map of Mt. Saint Helens.

Place that I saved, and I'm gonna drag it, and drop it into that folder.

Okay?

And so, now essentially what we've done is we have a folder here, and we've actually put this place that we'd like to save in there.

The second thing that I wanna do is, I wanna put a place marker, where I want that's path to start.

And so what I'm gonna do is I'm gonna go up to this little push pin upon the top tool bar here, and I'm going to click on it, and I have this push pin that basically is appeared for me.

Okay?

So I'm just gonna title that 'beginning', and I'm also gonna go on to the style and color menu, and I'm going to change the color of the title to red, here the label to red.

Okay?

At this point in time, what we can actually do in the description, is we can put any tags or web links or anything like that, and the web links that we put it in there will actually be hot, they'll be clickable.

So I've actually got some information that I saved, a blog that I've put up that we'll look at in a bit that has a link to this picture.

And I'm actually gonna click in there, I'm gonna put in, paste in my link.

And we'll put a little bit of texts in here that talks about what this picture is about.

Then I'm gonna go and click okay.

So now I'm gonna click on this push pin.

I'll have a link, and I'll have this description that I have there, that I'll be able to access in the future.

So the second thing that I wanna take a look at is, I want to talk a little bit about the different ways that we can somewhat measure, things that are individual view of Google Earth.

So upon the top toolbar, there's this thing looks like a ruler, this tool right here.



And that ruler, if I click on it, will allow me to decide whether I wanna have a line or I want a path.

Well, for this particular part I wanna show you how to just do measure lines, so you can kind of measure some distances between two points.

🔊 [17:58]

So let's say that I wanted to see from the edge of the volcano right down here, and let's say that I wanted to measure all the way across.

So what I would do is I would do just click on it, and hold my mouse, and just drag it all the way across and let it go.

So with the type of measurement, the type of units that you're using, I'm using miles right now, so it's basically measured seven point nine five miles.

Well easily if I wanted to change what kind of measurement I wanted, if I wanted to measure in kilometers, or meters, or whatever the case might be, I can easily change that and we could see the results of whatever that particular measurement would be.

Now sometimes when you're measuring, you don't have enough screen, real estate, to basically finish your measurement.

So what I might do then is to turn on my mouse navigation and this allows me to let's say take this move my screen little bit.

Turn mouse navigation off again, and then I could go ahead and let's say I wanted to measure the bigger distance, I could go ahead and do that.

Now the difference between this measurement, this ruler tool, and the path that I've created in demonstration is once I have actually done with the ruler tool, it actually doesn't save it for me.

And what I really wanted is saved path.

So what I'm gonna do real quick here is I'm gonna click to clear it.

Get that measurement out of the way.

And I'm actually gonna go up to this path tool, which is right up on the tool bar here, and what this is going to allow me to do is it's going to allow me to create a path where I have multiple points that will actually remain with this folder that we're creating.

So I'm gonna make sure that I highlighted my volcano demo 2 folder and I'm gonna click on this path.



Now I could call the path, let's say I'm gonna call it 'volcanic material' or something on that order.

I could put or pick a style that I want for my path.


In my demonstration I made it.

So I'll do that again.

And basically at this points I'm not gonna fill out any of these other information yet.

One of the things when the path is created, we're gonna have to come back to this altitude setting, so that we can adjust how far above ground level, the path is, so that we're not burying it under mountain essentially.

So we draw the path and then we'll most likely becoming back and doing it relative to ground.

 **[21:06]**

You know we might have to look a little adjustment here because I see that we're in a negative space right now.

So let me just pull it up a little bit.

I'm gonna try that and see how that works.

So now what I can do is before I actually click okay on this I'm actually gonna start drawing my path.

So if I wanted path to start somewhere up here, again I've got here little box that I had when I was doing my measuring tool.

And I'm gonna go ahead click where I wanted the path to start.

And basically I'm making data points.

So I'm gonna click once, I'm gonna click where I want the next one to be.

I moved down a little bit.

Click again.

Click again.

And just keep clicking until I basically have my path worked up.



Okay?

