ArcGIS Enterprise Map Viewer Beta

THE SCIENCE OF WHERE

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Install or upgrade Map Viewer Beta on ArcGIS Enterprise

Map Viewer Beta is available as an optional, additional installation on top of your ArcGIS Enterprise 10.8.1 or 10.9 deployment. Once installed, Map Viewer Beta is available in the portal along with the current Map Viewer. Administrators can turn Map Viewer Beta on or off to make it available across the organization.

Map Viewer Beta can also be upgraded.

Install Map Viewer Beta

When you install Map Viewer Beta for the first time, ensure your environment is running a supported version of ArcGIS Enterprise—either 10.8.1 or 10.9.

Next, download the Map Viewer Beta file. Download the correct files for your ArcGIS Enterprise version and operating system.

Click a link below to download the latest installation files to your computer.

- Map Viewer Beta for ArcGIS Enterprise 10.8.1 on Windows
- Map Viewer Beta for ArcGIS Enterprise 10.8.1 on Linux
- Map Viewer Beta for ArcGIS Enterprise 10.9 on Windows
- Map Viewer Beta for ArcGIS Enterprise 10.9 on Linux

Run the installer on the machine (or machines) where the Portal for ArcGIS component of ArcGIS Enterprise is installed.

Note:
The installation takes approximately 15–20 minutes and automatically restarts your portal service, so you may want to run the installation during off hours if it is important for your portal to not have any interruptions.

Once Map Viewer Beta is installed, administrators can enable and disable it by browsing to **Organization** > **Settings** > **Map** in the portal.

Tip:
You can also search Map Viewer Beta under the **Settings** tab to find this option.

If you decide that you no longer want to offer Map Viewer Beta in ArcGIS Enterprise—even temporarily—you can disable it, and members will not be able to see options to open Map Viewer Beta.

Upgrade Map Viewer Beta

Multiple versions of Map Viewer Beta have been released for ArcGIS Enterprise 10.8.1. You can upgrade an older beta release to the current 10.8.1 beta release.

If you started using Map Viewer Beta at 10.8.1 and you upgrade ArcGIS Enterprise to 10.9, you must upgrade Map Viewer Beta to the 10.9 release. Or, if you do not want to use Map Viewer Beta with ArcGIS Enterprise 10.9, uninstall Map Viewer Beta before upgrading ArcGIS Enterprise.

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Upgrade a beta release on 10.8.1

To upgrade to the newest version of Map Viewer Beta on ArcGIS Enterprise 10.8.1, you must uninstall the previous version of Map Viewer Beta before you can install the newer version. Uninstall the previous version from each of the machines where Portal for ArcGIS is installed, and then install the new version of Map Viewer Beta. Any content created and saved in Map Viewer Beta will remain in your organization and will not be affected by uninstalling or upgrading.

Upgrade from 10.8.1 to 10.9

If you install Map Viewer Beta on an ArcGIS Enterprise 10.8.1 portal and upgrade ArcGIS Enterprise to 10.9, you can upgrade Map Viewer Beta to 10.9.

First, upgrade Portal for ArcGIS to 10.9 and then upgrade Map Viewer Beta to 10.9. To upgrade Map Viewer Beta, run the Map Viewer Beta 10.9 installer on the same machine (or machines) where Portal for ArcGIS 10.9 is installed.

If you used ArcGIS Enterprise Builder to install ArcGIS Enterprise, follow the steps to upgrade ArcGIS Enterprise Builder and then upgrade Map Viewer Beta.

Alternatively, you can uninstall Map Viewer Beta 10.8.1 before you upgrade Portal for ArcGIS or ArcGIS Enterprise Builder to 10.9 and then install Map Viewer Beta 10.9 on the portal machines in your deployment.

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Get started with Map Viewer Beta

Map Viewer Beta allows you to create interactive web maps that you can share with others. It features responsive mapping and real-time updates to the map as you work, inspiring creativity and experimentation with your data. Map Viewer Beta has an intuitive design that allows you to view and manage your content in one dedicated area and to customize and configure your map in another area. The following sections provide an overview of the new design and tools.

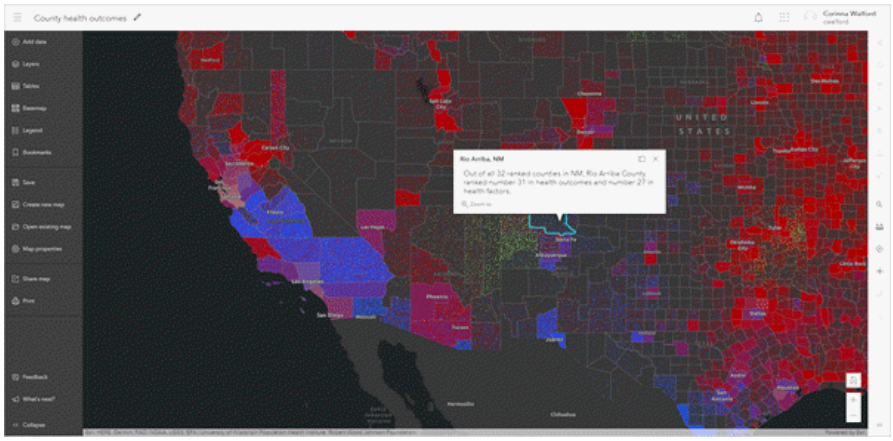
Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Author and explore maps

An ArcGIS web map is an interactive display of geographic information that you can use to tell stories and answer questions. Web maps contain a basemap, a set of data layers (many of which include interactive pop-ups with information about the data), an extent, a legend, and navigation tools to pan and zoom.

Use Map Viewer Beta to view, explore, and create web maps in ArcGIS Enterprise. Navigate the map to view different areas. Click features on the map to view pop-ups with more information about the data. Rotate the map to get a new perspective. Experiment with zoom levels to see which features and layers are visible at different scales.

Map Viewer Beta includes two vertical toolbars—the **Contents** (dark) toolbar and the **Settings** (light) toolbar. Use the arrow buttons at the bottom of each toolbar to expand or collapse them. The **Contents** toolbar allows you to manage the map contents and work with the map itself. Use the **Settings** toolbar to access tools and options for configuring and interacting with map layers and other components of your map. For more information about these toolbars, see the following sections.



Contents

Manage key components of the map using the **Contents** (dark) toolbar. For example, you can use the buttons on the **Contents** toolbar to change the basemap and add layers. Layers are the building blocks of a map. See what layers are on the map by clicking the **Layers** button.

Layers are drawn on the map in the same order in which they appear in the **Layers** pane. You can organize layers to draw in the order you like and hide or show individual layers. You can also click **Open** to expand a list of options for the layer and view the layer's properties.

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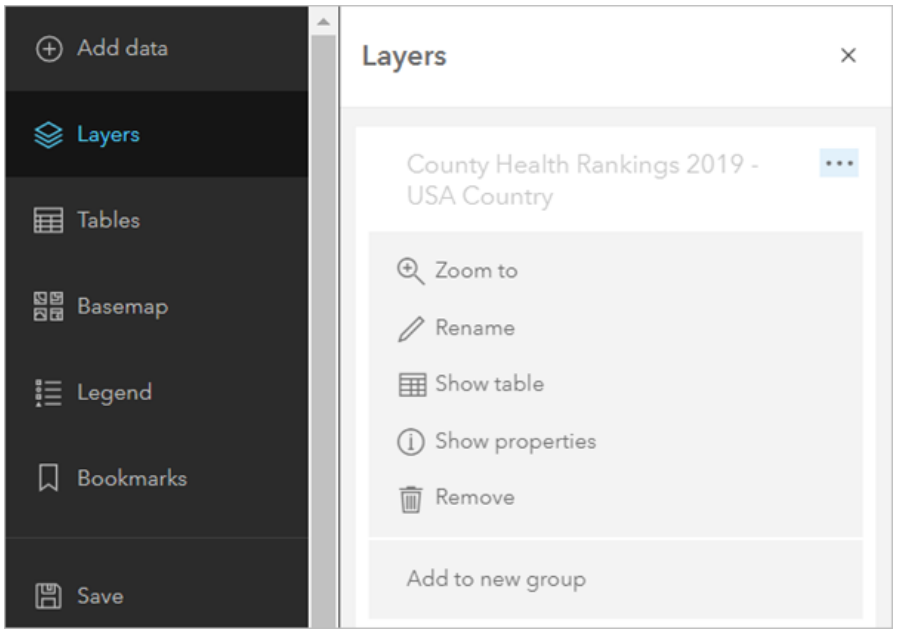
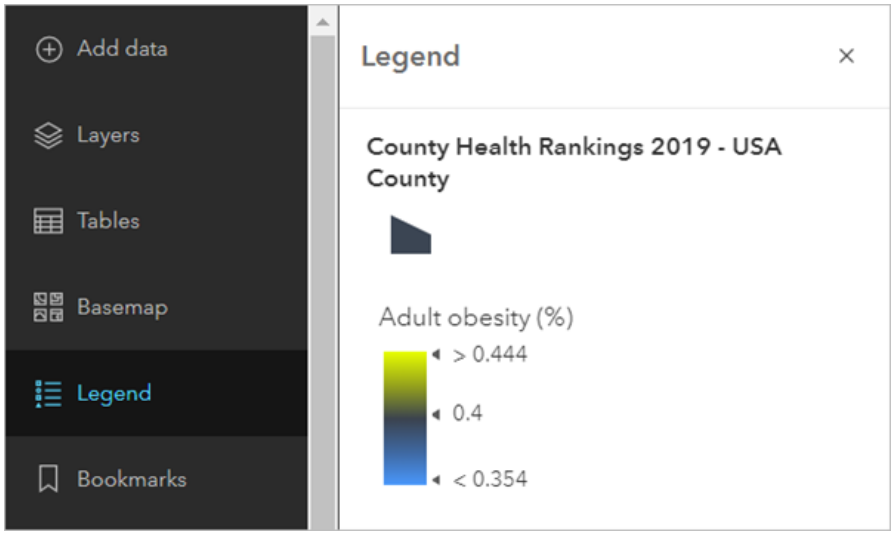


Some layers have symbology that appears in a legend. View the legend to help you understand how the data layer is represented on the map.



You can also use the **Contents** toolbar to perform actions like opening, saving, sharing, and printing your maps. Use the **Feedback** and **What's next?** buttons to participate in the Map Viewer Beta GeoNet community. You can submit feedback and learn what to expect in future updates.

Settings

Select individual layers in your map to access tools and options on the **Settings** (light) toolbar. You can configure pop-ups, filters, clustering, labels, and more. Your changes are instantly visible on the map, allowing you to experiment and explore different options.

Open the **Styles** pane to explore new smart mapping styles exclusive to Map Viewer Beta, such as dot density. You can try different symbols and color ramps.

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Some buttons on the **Settings** toolbar allow you to interact with and get new information from the map. You can search for locations, measure distance or area, view time-animated data, get directions, and find geographic coordinates.

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View maps

You can use Map Viewer Beta to create and explore a wide range of maps in ArcGIS Enterprise. The following is a quick reference for opening, viewing, and navigating maps in Map Viewer Beta.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Open Map Viewer Beta

To open Map Viewer Beta, do the following:

1. Sign in to your ArcGIS Enterprise portal.
2. Click the app launcher button .
   A grid of app icons appears.
3. Select the Map Viewer Beta icon.
   Map Viewer Beta opens in a new tab.

Find and open a map

To find and open an existing map in Map Viewer Beta, do the following:

1. Open Map Viewer Beta.
2. On the **Contents** (dark) toolbar, click **Open existing map**.
3. From the drop-down menu at the top of the pane that appears, choose where you want to search—for example, **My Content**, **My Organization**, or **ArcGIS Online**.
4. Do any of the following to find a map:
   - Type search terms in the search box. You can also use advanced search to narrow the search results.
   - Display map results in different ways using the view buttons (**Table** and **List**).
   - Click the **Sort** button to sort the map results and change the sort direction.
   - Click the **Filter** button to narrow the search results. For example, if you are searching for maps in an organization and content categories have been set up, you can use the **Categories** filter to narrow the results. Use the **Status** filter if you want the search to only return maps that have been marked as authoritative. The available filter options depend on where you are searching for maps, and whether and how you are signed in.

     Note:
     To limit search results based on the current map extent, select **Only show content within map area**. For example, if your map is zoomed to Nevada, USA, your search results are ordered and based on your map extent. Changing your map extent to Pennsylvania typically returns different results (depending on your keywords). All maps that overlap your current map extent (and match your keywords) are returned.

   - Click a map's title to see details about the map, including its description and terms of use. The map details pane appears. Click the **View full details** button to open the map's item page in a new tab.

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5. Click the **Open map** button ⊕ on the search result.

Tip:

You can also open items in Map Viewer Beta from the content page or item page.

From the **My Content** tab of the content page, browse to the item. Click **More options** ··· and choose **Open in Map Viewer Beta**. From an item page, click the drop-down arrow ⌄ next to the **Open in Map Viewer** button and choose **Open in Map Viewer Beta** from the drop-down menu.

Navigate the map

Use the following controls to navigate the map:

- To zoom, use the **Zoom in** button + or the **Zoom out** button −, the mouse and wheel button, or the arrow keys on the keyboard. To zoom in, you can also press the `Shift` key while dragging a box on the map.
- To zoom the map to its initial extent, click the **Default extent** button ⌂. You can also navigate the map to a predefined extent using a bookmark.
- To pan, use the mouse and wheel button or the arrow keys on your keyboard.
- To rotate a map, right-click and hold and drag the pointer. Click the **Reset compass orientation** button ▲ to return the map view to north.
- If you're using a Mac with OS X 10.6 or later, you can use multitouch gestures by dragging two fingers to pan and zoom the map. The default behavior is to pan. To zoom in or out, press and hold the `Shift` key. Dragging two fingers toward you zooms in; dragging two fingers away from you zooms out.

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View legend

A legend shows the meaning of the symbols used to represent features on the map. Legends consist of examples of the symbols on the map with labels containing explanatory text. Legends have patches that match the map symbols, which are often points, straight lines, or rectangles. The layer author may have customized the legend patches; for example, some areas are represented with patches of another shape, or rivers are drawn with a winding line rather than a straight line.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

To view a map's legend, do the following:

1. In Map Viewer Beta, find and open the map with the legend you want to view.
2. On the **Contents** (dark) toolbar, click **Legend**.
   The legend appears in a new pane and displays information about each layer that is visible at the current map scale. Not all layers contain legend information.

Hide a layer in the legend

Sometimes you do not want a layer to appear in the legend. For example, if your map focuses on unemployment rates for a county, you may want your legend to show only employment symbols and not street symbols and other reference data you've included in the map.

To hide a layer in the legend, do the following:

1. Find and open the map with the legend in which you want to hide a layer.
2. On the **Contents** (dark) toolbar, click **Layers**.
3. Browse to and select the layer you want to hide in the legend.
   The layer's **Properties** pane opens.
4. In the **Properties** pane, turn off the **Enable legend for this layer** toggle button.
5. On the **Contents** toolbar, click **Legend**.
   The layer is hidden in the legend. You can show it again by selecting the layer in the **Layers** pane, opening the **Properties** pane from the **Settings** (light) toolbar, and turning on the **Enable legend for this layer** toggle button.

Considerations for viewing a legend

Keep the following in mind when viewing a legend:

- Basemaps, image layers, map notes layers, and layers that are not accessible externally do not contain legend information.
- Legends for map layers may not match the legend in Map Viewer Beta. This typically happens when the legend in Map Viewer Beta is out of sync with the symbology in the layer. For example, the layer author has changed the symbology in the service, but Map Viewer Beta still displays the older symbology. Often, Map Viewer Beta displays the latest legend after 30 minutes. Layer authors may need to clear the REST cache of the map service to

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see the legend updates in Map Viewer Beta. The layer author can trigger an update to the legend by changing the layers, for example, by renaming a layer or reordering the layers.

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View pop-ups

Pop-ups bring to life the attributes associated with each feature layer in the map, such as hiking trails, land values, or unemployment rates. They can display attachments, images, charts, text, and can link to external web pages.

The default pop-up appearance for a layer—if the layer owner has not configured it for you—is a plain table of attributes and values. The layer owner can save a new configuration, which is why the pop-ups in your map can look good with no effort on your part.

Within a particular map, the map owner can reconfigure the pop-ups to their liking. Map authors define the list of visible and hidden fields and how the information is presented. For example, they might show a simple list of attributes, or provide a rich interactive experience using custom-formatted text, charts, and images.

To learn more about designing and configuring pop-ups, see Configure pop-ups.

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View time maps

If you see a time slider at the bottom of a map, that map includes one or more temporal layers, and you can play the map to see how the information changes over time. Using the slider controls, you can control the animation of the data with buttons to play and pause, go to the previous time period, and go to the next time period. You can configure time settings for a map to adjust playback speed, time intervals, and more.

1. In Map Viewer Beta, open the map containing the layer or add the layer directly.
2. Look for a time slider at the bottom of the map. If the time slider is not visible, the map does not contain any time-aware layers or the time-aware layers are not currently visible.
3. Click **Play** ▷ to begin animating the map.
4. Optionally, use the slider to manually adjust the time period that appears on the map. The date dynamically updates as you move the slider to display the selected time period.
5. Click **Pause** ▯▯ to pause the animation.
6. Click **Previous** ◁| to go back to the last data interval.
7. Click **Next** |▷ to advance to the next data interval.
8. Click **Time** 🕒 on the **Settings** (light) toolbar to hide the time slider.

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Search locations and features

One way to find a location or data in the map is to search for it. You could pan and zoom or read details in pop-ups until you found what you wanted, but using a search tool is often faster and more precise. For example, if you needed to find a particular storm drain that was recently reported as damaged and you only used a map to locate it, you'd have to zoom in to the area where you thought the drain was located and view details of each drain until you found the right one. Instead, you could use a search tool to locate the drain by its ID.

Map Viewer Beta includes an integrated search that combines resources in the map such as locators configured by your organization and searchable layers. When searching for a location, you can enter addresses, places, points of interest, street intersections, and longitude and latitude coordinates. When you search for a location or feature, suggestions are provided to help you find what you're looking for. By default, the integrated search combines the available resources in the map, but you can also choose to search using a single resource—for example, only the layer with the storm drains.

Your map is automatically zoomed to the selected search result, and a pop-up appears at the location.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Use search to find locations and features

To find locations and features using search, complete the following steps:

1. Open a new or existing map in Map Viewer Beta.
2. On the **Settings** (light) toolbar, click **Search**.
   The search box appears on the map.
3. Enter keywords into the search box. Keywords can include addresses, street intersections, places, points of interest, longitude and latitude coordinates, feature IDs, and so on.

   Note:
   As you type, similar recent searches or suggestions based on similar keywords appear. You will see suggestions for features from hosted feature layers, street addresses, street intersections, points of interest by name or by type (for example, Riverside Hospital or hospital), place-names (such as city, county, province, and so on), and postal codes. Locators may or may not have suggestions enabled.

