

Learning Guide

Create an Interactive Digital 3D Map that Tells a Story with Cesium Stories

Introduction

Cesium Stories is a free 3D geospatial software program that runs in a web browser. It allows you to develop 3D geospatial presentations that highlight events or tell stories in geospatial context. These presentations are just like slideshows, except each slide is geolocated somewhere on a digital 3D map of the globe. You can add text, images, and even your own custom 3D models to each slide to help add details to your story. Your audience can also interact with the digital globe to see the real-world terrain surrounding each area you choose to highlight in your story.

Video Learning Guide for this Lesson Coming Soon!

Contents

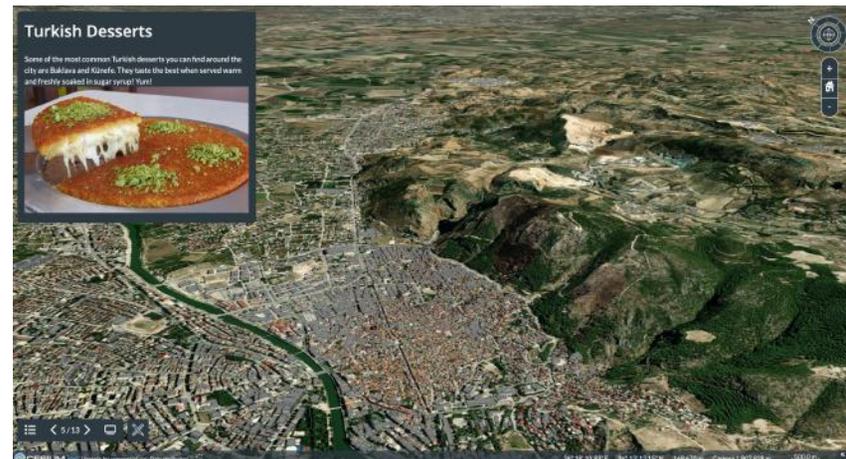
By the end of this lesson, you'll be able to set up a Cesium ion account and create your first Cesium Story with text, images, and annotations. Other lessons will show you how to add your own 3D models to your story.

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Step 1: Create a Cesium ion account and set up your Story

Preview

This step will help you create a Cesium ion account and set up your first Story.

Experiment

SIGN UP FOR A CESIUM ION ACCOUNT

Head to the Cesium website (cesium.com) where you can learn more about Cesium and access their news and tutorials. You will need to sign up for a **Cesium ion** account to use its platform and 3D global content.

Click the **Sign Up Free** button at the top right corner.



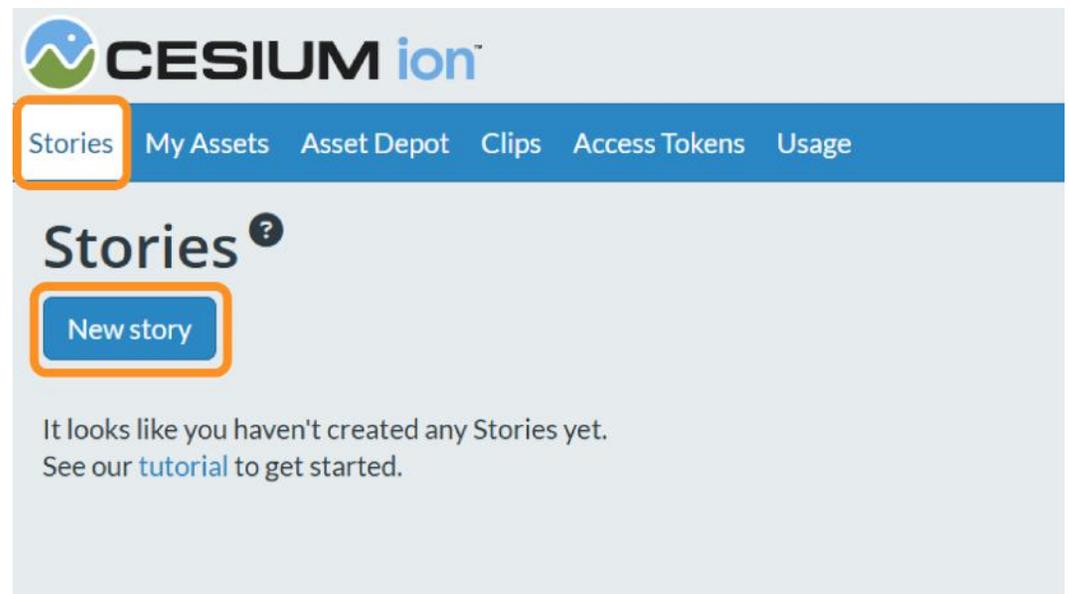
In the new window, sign up for a new Cesium ion account with your email address and a password. If you have an existing account, you can log into it.



CREATE A NEW CESIUM STORY

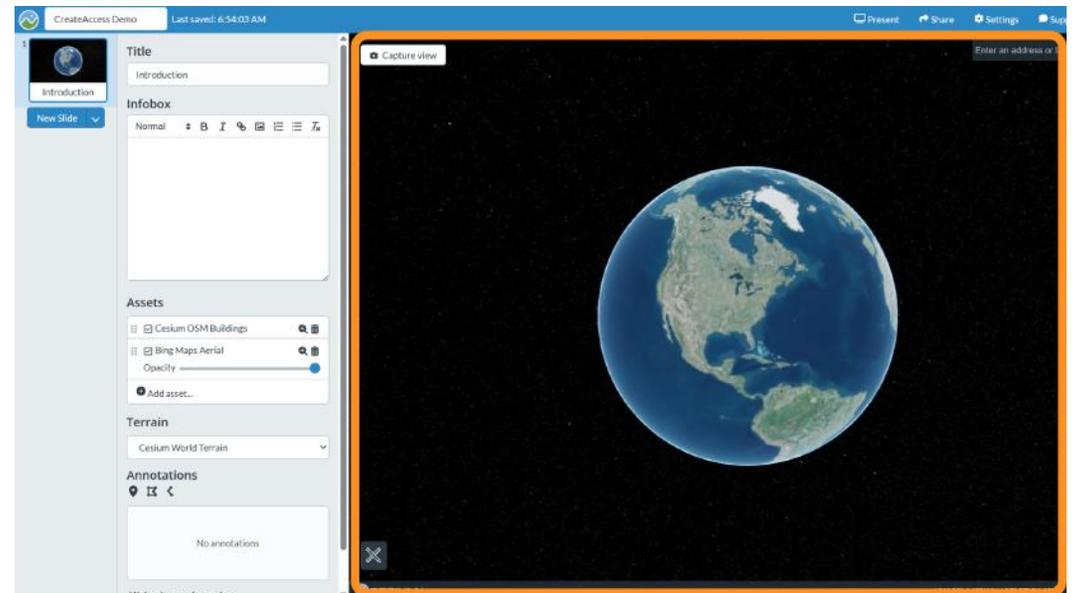
Navigate to the **Stories** tab in Cesium ION and select **"New story"**.

A new page will open up with a blank Story project.