Alright.

So once I got the path already to go, Then I'm just gonna click okay.

Now, what I notice about my path down in this area, is it seems to be underground.

So I'm gonna need to develop, actually change, the height of the path up to the ground little bit.

So it actually looks decent.

I'm gonna go over here, to my places area, click on volcanic material, right click, do 'get info', and I'm gonna have to adjust the altitude.

Okay?

Let me go ahead and do that, bring it up a little bit.

Now what I'm noticing as I bring it up, is as I move my slider, my path is actually coming out of the ground.

So I've actually moved it, it says 750 or so meters and I'm gonna click okay.

Okay?

Now I'm gonna actually got my path.

It's actually moving above ground, which is actually helpful for us to see it.


And then, I can go through and do some navigating if I wish to do that to see how that actually would work.

So now you have our path and one of the last things that I want to show you is I want to show you quick video tour.

So let's say that for example, I wanted to walk somebody down this path that I've essentially created.

What I can actually do on the tool bar is right up here, here is this little video camera icon, and I can actually go up here and click on it.

And it's gonna give me at the bottom of the screen, it's gonna give this little box that will allow me to basically record visuals and audio.

 **[24:00]**



The microphone would be for audio that you're recording.

So essentially you could do the voice over and you kind of walk somebody through this tour that you're taking.

So I'm actually not gonna do the voice over part just to be kind of speedy about it.

I'm just gonna do the video.

So I'm gonna go ahead and click down here, on this record button, this round red button.

And I'm gonna walk through what I want people to see.

So let's say that I wanted to kind of follow on this path.

I can basically kind of walk somebody through, we're gonna go down this path, follow this path to the end.

And when I'm done recording I'm just gonna click record.

Okay?

What you might have notice is as soon as I clicked stop, it actually zoomed back to where I was at the beginning.

Now it's automatically playing this.

Now if I were doing this for somebody else to watch, that probably wouldn't be very good quality, it's kind of jerky and whatnot.

So practicing, you know to get the movements around, you can also move your screen around with your keyboard.

So sometimes that helps little bit as well.

So then, I've got this movie basically that I can either save if I wanted to do that, I can play again, if we wanted to do that.

I can also move this slider around while it's playing.

So we can kind of see what it looks like.

And then, if I wanted to save this little tour, I can save and call it a 'volcano tour', for example, and basically now we've added that tour folder here.

Okay?



And nice thing about all of this is if I were developing content that I wanted somebody else to use, I can easily go up to the top of my folder here, I can right click on it, I can do a save place as and what I'll be able to do is I'll be able to do save at.

Kmz file that I can put up on the web.

Somebody else could download, loaded into the Google Earth and this stuff is ready to go for the.

So what we would like to do is, we'd like to go ahead and talk about, I want to show a little bit of an example of some overlays.

Now I'm not gonna actually walk you through how to make an overlay tonight, because they take, in my experience, hours to make.

So what I wanna do is I wanna show you some examples of some overlays.

And just really give you feel for how those work and what that looks like.

So here we have a picture of a United States.

Let's say that I was working with a group of students.

I wanted to decide, if I were gonna put some solar panel installations some big utility scale ones where would be the best place in the United States to put those.

🔊 [27:11]

Now we're gonna have discussion about this with students.

We are probably not gonna get answers like, you know, Vermont, places like that.

We're probably getting answers like, you know, southwest United States and whatnot.

But in science, we're always interested in looking at data.

So what data will actually prove where we, you know, thinking we'd like to have our solar installation.

So what I'm gonna actually do is I'm actually gonna turn on a couple of overlays that have been developed that will give us that information.

So on the United States here, I'm going up to some things that I've downloaded already.

There is an overlay that's actually several files worth.

Where I'm gonna turn on US solar potential.



Okay?

So this particular overlay basically we've taken, you know we've got the United States here, and we're just looking at essentially a picture that someone has created.

That we can put on the top of the map that we're using.

So if we're looking at the key that comes with this overlay down below, the darker the green, the better the place meant for our utility scale solar project also for homes and whatnot as well.