4. If you see an arrow in the search box, you can search multiple resources. These resources can include locators configured by your organization and layers the map author configured as searchable to find features in the map. To search in one of these available resources, click the arrow and choose the desired option. By default, you can search all available resources.
5. Press `Enter` after you finish typing your keywords into the search box, or select one of the suggestions.
   The map zooms to the location of the search result and a pop-up with information for the search result opens.
6. If the location isn't what you wanted, click the **Show more results** link in the pop-up and select a different result from the list.

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Get directions

Note:
If the **Directions** button is not present in Map Viewer Beta, your portal is not configured to view directions. Contact your administrator if you need this functionality.

If the portal is configured to use the ArcGIS Online network utility service, credits are consumed when the initial route is generated, destinations are modified, or the order is optimized.

As a member of an organization with privileges to perform network analysis, you can use Map Viewer Beta to get a set of turn-by-turn driving or walking directions. You can set the travel mode, add multiple destinations, and choose a departure time.

1. Verify that you are signed in to your organization with privileges to perform network analysis and open Map Viewer Beta.
2. On the **Settings** (light) toolbar, click the **Directions** button .
3. In the **Directions** window, specify an origin and one or more destinations as follows:

   Tip:
   If a drop-down arrow is available next to the destination fields, you have multiple search resources for finding destinations. These resources can include locators configured by the organization and layers enabled by the map author to find features on the map. By default, the search is performed on all available resources. Alternatively, select the resources you want to use to find destinations for your route.

   a. Enter the origin and destination.
      Once you add a destination, the route draws on the map.

      Tip:
      To use your current location as the origin or a destination, click in the field and click **Use current location** from the drop-down menu.

   b. To add destinations, click **Add stop** and enter an address in the new field.
      Your route can include up to 49 destinations (and an origin).
4. Do any of the following to make changes to your destinations:
   - To switch the origin and destination, click **Reverse Directions** .
   - To reorder a route with an origin and two or more destinations, drag the address fields using the **Reorder** handles .
   - If your route includes an origin and two or more destinations and you want to remove any of them, click **Remove stop** next to the one you want to remove.
5. Optionally, choose a travel mode from the drop-down menu to change it. The default travel mode is set by your organization. The following options are available:

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- **Driving Distance**—Models the movement of cars and other similar small automobiles, such as pickup trucks, and finds solutions that optimize travel distance. Travel obeys one-way roads, avoids illegal turns, and follows other rules that are specific to cars.
- **Rural Driving Time**—Models the movement of cars and other similar small automobiles, such as pickup trucks, and finds solutions that optimize travel time. Travel obeys one-way roads, avoids illegal turns, and follows other rules that are specific to cars but does not discourage travel on unpaved roads. Dynamic travel speeds based on traffic are used where it is available when you specify a start time.
- **Rural Driving Distance**—Models the movement of cars and other similar small automobiles, such as pickup trucks, and finds solutions that optimize travel distance. Travel obeys one-way roads, avoids illegal turns, and follows other rules that are specific to cars but does not discourage travel on unpaved roads.
- **Trucking Time**—Models basic truck travel by preferring designated truck routes and finds solutions that optimize travel time. Routes must obey one-way roads, avoid illegal turns, and so on.
- **Trucking Distance**—Models basic truck travel by preferring designated truck routes and finds solutions that optimize travel distance. Routes must obey one-way roads, avoid illegal turns, and so on.
- **Walking Time**—Follows paths and roads that allow pedestrian traffic and finds solutions that optimize travel time. The walking speed is set to 5 kilometers per hour.
- **Walking Distance**—Follows paths and roads that allow pedestrian traffic and finds solutions that optimize travel distance.

6. Choose a departure option as follows:
   a. Choose either **Leave now** or **Depart by** from the drop-down menu.
   b. If you choose **Depart by**, select a departure time and date.

   The departure time is set in the time zone of the place of departure. The time zone of the destination is used for the arrival and departure times displayed in the turn-by-turn directions.

Use your route

Once you get directions, you can use your route in the following ways:

- To see a specific segment of the route, click the segment in the **Directions** pane. The map centers on that segment.
- To print the route map, on the **Contents** (dark) toolbar, click **Print** (the route map does not include driving directions).

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Measure

When using a map, you can measure a linear distance or an area (and its perimeter) using the Measurement tool. Map Viewer Beta calculates the shortest measurement (using the ellipsoid-based geodesic calculation) even if the data uses a projected coordinate system. You can change the default units you see by updating your profile. You can also change the units of measure while performing a measurement.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Make a measurement

To measure distance or area, do the following:

1. Open the map in Map Viewer Beta.
2. On the **Settings** (light) toolbar, click **Measurement**.
   The measurement toolbar appears on the map.
3. On the measurement toolbar, choose a measurement option as follows:
   - To measure a distance on the map, click **Measure distance**. Click the map where you want to start your measurement, and click once for every vertex of the line you want to measure. Double-click to complete the line.
   - To measure an area (and its perimeter) on the map, click **Measure area**. Click the map where you want to start your measurement, and click once for every vertex of the area you want to measure. Double-click to complete the area.

   Your results appear at the bottom of the measurement window.
4. Do any of the following as needed:
   - From the **Unit** drop-down menu, select a different unit of measure. The measurement results are converted to the newly selected unit.
   - To clear the measurement, click **Clear measurement**.
   - To start another measurement, click **New measurement**.

Move the map while measuring

You may find that what you want to measure is not completely contained within the current extent of the map; for example, a street or parcel may extend beyond what is visible. To move the map as you're measuring, while still maintaining the cumulative total distance or area, hold down the mouse button (or the equivalent navigation) and drag the map in the desired direction. Double-click to complete your measurement.

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Find location coordinates

You can find the geographic coordinates of any point on a map using the Location tool. Map Viewer Beta displays geographic coordinates in several common formats. You can change the location units used to display the coordinates, capture a point to see its exact coordinates, input coordinates and go to that location on the map, and format how each location unit displays. You can also display coordinates using different units by adding multiple conversions.

You can display coordinates in any of the following notations:

- Longitude and Latitude (XY)
- Decimal Degrees (DD)
- Degrees Minutes Seconds (DMS)
- Degrees Decimal Minutes (DDM)
- Military Grid Reference System (MGRS)
- Universal Transverse Mercator (UTM)
- US National Grid (USNG)
- BASEMAP—Display x,y coordinates in the coordinate system and units used by the current basemap.

Find a location

To find a location of the map, complete the following steps:

1. In Map Viewer Beta, open the map you want to view.
2. On the **Settings** (light) toolbar, click the **Location** button .
3. Move your pointer to a location on the map and view the coordinates in the **Location** window.
4. Click the **Expand** button to reveal additional location options.
5. Optionally, click the **Add conversion** drop-down menu and choose additional coordinate systems to display the location.

   Tip:

   Click the box displaying the coordinate system in the **Location** window to quickly convert your location to another coordinate system.

6. Do any of the following as needed:
   - If you have multiple coordinate system conversions and want to remove one or more from the list, click **Remove conversion** next to the coordinate system you want to remove.
   - To input coordinates, click the **Input coordinate** button , choose a coordinate system, and provide the coordinates.
   - To capture a location, click the **Capture** button to switch to capture mode. When in capture mode, you can click anywhere on the map to capture the coordinates of that location.

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- To format how your coordinates appear, click the **Format settings** button . From the drop-down menu, choose the coordinate system, and change the formatting in the field below it. To reset any formatting, click **Reset to default** .

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Print maps

Use the Print tool to export a printer friendly page of your map in various formats including PDF, PNG, JPEG, GIF, EPS, and SVG. You can print the map layout or only the map.

Print a map layout

The map layout includes the document title, a scale bar, and the date. To create a printer friendly map layout, complete the following steps:

1. In Map Viewer Beta, open the map you want to print.
2. On the **Contents** (dark) toolbar, click **Print**.
3. Click the **Layout** tab.
4. Enter a title for your document.
5. From the **Page setup** drop-down menu, choose a layout.

   Note:
   If your organization has configured custom print layouts, you can click **Select template** and choose from your organization's print layouts.

6. From the **File format** drop-down menu, choose the file type to export.
   File types include PDF, PNG8, PNG32, JPG, AIX, GIF, EPS, SVG, and SVGZ.
7. Optionally, click **Advanced options** and do any of the following:
   - Set the map scale.
   - Include author and copyright information.
   - Change the DPI of the map.
   - Include a map legend.
8. Click **Export** to create the map file.

Exported files are listed in the **Print** pane. You can click the file to download it and print it using the program of your choice. Closing the **Print** pane does not remove your exported files. Exported files are removed when you close the map or refresh your browser.

Print only the map

To create a printer friendly document of only the map, complete the following steps:

1. In Map Viewer Beta, open the map you want to print.
2. On the **Contents** (dark) toolbar, click **Print**.
3. Click the **Map only** tab.
4. Enter a file name for your document.
5. From the **File format** drop-down menu, choose the file type to export.
   File types include PDF, PNG8, PNG32, JPG, AIX, GIF, EPS, SVG, and SVGZ.
6. Enter a width and height for the map document.

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7. Optionally, click **Advanced options** and do any of the following:
   - Set the map scale.
   - Change the DPI of the map.
   - Include a basemap attribution.
8. Click **Export** to create the map file.

Exported files are listed in the **Print** pane. You can click the file to download it and print it using the program of your choice. Closing the **Print** pane does not remove your exported files. Exported files are removed when you close the map or refresh your browser.

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Create maps

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Get started creating maps

1. Choose a basemap

Maps can do meaningful things, such as tell a story, present an idea, or showcase a situation. To create a meaningful map, you should choose a basemap and layers that have good cartography, work at multiple scales, draw quickly, contain informative and accurate information, target a specific audience, and include visible legends if the symbology is not intuitive.

Learn more about basemaps

2. Add layers

Layers are the contents of your story. They can include topics related to people, Earth, life, imagery, and more. You can add one layer or multiple layers. By bringing together multiple layers, or data sources, into a single map, you can tell a more interesting story. Be careful, however, that you don't add too many things to one map and make it hard to read. Search for and add layers from your content or organization, or browse layers from ArcGIS Online and ArcGIS Living Atlas.

Learn more about layers

3. Change styles

Geographic data can be styled in many different ways on a map. When you want to change the way your layer is styled, you are presented with different ways to style the data along with options for each choice. The choices you see change based on the data. You can choose different symbols to represent the features you've added to your map. For example, water bodies and streams might be shown with a single, constant blue color, while roads might be symbolized based on road class. Additionally, use smart mapping styles such as dot density to find more meaning in your data.

Learn more about styles

4. Configure pop-ups

Pop-ups bring to life the attributes associated with each feature layer in the map, such as hiking trails, land values, or unemployment rates. They can show attachments, images, charts, and text, and they can link to external web pages. The default pop-up appearance for a layer is a list of attributes and values. You can configure the pop-ups to define the list of visible and hidden fields and how that information is presented. For example, you can show a list of attributes or provide an interactive experience for visualizing and comparing features in a particular layer by providing custom-formatted text, images, and charts. Additionally, you can use Arcade expressions to further customize how your pop-ups display.

5. Save the map

After you create your map, you can save the map as an item on the **My Content** tab of the content page.

Now that you have a basic map, you can refine it by setting map properties, adding bookmarks, and setting transparency. Depending on your sharing privileges, you can share the map with groups, your organization, and the public.

Next steps

Try the quick-start tutorial to learn more about creating maps.

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Choose a basemap

A basemap provides a background of geographical context for the content you want to display on a map. When you create a map, you can choose which basemap to use. You can change the basemap of the current map at any time using the basemap gallery or your own layer as the basemap. You can also create a basemap containing multiple layers from the **Basemap** pane in Map Viewer Beta.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Select a basemap from the gallery

The basemap gallery includes a variety of choices, including topography, imagery, and streets.

1. Verify that you are signed in and, if you want to save changes, that you have privileges to create content.
2. Open Map Viewer Beta and click **Basemap** on the **Contents** (dark) toolbar.
   The **Basemap** pane appears.
3. Click the thumbnail of the basemap you want to use in your map.
4. View information about a basemap in the gallery by first adding it to your map.
   a. At the top of the **Basemap** pane, click **Current Basemap**.
   b. On any of the listed reference layers or base layers, click **More Options** and choose **Properties**.
      The **Properties** pane opens from the light toolbar. This pane displays the layer's symbology, transparency, blending, and visible range settings.
   c. Some layers also have an **Information** section in the **Properties** pane with a **More details** link. Click the link to see the layer's item page and description.
5. Click **Save** to save the new basemap to the map.

Use your own basemap

In addition to the basemap gallery, you can also use your own basemap by searching for an existing layer or adding a layer from the web. Several layer types are supported. When you use your own basemap, your map uses the coordinate system of that basemap instead of Web Mercator, the coordinate system of Esri basemaps.

1. Verify that you are signed in, open the map in Map Viewer Beta, and click **Layers** on the **Contents** (dark) toolbar.
   The **Layers** pane opens.
2. In the **Layers** pane, click **Add layer**.
3. To search for an existing layer to use as a basemap, choose where you want to search for the layer from the drop-down menu at the top of the pane.
   a. Do any of the following to find the layer you want:
      - Type search terms in the search box. You can also use advanced search to help narrow your search results.
      - Display layer results in different ways using the view buttons (**Table** and **List**).
      - Click the **Sort** button to sort the layer results and change the sort direction as needed.

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b. Click the title of the layer you want as your basemap.

c. At the bottom of the pane, click **Use as Basemap**.

d. To close the search pane, click the **Back** button.

Create a multilayer basemap

You can create a multilayer basemap using operational layers in your map. Operational layers are the layers that you interact with and that draw on top of the basemap. By moving certain types of operational layers into the basemap layer group in the **Layers** pane, you can create a basemap with multiple layers. This is useful when you have two or more layers that you want to use together as a background, or context, for your map—for example, if you have a base imagery layer and want to add a map image layer that includes reference labels on top of it, or if you want to combine multiple base layers, such as a hillshade imagery layer with a topographic map image layer.

Once you have moved layers to the basemap layer group, you can move them up or down in the group, specify a layer to be used as a reference layer, and move a layer out of the basemap layer group. After creating your multilayer basemap, you can rename any of the layers, including the basemap layer group title, and save the basemap. Multilayer basemaps can be used in your organization's basemap gallery.

1. Verify that you are signed in and, if you want to save changes, that you have privileges to create content.
2. Do one of the following in Map Viewer Beta:
   - Create a map and add the layers you want to include in your basemap.
   - Open an existing map containing layers you want to include in your basemap.
3. Browse to a layer that you want to move to the basemap and do the following:
   a. Modify the layer as needed. Depending on the layer type, modifications can include configuring pop-ups, changing the style, and so on. Any changes you make persist when you move the layer to the basemap.
   b. Click **More Options** ⋯ and click **Move to basemap**.
4. Repeat the previous step for each layer you want to include in the multilayer basemap.

   Tip:

   You can also bypass the operational **Layers** pane and add layers directly to the basemap. To do so, select **Basemap** from the **Contents** toolbar and click **Current basemap** at the top of the Basemap gallery. Click **Add layer** in the **Base** section of the pane to browse layers and add them directly to your basemap.

5. To do any of the following, begin by selecting **Basemap** from the **Contents** toolbar and clicking **Current basemap** at the top of the Basemap gallery:
   - To specify a layer in the basemap to be used as a reference layer (for example, a layer containing place-names), drag it into the **Reference** section of the **Basemap** pane. Reference layers always draw on top of all other layers on the map and appear at the top of the basemap layer group in the **Contents** pane. They typically include labels indicating transportation routes, place-names, and other reference features. If you change your mind later, drag the layer back into the **Base** section to make it a nonreference basemap layer.
   - To move a layer out of the basemap, browse to the layer and click **More Options** ⋯. Select **Move from basemap**. The layer is moved out of the basemap layer group and back into the **Layers** pane.

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Note:
The bottommost basemap layer can only be moved out of the basemap layer group if the basemap layer group contains another basemap layer of the same type. For example, you can move a tile basemap layer only if the basemap layer group contains another tile layer.

- To move a layer up or down in the basemap layer group, drag the layer to the desired position.

Note:
Basemap layers in a multilayer basemap can only be reordered if the basemap layer group contains at least two tile layers, two nontile layers, or two reference layers. Reference layers cannot be moved below nonreference layers.

- To rename the basemap layer group title or any of the basemap layers, select **Rename**. Type a new name in the text box and click **OK**.

6. Click **Save** to save your multilayer basemap. You must be signed in and have privileges to create content to save the basemap.

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Add layers to maps

Layers are the contents of a map. They include a wide range of information about people, the earth, life, and so on, and are composed of imagery, tiles, features, and more. To add layers to a map, sign in to your organization and open Map Viewer Beta. You can search for layers in your content or organization, or public layers in ArcGIS Online. You can also add layers from the web.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

What layers can you add?

You can search for and add the following layers to a map in Map Viewer Beta:

- Layers you own or that have been shared with you
- Layers from ArcGIS Living Atlas of the World
- Public layers on ArcGIS Online
- Table layers

You can also add supported layer types from a URL.

When you save a map, any items you've added are saved with it, and the map appears on your **My Content** tab on the **Content** page.

Search for layers

By default, layers are searched from **My Content**, but you can also search for layers from the following:

- **My Favorites**—Includes layers you've marked as favorites.
- **My Groups**—Includes layers from groups you belong to.
- **My Organization**—Includes layers from the organization.
- **Living Atlas**—Includes selected layers from ArcGIS Living Atlas of the World, including traffic, demographics, and land-cover layers. This option is only available if ArcGIS Enterprise is configured to use ArcGIS Living Atlas of the World content.
- **ArcGIS Online**—Includes public content from ArcGIS Online.

To search for layers, complete the following steps:

1. On the **Contents** (dark) toolbar, do one of the following:
   - To search for spatial layers, click **Add data** and click **Browse layers**.
   - To search for table layers, click **Tables** and click **Add table**.
     The **Add table** pane is pre-filtered to show only table layers.
2. Choose where you want to search for layers: **My Content**, **My Favorites**, **My Groups**, **My Organization**, **Living Atlas**, or **ArcGIS Online**.
   If you are not signed in, only public layers from the portal and public ArcGIS Online layers are available.
3. Do any of the following to help you find layers:
   - Type search terms in the search box. You can also use advanced search to help narrow the search results.

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- Display layer results in different ways using the view buttons (**Table** and **List**).
- Click the **Sort** button to sort the layer results and change the sort direction.
- Click the **Filter** button to narrow the search results. For example, if you are searching for layers in an organization and content categories have been set up, you can use the **Categories** filter to narrow the results. Use the **Status** filter to only return layers that have been marked as authoritative. The filter options available depend on where you are searching for layers, and whether and how you are signed in.

  Note:
  To limit search results based on the current map extent, select **Only show content within map area**. For example, if the map is zoomed to Nevada, USA, your search results are ordered and based on the map extent. Changing the map extent to Pennsylvania typically returns different results (depending on your keywords). All layers that overlap your current map extent (and match your keywords) are returned.

- To see important details about a layer, click its title. In the layer details pane, click the **View full item details** button to open the item page to see more information about the layer.

4. To add a layer to the map, click the **Add** button on the layer result.
5. Repeat the previous step for each layer you want to add.