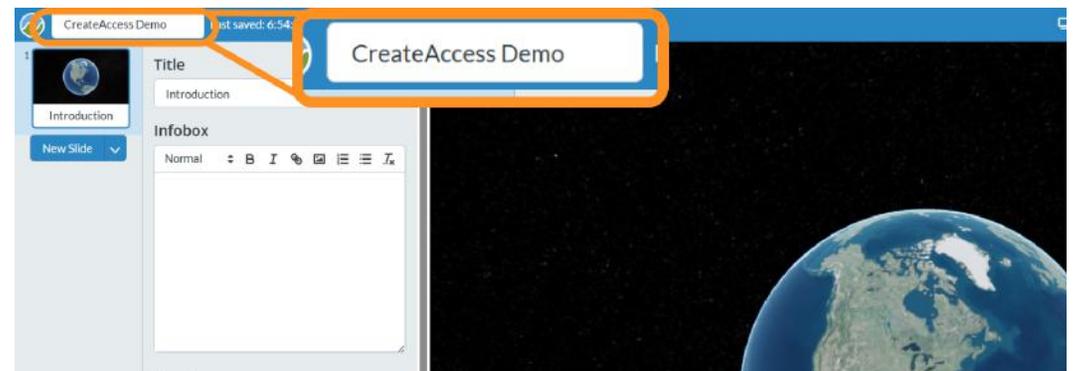


In the new **Story**, you should see the **blue marble Earth** in your center screen, the **Viewport**.

To navigate the globe in the **Viewport**, use the **left mouse button** to move around and the **scroll wheel (or right mouse button)** to zoom in/out. You can zoom in or out as much as you'd like on the location you want to highlight.



You can change the title of your Story using the menu bar at the top of the screen.



Self Check

Could you sign up for a Cesium ion account and create your first Story?

Step 2: Add slides to your Story

Preview

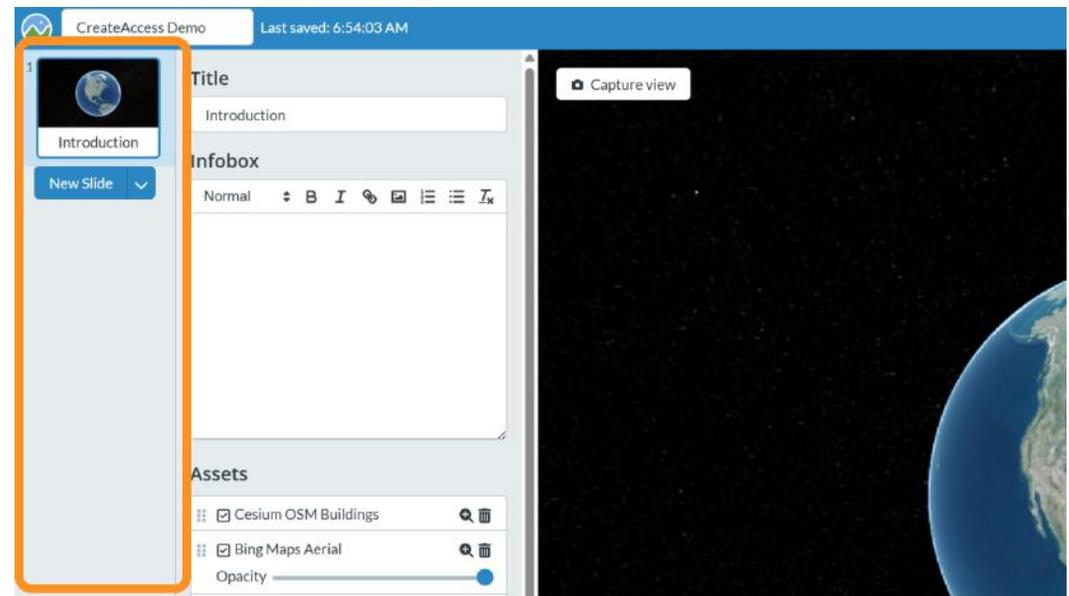
This step will help you add slides to your Story that highlight different locations on the 3D globe.

Experiment

CREATE YOUR FIRST SLIDE

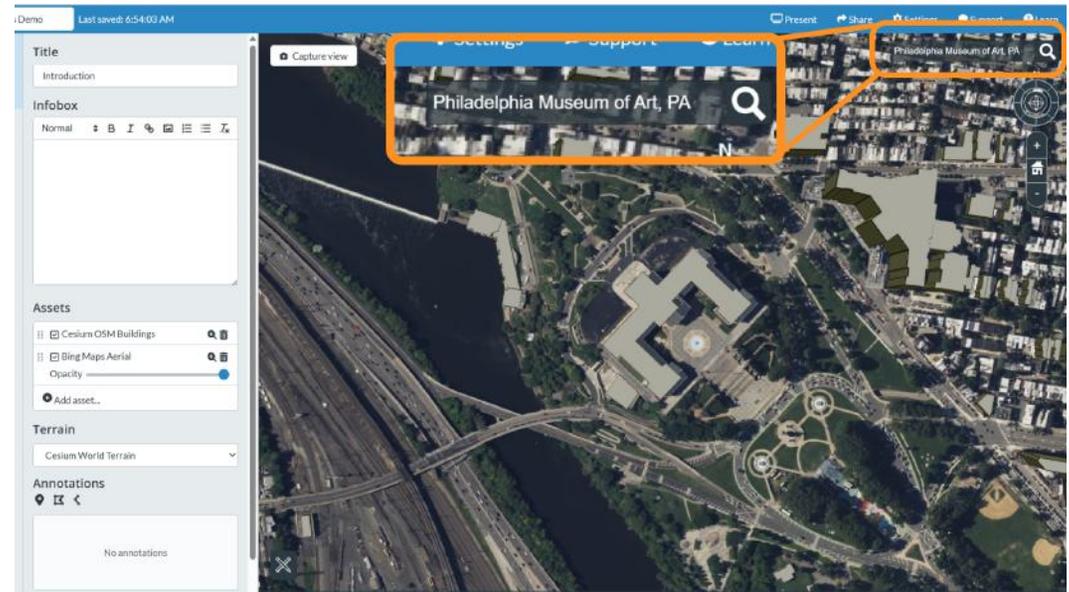
The left-most panel on the screen is the **Slides** panel. Each **slide** can be set up to focus on a different location or angle on the 3D globe in the Viewport.

In this panel, you can name, create, reorder, or delete slides as you work on your project.



Create your first slide by deciding on a location on the globe that you'd like to highlight. You can find this location by exploring the Earth with your mouse or typing in an address or landmark in the **search bar** at the top right corner of the screen. Note that not every landmark will be accessible via search, but you can usually find the landmark you want by typing in its address.

After entering a location or address, the **Viewport** will automatically zoom into the location you've picked.