Now on top of that, we might wanna know, well you know, we're also concerned about the environments.

And we wanna know about the environmental impact of where we might wanna place these large scales, solar utility panel clusters.

So what I might do is I have a little bit of information about some protected areas.

So here's some information from the national resources defense council and the Audubon that tells us where we might have some endangered wildlife or some preserves, or some endangered habitats and whatnot.

So now we've added another overlay that can help us, kind of dig deeper in and make some more choices.


Now I'm gonna turn off the solar potential and protected areas.

And I'll show you another one.

This one's about geothermal potential.

Now this one is very very complex one that somebody took probably weeks to make.

And on this different little icons here, we've got some graphs and charts and all these sort of things that people have actually put in there that give us some information about the geothermal potential.

 **[30:09]**

So that's one example of some overlays that we can take a look at.

I also want to show you another one that have some overlays that have to do with hurricane Katrina.

One of the things that overlays or some other material in Google Earth, remember we were talking earlier that the data is actually streaming in from other places.



So these particular ones regarding hurricane Katrina are actually ones where it's going out and grabbing information off the web.

And so, what these folks have done is they've actually put together a time line of various movements of the tracking of the hurricane.

And we've also got the green and yellow and orange are some sea surface temperatures.

Now I have to just put a disclaimer here.

I couldn't find sea surface temperatures from that same time period.

So these are not the actual sea surface temperatures from that time period, but it was a good illustration that kind of showed you the point.

So what I'm going to do is just zip through this timeline real quick and what you'll notice here and there is every time it looks like some new image is being put on top, that's actually another overlay that somebody has built with this information.

And so what's happening in this overlay that's being built is we have a couple of things.

We actually have a path that is the actually tracking of the hurricane.

And so those are done by many many data points that these folks put together.

And then as we're you know looking at the different intensities, they've used a nice method of making bigger dots to show the intensity of the hurricane.

And then we're looking at an overlay of the sea surface temperature.

Again, not the same time frame but really I haven't thoroughly illustrated the point.

Okay.

So the overlays by having them in there have really added a depth knowledge in understanding that we can use to make some more you know decisions about whatever we might be looking at.

Okay?

Now let's say that, let me just turn these off so that we don't get too much stuff on the screen.

What I'd like to kind of look at and demonstrate a little bit about now is, let's say we're looking right at this Gulf of Mexico area.



And we take a look at some of the stuff that's in the layer's area.

So we've got all of these particular layers right in here.

So one of the neat things is that as we start to turn these layers on, these little icons started appearing on the screen everywhere.

🔊 **[32:59]**

So let's say for example I turn on borders on labels, okay? One of the things you may have noticed that just appeared is there's an outline around the edge of the U.S and all of these outlines around the states have come up.

We also have cities and towns and what not, the closer we get in here for example we got some state names that have appeared, we got cities in Texas that have appeared.

And as I start clicking more things on for example, places of interest, and you'll notice there's a little spinning icon there.

Different icons start appearing the closer we kind of get in here.

So for example, let's say on that roads here, I click on a place of interest and then it gives me some information about that route and some web links and what not that I could kind of prove.

And then there's also user generated content that is available in Google Earth as well.

So I might turn on this picture service called Panoramio where we will as we kind of zoom in here will start getting some icons appearing here and there.

So these are ones that people have actually put in here.

So let me add a click on this one.

So we've got some user generated photos that people have uploaded that are now attached into Google Earth so that it's accessible for us.

We've also got a roads layer that will put highways and that sort of thing on here.

In a moment I want to show you the 3D buildings, what those look like, but we'll go on and put a couple of things on.

We can actually do some weather.

So if I zoom out, we can see cloud cover, and if I zoom out far enough we can see



Doppler radar maps and cloud pictures of you know, where the satellite images are for the different weather systems and what not that are around.

And anything that's got a triangle next to it, we can actually expand and then we've got all these other layers that are in there that can be selected to add different things on there.

You're zip pluses.

So you're on Windows, correct? Okay, thank you.