   Tip:
   You can add any of the layer results to your favorites by clicking **Add to Favorites** under the layer thumbnail in the layer details pane. You can view your complete list of favorites by choosing **My Favorites** when searching for layers in Map Viewer Beta or on the **My Favorites** tab on the Content page.

   Once you've added layers to Map Viewer, you can configure each individual layer. For example, you can change the style, create labels, and configure pop-ups on each layer you added to the map.
6. To remove a layer from the map, click the **Remove** button on the layer in the search result list.
7. To close the search pane, click the **Back** button.

Add layers from the web

You can add supported layer types from a URL. To add a layer from a URL, complete the following steps:

1. On the **Contents** (dark) toolbar, click **Add data**. From the options that appear, choose the layer type you want to add:
   - **Web service**—a map, image, or feature resource that is located on an ArcGIS Server site.
   - **GeoRSS**—a live web feed that includes geographic features and locations.
   - **KML**—an XML-based file format used to represent geographic features.
   - **CSV**—a web-based, comma-separated values text file that typically includes location information.
2. Copy the layer's URL into the **URL** text box.
3. Do one of the following:
   - Click **Add to map** to add the data as a layer.
   - Click **Use as basemap** to use the data as a basemap layer. This option is available for **Web service** layers only.

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The data is added to the map and now appears in the **Layers** pane or the **Basemap** pane.

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Apply styles

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Apply styles

Maps allow you to visualize your data in a variety of ways, which can make them a powerful tool. For example, population data for countries can be visualized as a sequence of colors, such as from light to dark, or as proportional circles, such as from small to large. This flexibility allows you to tell different stories and discover hidden patterns depending on how the data is presented. However, because mapmaking is so flexible, you must make decisions when there isn't always a single best answer.

With Map Viewer Beta, you can explore different styling options using smart mapping defaults. When you style map layers in Map Viewer Beta, the nature of your data determines the styling options that appear by default in the Styles pane. You can then experiment with color ramps, line weights, transparency, symbols, and other graphic elements, and see your choices reflected immediately on the map.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Apply a style

The styling options provided for a layer are based on the type of data you are mapping. The available options depend on whether your layer is composed of point, line, or polygon features. For example, heat map styling options are available for a layer composed of points, but not for line or polygon layers. The options are also influenced by the type of data associated with your features. For example, a point feature may only have location information such as geographic coordinates but may also have categorical information such as tree species or numerical information such as air temperature. Not every styling option can be used for every type of data. By analyzing these and other characteristics of your data, Map Viewer Beta presents the best styling options.

Note:
You can create a custom expression written in the Arcade scripting language to use for styling instead of styling a feature layer using explicit attributes in your layer. This is available for most styles. For example, you can create an Arcade expression to derive a yearly sales figure for individual sales territories by summing the value of monthly sales fields. The yearly sales figures can then be represented as different-sized symbols on the map. You can also create an Arcade expression or edit an existing Arcade expression directly in Map Viewer Beta. You can also use Arcade expressions when setting transparency for features or the rotation angle of symbols.

When you add a layer without any styling attached to it—for example, you add a hosted feature layer from its item page immediately after publishing—Map Viewer Beta displays the layer with default styling applied. If you add a layer with existing styling applied, Map Viewer Beta respects that styling. You can change the style of a supported layer at any time by clicking the **Styles** button on the **Settings** toolbar.

To apply a style or change the style of a layer, do the following:

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.
3. In the **Layers** pane, click the layer to select it.
4. On the **Settings** (light) toolbar, click the **Styles** button .

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5. In the **Styles** pane, do one of the following in the **Choose attributes** section:

   Note:
   You can skip this step if you want to show locations using a single symbol or map the locations of point features as a heat map.

   - To style an attribute in your layer, click **+ Field**, find and select the attribute, and click **Add**.
   - To use a custom Arcade expression to style your layer, click **+ Expression** and create your expression in the editor window, including providing a name.
     You can also use existing expressions to build new expressions; however, some variables may not work across profiles—for example, an expression created for pop-ups may not work for styles. To use an existing expression, select it from the **Existing** tab in the editor window.

   Tip:
   If you need help with any of the Arcade functions, click the **Information** button next to the function in the editor window to see reference information about the function.

6. To style additional attributes or create more expressions, repeat the previous step.
   The style currently applied to the layer is selected in the **Try a drawing style** section.
7. Optionally, select a different style. Choose a style based on what you want to show.
   For help choosing a style, see the Styles quick reference table.

   Note:
   Only the options that apply to your data appear. For example, if you only know the location of a feature, you can only use a single symbol or heat map, not size or color. However, if you have categorical or numeric information attached to those locations, smart mapping presents additional styling options.

   Some styles also include a **Theme** option. Themes allow you to experiment with different views of your data. The availability of themes depends on the smart mapping style you choose.

8. Optionally, click **Style options** on the style card to customize the look of the layer.

   Tip:
   With Color and Size, Types and Size, Predominant Category and Size, Relationship and Size, Types and Size (age), and Color and Size (age), you apply styling options to each attribute. For example, if you choose the **Types and Size** style, choose options for Types (unique symbols) and Counts and Amounts (size).

9. In the **Style options** pane, click **Done** when you are finished customizing your style, or click **Cancel** to return to the **Styles** pane without saving your choices.
10. In the **Styles** pane, click **Done**.
11. On the **Contents** (dark) toolbar, click the **Save** button to save your styling changes to the map.

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Styles quick reference

When you style a layer using smart mapping, the available styling options depend on the type of features you are mapping (point, line, or polygon) as well as the type of data attributes (numbers, categories, dates, and so on) and number of attributes you choose. Each style helps you tell a slightly different story and answer different questions with your data.

The following table provides a quick reference of the smart mapping styling options available for different types of data and some of the key questions you can answer using each style:

Data type	Questions that smart mapping can answer	Available smart mapping style
Location only Examples: restaurant locations, coffee shop distribution	• Where are the features located? • How are they distributed geographically?	• Location (single symbol) • Heat map (point features only)
One numeric attribute Examples: cropland in use, largest urban areas, high- and low-traffic areas	• How do the features compare to each other based on numeric values? • Where are the highest and lowest values? • Which features are above and below a specific attribute value?	• Color and Size • Counts and Amounts (color) • Counts and Amounts (Size)
Two numeric attributes Examples: number and rate of single-parent households, global population change, smoking and excessive drinking	• Where are the highest and lowest values? • How are the numeric attributes related? • What is the relationship between numeric totals and the rate or ratio? • Are there any outliers? • Which features have high values or low values for both attributes? • Which features have low values for one attribute and high values for the other attribute? • Where is the relationship pattern the strongest or weakest for each attribute?	• Color and Size • Compare A to B • Relationship

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Data type	Questions that smart mapping can answer	Available smart mapping style
Three numeric attributes Example: obesity, diabetes, and physical inactivity	• How are the numeric attributes related? • Which features have high values or low values for both attributes? • Which features have low values for one attribute and high values for the other attribute? • Where is the relationship pattern the strongest or weakest for each attribute?	• Relationship and Size
One or more numeric attributes (counts or amounts) with the same unit of measurement Examples: distribution of different types of crime, distribution of unsheltered versus sheltered homeless people	• How is the data distributed? • How does the distribution of one attribute compare to other attributes?	• Dot Density
Two to ten related numeric attributes with the same unit of measurement Examples: highest per capita personal income per year, predominant crop harvest by U.S. county and which counties have the highest and lowest total crop yields	• Which attribute has the highest value compared to other related attributes for each feature? Which has the lowest value? • How much higher is the highest attribute value compared to other related attributes? • What is the sum of the attributes for each feature and how does it compare to the other features?	• Predominant Category • Predominant Category and Size
One category/type attribute Example: city rail lines	• How is the data distributed or summarized by category?	• Types (unique symbols)
One category/type and one numeric attribute Example: annual average of daily traffic on Florida roads by district	• Where are the highest and lowest values? • How is the data distributed by category?	• Types and Size

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Data type	Questions that smart mapping can answer	Available smart mapping style
One date/time attribute Examples: street inspections by date, furniture sales by date, old and recent home sales, age of code violation complaint to compliance date, buildings by build year	• Where are older features and where are newer ones? • Which features have dates that are before or after a key date? • Which features have a higher age (length of time between two dates) and which have a lower age? • What's the distribution of features by time period?	• Continuous Timeline (color) • Continuous Timeline (size) • Age (color) • Age (size) • Discrete Time Periods (categories)
Two date/time attributes Example: relationship between age of code violation (how long between complaint and compliance) and how recently the violations occurred	• Where are older features and where are newer ones? • Which features have dates that are before or after a key date? • Which features have a higher age (length of time between two dates) and which have a lower age? • What is the relationship between the age of features and how old or new they are?	• Color (age) and Size • Color and Size (age)
One date/time attribute and one numeric attribute Example: length of time since migrants went missing and locations where migrants were found dead	• Which features have a higher age (length of time between two dates) and which have a lower age? • What is the relationship between a feature's age and a numeric attribute value?	• Color (age) and Size • Color and Size (age)
One date/time attribute and one category/type attribute Example: credit card payments by card type and length of time since payment	• How is the data distributed by category? • Which features have a higher age (length of time between two dates) and which have a lower age? • What is the relationship between the age of a feature and its category?	• Types and Size (age)

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Style location

Map Viewer Beta allows you to explore your data in different ways through a variety of smart mapping styles. When you style map layers in Map Viewer Beta, the nature of your data determines the default styling options. You can experiment with color ramps, line weights, transparency, symbols, and other graphic elements, and see your choices reflected immediately on the map.

To see where your features are located and how they are distributed geographically, use the **Location (single symbol)** style. If you are mapping point features, you can also use the **Heat map** style to see the location and distribution of features.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Location (single symbol)

Drawing your data using a single symbol gives you a sense of how features are distributed—whether they're clustered or dispersed—and may reveal hidden patterns. For example, when mapping a list of restaurant locations, you would likely see that the restaurants are clustered together in a business district.

To style location data using a single symbol, do the following:

1. Follow the first four steps of Apply a style.
2. In the **Styles** pane, click the **Location (single symbol)** style if necessary and click **Style options**.
3. Do any of the following:
   - To change the symbol, click the symbol under **Symbol style** and specify the symbol settings. For more information, see Use style options.
   - To change the transparency for the overall layer, click the symbol under **Symbol style**, and in the **Fill transparency** section, drag the slider to the left (less transparent) or the right (more transparent).
   - To adjust the transparency of locations per feature, click **Transparency by attribute** in the **Style options** pane and specify the transparency settings. You can only use this option if you have numeric or date data associated with your locations. For example, if your layer contains income data, you can adjust the transparency of each location proportional to its income.
   - If you are mapping point symbols that have numeric information attached to the points—for example, the direction the wind is blowing—click **Rotation by attribute** and specify the rotation settings.
4. In the **Styles** pane, click **Done**.

Heat map

You can use heat maps when mapping the location of point features. Heat maps are useful when many of the points on the map are close together or overlapping, making it difficult to distinguish between features. They are effective for displaying layers that contain a large number of points. For example, you can use a heat map to clearly show clusters of Starbucks coffee shops in Manhattan, New York.

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Heat maps use the points in the layer to calculate and display the relative density of points on the map as smoothly varying sets of colors ranging from cool (low density of points) to hot (many points). Avoid heat maps if you have only a few point features; instead, map the actual points.

Note:
If your data contains numeric attribute data, the heat map can weight this data to calculate the optimal display. Choose an attribute field with numeric data to take advantage of weighted features. Strings and other nonnumeric data are not weighted. The attribute field name appears in the heat map options pane when it is being used for weighting.

To use a heat map to style point data, do the following:

1. Follow the first four steps of Apply a style.
2. In the **Styles** pane, click the **Heat Map** style and click **Style options**.
3. Do any of the following:
   - To choose a different color ramp, click the ramp under **Symbol style** and choose a ramp. For more information, see Use style options. You can also click **Reverse ramp colors** to change the direction of the color ramp.
   - To change how the colors are applied to the density surface, adjust the position of the two handles on the color ramp slider.
   - To make the clusters larger and smoother or smaller and more distinct, adjust the **Area of influence** slider.
4. In the **Style options** pane, click **Done** when you are finished customizing your style or click **Cancel** to go back to the **Styles** pane without saving your choices.
5. In the **Styles** pane, click **Done**.

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Style categories

Map Viewer Beta allows you to explore your data in different ways through a variety of smart mapping styles. When you style map layers in Map Viewer Beta, the nature of your data determines the default styling options. You can experiment with color ramps, line weights, transparency, symbols, and other graphic elements, and see your choices reflected immediately on the map.

To see how your data is distributed by category, use the **Types (unique symbols)** style or the **Types and Size** style.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Types (unique symbols)

Use unique symbols to show different types of things (categorical data), not counts or numeric measurements. For example, you can use different colors to represent rail lines in the city.

Note:
There is an absolute limit of 200 unique values, although only 10 colors are used, so the same color may represent multiple categories. This means that unique symbols work best with 2 to 10 categories of things—for example, restaurant types, tree species, and political parties.

To style your data by type using unique symbols, do the following:

1. Follow the first four steps of Apply a style.
2. In the **Styles** pane, click the **Types (unique symbols)** style if necessary and click **Style options**.

   Tip:
   To show time-based categories on your map, try the Discrete Time Periods (Categories) style.

3. Do any of the following:
   - To change all the map symbols at once, click the symbol under **Symbol style** and specify the symbol options. For more information, see Use style options.
   - To customize any of the categories individually, click the colored symbol next to each category in the list. Depending on whether your data consists of points, lines, or areas, you see appropriate styling options for each type of symbol. For example, if your data consists of points, you can change the symbol shape, fill color, and outline.
   - To reorder the categories, drag a category up or down in the list.
   - For best visualization, include fewer than 10 categories in your layer; more than 10 are difficult to distinguish by color alone. If you include more than 10, only the 10 with the highest counts are shown. The remaining are automatically grouped into the **Other** category. If the counts of your features can't be determined, the first 9 categories are listed individually in alphabetical order, and the rest are grouped in the **Other** category. To ungroup the observations one at a time, drag them out of the **Other** list and into the main list, or click **Move**

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value out. To ungroup all of the observations at the same time, click **Move all values out**. To hide features in the **Other** category, uncheck the box. To show them, keep the box checked.

- To adjust the transparency applied to an individual category, click the color chip next to the category name. To adjust the transparency of unique locations per feature, click **Transparency by attribute** and specify the transparency settings. You can only use this option if you have numeric data associated with your locations. For example, if your layer contains restaurant sales data, you can style your data according to the type of restaurant and adjust the transparency of each category proportional to its annual sales.
- If you are mapping point symbols, you can rotate symbols based on a numeric attribute. For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It is best to choose a different shape. To rotate symbols, click **Rotation by attribute** and specify the rotation settings.

4. Click **Done** when you are finished customizing your style, or click **Cancel** to go back to the **Styles** pane without saving your choices.

Types and Size

This style allows you to represent your data using different sizes and categories by color. Choose a text or numeric field for unique values and a numeric field for size values, and adjust each attribute's map symbol settings as needed. For example, use this style to show a count attribute, such as the annual average of daily traffic on Florida roads, and use a unique color for each value found in another field, such as the district.

To style two attributes using unique values and size, do the following:

1. Follow the first five steps of Apply a style.
2. Choose a second attribute field or expression.
3. Click the **Types and Size** style and click **Style options**.
4. Select and apply options to Types (unique symbols) (first attribute) and Counts and Amounts (size) (second attribute).
5. Click **Done** when you are finished customizing your style, or click **Cancel** to go back to the **Styles** pane without saving your choices.

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Style numbers

Map Viewer Beta allows you to explore your data in different ways through a variety of smart mapping styles. When you style map layers in Map Viewer Beta, the nature of your data determines the default styling options. You can experiment with color ramps, line weights, transparency, symbols, and other graphic elements, and see your choices reflected immediately on the map.

The styling options described below are available for visualizing features according to numeric values in your data.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Counts and Amounts (color)

If you have numeric data, you can distinguish features using graduated colors to reflect a count or an amount. Different kinds of color ramps can be used—for example, a simple light-to-dark color ramp is good for showing low-to-high data values such as age, income, or ratio. Color ramps can be applied to points, lines, and polygons. For example, you can use a light-to-dark color ramp to represent the ratio of cropland area to general land area from low to high by county.

To style counts and amounts using color, do the following:

1. Follow the first five steps of Apply a style.
2. In the **Styles** pane, click the **Counts and Amounts (color)** style if necessary and click **Style options**.
3. Do any of the following:
   - Choose a theme for the color ramp. A number of color themes are available. Each color theme can tell a different story by matching colors to data in different ways.
   - If your data isn't already normalized or standardized, choose an attribute field from the **Divided by** drop-down menu to turn your raw data into rates or percentages. Examples of normalized data include x per capita, y per square kilometer, or a ratio of x to y. Raw counts, by comparison, are better visualized with colors after they are standardized.
   - To choose a different color ramp or to change other graphic parameters such as stroke weights and colors, click the color ramp under **Symbol style** and specify the color ramp settings. For more information, see Use style options.
   - To invert, or flip, the colors in the color ramp, in the **Style options** pane, click the **Invert color ramp** button ↑↓ .
   - To change how the color ramp is applied to the data, adjust the bounding handles along the color ramp. You can either drag the handle or click the number next to the handle and type a value. Experiment with the position of the handles and use the histogram and calculated average $\bar{x}$ to understand the distribution of the data to fine-tune the message of the map.

     Tip:
     To enlarge the details in the histogram, click the **Magnify color ramp** button 🔍. To return to the original slider positions at any time, click the **Reset slider positions** button ⮌.

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- To draw locations with missing data on the map, turn on the **Show features with no value** toggle button and optionally specify a style and label to represent those values.
- To hide the color ramp in the legend, turn off the **Include in legend** toggle button.
- To further generalize your map, turn on the **Classify data** toggle button and choose the classification method and the number of classes, or if you're using standard deviation, choose the interval. You can also click the individual color chips in the classification legend to manually edit the symbols and labels for the classes in the map legend.
- To adjust the transparency of counts and amounts per feature, click **Transparency by attribute**, turn on the **Set transparency based on attribute values** toggle button, and specify the transparency settings. You can only use this option if you have numeric or date data associated with your locations. For example, if your layer contains population data, you can adjust the transparency of each location proportional to its population.
- If you are mapping point symbols, you can rotate symbols based on a second numeric attribute. For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It is best to choose a different shape. To rotate symbols, click **Rotation by attribute** and specify the rotation settings.

4. Click **Done** when you are finished customizing your style, or click **Cancel** to return to the **Styles** pane without saving your choices.

Counts and Amounts (size)

This map style uses an orderable sequence of sizes to represent your numeric data or ranked categories. Points, lines, and areas can all be drawn using this approach. Polygon features are displayed as proportional points over polygons. These proportional symbol maps use an intuitive logic in which larger symbols equate to larger numbers. Adjust the size of the symbols to clarify the story you're telling. For example, you can use proportional symbols to show the total population of cities.