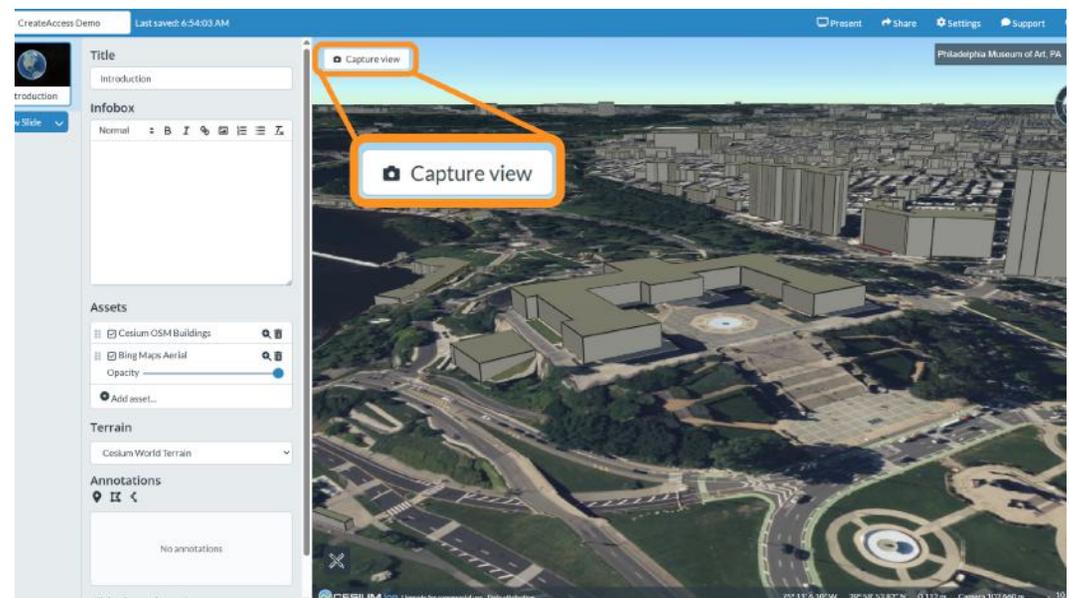


Once the Viewport is displaying the location you've chosen, you can pinpoint the exact angle you want to show in your Story slide and save it.

To adjust the view in the Viewport:

- Use the **left mouse button** to pan around
- The **scroll wheel or right mouse button** to zoom in/out
- Use the **middle mouse button or hold CTRL + left mouse button** to change the viewing angle

Once you're happy with the view in the Viewport, click on the **Capture View** button at the top-left corner of the screen. The current view will be saved as **your first slide** in the Story.

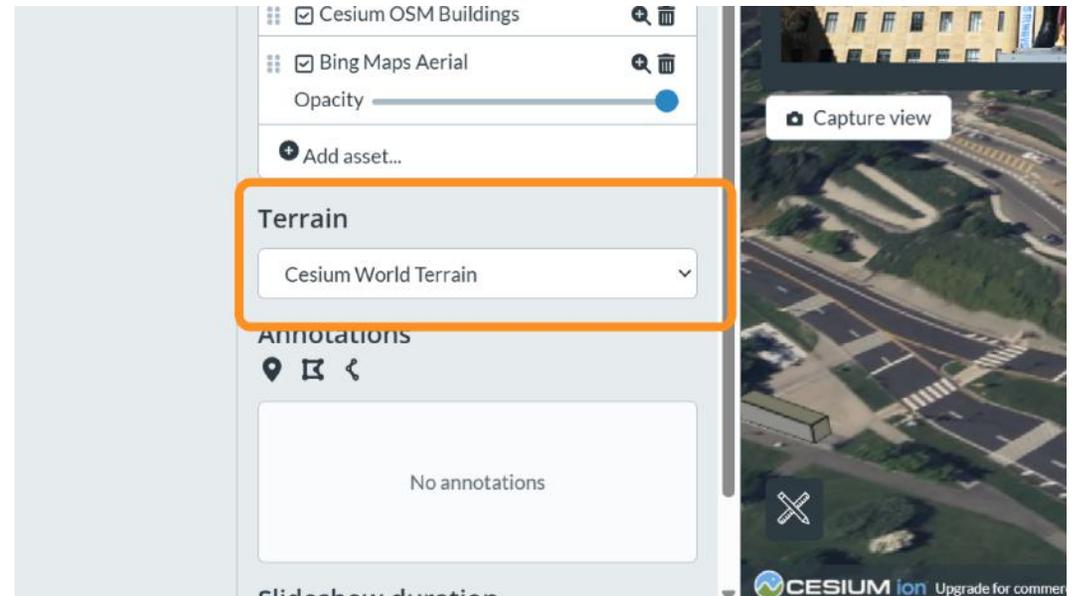


CHANGE THE TERRAIN

The **Terrain** setting on the left-side panel controls how the terrain of the Earth appears in your slides.

The default option, **Cesium World Terrain**, provides accurate global elevation data. This option is likely best if you want to display realistic landscapes or measure height differences around the globe.

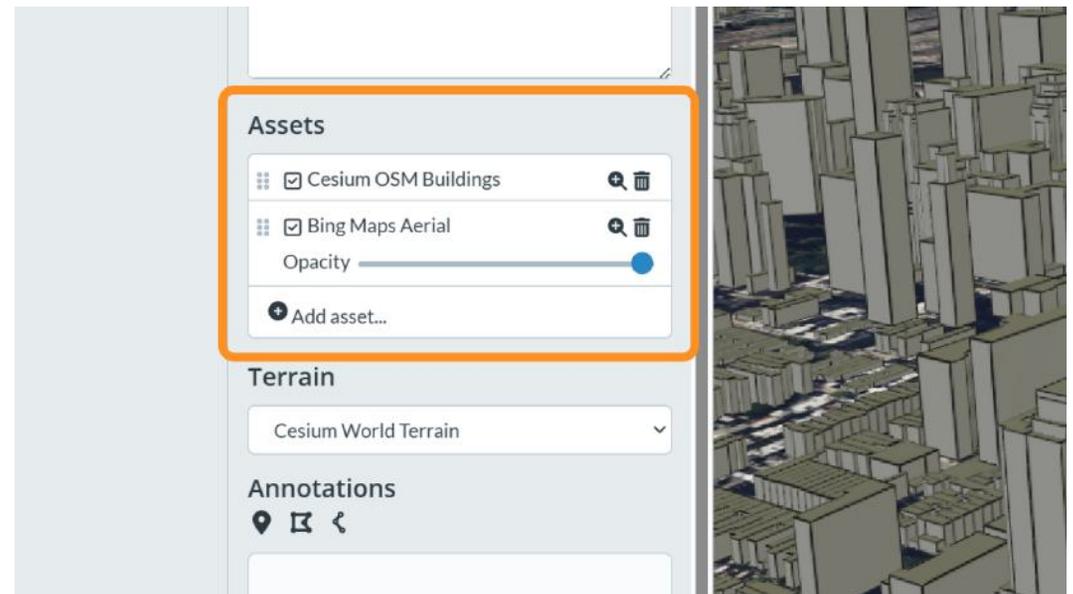
Cesium World Terrain will overlay satellite imagery on the terrain, so you will still be able to see roads, buildings, trees, etc., but they will not be separated from the terrain as individual 3D models.