So as you kind of want to dig into this, again earlier we had our terrain layer on, which allowed us to see the three dimensional images of the land and that sort of thing.

And then in the global awareness gives you various different United Nations organizations and what not that have got things on here.

🔊 **[36:04]**

Now, as you go in each of the layers, you'll notice that there's a particular icon that matches up with the icon of that particular layer.

So as you turn those layers on, and you look through Google Earth, you're going to see those icons coming up.

And that's where that particular organization or that particular layer's information is going to come up.

One of the interesting things if I go into the ocean's layer.

This layer is fairly new within I believe probably the last year or so? And that's got all sorts of information in it as well.

There's a kind of one that I think is kind of unique and that's a layer for animal tracking.

So when scientists basically put on, let's say they tag with some sort of satellite tag on a fish or mammal in the water.

We can actually follow that organism, that fish, around the sea.

Now I will have to do a little bit of a disclaimer.

Watching this can sometimes make you feel a little bit sea sick.

So what I'm going to do is I'm just going to click on that.



I'm just going to double click on it and see if it'll take us to one here.

I'm going to turn off my weather because it's kind of distracting us here.

So I've got fish four thousand and nine So let me just go on and double click on that one, and it look like it's a shark.

Okay?

So once I have actually clicked on that, I have this swim with me option.

And I can either swim quickly or slowly.

I devised this slowly one if you want to watch it.

It's pretty quick in of itself.

The quickly one really moves.

We can look at you know what the depths profile, you know how far the fish, the shark went down under water.

Let me go on and click quickly and so we can kind of you know see as we're moving through.

It's basically an animated sea glimpse.

So we're seeing where the fish is moving.


We follow the fish over, you know like over 25 minutes and watched where it was basically swimming around.

Also in the ocean's layer, we can explore all sorts of various features.

We've got pictures of items, we've just all sorts of different things.

Again, when you see the little icons, we'll be able to take a look at more pieces of information.

So you can also like you can do on land, you'll notice that when I went on this particular one, they've got a video that is right there loaded to be played, what looks like off of Youtube.

 **[39:04]**

So I can play a video right in my window if I wanted to.

Also if I wanted to go kind of dive through the ocean, I can kind of get down



underneath the water, and zoom in to see various places that might be worth taking a look at.

So for example, let's see if we go down in here, then once you kind of dived down beneath the surface, you can actually get that sideways view like what we did earlier in the view of Mount Saint Helens.

So as I was saying earlier, one of the neat three dimensional views is when you can actually take a look at buildings.

So I'm going to actually zoom in to a place.

I'm going to uncheck my oceans layer real quick.

Uncheck my global awareness.

And some of these other ones here, I'm going to uncheck.

And I'm actually going to go to a place in San Francisco that I know has a pretty cool 3D building.

And this one is called the Palace of Fine Arts.

So what I did in my search here in my fly to, is I'm doing Palace of Fine Arts, San Francisco, and then I'm going to hit Enter, or return, and we're going to basically fly there.

Now this particular one, what people have done is in Google Sketch Up, which is a Google drawing tool, they've actually drawn the Palace of Fine Arts and super imposed it into Google Earth.

So I'm going to go down and I'm going to turn on my 3D buildings layer.

And you might notice that as soon as I do that, my screen just kind of populate with a whole bunch of stuff.

So what people have done is they've actually drawn a bunch of these items and put it into Google Earth.

So rather than just a flat two dimensional satellite view of these buildings, we're actually now going to get a three dimensional view that's been hand drawn or drawn.

And you know pretty cool you can actually fly through buildings, just kind of fly.

And so, let me just move up a little bit, ah there we go.

So as I move forward, all of this particular information has been drawn and put into Google Earth, now sometimes I need to back up a little bit here.



So here we have kind of a nice view here of the Palace of Fine Arts.

So this is one example.

If you also look at Manhattan in New York, you can actually look at a great view that with the 3d layer on gives you a really cool view of what that might look like.

🔊 **[42:04]**

Now various places around the world, where we have historical sites or what not, people have actually done this and this is user generated content that they've actually put in here to basically you know create a more realistic view rather than just the two dimensional satellite view that we often times get when we're looking at those sorts of things.