To style counts and amounts by size, do the following:

1. Follow the first five steps of Apply a style.
2. In the **Styles** pane, click the **Counts and Amounts (size)** style if necessary and click **Style options**.
3. Do any of the following:
   - Choose a theme for the symbols. Several themes are available. Each theme can tell a different story by matching different-sized symbols to data in different ways.
   - If your data isn't already normalized or standardized, choose an attribute field from the **Divided by** drop-down menu to turn your raw data into rates or percentages. Examples of normalized data include x per capita, y per square kilometer, or a ratio of x to y. Raw counts, by comparison, are better visualized with colors after they are standardized.
   - To change the styling of your proportional symbols (color, stroke, and opacity), click the symbol under **Symbol style** and specify the settings. For more information, see Use style options.
   - To invert, or flip, the symbol size order, in the **Style options** pane, click the **Invert size ramp** button ↑↓.

   Note:
   By default, higher values are drawn with larger symbols and lower values are drawn with smaller symbols. Clicking the **Invert size ramp** button allows you to reverse this pattern.

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- To change how the proportional symbols are applied to the data, adjust the bounding handles along the histogram. You can either drag the handle or click the number next to the handle and type a value. All values above the upper handle are drawn with the same largest symbol. Values below the lower handle are displayed with the same smallest symbol. The remaining values are drawn with a proportional sequence of sizes between the two bounds. Experiment with the position of the handles and use the histogram to see the distribution of the data to fine-tune the message of the map.

  Tip:

  To enlarge the details in the histogram, click the **Magnify histogram** button . To return to the original slider positions at any time, click the **Reset slider positions** button .

- For **Size range**, keep the default size range or specify a custom range (in pixels) by adjusting the slider handles or clicking the default values and providing new values. To optimize the symbols for the current map zoom level and automatically adjust them at other zoom levels, keep the **Adjust size automatically** check box selected.
- If you are mapping data associated with polygons, click the symbol under **Symbol style** and adjust the fill and stroke properties of the polygons. For more information, see Use style options.

  Tip:

  By default, polygon feature symbols in the layer—for example, county boundaries—are shown on the map under the proportional symbols. To keep this setting, leave the **Show background symbol** toggle button turned on and optionally customize the symbol style for the background features, such as adjusting the transparency or changing the outline color. To hide the background symbols in the layer—for example, if you don't want to see county boundaries under the proportional symbols—turn off the **Show background symbol** toggle button.

- To draw locations with missing data on the map, turn on the **Show features with no value** toggle button and optionally specify a style and label to represent those values.
- To hide the size ramp in the legend, turn off the **Include in legend** toggle button.
- To further generalize your map, turn on the **Classify data** toggle button and choose the classification method and the number of classes, or if you're using standard deviation, choose the interval. You can also click the individual color chips in the classification legend to manually edit the symbols and labels for the classes in the map legend.

  Note:

  These options aren't available with the Color and Size, Types and Size, or Predominant Category and Size styles.

- To adjust the transparency of counts and amounts per feature, click **Transparency by attribute**, turn on the **Set transparency based on attribute values** toggle button, and specify the transparency settings. You can only use this option if you have numeric or date data associated with your locations. For example, if your layer contains population data, you can adjust the transparency of each location proportional to its population.

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- If you are mapping point symbols, you can rotate symbols based on a second numeric attribute. For example, the size of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It is best to choose a different shape. To rotate symbols, click **Rotation by attribute** and specify the rotation settings.

4. Click **Done** when you are finished customizing your style, or click **Cancel** to return to the **Styles** pane without saving your choices.

Dot Density

Use the Dot Density style to visualize the distribution of one numeric attribute or to compare multiple numeric attributes using different-colored dots. With this style, each dot represents a count of something or someone, such as citizens, sales, or crimes. Dot Density works well for layers with polygon features associated with counts or totals that share a common unit of measurement, such as people, houses, incident reports, total dollars, and more. For example, you can use this style to show the concentration of unsheltered homeless people compared to sheltered homeless people in a given city.

When you apply Dot Density styling to your layer, you select the quantity represented by each dot—for example, one dot represents 20 trees. You can also customize the legend and color ramp, and specify other settings to fine-tune the style.

1. Follow the first five steps of Apply a style.
2. Repeat the previous step to select additional numeric attributes. Each attribute should represent a distinct category related to the first attribute and should have the same unit of measure.
3. Click the **Dot Density** style and click **Style options**.
4. Do any of the following:
   - To choose a different color ramp for the layer or to apply transparency to the dots, click the color ramp under **Symbol style** and change the settings. To customize the color or transparency of any of the categories individually, click the colored symbol next to the category in the list. For more information, see Use style options.
   - To customize any of the dot category labels, click the label, type a new label, and press `Enter`.
   - To reorder the categories, drag a category up or down in the list.
5. In the **Dots represent** text box, specify what each dot represents—for example, people, trees, or houses.
6. For **Dot value**, use the slider to specify a value that each dot represents. To set a precise value, you can also click the dot value above the slider, type a value, and press `Enter`.
7. Do any of the following to fine-tune the dot display:
   - By default, polygon feature symbols in the layer—for example, county boundaries—are shown on the map under the dots. To keep this setting, leave the **Show background symbol** toggle button turned on and optionally customize the symbol style for the background features, such as adjusting the transparency or changing the outline color. To hide the feature symbols in the layer—for example, if you don't want to see county boundaries under the dots—turn off the **Show background symbol** toggle button.
   - By default, the dot value varies according to the map scale; zooming in on the map decreases the dot value and zooming out increases it. To keep the dot value the same regardless of map scale, turn off the **Vary dot value by scale** toggle button.

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- By default, when more than one category is present in an area, the colors representing those categories are blended for the area. To prevent blending of overlapping colors, turn off the **Blend overlapping colors** toggle button.

8. Click **Done** when you are finished customizing your style, or click **Cancel** to return to the **Styles** pane without saving your choices.

Color and Size

With this style, you choose one or two numeric attributes in your data and specify both the color and the size of point symbols on your map. This is a good style to use to show count information—for example, the number of female single-parent households—shaded by a rate, such as the rate of female single-parent households. The Color and Size style is also useful for mapping a single attribute in your data using different colors and proportional symbol pairs to show values that are above and below a key value—for example, where childhood obesity rates are above and below the national average.

Style one attribute

To style one attribute using color and size, do the following:

1. Follow the first five steps of Apply a style.
2. Click the **Color and Size** style and click **Style options**.
3. From the first drop-down menu, choose a theme. Each theme can tell a different story about your data. For example, choose the **Above and below** theme to show where values are above and below a given value, such as above- and below-average traffic levels.
4. Do any of the following:
   - If your data isn't already normalized or standardized, choose an attribute field from the **Divided by** drop-down menu to turn your raw data into rates or percentages. Examples of normalized data include x per capita, y per square kilometer, or a ratio of x to y. Raw counts, by comparison, are better visualized with colors after they are standardized.
   - If you chose **Above and below** for the theme, select a symbol pair from the **Symbol pair** drop-down menu to use different symbols such as up and down arrows for the above and below values. Alternatively, to use the same symbol in different colors for all values, select **Single symbol** and select a symbol—for example, squares. For **Color scheme**, select **Continuous** to apply a smooth and gradual color ramp, or **Binary** to group your data into two distinct colors.
   - To choose a different color ramp or to change other graphic parameters such as stroke weights and colors, click the color ramp under **Symbol style** and specify the color ramp settings. For more information, see Use style options.
   - To invert, or flip, the colors in the color ramp, in the **Style options** pane, click the **Invert color ramp** button ↑↓ .
   - To change how the color ramp and symbols are applied to the data, adjust the bounding handles along the histogram slider. You can either drag the handle or click the number next to the handle and type a value. Experiment with the position of the handles and use the histogram and calculated average $\bar{x}$ to understand the distribution of the data to fine-tune the message of the map.

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Tip:

To enlarge the details in the histogram, click the **Magnify color ramp** button. To return to the original slider positions at any time, click the **Reset slider positions** button.

- For **Size range**, keep the default size range or specify a custom range (in pixels) by adjusting the slider handles or clicking the default values and providing new values. To optimize the symbols for the current map zoom level and automatically adjust them at other zoom levels, keep the **Adjust size automatically** check box selected.
- If you are mapping data associated with polygons, click the symbol under **Symbol style** and adjust the fill and stroke properties of the polygons. For more information, see Use style options.

Tip:

By default, polygon feature symbols in the layer—for example, county boundaries—are shown on the map under the proportional symbols. To keep this setting, leave the **Show background symbol** toggle button turned on and optionally customize the symbol style for the background features, such as adjusting the transparency or changing the outline color. To hide the background symbols in the layer—for example, if you don't want to see county boundaries under the proportional symbols—turn off the **Show background symbol** toggle button.

- To draw locations with missing data on the map, turn on the **Show features with no value** toggle button and optionally specify a style and label to represent those values.
- To hide the color ramp in the legend, turn off the **Include in legend** toggle button.
- To adjust the transparency of counts and amounts per feature, click **Transparency by attribute**, turn on the **Set transparency based on attribute values** toggle button, and specify the transparency settings. You can only use this option if you have numeric or date data associated with your locations. For example, if your layer contains population data, you can adjust the transparency of each location proportional to its population.
- If you are mapping point symbols, you can rotate symbols based on a second numeric attribute. For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It is best to choose a different shape. To rotate symbols, click **Rotation by attribute** and specify the rotation settings.

5. Click **Done** when you are finished customizing your style, or click **Cancel** to return to the **Styles** pane without saving your choices.

Style two attributes

To style two attributes using color and size, do the following:

1. Follow the first five steps of Apply a style.
2. Repeat the previous step to select a second attribute or Arcade expression.

Tip:

The first attribute uses color and the second attribute uses different symbol sizes. Switch the order of the attributes by dragging the second attribute to the top of the attribute list.

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3. Click the **Color and Size** style and click **Style options**.
4. Define settings for Counts and Amounts (color) (first attribute) and Counts and Amounts (size) (second attribute).
5. Click **Done** when you are finished customizing your style, or click **Cancel** to return to the **Styles** pane without saving your choices.

Compare A to B

This style allows you to map the ratio between two numbers and express that relationship as a percentage, simple ratio, or overall percentage. For example, you can map the estimated population for 2025 as a percentage of the known population in 2015 to observe the trend of population shift.

To style ratios, do the following:

1. Follow the first five steps of Apply a style.
2. Repeat the previous step to select a second attribute or Arcade expression.
3. Click the **Compare A to B** style and click **Style options**.
4. Do any of the following:
   - To choose a different color ramp, or to change other graphic parameters such as stroke weights and colors, click the color ramp under **Symbol style** and specify the color ramp settings. For more information, see Use style options.
   - To invert, or flip, the colors in the color ramp, in the **Style options** pane, click the **Invert color ramp** button ↑↓.
   - To change labels for the legend and the histogram, select an option from the **Labels** drop-down menu. You can show the ratio of A to B, show A as a percentage of A and B, or show A as a percentage of B.
   - To center the histogram, click **Equal values** to center on equal values or click **Average values** to center on the average value.
   - To change how colors are applied to the data, adjust the bounding handles along the color ramp. You can either drag the handle or click the number next to the handle and type a value. Experiment with the position of the handles and use the histogram next to the color ramp to see the distribution of the data to fine-tune the message of the map.

     Tip:

     To enlarge the details in the histogram, click the **Magnify color ramp** button .

   - To draw locations with missing data on the map, turn on the **Show features with no value** toggle button and optionally specify a symbol style and label to represent those values.
   - To hide the color ramp in the legend, turn off the **Include in legend** toggle button.
   - If you are mapping point symbols, you can rotate symbols based on a second numeric attribute. For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It is best to choose a different shape. To rotate symbols, click **Rotation by attribute** and specify the rotation settings.

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5. Click **Done** when you are finished customizing your style, or click **Cancel** to return to the **Styles** pane without saving your choices.

Predominant category

This map style is useful if your layer contains multiple related attributes that you want to compare and show which attribute is predominant—that is, has the highest value—and the degree of its predominance compared to the other attributes in the layer. For example, in a layer that shows per capita personal income by United States county across a range of years, you can use this style to see which year had the highest per capita personal income in each county, and how much higher the predominant year's value is compared to the other years.

To use the Predominant category style, choose 2 to 10 numeric attributes with the same unit of measure (for example, United States dollars), each representing a distinct category (for example, 2006, 2007, 2008, and 2009) related to the subject of your map (for example, per capita personal income by county). Each attribute is drawn with a different color—for example, red for 2006 and blue for 2007—defined by the color ramp applied to the layer or by colors you apply to the individual attribute categories.

This style uses transparency to show the relative strength of the predominant attribute for each feature in the layer. The strength, or degree, of predominance is calculated as a percentage of the total value of all the attributes for a given feature. Generally, the higher the transparency (that is, the lighter the color) of a feature, the lower the strength of its predominant attribute compared to the total. In the per capita personal income example, this means that counties in which the predominant year is 2007 are drawn in different shades of blue to reflect the value of per capita personal income in 2007 as a percentage of the total per capita income value for all of the years.

To style features by predominant category, do the following:

1. Follow the first five steps of Apply a style.
2. Repeat the previous step to select up to nine more numeric attributes. Each attribute should represent a distinct category related to the first attribute and should have the same unit of measure.
3. Choose the **Predominant category** style and click **Style options**.
4. Do any of the following:
   - To choose a different color ramp or to change other graphic parameters, such as line width and outline pattern, click the color ramp under **Symbol style** and change the settings. For more information, see Use style options.
   - To customize the color of any of the categories individually, click the colored symbol next to the category in the list. Available options depend on whether your data consists of points, lines, or polygons. For example, if your data consists of points, you can change the shape, fill color, stroke, and size of the point symbol.
   - To customize any of the category labels, click the label, type a new label, and press `Enter`.
   - To reorder the categories, drag a category up or down in the list.
   - If you are mapping point symbols, you can rotate symbols based on a second numeric attribute. For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It is best to choose a different shape. To rotate symbols, click **Rotation by attribute** and specify the rotation settings.
   - To adjust the transparency per feature based on the relative strength of the predominant attribute, click **Transparency by predominant percentage**, ensure that the **Set transparency based on the predominant percentage** toggle button is turned on, and specify the transparency settings. Values reflect the relative

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strength of the predominant attribute as a percentage of the total value of all attributes. Features with a predominant percentage value above the upper handle value (high values) are drawn with the same transparency (darker or less transparent). Features with a predominant percentage value below the lower handle value (low values) are displayed with the same transparency (lighter or more transparent). The remaining features are drawn with continuous transparency between the two bounds. Experiment with the position of the handles and use the calculated average $\bar{x}$ to help you apply transparency effectively.

5. Click **Done** when you are finished customizing your style, or click **Cancel** to return to the **Styles** pane without saving your choices.

Predominant category and Size

Use this map style to compare multiple related attributes with the same unit of measure. As with the Predominant category style, this style uses color to show the predominant attribute and transparency to show the degree of its predominance compared to the other attributes. In addition, the Predominant category and Size style uses a third element—size—to represent the sum of the attributes for each feature. For example, in a layer that shows crop production by United States county, you can apply this style to see which crop—wheat, corn, soybeans, and so on—has the highest value in each county, and how much higher the predominant crop's value is compared to the other crops. In addition, by applying proportional symbols to the layer, you can compare total crop production across counties, visualizing the counties with high total crop production and those with a lower yield.

To use the Predominant category and Size style, choose 2 to 10 numeric attributes with the same unit of measure (for example, acres), each representing a distinct category (for example, wheat, cotton, or soybeans) related to the subject of your map (for example, crop production). Each attribute is drawn with a different color, defined by the color ramp applied to the layer or by colors you apply to the individual attribute categories. As with the Predominant category style, this style uses transparency to show the relative strength of the predominant attribute (for example, wheat) compared to the total. Generally, higher transparency equates to lower strength (that is, a lower percentage of the total value of all attributes). For the size component of this style, proportional symbols are used to show the sum of the categories (for example, total crop production by county); larger symbols represent larger numbers.

To style features by predominant category and size, do the following:

1. Follow the first five steps of Apply a style.
2. Repeat the previous step to select up to nine more numeric attributes. Each attribute should represent a distinct category related to the first attribute and should have the same unit of measure.
3. Choose the **Predominant category and Size** style and click **Style options**.
4. Define settings for Predominant category (attribute with the highest value) and Counts and Amounts (size) (sum of the categories).
5. Click **Done** when you are finished customizing your style, or click **Cancel** to return to the **Styles** pane without saving your choices.

Relationship

Using the Relationship smart mapping style, you can visualize the relationship between two numeric attributes in your point, line, or polygon feature data. For example, you can see whether there is a relationship between smoking rates and excessive drinking rates in the United States and in which areas of the country the relationship is most pronounced. Based on the bivariate choropleth mapping technique, the Relationship style applies a distinct

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graduated color ramp to the classified data in each attribute and combines the color ramps, allowing you to see where the attributes may be related. You can explore the relationship using different focus options—for example, you can focus on where both smoking and excessive drinking rates are high or change the focus to highlight areas where they are both low. You can also change the classification method and other settings.

1. Follow the first five steps of Apply a style.
2. Repeat the previous step to select a second numeric attribute or Arcade expression.
3. Choose the **Relationship** style and click **Style options**.
4. Optionally, choose a different color ramp or change other graphic parameters, such as line width and outline pattern. Click the color ramp under **Symbol style** and change the settings. For more information, see Use style options.
5. From the **Grid size** drop-down menu, choose the grid size to use for the legend.
   The higher the grid numbers, the more detailed the color gradient in the color ramp is applied.
6. From the **Method** drop-down menu, choose the classification method to classify the attribute values in your data. You can also click **Legend** to manually edit the symbols and labels for the classes in the map legend.
7. For each attribute you're mapping, expand the attribute and choose an option from the **Divided by** drop-down menu. To change how the data is distributed, adjust the bounding handles along the histogram by either dragging the handle or clicking the number next to the handle and typing a value. You can also use calculated average $\bar{x}$ to understand the distribution of the data and fine-tune the message of the map.
   If your data isn't normalized or standardized, you can turn your raw data into rates or percentages. Normalizing data is recommended when you're mapping relationships. Examples of normalized data include x per capita, y per square kilometer, or a ratio of x to y. Raw counts, by comparison, are better visualized with colors after they are standardized.
8. Optionally, draw locations with missing data on the map. Turn on the **Draw features with no values** toggle button and optionally specify a style and label to represent those values.
9. From the **Focus** drop-down menu, choose one of the following options to specify the aspect of the relationship to highlight:
   - **High values**—The legend focuses on features with high values for both attributes.
   - **High values/Low values**—The legend focuses on features with high values in the first attribute and low values in the second attribute.
   - **Low values/High values**—The legend focuses on features with low values in the first attribute and high values in the second attribute.
   - **Low values**—The legend focuses on features with low values for both attributes.
   - **None**—The legend has no specific focus.
10. Optionally, adjust the transparency of numeric values per feature. Click **Transparency by attribute**, turn on the **Set transparency based on attribute values** toggle button, and specify the transparency settings.
    You can only use this option if you have numeric or date data associated with your locations. For example, if your layer contains population data, you can adjust the transparency of each location proportional to its population.
11. Optionally, if you're mapping point symbols, click **Rotation by attribute** and specify the rotation settings to rotate symbols based on a second numeric field.