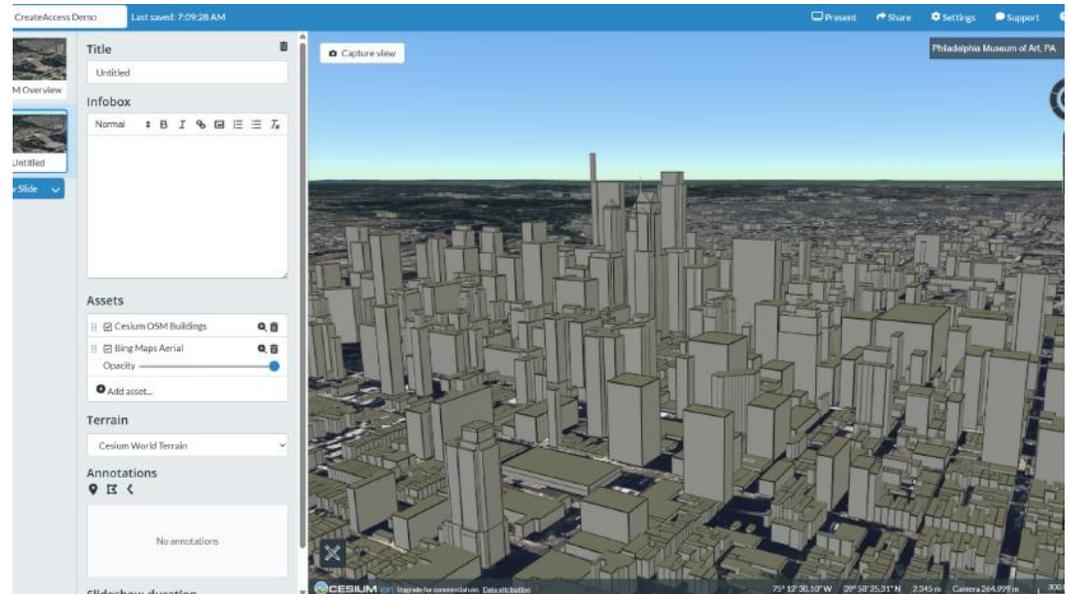
If you'd like to add 3D models of buildings to your Cesium World Terrain, you can enable them from Assets settings with simplified shapes and sizes.

The **Assets** settings on top of the **Terrain** menu in the left panel lists the imported 3D models, maps, or imagery layers used in the Story.

To add basic buildings, enable the **Cesium OSM Buildings** option in the Assets menu. This option might be turned on by default when you have started your project.



The global map in your Story should now be populated with simplified buildings.

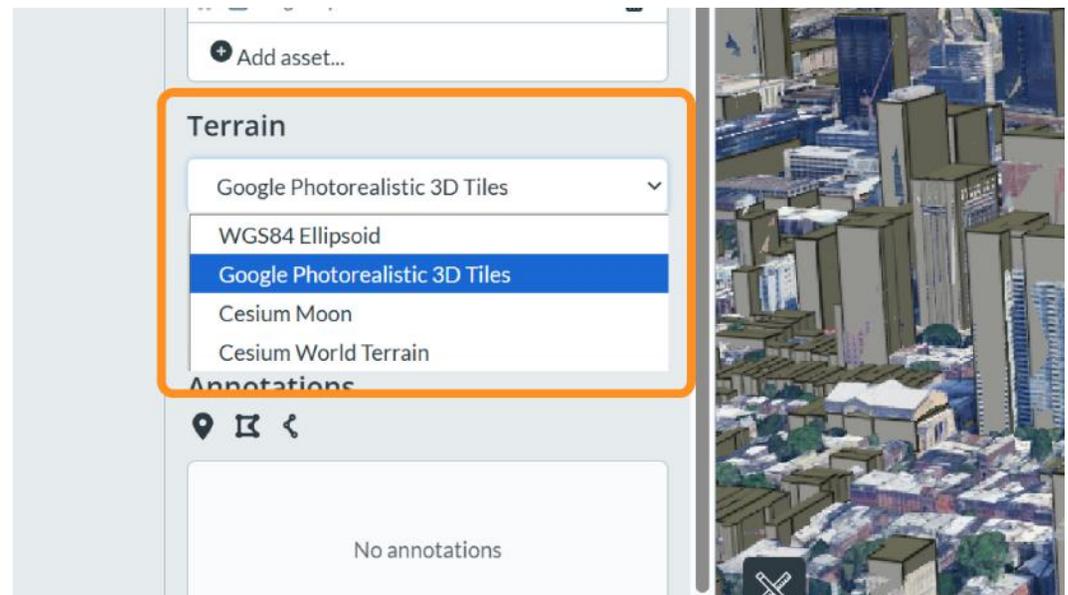


You also have the option to add more detailed and realistic-looking buildings to your Story by enabling the **Google Photorealistic 3D Tiles** Terrain.

Open the dropdown in the **Terrain** menu and select **Google Photorealistic 3D Tiles**.

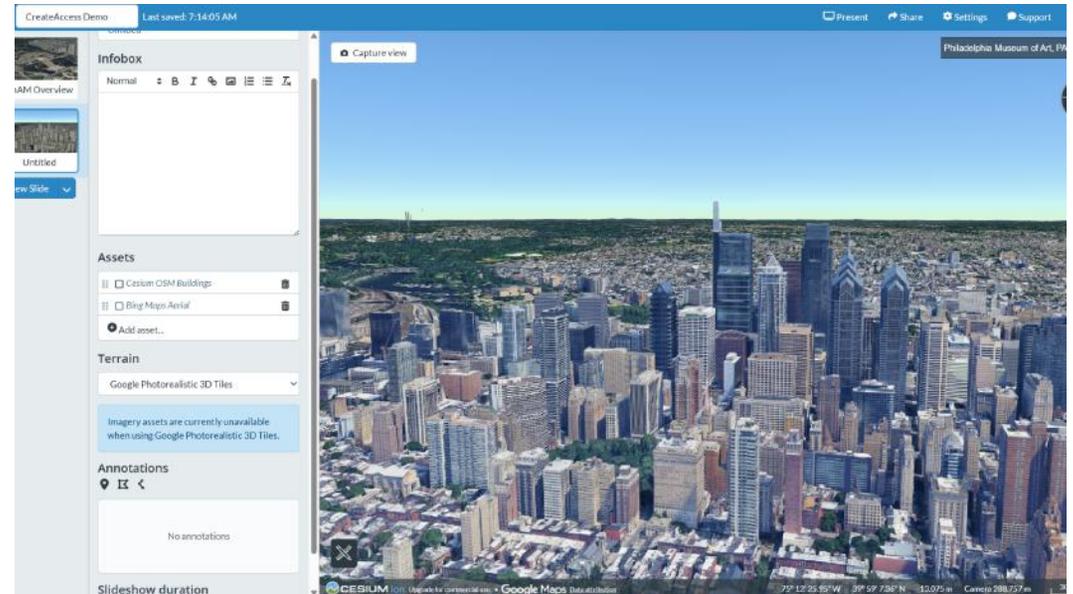
Especially for city scenes, this option can help you bring your story to life by enabling higher-textured buildings.

Make sure to disable Cesium OSM Buildings by un-checking the checkbox when using Google Photorealistic 3D Tiles so you don't get overlapping buildings.