So quickly I want to take a look at a couple of things that we haven't taken a look at yet on the tool bar are this kind of sun, this one that has a picture of a sun and a mountain on it.

Basically if I go on and click on that, what I'm going to be able to do, I'm going to be able to get a view of what it looks like for, when the sun is shining or not shining on a particular place.

So right now, our little time scale slider that we have up here, says that we are at 6P.M, Pacific time.

And let's say that I take that slider and I slide it back to yesterday at, so let's go backwards, maybe I want to go to some time back before sunrise, so as I'm moving this along, we're basically now getting a night view of what it looks like in this part of the world.

So we can kind of move this slider back and forth and basically follow the sunrise and sunset patterns to see what that particular area might look like at that particular time of the day.

That's one particular thing that we can do.

And then there are these historical by clicking on this little clock up here.

We can actually see different photos of this particular area over history.

And sometimes those include old photos, old maps and such like that.

So that particular tool would allow you to get those older photographs from satellite images.

So we might see different satellites over time depending on what sort of places we're



photographs.

Some have, some don't.

And one of the other things I wanted to point out was we actually on the tool bar, have the ability to take a look at the sky, Mars, and the moon, okay?

So If I ... for example...click on sky.

Let's say.

I'm going to go away from the earth and I'm actually going to be taking a look at what we have out in the sky.

Okay?

🔊 [45:08]

So under the layers in the sky, I have several choices and what I'm going to do is I'm going to click on our solar system.

And every time we click a new layer, you might see that there is a little circular icon spinning and that basically is loading data.

So let's say for example that I wanted to take a view of Jupiter.

So I'm going to type in Jupiter in here, and hit enter return on my keyboard.

And it's going to basically fly me to Jupiter, Okay?

It's pretty cool.

I love this.

Now the reason why I could find Jupiter is because I actually had clicked on our solar system here and that allowed me to search for that particular object.

So we have all these different kinds of layers again lots of user generated content and that's fair?

Including historical sky maps that you can you know layer over and kind of see what people over the course of history have made maps of this solar system.

The resolution in this is pretty incredible.

It's pretty awesome.

So that's an easy way to search the you know just search the sky and find what you



are looking for.

We also have Mars, which we can flip to and this again has lots and lots of different layers.

You can get spacecraft imagery, you can get global maps you can get all sorts of things.

There are guided tours that you can follow regarding Mars.

You can follow the Rovers and Landers and whatnot.

And then lastly we have a moon, so that we are look at an earth moon.


And again we've got all sorts of layers on this one that we can kind of dig into.

And there are a lot of layers turned on, on this.

So you've got a lot of pieces of information that you could kind of really dig into and see what's there.

For the last part that we've like to kind of to show is go out on the web and talk about some places where you can get contents for Google Earth, okay?

So earlier in the night, when we looked on a help menu we can actually get directly into the user guide as we talked about earlier where it actually will have quite a bit of information there for you and then also we can get to some of the user generated contents.

 **[48:03]**

So Google is actually put together a gallery of contents.

So the particular one that I was able to click in Google earth to get a link to the gallery, I went to help and I went to Help Center Website and from there I have the gallery lists of right on the left hand side here and that will take me to quite a few different areas of the Google Earth gallery.

Okay?

And so in this particular thing they've got all sorts of different categories on the side from featured to outreach to buildings tourism etcetera.

There's an educational one as well so as you are taking a look at these you can kind of go through these and also notice that on each of the different items.

It tells you how many people have actually rated that particular listing.



And like anything else the more ratings, you know usually can give an indication that something is actually more validated, more you know user friendly and that sort of thing.

But again it's you are going to go and kind of take a look at it and see what you can actually find with this.

Now let's say take for example this one called real time earthquakes.

And let's say that I wanted to actually get that real time earthquakes one and I wanted to bring it into my computer.

Okay?

So what I could do is I could just go to the one that I want I can click on opening Google earth and that is going to pop-up whatever appropriate many ways what they are on a Mac or a windows computer or Linux for that matter.