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For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It's best to choose a different shape.

12. Click **Done** when you are finished customizing your style, or click **Cancel** to return to the **Styles** pane without saving your choices.

Relationship and Size

Use the Relationship and Size map style to see the relationship between numeric attributes in your point, line, or polygon feature data. As with the Relationship style, this style applies distinct graduated color ramps to the classified data in two attributes and combines the color ramps to show relationships between the attributes. In addition, the Relationship and Size style uses different-sized symbols to represent a third numeric attribute you specify. For example, you can see whether there is a relationship between obesity rates and diabetes rates in the United States, and whether rates of physical inactivity are consistent with the pattern. Using this map style, you can also visually identify the areas of the country where the relationship is most and least pronounced. The Relationship and Size style allows you to explore relationships in your data using focus options, classification methods, and other options.

1. Follow the first five steps of Apply a style.
   The first attribute is styled using color to show its potential relationship with the second attribute.
2. Repeat the previous step to select a second and third numeric attribute or Arcade expression.
   The second attribute is styled using color to show its potential relationship with the first attribute. The third attribute is styled on the map using different-sized symbols.
3. Choose the **Relationship and Size** style and click **Style options**.
4. Define settings for Relationship (for the first two attributes) and Counts and Amounts (size) (for the third attribute).
5. Optionally, adjust the transparency of numeric values per feature. Click **Transparency by attribute**, turn on the **Set transparency based on attribute values** toggle button, and specify the transparency settings.
6. Optionally, if you're mapping point symbols, click **Rotation by attribute** and specify the rotation settings to rotate symbols based on a second numeric field.
   For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It's best to choose a different shape.
7. Click **Done** when you are finished customizing your style, or click **Cancel** to return to the **Styles** pane without saving your choices.

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Style time

Map Viewer Beta allows you to explore your data in different ways through a variety of smart mapping styles. When you style map layers in Map Viewer Beta, the nature of your data determines the default styling options. You can experiment with color ramps, line weights, transparency, symbols, and other graphic elements, and see your choices reflected immediately on the map.

Several styling options are available for visualizing features according to time and date values.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Continuous Timeline (color)

If your layer contains date values, you can use color to view your data sequentially from new to old or before and after a key date. For example, applying a color ramp to the date attribute in your streets feature layer can help you see which street segments in your city were inspected most recently and which ones are due to be inspected again.

To style dates using color to show a continuous timeline, do the following:

1. Follow the first five steps of Apply a style. Choose an attribute field that contains date values.
2. Click the **Continuous Timeline (color)** style and click **Style options**.
3. Do any of the following:
   - From the **Theme** drop-down menu, choose a theme for the color ramp. Each color theme option can tell a different story by matching colors to your data in different ways.
   - To choose a different color ramp, or to change other graphic parameters such as stroke weights and colors, click the color ramp under **Symbol style** and define the applicable settings. For more information, see Use style options.
   - To invert, or flip, the colors in the color ramp, in the **Style options** pane, click the **Invert color ramp** button ↑↓.
   - To change how the color ramp is applied to the data, adjust the bounding handles along the color ramp. You can either drag the handle or click the date next to the handle and type a new date. Experiment with the position of the handles and use the histogram and calculated average $\bar{x}$ to understand the distribution of the data to fine-tune the message of the map.

     Tip:
     To enlarge the details in the histogram, click the **Magnify slider** button. To go back to the original slider positions at any time, click the **Reset slider positions** button.

   - To draw locations with missing data on the map, turn on the **Show features with no values** toggle button and optionally specify a style and label to represent those values.
   - To hide the color ramp in the legend, turn off the **Include in legend** toggle button.
   - If you are mapping point symbols, you can rotate symbols based on a second numeric attribute. For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts

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humidity. The default symbol is round, which doesn't depict rotation well. It is best to choose a different shape. To rotate symbols, click **Rotation by attribute** and specify the rotation settings.

- To adjust the transparency per feature, click **Transparency by attribute**, turn on the **Set transparency based on attribute values** toggle button, and specify the transparency settings. You can only use this option if you have numeric or date data associated with your locations. For example, if your layer contains sales data, you can adjust the transparency of each store proportional to its revenue.

4. Click **Done** when you are finished customizing your style, or click **Cancel** to go back to the **Styles** pane without saving your choices.

Continuous Timeline (size)

If your layer contains date values, you can use a sequence of proportional symbols to view the dates sequentially on the map. For example, in a map showing furniture sales, you can show where recent sales are occurring using larger symbols to represent more recent sales and smaller symbols to represent less recent sales.

To style dates using proportional symbols to show a continuous timeline, do the following:

1. Follow the first five steps of Apply a style. Choose an attribute field that contains date values.
2. Click the **Continuous Timeline (size)** style and click **Style options**.
3. Do any of the following:
   - To change the styling of your proportional symbols (color, stroke, opacity), click the color ramp under **Symbol style** and define the applicable settings. For more information, see Use style options.
   - To invert the symbol size order, click the **Invert size ramp** button ↑↓.

     Note:
     By default, recent dates are drawn with larger symbols and less recent dates are drawn with smaller symbols. Clicking the **Invert size ramp** button allows you to reverse this pattern.

   - To change how the proportional symbols are applied to the data, adjust the bounding handles along the histogram. You can either drag the handle or click the date next to the handle and type a new date. All values above the upper handle are drawn with the same largest symbol. Values below the lower handle are displayed with the same smallest symbol. The remaining values are drawn with a proportional sequence of sizes between the two bounds. Experiment with the position of the handles and use the histogram to see the distribution of the data to fine-tune the message of the map.

     Tip:
     To enlarge the details in the histogram, click the **Magnify slider** button. To go back to the original slider positions at any time, click the **Reset slider positions** button.

   - For **Size range**, keep the default size range or specify a custom range (in pixels) by adjusting the slider handles or clicking the default values and entering new ones. To optimize the symbols for the current map zoom level and automatically adjust them at other zoom levels, keep the **Adjust size automatically** check box selected.
   - If you are mapping data associated with polygons, click the **Symbol style** box and adjust the fill and stroke properties of the polygons. For more information, see Use style options.

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Tip:

By default, polygon feature symbols in the layer—for example, county boundaries—are shown on the map under the proportional symbols. To keep this setting, leave the **Show background symbol** toggle button turned on and optionally customize the symbol style for the background features, such as adjusting the transparency or changing the outline color. To hide the background symbols in the layer—for example, if you don't want to see county boundaries under the proportional symbols—turn off the **Show background symbol** toggle button.

- To draw locations with missing data on the map, turn on the **Show features with no values** toggle button and optionally specify a style and label to represent those values.
- To hide the size ramp in the legend, turn off the **Include in legend** toggle button.
- To adjust the transparency per feature, click **Transparency by attribute**, turn on the **Set transparency based on attribute values** toggle button, and specify the transparency settings. You can only use this option if you have numeric or date data associated with your locations. For example, if your layer contains sales data, you can adjust the transparency of each store proportional to its revenue.
- If you are mapping point symbols, you can rotate symbols based on a numeric or date attribute. For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It is best to choose a different shape. To rotate symbols, click **Rotation by attribute** and specify the rotation settings.

4. Click **Done** when you are finished customizing your style, or click **Cancel** to go back to the **Styles** pane without saving your choices.

Age (color)

If your layer contains date or time values, you can use color to represent the age of features. Age reflects the length of time (in seconds, minutes, hours, days, months, or years) from a start date or time to an end date or time. For example, by applying this style to a parcels layer using the sale date attribute and the current date to specify the period of time, you can use color to show which homes in a neighborhood were sold more than 15 years ago and which were sold more recently.

To style dates using color to show age, do the following:

1. Follow the first five steps of Apply a style. Choose an attribute field that contains date values.
2. Click the **Age (color)** style and click **Style options**.
3. From the **To** drop-down menu, select an end date. Click the **Flip From and To** button ↑↓ if you want to switch the start date to the end date.
4. From the **Units** drop-down menu, select the time units.
5. Do any of the following:
   - From the **Theme** drop-down menu, choose a theme for the color ramp. Each color theme option can tell a different story by matching colors to your data in different ways.
   - To choose a different color ramp, or to change other graphic parameters such as stroke weights and colors, click the color ramp under **Symbol style** and define the appropriate settings. For more information, see Use style options.

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- To invert, or flip, the colors in the color ramp, in the **Style options** pane, click the **Invert color ramp** button ↑↓.
- To change how the color ramp is applied to the data, adjust the bounding handles along the color ramp. You can either drag the handle or click the number next to the handle and type a precise value. Experiment with the position of the handles and use the histogram and calculated average $\bar{x}$ to understand the distribution of the data to fine-tune the message of the map.

  Tip:

  To enlarge the details in the histogram, click the **Magnify slider** button. To go back to the original slider positions at any time, click the **Reset slider positions** button.

- To draw locations with missing data on the map, turn on the **Show features with no values** toggle button and optionally specify a style and label to represent those values.
- To hide the size ramp in the legend, turn off the **Include in legend** toggle button.
- To adjust the transparency per feature, click **Transparency by attribute**, turn on the **Set transparency based on attribute values** toggle button, and specify the transparency settings. You can only use this option if you have numeric or date data associated with your locations. For example, if your layer contains sales data, you can adjust the transparency of each store proportional to its revenue.
- If you are mapping point symbols, you can rotate symbols based on a numeric or date attribute. For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It is best to choose a different shape. To rotate symbols, click **Rotation by attribute** and specify the rotation settings.

6. Click **Done** when you are finished customizing your style, or click **Cancel** to go back to the **Styles** pane without saving your choices.

Age (size)

If your layer contains date or time values, you can use a sequence of proportional symbols to view the age of features. Age reflects the length of time (in seconds, minutes, hours, days, months, or years) from a start date or time to an end date or time. For example, to show the age of code violations from complaint date to compliance date, you can show violations that are less than 30 days old with a small symbol and use increasingly larger symbols for violations that are closer to 90 days old.

To style dates using proportional symbols to show age, do the following:

1. Follow the first five steps of Apply a style. Choose an attribute field that contains date values.
2. Click the **Age (size)** style and click **Style options**.
3. From the **To** drop-down menu, select an end date. Click the **Flip From and To** button ↑↓ if you want to switch the start date to the end date.
4. From the **Units** drop-down menu, select the time units.
5. Do any of the following:
   - To change the styling of your proportional symbols (color, stroke, opacity), click the symbol under **Symbol style** and change the settings. For more information, see Use style options.
   - To invert the symbol size order, click the **Invert size ramp** button ↑↓.

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Note:
Older features are drawn with larger symbols and younger features are drawn with smaller symbols by default. Inverting the symbol size order allows you to reverse this pattern.

- To change how the proportional symbols are applied to the data, adjust the bounding handles along the histogram. You can either drag the handle or click the date next to the handle and type a new date. All values above the upper handle are drawn with the same largest symbol. Values below the lower handle are displayed with the same smallest symbol. The remaining values are drawn with a proportional sequence of sizes between the two bounds. Experiment with the position of the handles and use the histogram to see the distribution of the data to fine-tune the message of the map.

  Tip:
  To enlarge the details in the histogram, click the **Magnify slider** button . To go back to the original slider positions at any time, click the **Reset slider positions** button .

- For **Size range**, keep the default size range or specify a custom range (in pixels) by adjusting the slider handles or clicking the default values and entering new ones. To optimize the symbols for the current map zoom level and automatically adjust them at other zoom levels, keep the **Adjust size automatically** check box selected.
- If you are mapping data associated with polygons, click the symbol under **Symbol style** and adjust the fill and stroke properties of the polygons. For more information, see Use style options.

  Tip:
  By default, polygon feature symbols in the layer—for example, census tract boundaries—are shown on the map under the proportional symbols. To keep this setting, leave the **Show background symbol** toggle button turned on and optionally customize the symbol style for the background features, such as adjusting the transparency or changing the outline color. To hide the background symbols in the layer—for example, if you don't want to see census tract boundaries under the proportional symbols—turn off the **Show background symbol** toggle button.

- To draw locations with missing data on the map, turn on the **Show features with no values** toggle button and optionally specify a style and label to represent those values.
- To hide the size ramp in the legend, turn off the **Include in legend** toggle button.
- To adjust the transparency per feature, click **Transparency by attribute**, turn on the **Set transparency based on attribute values** toggle button, and specify the transparency settings. You can only use this option if you have numeric or date data associated with your locations. For example, if your layer contains sales data, you can adjust the transparency of each store proportional to its revenue.
- If you are mapping point symbols, you can rotate symbols based on a numeric or date attribute. For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It is best to choose a different shape. To rotate symbols, click **Rotation by attribute** and specify the rotation settings.

6. Click **Done** when you are finished customizing your style, or click **Cancel** to go back to the **Styles** pane without saving your choices.

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Discrete Time Periods (categories)

If you have date or time attributes in your layer, you can show different categories representing discrete time periods. For example, you can use different colors to represent the year houses were built on a particular street.

To style your data using discrete time periods, do the following:

1. Follow the first five steps of Apply a style. For this mapping style, choose an attribute that contains date values.
2. Click **Discrete Time Periods (categories)** and click **Style options**.
3. Do any of the following:
   - To change all the map symbols at once, click the symbol under **Symbol style** and specify the symbol options, such as a different color ramp or fill transparency. For more information, see Use style options.
   - To customize categories individually, click the colored symbol next to each category in the list. Appropriate styling options for each kind of symbol are shown depending on whether the data is points, lines, or areas. For example, if your data is points, you can change the symbol shape, fill color, and outline.
   - To reorder the categories, drag a category up or down in the list.
   - For best visualization, include fewer than 10 categories in your layer. More than 10 are difficult to distinguish by color alone. If you include more than 10, only the 10 with the highest counts are shown. The remainder are automatically grouped into the **Other** category. If the counts of your features can't be determined, the first 9 categories are listed individually in alphabetical order, and the rest are grouped in the **Other** category. To ungroup these observations one at a time, drag them out of the **Other** list and into the main list, or click **Move value out**. To ungroup all of these observations at the same time, click **Move all values out**. To hide features in the **Other** category, uncheck the box. To show them, keep the box checked.
   - To adjust the transparency of discrete time periods per feature, click **Transparency by attribute** and specify the transparency settings. You can only use this option if you have numeric or date data associated with your locations. For example, if your layer contains restaurant sales data, you can style your data according to the type of restaurant and adjust the transparency of each category proportional to its annual sales.
   - If you are mapping point symbols, you can rotate symbols based on a numeric attribute. For example, the color of the points can depict air temperature at weather stations, while the rotation of the points depicts humidity. The default symbol is round, which doesn't depict rotation well. It is best to choose a different shape. To rotate symbols, click **Rotation by attribute** and specify the rotation settings.
4. Click **Done** when you are finished customizing your style, or click **Cancel** to go back to the **Styles** pane without saving your choices.

Color (age) and Size and Color and Size (age)

You can use these styles to show two attributes on your map using color and proportional symbols to see the age of features in your data. Age reflects the length of time (in seconds, minutes, hours, days, months, or years) from a start date or time to an end date or time. The **Color (age) and Size** or **Color and Size (age)** style can be used when you choose one date attribute and one numeric attribute or two date attributes. For example, in a map showing approximate locations where migrants went missing, you can use color to show when migrants went missing based on the date the incident was reported, and use proportional symbols to show how many migrants were rescued.

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One date and one numeric attribute

If you choose one date attribute and one numeric attribute, you can use color to show the age of features and use proportional symbols to represent the numeric attribute values. To do this, choose the date attribute as your first attribute and the numeric attribute as your second attribute, and select the **Color (age) and Size** style.

Alternatively, you can use proportional symbols to represent the age of features and use color to represent the numeric attributes by switching the order of the selected attributes and choosing the **Color and Size (age)** style.

To style one date attribute and one numeric attribute to show age, do the following:

1. Follow the first five steps of Apply a style.
   For mapping styles that show the age of features, choose at least one attribute that contains date values. The other attribute can contain date values or numeric values.
2. Repeat the previous step to select a second attribute or Arcade expression.
   The available age options depend on the order of attributes you chose and whether you chose one date attribute and one numeric attribute or two date attributes. To switch the order of the attributes, drag the second attribute to the top of the attribute list.
3. Click an age style and click **Style options**.
4. Apply the options for either of the following combinations: Age (color) and Counts and Amounts (size), or Counts and Amounts (color) and Age (size).

Two date attributes

If you choose two date attributes, you can use color or proportional symbols to show the age of features based on one of the date attributes. A continuous timeline based on the other date attribute is shown using the other rendering option (color or size). You can also choose the same date attribute twice to show both age and a continuous timeline based on that same attribute.

The **Color (age) and Size** style uses color to represent age based on the first date attribute and uses proportional symbols to represent dates as a continuous timeline based on the second date attribute.

The **Color and Size (age)** style does the opposite of **Color (age) and Size**, using color for the continuous timeline and proportional symbols for the age of features. For example, in a map showing city code violations, you can use color to show complaint dates as a continuous timeline from older complaints to newer complaints, and use larger symbols to emphasize code violations that have gone uncorrected for a significant amount of time.

To style two date attributes to show age, do the following:

1. Follow the first five steps of Apply a style.
   For mapping styles that show the age of features, choose at least one attribute that contains date values. The other attribute can contain date values or numeric values.
2. Repeat the previous step to select a second attribute or Arcade expression.
   The available age options depend on the order of attributes you chose and whether you chose one date attribute and one numeric attribute or two date attributes. To switch the order of the attributes, drag the second attribute to the top of the attribute list.
3. Click an age style and click **Style options**.
4. Apply options for either of the following combinations: Age (color) and Continuous Timeline (size) or Continuous Timeline (color) and Age (size).

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5. Click **Done** when you are finished customizing your style, or click **Cancel** to go back to the **Styles** pane without saving your choices.

Types and Size (age)

If your layer contains unique values (types) and date or time values, you can use color to show different categories, or types, of features based on the unique values, and proportional symbols to show the age of features. Age reflects the length of time (in seconds, minutes, hours, days, months, or years) from a start date or time to an end date or time. For example, in a map comparing Visa and American Express credit card payments, you can use a different color to represent each credit card company and different-sized symbols to show the length of time since payment.

To style two attributes using color to show different types and proportional symbols to show age, do the following:

1. Follow the first five steps of Apply a style. For this mapping style, choose an attribute that contains date values.
2. Repeat the previous step to select a second attribute. For this mapping style, choose an attribute that contains unique values.
3. Click the **Types and Size (age)** style and click **Style options**.
4. Apply options to Types (unique symbols) (first attribute) and Age (size) (second attribute).
5. Click **Done** when you are finished customizing your style, or click **Cancel** to go back to the **Styles** pane without saving your choices.

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Use style options

Map Viewer Beta allows you to explore data in different ways using a variety of smart mapping styles. When you style map layers in Map Viewer Beta, the nature of your data determines the default styling options. You can experiment with graphic elements such as symbols, color ramps, and line weights, as well as rotation, classification, and themes, and instantly see your choices reflected on the map.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Change symbol style

You can choose from a variety of symbol options when styling your layer. The available options depend on the smart mapping style applied to the layer and the type of features in your layer (point, line, or polygon).