Keep in mind that Google's tiles and terrain are designed for **visualization**. The alignment and size accuracy of the terrain may not be a perfect replica of the real-world terrain.

It's suggested that you use the **Cesium World Terrain** for accuracy and **Google Photorealistic 3D Tiles** for visual quality.



The Terrain option you select will apply for each slide. While you can have Cesium World Terrain for one slide and Google Photorealistic 3D Tiles for another, keep in mind that changing the terrain from slide to slide will add extra loading time when switching between slides.

Self Check

Could you test different terrain options and create new slides for your Story?



Step 3: Add details to your Story

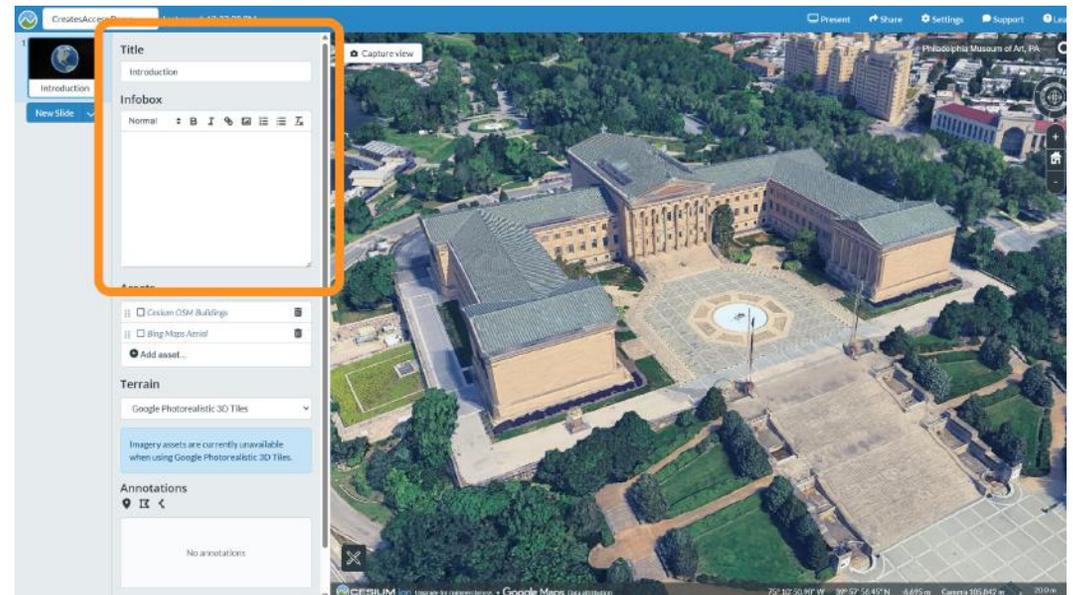
Preview

This step will show you how to add information and images to your slides, as well as create annotations. At the end, you will learn how to share your Story with others on the web.

ADD TEXT AND IMAGES TO SLIDES

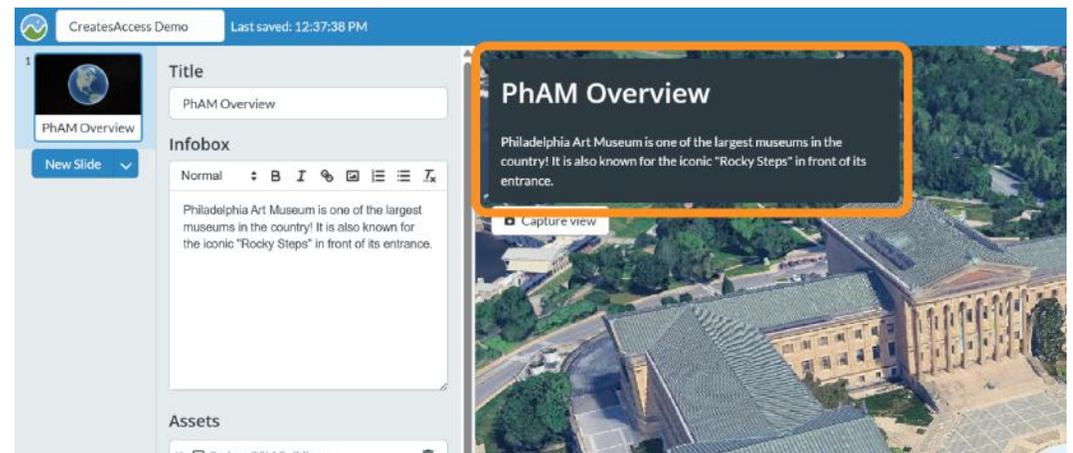
After capturing the view and creating a slide, you can add text and images to accompany any slide in your Cesium Story.

You can find the settings for the Infobox on the left panel on your screen.



Start by adding a title to your slide with the **Title** box and any text information you would like in the **Infobox**.

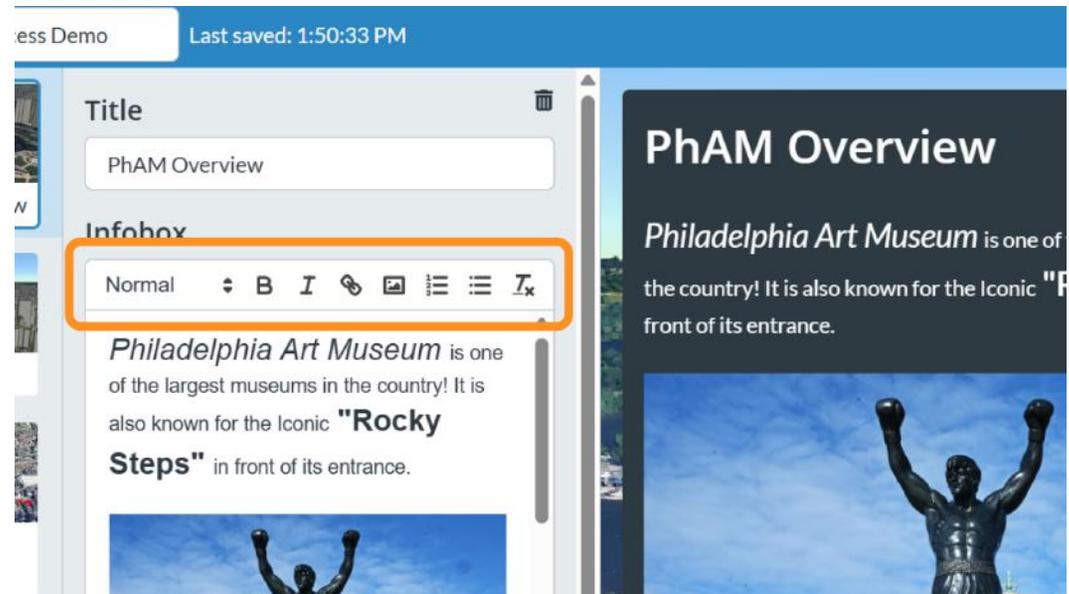
This is a good opportunity to share some information about the location you have highlighted in the slide.