And then, I can either do one of two things.

I can either do an open with and the choose Google earth as the program that I'd like to open it with or I could save the file to my computer.

If I saved the file to my computer I would just navigate to where I saved it and then be able to open it from there.

When I do the open with version and let's bring that run in.

So what happen when I brought that in is I actually have in temporary places I have this folder called real time earthquakes and I have all of this information that's in here.

Now you'll notice that each of these you might recognize that icon because that's a path that's very similar to what we made earlier.

So when we are looking at this particular version we'll see that on the edges of the plates and whatnot we've got some boundary information we've got a little path there and as we zoom in on this one in particular, we will start to notice that there are more and more dots on the screen.

Now if we go to a place like southern California for example that has more earthquakes.

You will see far far more dots on the screen.

Okay?

So what this file of course based on the legend it's telling us is these earthquakes are based basically by the past hour, we've got some based on the past today, the



past week and whatnot.

And if you click on the particular dot this particular thing will tell you the magnitude of the earthquake and where it was located.

🔊 **[51:58]**

So I'm going to go back to the gallery here.

And again we've got all sorts of different categories that you can choose from.

Okay?

Now people have used a lot of different Google earth files, kmz files, kml files in order to represent various things.

So I'm going to just flip to blog posting I made on the Google earth for this class.

So here I've actually got some links to some other files that are out there.

That are really helpful in terms of providing various different types of content.

So again link to the helping documentation.

I'm going to quickly go to this Google earth for educator's one because I'd like to show one example of what's called Google Lit Trips.

It's basically a website that somebody has put together that covers different literary novels and whatnots using Google earth that kind of see physically where those people actually went.

So I'm going to just go here and I'm going to go down to one of the grapes of wrath.

So right in this center here I'm going to choose the grapes of wrath and I'm going to be able to download the latest version of that here's on my download.

So let me go out and click on that.

Again, it's going to ask me if I want to open it up.

I'm going to uncheck my real time earthquakes.

And now I've got some information here on the grapes of wrath.

So as I'm looking at my view of the United States here what somebody has basically done is they've actually gone through and put place marks for the places where the grapes of wrath took place and we can click on that and get various bits of information about that particular place.



So as a student reading this particular novel that would really help me to do various things.

So using this sort of thing kind of embedded in an activity or in reading that particular novel could really add a lot of good contents make that a lot deeper for the student.

Now that could be done for example in the same way that we created our own file and saved it we could have it up on the web for students or whatnot.

🔊[55:02]

What can be kind of interesting in this regard is that students could actually be creating this work themselves as you are actually walking through doing whatever scientific work or social studies or literary work or whatnot.

So they can actually be going and gathering resources and this could technically be a finish product for them to put together so that you could you know see what sort of learning they've done along the way.

So not only could a teacher do it but a student could actually be involved in doing this themselves.

So I just went through and on my blog page.

I basically just pulled a few various different things and then linked to some bigger ones that are galleries and whatnot that you will be able to go back and take a look at.

Now just in general, when I'm looking for different sites that I like to able to using Google earth there was a question earlier about what's the difference between a file that has a period kmz at the ending or period kml.

And we went ahead to look that up and what the difference is the kmz is actually zipped or compressed version of the kml.

So it takes up less space which can be good if you're putting it in on the web and having people download it that could really help with it the speed in being downloaded.

So when I am actually looking for these tabs of files on the web what I like to do is put in the thing I'm looking for.

For example one of the over lays I saw that I showed you earlier was about solar potential or solar energy potential in particular parts of the U.S.

So when I would go looking for something like that I put in what I like to look for and



and then I put Google earth or kmz file or kml files something else in the search that would allow me to really kind of sort my results or kind of dig in to get results that I'm looking for.

And a lot of times it is trial and error to see actually what sort of result that you can really get.

So basically at this point time we've pretty much covered every thing that we want to cover tonight.

I'd like to just say that thank you very much for coming.

And I hope you really enjoy Google earth it sets hours and hours of fun for sure.

So thank you.

🔊 **[58:32]**