To change the symbol style for all the features in your layer, do the following:

1. Follow the first four steps of Apply styles.
2. In the **Styles** pane, click the symbol or color ramp under **Symbol style**.
3. If your layer has point features, select a symbol set from the drop-down menu.
   - To use a basic shape such as a circle or square, select the shape, optionally adjust the size, and specify the fill and outline options (as described below).
   - To use an icon from one of the symbol sets, click the icon, optionally click **Invert background color** to optimize the symbol for dark backgrounds, and adjust the size as needed.
4. For **Fill**, select a color or specify a custom color using RGB or hex values. Optionally, use the **Fill transparency** slider to apply transparency to the fill. For styles that include a color ramp—for example, Heat Map and Counts and Amounts (color)—select a color ramp.
   You can filter the color ramp options by choosing a color ramp category from the drop-down menu—for example, **Best for dark backgrounds** or **Colorblind friendly**—and optionally click **Reverse ramp colors** to flip the ramp.

   Tip:
   To see the name of a color ramp, point to it.

5. Specify any of the following settings, depending on the feature type:
   - For point and polygon features, under **Outline**, select a color or specify a custom color using RGB or hex values. Optionally, use the **Outline transparency** slider to apply transparency to the outline. Under **Stroke**, optionally select a pattern for the outline and use the **Width** slider to change the outline width. For polygons, you can also check the **Adjust width automatically** check box to adjust the outline width automatically.

     Tip:
     To hide the outline, turn off the **Enable outline** toggle button.

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- For line features, select a color or specify a custom color using RGB or hex values. Optionally, use the **Line transparency** slider to apply transparency to the line. Under **Stroke**, optionally select a line pattern and add an arrow as needed. Use the **Width** slider to change the line width. You can also check the **Adjust width automatically** check box to adjust the line width.

6. If you are using the Dot Density style, select a color ramp (choose a color ramp category first if necessary), and optionally use the **Transparency** slider to apply transparency to the dots.
7. Click **Done** in the **Styles** pane to apply your changes to the layer.

Themes

Map Viewer Beta includes a variety of themes you can apply to reveal patterns in your data. Just as a camera may come with different lenses, each for a specific job, themes allow you to experiment with different views of your data. If you are styling numeric or date and time values in your data, you can choose from a selection of themes and apply the one that best suits your data and the story you want to tell. The availability of the following themes depends on the smart mapping style you choose:

- **High to Low**—Show the range of values from high to low. You define the threshold of what is considered high and low, so that you can draw attention to either the high values or the low values. The map varies the symbol based on how near its value is to your definition of high and low. This theme emphasizes the highest or lowest values in your data, depending on how you apply the color ramp (for polygons) or size (for points and lines). By default, this theme defines high as 1 standard deviation above the mean, and low as 1 standard deviation below the mean. You can adjust those settings based on your knowledge of the data, standards commonly used for the data, or other inspiration.

  For polygons, the color ramps for this style use only one or two colors, so the effect is that only the highest, or lowest, values draw attention. For points and lines, size is used to show variation from high to low, so larger-sized features tend to draw attention. Choose this theme when only the high values or only the low values need emphasis. For example, when mapping vaccination rates, you can use this theme to highlight the areas with the highest rates, to help identify areas that are doing well. Or, you can choose to emphasize the areas with the lowest rates, to help identify them as areas needing help.

  Tip:

  If you are starting to get familiar with your data, set the high value to the maximum value in the dataset, and set the low value to the minimum value, to show the overall spread or range of values in your data. While this may not produce the best map, it can help you see how your settings dramatically change the map's meaning.

- **Above and below**—Show values above and below a key value such as zero, the mean of the data, or another significant value you know about. You define the threshold of what is considered normal, as well as what is considered high and low, so that you can draw attention to values that are not considered normal—the high values and the low values.

  By default, this theme centers the map symbology around the statistical mean; high is defined as 1 standard deviation above the mean and low is defined as 1 standard deviation below the mean. For polygons, the best color ramps for this style use three colors, which results in high and low values drawing attention, while values nearer to normal are de-emphasized. For points and lines, size is used to show variation from the mean, which results in larger-sized features drawing attention on both the high side and the low side. You can also choose a value other than the statistical mean.

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Choose this theme to anchor your map around a meaningful value so that you can easily communicate which areas are above or below that meaningful value. For example, when mapping traffic levels, you can use this theme to emphasize areas with above- and below-average traffic.

- **Above**—Emphasize data above a key value such as zero, the mean of the data, or another significant value you know about. You define the threshold of what is considered normal, as well as what is considered high, to draw attention to values that are above a normal value. Values above the specified key value are styled with a stronger color or larger symbol, depending on the selected style. For example, if you are mapping retail store revenues, choose this theme to emphasize values that are above a key value, such as target revenue for electronics stores. Stores that are exceeding their target revenue goal appear larger on the map.
- **Below**—Emphasize data below a key value such as zero, the mean of the data, or another significant value you know about. You define the threshold of what is considered normal, as well as what is considered low, to draw attention to values that are below a normal value. Values below the specified key value are styled with a stronger color or larger symbol, depending on the selected style. Choose this theme to emphasize values that are below a key value, such as target revenue for electronics stores. Stores that are not meeting their target revenue goal appear larger on the map.
- **Centered on**—Center on and highlight a range of values that are near a key value. This theme emphasizes values within 1 standard deviation of the mean. It puts focus on features that are closest to that key value, and adds transparency to the rest of the values. Choose this theme to emphasize values that are near a key value, such as target losses from theft or damage for electronics stores. Stores that are slightly above or below their target loss goal are emphasized on the map.
- **Extremes**—Highlight the extreme values in the data. This theme helps to showcase the statistically extreme edges of the data by adding focus to the values that fall outside of the +-1 standard deviation. For example, you can use this theme to highlight the highest and lowest data values, such as the least expensive and most expensive housing in an area. Choose this theme to emphasize values that are oddly far away from a key value, such as target losses from theft or damage for electronics stores. Stores that are very far above or below their target loss goal are emphasized on the map.
- **New to old**—Show the range of dates from most recent to less recent. This theme emphasizes the most recent and oldest dates in your data, using dark to light or light to dark shades of the same color. Choose this theme to show the overall spread or range of date or time values in your data. For example, you can use this theme to show which street segments in your city were inspected most recently and which are due to be inspected again. Choose dates to define what is considered new and old.
- **Before and after**—Show dates before and after a given date or time. This theme centers the map around a specified date and maps all dates before this date in one color and all dates after this date in a different color. Choose this theme to anchor your map around a specific date. For example, you can use this theme to compare housing sales that occurred before and after a particular date.

Rotate by attribute

Rotate symbols by an angle, determined by a chosen field, when you want the symbol to reflect direction—for example, the direction the wind is blowing or a vehicle is traveling. When selecting a symbol style, choose one that points north so that the rotation matches the resulting direction of the symbol.

To rotate symbols, do the following:

1. Follow the first five steps of Apply a style.
2. In the **Styles** pane, select a style and click **Style options**.

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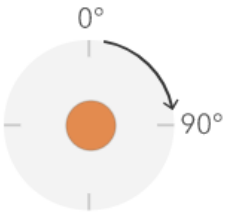
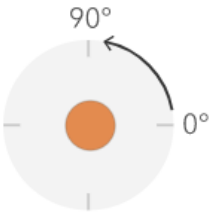
3. In the **Style options** pane, click **Rotation by attribute** and turn on the **Rotate symbols by data value** toggle button.
4. From the **Attribute** drop-down menu, select an attribute value to represent the rotation.

Tip:

You can use a custom attribute expression written in Arcade instead of an attribute field. Click the **Use expression** button </> and use the editor window to create your expression.

You can also use existing expressions to build new expressions; however, some variables may not work across profiles—for example, an expression created for pop-ups may not work for styles. To use an existing expression, select it from the **Existing** tab in the editor window.

5. Select one of the following:

Geographic	Angles are measured clockwise from the 12 o'clock position (geographic rotation). 
Arithmetic	Angles are measured counterclockwise from the 3 o'clock position (arithmetic rotation). **Note:** With arithmetic rotation, the symbol—assumed to be pointing north—is first rotated 90 degrees clockwise to align with 0 degrees before the counterclockwise rotation from the field attribute is applied. 

6. Click **Done** to apply your changes.

Classification methods

If you style a layer using color or size to show numeric data, the layer is styled by default using a continuous color ramp (see Counts and Amounts (color)) or a sequence of proportional symbols (see Counts and Amounts (size)). You can also classify your data—that is, divide it into classes or groups—and define the ranges and breaks for the classes. For example, you can group the ages of individuals into classes of 10 (0-9, 10-19, 20-29, and so on). Classification allows you to create a more generalized (less detailed) picture of your data to tell a specific story.

Depending on how much data you have in your layer, you can also choose the number of classes—1 through 10. The more data you have, the more classes you can have. The way in which you define the class ranges and

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breaks—the high and low values that bracket each class—determines which features fall into each class and what the layer looks like. By changing the classes using different classification methods, you can create different looking maps. Generally, the goal is to ensure that features with similar values are in the same class.

Equal interval

Equal interval classification divides the range of attribute values into subranges of equal size. With this classification method, you specify the number of intervals (or subranges), and the data is divided automatically. For example, if you specify three classes for an attribute field with values ranging from 0 to 300, three classes with ranges of 0–100, 101–200, and 201–300 are created.

Equal interval is best applied to familiar data ranges, such as percentages and temperature. This method emphasizes the amount of an attribute value relative to other values. For example, it can show that a store is part of the group of stores that make up the top one-third of all sales.

Natural breaks

Natural breaks (also known as Jenks Optimal) classes are based on natural groupings inherent in the data. Class breaks that best group similar values and maximize the differences between classes—for example, tree height in a national forest—are identified. The features are divided into classes whose boundaries are set where there are relatively big differences in the data values.

Because natural breaks classification places clustered values in the same class, this method is good for mapping data values that are not evenly distributed.

Standard deviation

Standard deviation classification shows how much a feature's attribute value varies from the mean. By emphasizing values above the mean and below the mean, standard deviation classification helps show which features are above or below an average value. Use this classification method when it is important to know how values relate to the mean, such as when looking at population density in a given area, or comparing foreclosure rates across the country. For greater detail in your map, you can change the class size from 1 standard deviation to .5 standard deviation.

Quantile

With quantile classification, each class contains an equal number of features—for example, 10 per class or 20 per class. There are no empty classes or classes with too few or too many values. Quantile classification is well suited to linearly (evenly) distributed data. If you need to have the same number of features or values in each class, use quantile classification.

Because features are grouped in equal numbers in each class, the resulting map can often be misleading. Similar features can be placed in adjacent classes, or features with widely different values can be put in the same class. You can minimize this distortion by increasing the number of classes.

Manual breaks

To define your own classes, you can manually add class breaks and set class ranges that are appropriate for your data. Alternatively, you can start with one of the standard classification methods and make adjustments as needed. There may already be certain standards or guidelines for mapping your data—for example, an agency might use standard classes or breaks for all maps, such as the Fujita scale (F-scale) used to classify tornado strength.

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Configure pop-ups

A map can show descriptive information about features configured to display in a pop-up. Pop-ups can bring focus to the attributes associated with each feature layer in the map, such as hiking trails, land values, or unemployment rates. They can contain attachments, images, charts, and text, and they can link to external web pages.

Tip:

For point layers with clustering enabled, you can also configure pop-ups for clusters.

The default pop-up appearance for a layer is a list of fields and values. As a map owner, you can reconfigure the pop-ups to define the list of visible and hidden fields, and define how the information is presented. You can also add additional content to give more meaning to the pop-up. For example, you can show a list of fields or provide an interactive experience using custom-formatted text and images.

Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Pop-up configuration options

The main decisions map authors make about pop-ups are what information is displayed in a pop-up and the best way to present it. For example, if you want to show the public where they can swim, fish, and boat along the Mississippi Gulf, you can configure pop-ups to show the address, type of access, and images of public access points. Even though the layer may have numerous other fields regarding the location and type of point, you may not want to show them in the pop-up, as the public wouldn't be interested and they detract from the more relevant information.

Depending on what you are trying to show in pop-ups for your feature layer, you can choose from a variety of configuration options.

Enable and remove pop-ups

Layers can contain a large amount of feature data, and maps can include several layers, so pop-ups tend to look better if you take the time to configure them with selected fields, formatting, media, and so on. By default, pop-ups are enabled on feature layers.

To remove pop-ups from a layer, complete the following steps:

1. Verify that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.
3. On the **Contents** (dark) toolbar, click **Layers** to open the **Layers** pane, and select the layer that contains the feature data you want to show in a pop-up.
4. On the **Settings** (light) toolbar, click **Configure pop-ups**, and turn off the **Enable pop-ups** toggle button.

   To enable pop-ups from a layer with pop-ups turned off, turn on the **Enable pop-ups** toggle button.

Configure pop-ups

To configure pop-ups, complete the following steps:

1. Verify that you are signed in and, if you want to save your changes, that you have privileges to create content.

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2. In Map Viewer Beta, open the map containing the layer or add the layer directly.
3. On the **Contents** (dark) toolbar, click **Layers** to open the **Layers** pane, and select the layer that contains the feature data you want to show in a pop-up.
4. On the **Settings** (light) toolbar, click **Configure pop-ups**.
5. Enter a title for the pop-up.
   a. Click { } to select fields from your data.

      Note:
      To display information derived from an Arcade expression in your pop-up title, add a new expression. The new expression appears in the list of fields.

   b. Optionally, enter static text instead of or in addition to your field values.

   For example, you want the title to show population by county. You can configure the title with a combination of static text and field values, such as typing `Population for`; inserting your data's field value of county names `[Cnty_name]`; typing the equal sign `=`; and inserting another field value that shows population, `[pop2010]`. This configures the title as follows:

   ```
   Population for [Cnty_name] = [pop2010]
   ```

   This gives you a title in which the field values are substituted into the title, for example, `Population for Clark County = 453099`.
6. Click **Fields**, rearrange and remove fields, and click **Select fields** to add fields to the list.
   You can configure the fields to better display your field names and values.
7. If your feature layer includes attachments, they are automatically added to your pop-up under attachments. Attachments are supported as a related table to a feature class in a feature service.
8. Optionally, click **Add content** and add media such as images, charts, or text to your pop-up.
9. To change the order of how the content appears, drag the items to rearrange the order.
10. On the **Contents** toolbar, click **Save** to save the pop-up changes to the map.

Configure fields

You can configure the field or fields you want to display by changing the display name and formatting any display properties.

1. On the **Settings**(light) toolbar, click **Configure fields**.
2. Select the field you want to configure.

   Tip:
   You can select multiple fields of the same type to configure their formatting at the same time.

   a. Change the display name of the field.
   b. For number fields (such as population), select the number of decimal places to display and whether to use a thousands separator.

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c. For date fields, select a date format from the **Date format** drop-down menu. To display both date and time for date fields, turn on the **Show time** toggle button and select a format for displaying time.

3. Click **Done**.

Use expressions

You can also use custom expressions written in the Arcade expression language when configuring pop-ups. Using expressions allows you to create and display new information from existing fields in the layer. For example, you can create an expression that converts values from feet to meters, or dynamically create a URL based on feature attributes. If an expression is already available for the layer—for example, for labeling or styling—you can copy and reuse it in your pop-up configuration.

You can create expressions in pop-ups or reuse existing expressions created for the layer.

1. Follow the first four steps in the Configure pop-ups section to open the **Configure pop-ups** pane for the layer you want to configure.
2. Click **Manage expressions**.
   The **Pop-up expressions** pane appears.
3. Click **+ Add expression** to open the editor window and create your expression.

   Tip:

   If you need help with any of the Arcade functions, click the **Information** button next to the function to see reference information about it.

4. In the editor, click **OK** when you're finished.

   Tip:

   Give your Arcade expression a meaningful title to make it easily identifiable in your list of fields.

   Your new expression is added to the **Pop-up expressions** list. You can edit it by selecting it from the list and making changes in the editor. To remove your expression, click **Remove expression** × next to the expression.

   If you used a list of field attributes in your pop-ups, your new expression is added to the **Fields** list, and you can change its formatting in the Configure fields pane.

5. On the **Contents** (dark) toolbar, click **Save** to save the pop-up changes to the map.

Add attachments

When a feature layer includes attachments in its data, the attachments are added to the layer's pop-up. Attachments are added as a gallery to your pop-up by default. Clicking attachments in a pop-up opens the attachment in a new browser tab. You can show your attachments as a list, or remove attachments from the pop-up.

1. Follow the first four steps in the Configure pop-ups section to open the **Configure pop-ups** pane for the layer you want to configure.
2. Click **Attachments**.

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3. To show attachments in a list, turn on the **Show as list** toggle button.
4. To remove attachments from the pop-up, click the **More options** button ··· and click **Delete**.
5. On the **Contents** (dark) toolbar, click **Save** to save the pop-up changes to the map.

Add images

You can include images in your pop-ups by providing a URL to an image (PNG, JPEG, or GIF). The images can include a title, caption, links to related websites, and alternative text.

Tip:

For the best display, create images that are 200 pixels wide by 150 pixels high. If your image is smaller than 200 by 150, a white border is visible in the window. If the image is larger, the web browser automatically rescales the image to 200 by 150 and it may appear warped.

When adding images to your pop-ups, you can seta refresh interval. This option allows the pop-up to refresh and display a frequently updated image at a specific interval (in minutes). For example, you can use this option to refresh images captured by a traffic camera.

1. Follow the first four steps in the Configure pop-ups section to open the **Configure pop-ups** pane for the layer you want to configure.
2. Click **+ Add content** and choose **Image**.
3. Provide the URL to the image.
   a. Click { } and select a field or expression from your data. Use this option if you want a unique image for each feature in your data.
   b. Optionally, provide the URL to an image stored on an external website, in ArcGIS Enterprise, or as an attachment within the layer's data. PNG, JPEG, and GIF images are supported. If the image is stored as an item in ArcGIS Enterprise, you must provide the URL copied from the **URL** field on the item page.
4. Click **Options** to reveal additional fields for the title, caption, link, and refresh interval.
5. Enter a title for the image.
   a. Click { } and select a field value or expression from your data. Use this option if you want a unique title for each feature in your data.
   b. Optionally, enter static text instead of or in addition to your field value.
   c. If you don't want a title with your image, leave the field blank.
6. Enter a caption. The caption appears below the title and above the image. It is useful for giving a short explanation of the image.
   a. Click { } and select a field or expression from your data. Use this option if you want a unique caption for each feature in your data.
   b. Optionally, enter static text instead of or in addition to your field values.
   c. If you don't want a caption with your image, leave the field blank.
7. Enter the URL of a related link. When the image is clicked, this URL opens in a new browser tab.
   a. Click { } and select a field or expression from your data. Use this option if you want a unique URL for each feature in your data.

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b. Optionally, enter the URL of a related link.

c. If you don't want a related link for your image, leave the field blank.