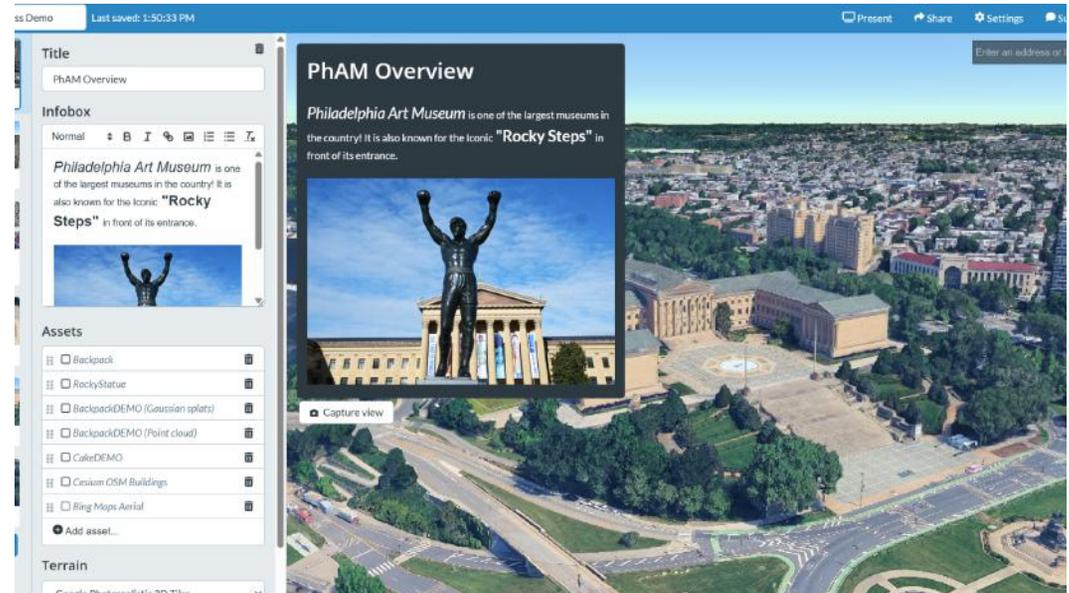
The **Infobox** works just like a common text editor. You can change the size of your text, make it italic or bold, create a bulleted list, etc.

You can also add images or links to the Infobox. Customize the text on your slide to best represent your Story to your audience.

Use the **text editor options** at the top of the Infobox panel to change the size of your text, make it bold or italic, add links or images, and more.



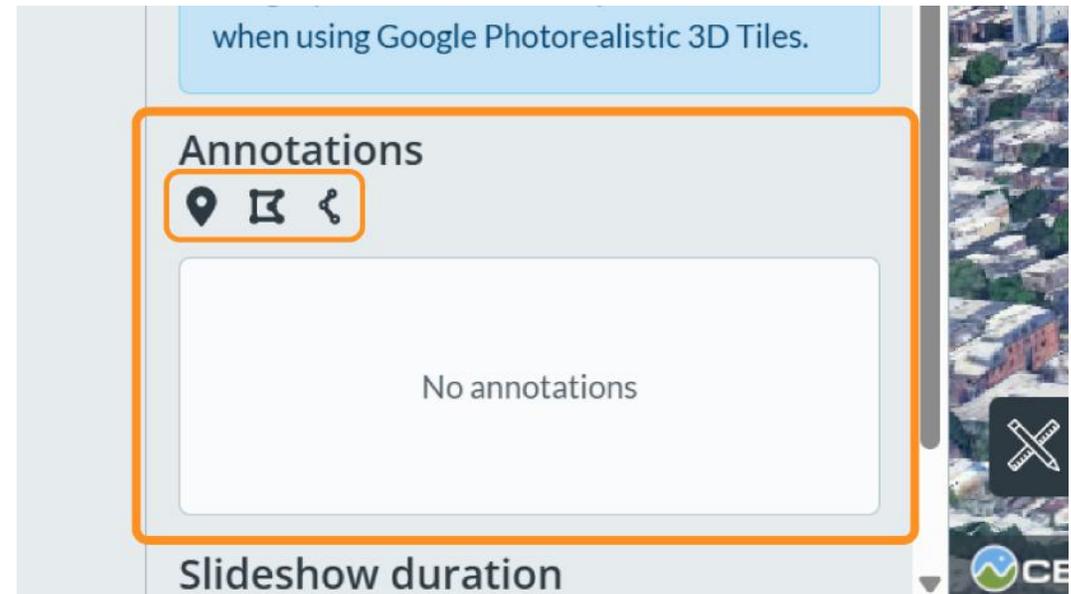
Keep in mind that the slide **Title and Infobox** are specific for each slide; this means you can customize the text, images, and links with every new location and view in your Story.



CREATE ANNOTATIONS

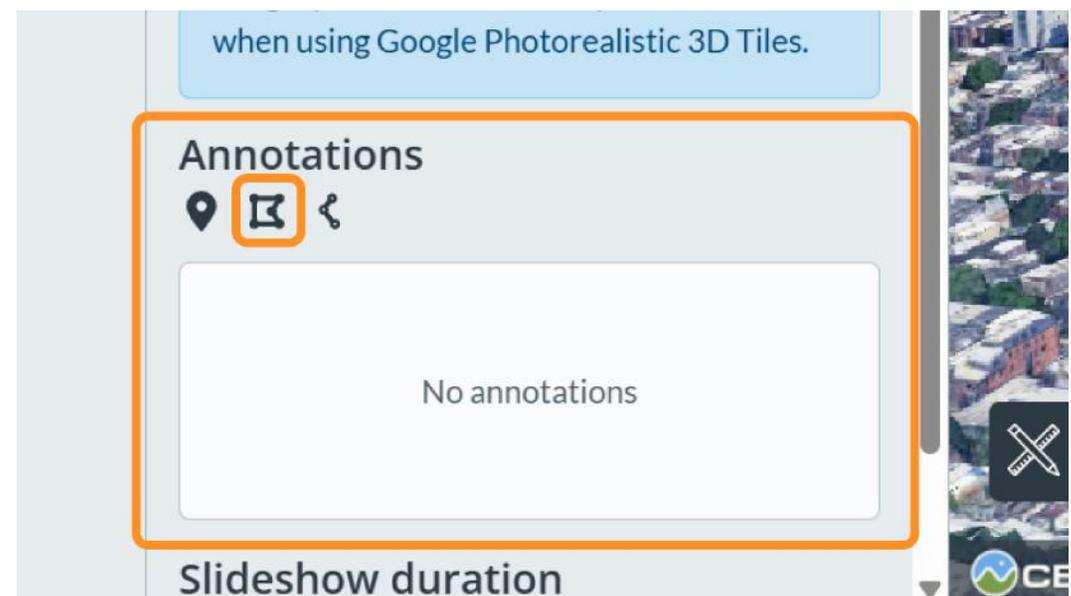
The **Annotations** tool on the left panel allows the user to highlight specific points, lines, or areas on each slide of the Story.

The three icons in the Annotations menu allow you to create highlights in the following order: **Point, Area, Line**.