8. Enter alternative text for the image. Alternative text is hidden on the pop-up and is used by screen readers.
   a. Click { } and select a field or expression from your data. Use this option if you want a unique alternative text for each feature in your data.
   b. Optionally, enter static text instead of or in addition to your field values.
   c. If you don't want alternative text with your image, leave the field blank.
9. To set a refresh interval for the image, turn on the **Refresh interval** toggle button and enter a value in minutes in the text box.
   When the pop-up is displayed, the image is refreshed at the interval you specified.
10. On the **Contents** (dark) toolbar, click **Save** to save the pop-up changes to the map.

Add charts

You can add charts to graphically display the values of numeric attribute fields. You can add bar charts, line charts, and pie charts.

1. Follow the first four steps in the Configure pop-ups section to open the **Configure pop-ups** pane for the layer you want to configure.
2. Click **+ Add content** and choose **Chart**.
3. Choose the type of chart you want to show.
4. Enter a title for the chart.
   a. Click { } to select a field or expression from your data.
   b. Optionally, enter static text instead of or in addition to your field value.
   c. If you don't want a title with your chart, leave the field blank.
5. Enter a caption for the chart. The caption appears below the title and above the chart. It is useful for giving a short explanation of the data in the chart. You can include an indication of units for column, bar, or line charts in the chart description. A pie chart shows percentages when hovering over each segment.
   a. Click { } to select a field or expression from your data.
   b. Optionally, enter static text instead of or in addition to your field value.
   c. If you don't want a caption with your image, leave the field blank.
6. Enter alternative text for the chart. Alternative text is hidden on the pop-up and is used by screen readers.
   a. Click { } and select a field or expression from your data. Use this option if you want a unique alternative text for each feature in your data.
   b. Optionally, enter static text instead of or in addition to your field values.
   c. If you don't want alternative text with your chart, leave the field blank.
7. Click **Select fields** and select the fields to include in the chart.
8. To display a bar chart horizontally, choose **Horizontal orientation**.
9. Optionally, enable **Normalize** and select a normalization field.

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The values in this field are used to divide the value field to create ratios. Normalization ratios are useful when other factors influence the numerical values you are classifying and displaying. For example, population can be influenced by each county's size, so you can divide population by area to standardize the data. Data normalization is also useful for providing a meaningful comparison if the values in the fields do not use the same units of measurement.

10. On the **Contents** (dark) toolbar, click **Save** to save the pop-up changes to the map.

Add text

You can include plain text in your pop-ups to add additional context and information.

1. Follow the first four steps in the Configure pop-ups section to open the **Configure pop-ups** pane for the layer you want to configure.
2. Click **+ Add content** and choose **Text**.
3. Click the text field to open the text editor and enter your desired text.
   a. Type { and select a field or expression from your data. Use this option if you want unique text for each feature in your data.
   b. Optionally, enter plain text into the text editor.
   c. Use the text formatting tools to format your text.
4. Click **OK**.
5. On the **Contents** (dark) toolbar, click **Save** to save the pop-up changes to the map.

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Save maps

In Map Viewer Beta, you save maps in the following scenarios:

- When you first create a map, save it to create a map item.
  You are the owner of the map item.
- You make changes to a map you own and save your changes.
  You must be the owner of a map to edit and save changes to it.
- You save a copy of someone else's map. This creates a copy of the map, and you are the owner of the copy. You can now edit and save changes to this new map.
  You can make a copy of someone else's map only if the owner has enabled the map to allow others to save a copy of it.
- You make a copy of a map you own. You might do this if you created a map to use as a template that contains the basemap and initial settings you commonly use.

In all these scenarios, you must have privileges to create content.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

To save a map, complete the following steps:

1. Verify that you are signed in to the organization.
2. Click the app launcher and select Map Viewer Beta. Use the new map that opens or open an existing map.
   - To initially save a map, click **Save**.
   - To save changes to a map you own, click **Save** and click **Save** again.
   - To save a copy of a map, click **Save** and click **Save As**.
3. If you are saving a map for the first time or saving a copy of a map, follow these steps:
   a. Type a title.
   b. Type tags that describe your map.
      Tags are words or short phrases that describe your map. Separate terms with commas. `Federal land` is considered one tag, while `Federal, land` is considered two tags.
   c. Provide a summary that describes the map.
   d. Choose a folder in **My Content** where you want to save the map and click **Save**.

Tip:
To change the title of the map after you save it, click the **Edit Map Title** button next to the title, modify the title, and click the confirm button.

When you initially save a map or save a copy of a map, a new map item appears on the **My Content** tab of the content page and is only available to you. Depending on your sharing privileges, you may be able to share your map with groups you belong to, your organization, or everyone (public).

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As the map owner, you can also edit the map's item details.

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Configure and share maps

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Set map properties

Adjust settings that apply to your entire web map in the **Map properties** pane. You can enable a background color, preserve the map scale, and configure the time slider for maps with time-enabled data.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Enable background color

Background color can be used on its own or in combination with layer blending. In some instances, especially when using custom basemaps, you may need to set a background color for areas the basemap doesn't cover. The basemap color can be part of the overall thematic focus of the map, or it can be a color that corresponds with organizational themes.

To enable background color, do the following:

1. On the **Contents** (dark) toolbar, click **Map properties**.
2. In the **Background** section of the **Map properties** pane, turn on the **Enable background color** toggle button. A text box appears with a hex value (the default is #FFFFFF).
3. Click the text box and click a preset color from the color picker, or type a hex value.
   The background color changes in real time as you make your color selection. View the background color by zooming out to the map's full extent.
4. Save the map.

Preserve map scale

Sometimes you want a map to open a map at a specific scale regardless of the device or screen size. For example, if the map has multiple layers with predefined visible ranges, you may want to set the scale at which the map opens to highlight certain layers and features.

To preserve map scale, do the following:

1. If necessary,adjust the extent of the map to the scale you want.
2. On the **Contents** (dark) toolbar, click **Map properties**.
3. In the **Map view** section of the **Map properties** pane, turn on the **Preserve map scale** toggle button.
4. Save the map.
5. To adjust the scale at which the map is saved after the scale has been set, turn off the **Preserve map scale** toggle button and repeat steps 1–4.

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Bookmark places

Bookmarks provide shortcuts to interesting places on a map. As a map author, you create them based on the current location, scale, and rotation of the map. When others click a bookmark, the map zooms to that location.

Create a bookmark

To create a bookmark, complete the following steps:

1. Verify that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map.
3. Navigate the map to the location and scale at which you want to create the bookmark.
4. On the **Contents** (dark) toolbar, click **Bookmarks** and click **+ Add bookmark**.
5. Enter a title for your bookmark and click **Add**.
   Your bookmark is added to the list of bookmarks.

Go to an existing bookmark

To zoom the map to an existing bookmark, complete the following steps:

1. In Map Viewer Beta, open the map.
2. On the **Contents** (dark) toolbar, click **Bookmarks** to open the **Bookmarks** pane.
3. Click the name of the bookmark you want the map to zoom to.
   The map zooms to the bookmark.

Update a bookmark

To update or delete an existing bookmark, complete the following steps:

1. In Map Viewer Beta, open the map.
2. On the **Contents** (dark) toolbar, click **Bookmarks** to open the **Bookmarks** pane.
3. Update a bookmark in any of the following ways:
   - To reorder the list of bookmarks, drag the bookmarks using the **Reorder** handles .
   - To rename a bookmark, click **Edit** next to the bookmark you want to rename, enter a new name, and click **Save**.
   - To delete a bookmark, click **Edit** next to the bookmark you want to delete, and click **Delete**.

Edit a bookmark thumbnail

You can choose whether the thumbnail of a bookmark displays the map extent or an image. To edit the bookmark thumbnail, complete the following steps:

1. In Map Viewer Beta, open the map.
2. On the **Contents** (dark) toolbar, click **Bookmarks** to open the **Bookmarks** pane.
3. Click the **Edit** button next to the bookmark with the thumbnail you want to edit.
4. Click the **Bookmark menu** button ··· on the thumbnail to edit the thumbnail in any of the following ways:

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- To refresh the map extent of the thumbnail, click **Refresh thumbnail**.
- To use an image for the thumbnail, click **Use image URL**, enter the URL of the image, and click **Add**.
- To remove the thumbnail, click **Remove thumbnail**.

5. Click **Save** to save your thumbnail.

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Configure time settings

Spatial phenomena collected with time information can allow you to see what happened at a specific time, or what may happen in the future. By animating time-based data, you can visualize it at each step and see patterns or trends emerging over time. Examples of phenomena with data that are well suited for this purpose include hurricanes, tornadoes, and other meteorological events; population migrations; land-use and environment change; and wildfire or flood event progression.

Some map layers are time enabled; they contain spatial datasets that include different information for the same location at different times. If a map contains time-enabled layers, it is time aware, and you can configure it to display the data during a specific period of time or to animate the data over time.

Verify a layer contains time data

You can determine whether a layer in the map is time enabled by referring to the REST endpoint.

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. On the **Contents** (dark) toolbar, click **Layers** to open the **Layers** pane.
3. Browse to the layer that contains time data, click **More options** ⋯, and click **Properties**.
4. In the **Properties** pane, click **Information** to open the layer's details page and click **More details**.
5. On the **Overview** tab, scroll to the **Layers** section and click the hyperlinked text to open the layer description. If a layer contains temporal data, a section called **Time Info** is included on the web page that opens.

Enable time on layers

You can configure these time-enabled web layers to display time animation when you add them to Map Viewer Beta.

You can also publish hosted feature layers that include temporal data and enable time on them from the layer's item page. This allows you and your organization (if you share your feature layers) to use your temporal data to create time-enabled maps.

To enable time on hosted feature layers, the hosted feature layer owner or an administrator can follow these steps:

1. On the **My Content** tab of the content page, open the item page for a hosted feature layer with temporal data.
2. In the **Layers** section of the **Overview** tab, click **Time Settings**.
3. Check the **Enable time** check box.
4. Choose **specific events in time** or **time ranges with a start and end time** to record the time data.
5. Choose the time field or fields in your data.
6. Click **OK**.

When this hosted feature layer is added to Map Viewer Beta, time animation is enabled.

Configure time settings in a map

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. On the **Contents** (dark) toolbar, click **Map properties**, and click **Time slider options**.

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3. Make any of the configurations described in the subsections below.
4. On the **Contents** toolbar, click **Save** to save your time settings to the map.

Start and end points

Use the **Time Display** drop-down menu to specify the time period for your time-enabled layer. Choose one of the following:

- **Show current interval**—Show data that falls within a set time range.
- **Show features progressively**—Progressively show data that falls within a set time range. The start time is always pinned to the start of the slider.

Playback position

Choose whether to start the time animation at the beginning of the time span or at the time position last saved with the map.

Time intervals

Specify how much data to display as time passes. Choose **Length of one interval** to specify the count and units for each time interval, or choose **Total time divided into equal steps** and specify the number of intervals.

Play rate

Set the speed at which your time intervals play. You can adjust this by moving the slider to increase and decrease the speed.

Disable time animation

You can disable time animations on maps containing time enabled layers. To disable time animation on a web map, complete the following steps:

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. On the **Contents** (dark) toolbar, click **Layers** to open the **Layers** pane.
3. Select the time enabled layer.
4. On the **Settings** (light) toolbar, click **Properties**.
5. Turn off the **Enable time** toggle button.
6. Repeat the previous steps for each time enabled layer.

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Share maps

You can share any map you create with your organization, specific groups, or the public.

1. Verify that you are signed in and have privileges to share content.
2. In Map Viewer Beta, open the map.
3. On the **Contents** (dark) toolbar, click **Share map**.
4. Choose a sharing level for your map.
5. Optionally, click **Edit group sharing** to share your map with one or more groups, and click **OK**.
6. Click **Save**.

Considerations for sharing maps

Keep the following in mind when you share maps:

- For your map to be accessible to the general public (and your organization allows sharing outside the organization), you need to share it with everyone. To do this, click the **Share map** button and select **Everyone (public)**. You can also use the share option on the **My Content** tab of the content page.
- You can create an app with a map from the **My Content** tab of the content page.

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Work with layers

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Organize layers

In Map Viewer Beta, layers are drawn on the map in the same order in which they appear in the layers list, with layers that are higher in the list drawing on top of layers that are lower in the list. This means that some layers may cover other layers, preventing them from being visible on the map. You can correct this by changing the order of the layers. You can also rename layers and remove unnecessary layers to add meaning to your map and make it easier to explore.

If your map includes multiple related layers, you can use group layers to organize them. For example, you can organize the layers in a utilities map according to theme, such as water, storm, and sanitation. Organizing layers into group layers helps you and others find, explore, and manage layers in a map. You can use group layers to organize a large number of layers or to simplify the experience of exploring data.

Manage and organize layers

In Map Viewer Beta, you manage and organize layers in your map in the **Layers** pane.

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layers you want to organize or add layers to a new map.
3. On the **Contents** (dark) toolbar, click the **Layers** button if the **Layers** pane is not open.
4. In the **Layers** pane, do any of the following to organize the layers in the map:
   - Rename a layer—Click the **Open** button on the layer and click **Rename**. Type a new name for the layer and click **OK**.
   - Remove a layer—Click the **Open** button on the layer and click **Remove**.

     Caution:
     This action cannot be undone.

   - Change the order of a layer—Drag it to a new location in the layers list.
5. On the **Contents** toolbar, click the **Save** button to save your changes.

Tip:
To turn the visibility of layers in the map on and off, point to the layer in the **Layers** pane and click the layer visibility toggle button. Layers that are visible on the map display a visible layer button, while hidden layers display a hidden layer button.

Create and manage group layers

To organize related layers in your map, you can create group layers in the **Layers** pane. Once a group layer is created, you can name the group, move layers into and out of the group, and manage the group layer and the layers in the group the same way you manage individual layers in the layers list.

To create and manage group layers, do the following:

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layers you want to organize into group layers or add the layers to a new map.

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3. On the **Contents** (dark) toolbar, click the **Layers** button if the **Layers** pane is not open.
4. In the **Layers** pane, create a group layer as follows:
   a. On one of the layers you want to include in the group layer, click the **Open** button and click **Add to new group**.
   A new group appears at the top of the layers list. If you expand the group, you see the layer you added to the group.
   b. To add another layer to the group, click the **Open** button on the layer, click **Move to group**, click the name of the group, and click **OK**.

      Tip:
      You can also add a layer to a group by expanding the group layer and dragging the layer into the group.

   c. Repeat the previous step for each layer you want to add to the group layer.
5. Click the **Open** button on the group layer and click **Rename** to name the group layer. Type a name in the text box and click **OK**.
6. Do any of the following to manage and organize group layers:
   - Move a layer from one group layer to another group layer—Expand the group layer that contains the layer, click the **Open** button on the layer, and click **Move to group**. Click the name of the group to which you want to move the layer and click **OK**.

     Tip:
     You can also move the layer by dragging it into the expanded group layer.

   - Move a layer out of a group—Expand the group layer, click the **Open** button on the layer, and click **Remove from group**.
     The layer is now a stand-alone layer in the map. If you removed the only remaining layer from a group layer, an empty group layer remains in the layers list. You can add layers to the empty group layer or remove the group layer from the layers list, as described in the next option.
   - Remove a group layer from the map—Click the **Open** button on the group layer and click **Remove**.
     The group layer and all of the layers in the group are removed from the map. To remove specific layers in a group layer from the map, click the **Open** button and click **Remove** for each layer you want to remove.

     Caution:
     This action cannot be undone.

   - Change the order of layers in a group layer—Expand the group layer and drag the individual layers to a new location in the group. To change the order of the entire group layer, drag the group layer to a new location in the layers list.
7. On the **Contents** toolbar, click the **Save** button to save your changes.

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Tip:

You can also turn the visibility of an entire group layer on and off in the map by clicking the layer visibility toggle button on the group layer in the **Layers** pane. If you hide an entire group layer, all layers in the group layer are hidden in the map. You can make individual layers in a group layer visible using the layer visibility toggle button on each layer.

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Set transparency and visible range

You can set the transparency and visible range of layers in your map.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Set transparency

Changing the transparency, or opacity, of a layer in a map allows you to see more or less of the underlying layers. The transparency of any layer can be adjusted from 0 percent to 100 percent. The more transparent a layer is, the less visible it appears on the map and the more visible the other layers appear. For example, you can highlight a specific layer in the map by making it fully visible and adding transparency to the other layers.

You can set the transparency for the entire layer or, if you have numeric or date attributes in your data, based on one of these attributes.

Tip:
To fine-tune how layers are drawn in relation to one another, try using blend modes.

Set transparency for the layer

Set transparency for the layer in the **Properties** pane.

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.
3. In the **Layers** pane, click the layer to select it.
4. On the **Settings** (light) toolbar, if necessary, click the **Properties** button .
5. In the **Transparency** section, move the transparency slider to the left (less transparent) or right (more transparent).
6. If you own the map, click the **Save** button on the **Contents** (dark) toolbar to save the transparency setting to the map.

Set transparency based on attribute values

When styling a layer using most smart mapping styles, you can set the transparency per feature in your layer if you have numeric or date data associated with your locations. Setting the transparency based on attribute values in your data allows you to vary how much transparency is applied to each location based on a numeric attribute. For example, if your layer contains income data, you can adjust the transparency of each location proportional to its income.

1. Follow the first five steps in the styles workflow.
2. In the **Styles** pane, select a drawing style and click **Style options**.
3. In the **Style options** pane, click **Transparency by attribute** and turn on the **Set transparency based on attribute values** toggle button.

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Note:
The **Transparency by attribute** option is not available for some smart mapping styles, including Dot Density and Heat Map.

4. From the **Attribute** drop-down menu, select the numeric or date attribute to use as the basis for the transparency.

Tip:
You can use a custom attribute expression written in Arcade instead of an attribute field. Click the **Use expression** button </> and use the editor window to create your expression.

You can also use existing expressions to build new expressions; however, some variables may not work across profiles—for example, an expression created for pop-ups may not work for styles. To use an existing expression, select it from the **Existing** tab in the editor window.

5. Optionally, select an attribute from the **Divided by** drop-down menu to use to standardize or normalize your data, such as dividing population by area or costs by total population.
6. Adjust the position of the handles to change how the transparency gradient is applied. You can also click the numeric values next to the slider handles and type precise values. To see details in the histogram more closely, click the **Magnify slider** button. To go back to the original slider positions at any time, click the **Reset slider positions** button.
7. For **Transparency range**, adjust the percent of transparency for the high and low ends of the ramp. Note that 0 percent transparency is a solid color (fully opaque).
8. To hide the transparency ramp in the legend, turn off the **Include in legend** toggle button.
9. If you own the map, click the **Save** button on the **Contents** (dark) toolbar to save the transparency setting to the map.

Set visible range

Multiscale maps allow you to view geographic data across a range of scales—also known as zoom levels—from buildings to the entire globe. Specifying the zoom level at which content is drawn is known as setting the visible range. Since most data does not need to be shown across all zoom levels, it is a good practice to confirm, and if necessary, change the visible range. Your map may contain many layers, each with its own visible range. You can also specify a visible range for labeling features in a layer.

If you are adding data to your map that comes with a predefined visible range, the map will use that visible range. To update the visible range, you can set it manually. As a result, when you zoom in and out on the map, different layers on the map may turn on or off depending on their suggested visible range.