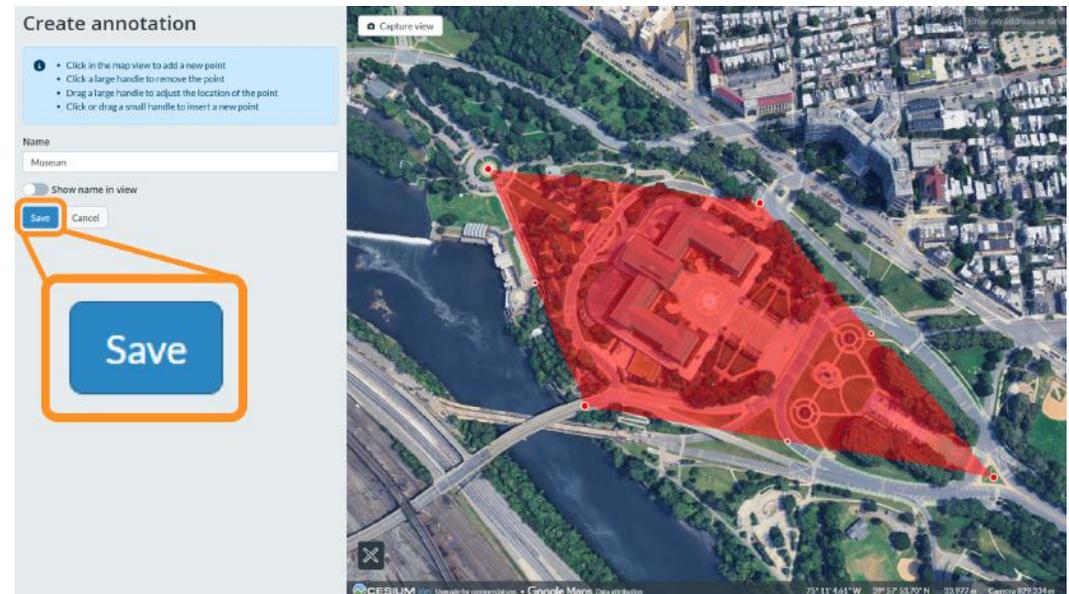
Select the tool you need based on what you would like to highlight in your slide.

For example, select the second tool, **"Add polygon"**, to highlight an area in your Story.

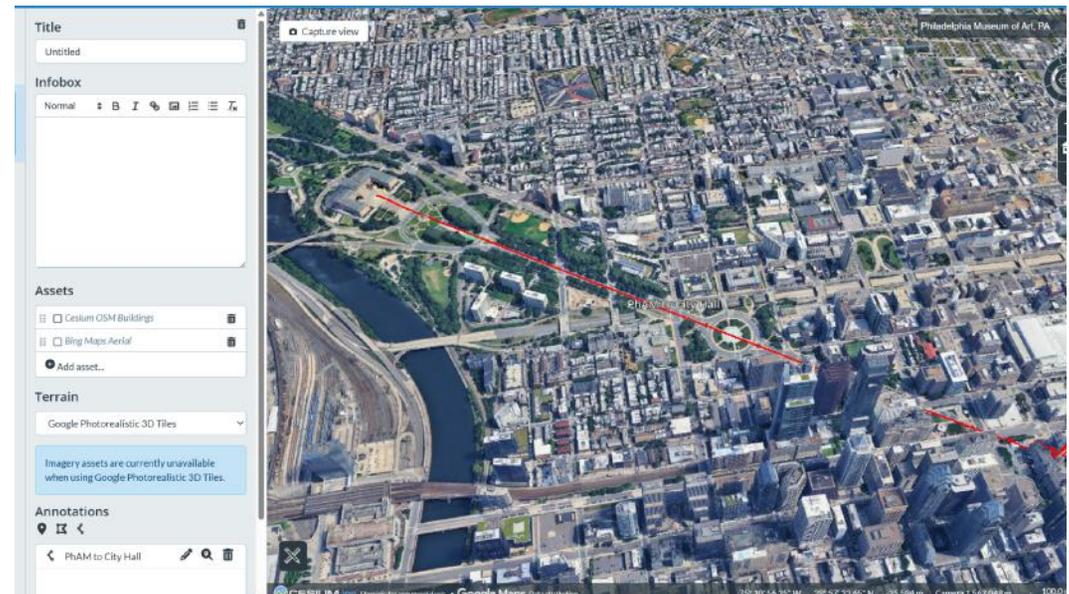


Follow the on-screen instructions to create and edit your highlight. To highlight an area, click on the map to select your starting point, then continue clicking to form an enclosed shape.

You will see the area highlighted in red. When done, click **Save**.

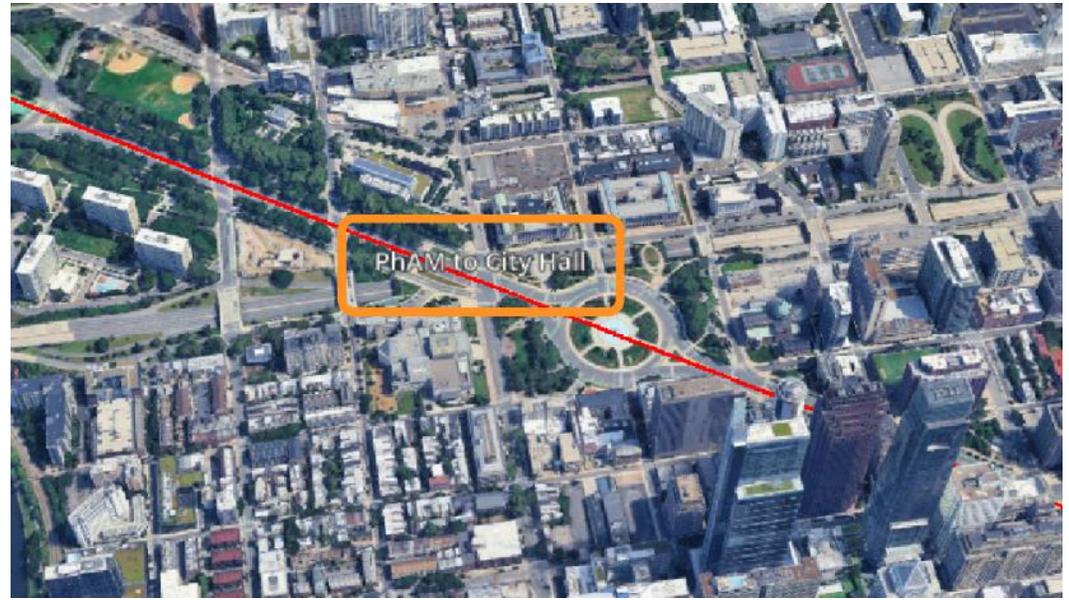


As shown on the example on the right, you can also use the **“Add line”** option in annotations to draw a simple line between two points.



After naming your annotation, you can use the “**Show name in view**” option to toggle the name of your highlight on or off.

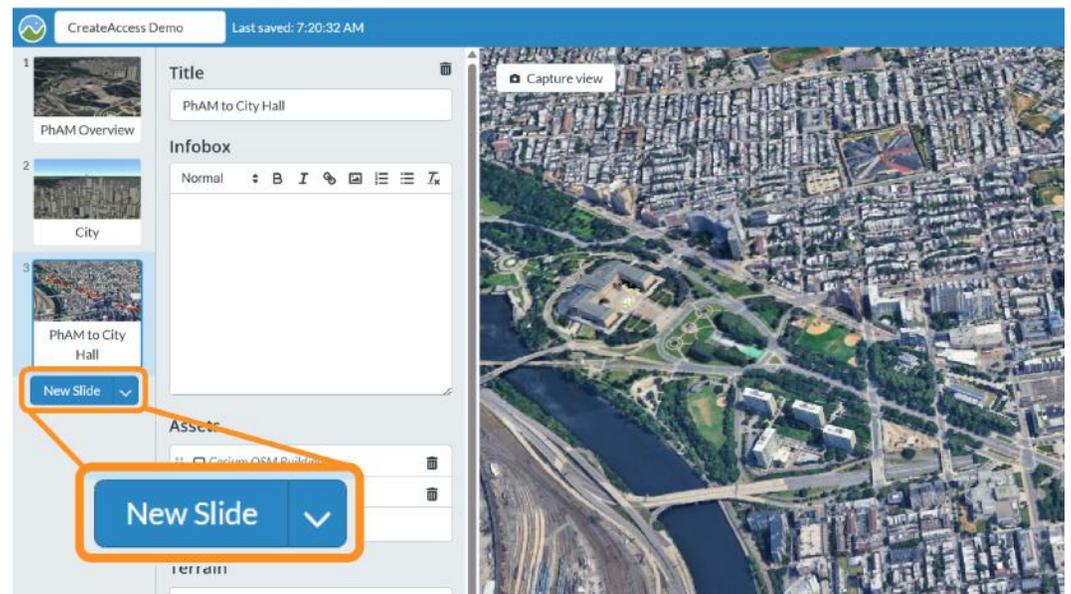
When turned on, the name of the annotation will appear visually over the highlighted area in your slide.

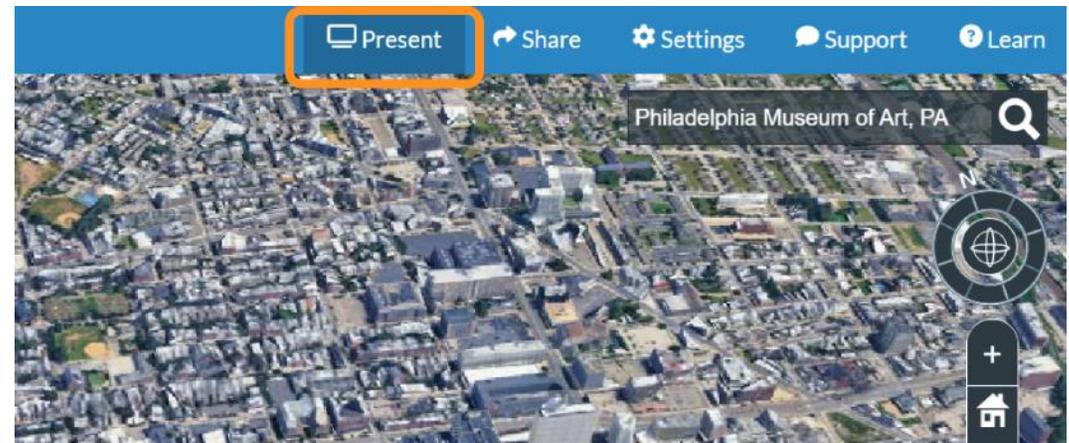


FINISH UP YOUR STORY

Create as many slides as you want by using the **New Slide** button on the left-most panel.

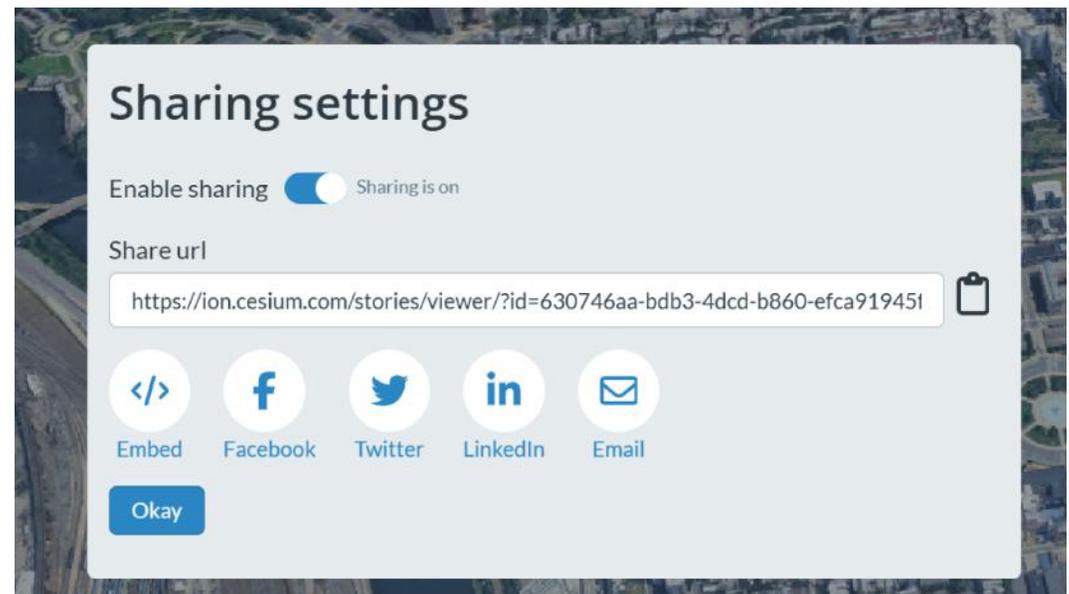
When you select different points around the globe for each slide, Cesium Stories will automatically create a smooth transition between the slides and move the Viewport camera for the viewer.





When your Story is complete, you can open it in **Presentation** mode or **share** with others via a weblink so they can view your Story on their own.

Click on the **Present** button at the top menu bar to open your Story in presentation mode.



To get the share link, click on **Share** and toggle on **“Enable sharing”**.

Now you can copy the shareable link of your story. Others can paste this link to their browser and easily view your Cesium Story without needing a Cesium ion account.

Self Check

Were you able to create a Cesium Story with multiple slides, text, images, and/or annotations? What kind of project can you come up with by using Stories?

Lesson Closure

Demonstration of Learning

In this lesson, you learned how to sign up for a Cesium ion account, create your first Cesium Story with different locations around the globe, and to add informational text, images, and annotations to different slides of your Story.

Exploration Opportunities

With the skills you learned in this lesson, you can create Stories that highlight a personal story, or put facts or issues in geographic context. You can customize each experience the way you need with the tools provided within Cesium Stories.

To go a step further, you can bring in your own 3D models into Cesium Stories and place them anywhere you wish for on the world terrain. To learn more about different methods of creating your own 3D models of realistic objects and how to bring them into Cesium ion, check out our next lesson: **Add 3D Models to Your Cesium Story**