Tip:
When a layer is out of range, its name appears in a lighter gray color in the **Layers** pane than the layers that are in range.

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.

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3. In the **Layers** pane, click the layer to select it.
4. On the **Settings** (light) toolbar, if necessary, click the **Properties** button .
5. In the **Visible range** section, do any of the following to set the maximum zoom level:
   - Drag the handle on the slider to the maximum zoom level you want. Use the maximum zoom scale drop-down menu below the slider to help you choose the best zoom level—for example, **World** or **Country**.
   - To manually specify a zoom level, click the drop-down menu below the slider, click **Custom**, and type the maximum zoom level you want.
   - To use the current extent of the map, click the drop-down menu below the slider, and click **Current map view**.
6. Repeat the previous step for the minimum zoom level.
7. If you own the map, click the **Save** button on the **Contents** (dark) toolbar to save the visible range setting to the map.

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Apply filters

A filter presents a focused view of a feature layer in a map. By limiting the visibility of features in a layer, you can reveal what's important. For example, you can create a filter on a crime layer so only arson fires that occurred within the last month appear on the map. By filtering the crime layer based on crime type and date, you can show patterns of where recent fires were set and help your police department prevent future arson attempts.

If your layer includes date fields, you can filter it by date. For example, you can show the locations of earthquakes that occurred during a specified date range, or dynamically show events that occurred relative to the current day.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Filter expressions

A filter uses one or more filter expressions to determine which features are shown on the map. You create filter expressions using attribute fields in your data or custom attribute expressions written in Arcade.

Each expression includes a field name, an operator, and a value. For example, you can create a filter on a layer containing a city's crime incident data (thefts, arson fires, assaults, and so on) to show only arson fire incidents, as follows:

- For the field name, choose **Primary Type**.
- For the operator , choose **includes**.
- For the value, choose **ARSON**.

Tip:
Using the **includes** operator instead of the **is** operator provides a list of available values in your data. This is useful when you aren't sure of the exact value. A values list is available for fields that include coded values.

To further refine the filter to show only the arson fire incidents that were reported in the last month, you can create a second expression as follows:

- For the field name, choose **Date**.
- For the operator, choose**in the last**.
- For the value, choose **1 month**.

If your filter has more than one expression, you must choose a matching option to connect the expressions. In the above example, the **Match all expressions** option is selected. This means that only the features that match all of the filter expressions—in this case, arson fires from the last month—are shown on the map when the filter is applied.

Other filters may require the **Match at least one expression** option. For example, to show both arson fires and thefts on the map while filtering out other crime incidents, you can create a filter expression to show arson fires (as shown above) and a similar expression to show thefts. Then choose **Match at least one expression** to show crime incidents that match either the arson or the theft expression.

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Create a filter

Creating a filter involves creating one or more filter expressions and using the appropriate matching option to determine how the expressions are applied to the data. If more advanced matching is required, you can also group filter expressions into sets.

As you set up the filter, features that do not match the filter criteria appear gray, or dimmed, on the map until you save the filter.

To create and apply a filter, do the following:

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.
3. On the **Contents** (dark) toolbar, click the **Filter** button .
4. Create a filter expression as follows:
   a. In the **Filter** pane, click **Add expression**.
   b. Click the field selector, select a field to use for the expression, and click **Replace**.

      Tip:
      Use the search and sort options in the **Replace field** window to find a field.

   c. Click the operator selector and select an operator, such as **is**, **is not**, **includes**, **excludes**, or **contains**.

      Note:
      If you select a date field, additional date operators become available. You can use the **in the last** and **not in the last** operators to apply a dynamic date filter to show events that occurred relative to the current day—for example, all features that were edited in the last five days—without manually updating the filter each day. Other available operators for date filters include **is on**, **is not on**, **is before**, **is after**, **is between**, and **is not between**.

   d. In the value input box, enter a value to use in the expression.
      The input box varies depending on the field type and the operator. For example, if the specified field contains coded values and you selected the **includes** or **excludes** operator, you select a value from a list derived from unique data values in the specified field. If you specified a date field, depending on the operator selected, you can specify a single date (or two dates) from the calendar, enter one or two dates manually, or specify a time range in days, weeks, or months.
5. To add expressions to the filter, do the following:
   a. Click **Add expression** and repeat the previous step for each new filter expression.

      Tip:
      To create a similar expression to the one you created, click the **Options** button ··· on the expression and click **Duplicate**. Make the necessary changes to the duplicate set.

      To delete an expression, click the **Options** button and click **Delete expression**.

   b. Click the **Filter results** drop-down menu and select a matching option.

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Match all expressions shows features that match all of the filter expressions. **Match at least one expression** shows features that match one or more expressions. For examples of these options, see Filter expressions.

6. In the **Filter** pane, click **Save** to save and apply the filter to the layer.

Tip:

To remove the filter, click the **Remove filter** button .

Use expression sets

To create a more complex filter, you can use expression sets to group multiple expressions. The way in which you group the expressions determines what you see on the map. For example, you can use expression sets to further refine the crime incident filter described above. To show both arson fire and theft incidents reported in the last month while filtering out incidents matching all other crime types and time periods, you can create two sets by grouping the date expression with each of the incident types and choose the option to filter results by matching at least one of the expression sets.

To create a filter using expression sets, do the following:

1. Follow the first four steps of the Create a filter section above.
2. On the expression you want to group into a set, click the **Options** button ··· and click **Add condition**.
   A new set containing the existing expression and a new empty expression is created.
3. Add a field, operator, and value for the new expression.
4. To add expressions to the set, click **Add condition** and repeat the previous step for each expression.
5. Click the drop-down menu for the set and select a matching option.
   Match all conditions shows features that meet all conditions in the set. **Match at least one condition** displays features that meet at least one condition in the set—for example, incidents with the primary type of arson or theft.
6. Optionally, repeat the previous steps to create additional filter sets.

Tip:

To create a similar set to the one you created, click the **Options** button on the set and click **Duplicate**. Make the necessary changes to the duplicate set.

To delete a set, click the **Options** button and click **Delete set**.

7. In the **Filter** pane, click **Save** to save and apply the filter set to the layer.

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Configure clustering

If your map has a layer with a large number of points, you can configure clustering to make it easier to visually extract meaningful information from your data. When you enable clustering, Map Viewer Beta groups point features that are within a certain distance of one another on the map into one symbol. Clustering allows you to see patterns in your data that are difficult to visualize when your layer contains hundreds or thousands of points that overlap and cover each other.

Clusters are represented by proportionally sized symbols based on the number of point features in each cluster. Smaller cluster symbols have fewer points, while larger cluster symbols have more points. You can adjust the size range applied to the cluster symbols.

Clustering is applied dynamically at multiple scales, which means that as you zoom out, more points are aggregated into fewer groups, while zooming in creates more cluster groups. When you zoom to a level where the clustering area around one point feature no longer contains other features, that point feature is not clustered; it is displayed as a single point feature with the styling options applied to the layer. You can adjust the number of point features grouped into clusters by setting the cluster radius.

When you enable clustering on a point layer, a label is displayed for each cluster. A default cluster pop-up also appears when you click a cluster on the map. You can customize the cluster pop-up and labels.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Apply clustering

When you enable clustering on a point layer, clusters automatically appear on the map using a default configuration. As you make changes to the cluster settings, your changes are immediately shown on the map. This allows you to experiment with cluster radius and other settings to achieve the desired look and message of your map.

To enable and apply clustering on a point layer, do the following:

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.
3. On the **Contents** (dark) toolbar, click the **Layers** button .
4. In the **Layers** pane, select the layer on which you want to enable clustering.
5. On the **Settings** (light) toolbar, click the **Clustering** button .
6. In the **Clustering** pane, turn on the **Enable clustering** toggle button.
7. Optionally, adjust the **Cluster radius** slider to change the number of features that are grouped into a cluster. Specify a lower cluster radius to group fewer features into each cluster. Specify a higher cluster radius to group more features into each cluster.
8. Optionally, adjust the **Size range** slider to set the minimum and maximum cluster size.
9. Optionally, customize the cluster labels.
10. Optionally, customize the cluster pop-ups.

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11. Optionally, change the formatting of fields in the clusters.
12. Close the **Clustering** pane when you're finished.

Configure cluster labels

Labeling clusters is similar to labeling individual features in a layer. You control the label style—font, text size, placement, and so on. You can keep the labels simple by showing the number of features in each cluster, or, if your layer is styled using an attribute, you can use this attribute for the cluster label. For example, if the layer shows parcels by their value per square foot, you can configure the cluster label to show the average value per square foot of all the points in each cluster. Map Viewer Beta also allows you to use a label filter to only display labels on clusters that meet the filter criteria.

Configuring label classes allows you to further customize your cluster labels. For example, you can use label classes to label each cluster based on two attributes, such as the average earthquake magnitude and the earthquake count, using a different label style for each attribute. Cluster label classes are configured in the same way as label classes for features.

Note:
Any unclustered point feature displays a feature label if feature labels are enabled for the layer.

To configure cluster labels for your point layer, do the following:

1. Follow the first six steps of the Apply clustering section above.
2. In the **Clustering** pane, click **Cluster label**.
3. In the **Label features** pane, turn on the **Enable labels** toggle button.
4. Optionally, configure label classes by clicking **Add label class** and specifying the options you want for each class, as described in the next step.
5. Do any of the following to customize the cluster labels:

   Note:
   See Configure labels for more information about label configuration.

   - To use a different field for the label, click the **Label field** selector, select a field, and click **Replace**.
     This option is only available if your layer is styled using an attribute. If it's not, you can display the number of features as the cluster label.

     Tip:
     You can use a custom attribute expression written in Arcade instead of an attribute field. Click the **Use expression** button </> and use the editor window to create your expression.

     You can also use existing expressions to build new expressions; however, some variables may not work across profiles—for example, an expression created for pop-ups may not work for styles. To use an existing expression, select it from the **Existing** tab in the editor window.

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- To display labels on a subset of clusters only, click **Edit label filter** and click **Add expression** to set up the filter. For more information, see Apply filters.
- To change the style of the cluster labels, click **Edit label style**. In the **Label style** window, set the label style options, including the font, text size and color, placement, offsets, and halo effect.
- To change the visible range for the cluster labels, adjust the **Visible range slider**.

Configure cluster pop-ups

Cluster pop-ups appear when you click a cluster on the map. The information displayed in cluster pop-ups depends on the style applied to the layer. For example, if the Predominant category style is applied, the default cluster pop-up includes the value of the predominant attribute for each cluster. You can customize the cluster pop-ups to suit your needs.

Note:
Clicking an unclustered point features displays a feature pop-up if feature pop-ups are enabled for the layer.

To configure cluster pop-ups, do the following:

1. Follow the first six steps of the Apply clustering section above.
2. In the **Clustering** pane, click **Cluster pop-ups**.
3. In the **Pop-ups** pane, do any of the following to customize the cluster pop-ups:

   Note:
   See Configure pop-ups for more information about pop-up configuration.

   - To add a title for your cluster pop-up, click the **Edit** button and type a title. You can enter static text and use the **Select fields** button { } to select attribute fields from your data.
   - To modify the default cluster pop-up content, click the **Text** content block and click the cluster pop-up text. Make your changes and click **OK**.
   - To add content and media to the cluster pop-up, including images and attribute fields, click **Add content** and click the content type.
   - To change the order of content blocks in your pop-up, drag the items to the desired order.
4. Click the clusters on the map to view the pop-ups.

Change field formatting

You can change the basic formatting of the fields that are used in cluster labels and pop-ups. For example, you can change the number of decimal places that appear for a numeric field.

To change the basic formatting of the fields, do the following:

1. Follow the first six steps of the Apply clustering section above.
2. In the **Clustering** pane, click **Cluster fields**.
3. Select a field, and in the **Formatting** window, specify the formatting settings. Click **Done**.

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4. Repeat the previous step for each field whose formatting you want to change.
5. Click a cluster on the map to see your formatting changes in the pop-up.
   These changes also appear in the cluster labels.

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Configure labels

Maps can display large amounts of geographic data in layers that generally overlap. The way you style your layers can help describe and identify features. When you want to say more than what a symbol or color can convey, however, you can use labels on your features. Labels are short pieces of text that describe features in a layer and help your audience understand those features.

Map Viewer Beta automatically places labels on the map on or near the features they describe. Longer text strings automatically wrap to create a multiline label. The text for a label is typically derived from the attributes in the layer. When you enable labels on a layer, you create one or more label classes, which allow you to customize the labels. For example, you can create two label classes, each showing a different attribute value with different label styling applied.

Note:
You can also create a custom attribute expression written in Arcade to label a feature layer. For example, you can create an Arcade expression to derive a yearly sales figure for individual sales territories by summing the value of monthly sales fields. If an expression is already available for the layer, you can use it for labeling. You can also edit the Arcade expression directly in Map Viewer Beta.

In Map Viewer Beta, you control the label style including font, text size, placement, and so on. You can also apply a label filter to only display labels on features that meet the filter criteria.

By setting a visible range, you can specify the zoom levels at which the labels are drawn on the map. Setting a different visible range for each label class allows you to define how labels are shown at different map scales. For example, your label can reveal more detailed information as you zoom in on the map.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Apply labels

When you turn on labeling for a layer and add a label class, labels automatically appear on the map using a default label configuration. As you make changes to the label configuration, your changes are immediately shown on the map. This allows you to experiment with label style and other settings to achieve the desired look and message of your map.

To enable and apply labels to features, do the following:

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.
3. On the **Contents** (dark) toolbar, click the **Layers** button .
4. In the **Layers** pane, select the layer on which you want to apply labels.
5. On the **Settings** (light) toolbar, click the **Labels** button .
6. In the **Label features** pane, turn on the **Enable labels** toggle button.
7. Click **Add label class** and do any of the following to create the labels:

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- To use a different attribute field for the label, click the **Label field** selector, select a field, and click **Replace**.

  Tip:

  You can use a custom attribute expression written in Arcade instead of an attribute field. Click the **Use expression** button </> and use the editor window to create your expression.

  You can also use existing expressions to build new expressions; however, some variables may not work across profiles—for example, an expression created for pop-ups may not work for styles. To use an existing expression, select it from the **Existing** tab in the editor window.

- To display labels on a subset of features only, click **Edit label filter** and click **Add expression** to set up the filter. For more information, see Apply filters.
- To change the style of the labels, including the font, text size, and placement, click **Edit label style**. In the **Label style** window, set the label style options.
- To change the visible range for the labels, adjust the **Visible range slider**.

8. Repeat the previous step to configure additional label classes as needed.

   Tip:

   To copy the properties you specified for the label class and apply them to a new label class, click the **Options** button ··· next to the label class name and click **Duplicate**.

9. Optionally, click the **Options** button next to the label class name, click **Rename**, type a new name in the text box, and click **OK** to change the name of a label class.
10. Optionally, click the **Options** button next to the label class name and click **Delete** to delete a label class.
11. Close the **Label features** pane when you're finished.

Customize the label style

When configuring labels for features in a layer or for point clusters (if your point layer has clustering enabled), you can customize the style of the labels, including the font, text size and color, placement, offsets, and halo effect.

1. Depending on whether you're customizing labels for features or for point clusters, do one of the following:
   - To set the label style for features, follow the first six steps of the Apply labels section above and click **Add label class**.
   - To set the label style for point clusters, follow the first four steps of Configure cluster labels.
2. Click **Edit label style**.
3. In the **Label style** window, do any of the following:
   - To change the font, click the **Font** selector and choose a font for the labels.
   - To change the text size, click the **Size** selector and choose a size for the label text.
   - To change the label color, click the color chip and choose a different color, or type the hex value representing the color.
   - To change the placement of the label in relation to the feature or cluster, click the **Placement** selector and choose the placement location.

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- To change the distance between the label and its associated feature or cluster, adjust the horizontal offset (**Offset X**) or vertical offset (**Offset Y**) values. You can use the up and down arrows to change the values or type a positive or negative value for each offset.
- To include a halo outline around the labels, turn on the **Halo** toggle button and specify a halo color and size.

4. Close the **Label style** window when you're finished.

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Use blend modes

In many maps, the way in which map layers are displayed in relation to one another is critical to understanding the map's message and uncovering patterns and insights in the data. Because layers are drawn on top of each other, the layers at the bottom are hidden under those closer to the top. While adjusting the transparency or opacity of layers can help you see more or less of the bottommost layers, applying blend modes gives you additional control of the map's appearance by making the layers appear blended in different ways. For example, you can use blend modes to fine-tune how the colors and textures of layers are combined and displayed on the map.

When you apply a blend mode, the pixels that are normally used to draw each layer on the map are blended to achieve a specific effect. Map Viewer Beta includes more than 30 unique blend modes that you can apply and instantly see reflected on the map.

Apply blend modes

When you apply a blend mode, there is no change to the data or to the original rendering of the layers. When you save the map, the blend mode is saved to the map.

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layers you want to blend, or add layers to a new map.
3. On the **Contents** (dark) toolbar, click the **Layers** button if the **Layers** pane is not open.
4. In the **Layers** pane, click the topmost layer to select it.
5. On the **Settings** (light) toolbar, if necessary, click the **Properties** button .
6. In the **Blending** section of the **Properties** pane, click **Normal**.
7. In the **Blending** window, choose a blend mode to apply to the map.

   Tip:

   Use the **Filter results** text box to narrow the list of blend modes or find a blend mode by name. For example, type `dark` and press `Enter` to show blend modes that allow you to darken, lighten, invert, or change the contrast of layers.

8. On the **Contents** toolbar, click the **Save** button to save your blend mode changes to the map.

Blend modes

In Map Viewer Beta, blend modes are organized by theme. The tables in the following sections provide a brief description of each theme and blend mode.

Lighten

Lighten blend modes create a lighter result than the colors of the original layer. Use these blend modes to create variations of this effect. In the Lighten blend modes, black is the neutral point and anything brighter than black affects the layer below it.

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Blend mode	Description
Lighter	Colors in the top and background layers are multiplied by their alphas (layer opacity and the layer's data opacity), and the resulting colors are added together. All overlapping midrange colors are lightened in the top layer. The opacity of the layer and the layer's data affect the blend result.
Lighten	Compares the top and background layers and retains the lighter color in the top layer. Colors in the top layer become transparent if they are darker than the overlapping colors in the background layer, allowing the background layer to show through completely. This blend mode can be thought of as the opposite of the Darken blend mode.
Screen	Inverts the colors of the background layer and multiplies with the colors of the top layer. The resulting colors are lighter than the original color with less contrast. The Screen blend mode can produce many levels of brightening depending on the luminosity values of the top layer. This blend mode can be thought of as the opposite of the Multiply blend mode.
Color Dodge	Creates a brighter effect by decreasing the contrast between the top and background layers, resulting in saturated midtones and bright highlights.
Plus	Colors in the top and background layers are added together. All overlapping midrange colors are lightened in the top layer.

Darken

Darken blend modes create darker results than all layers. With these blend modes, pure white in the top layer becomes transparent, allowing the background layer to show through. Black in the top layer remains unchanged. Any color that is darker than pure white darkens a top layer to varying degrees all the way to pure black.

Blend mode	Description
Darken	Emphasizes the darkest parts of overlapping layers. Colors in the top layer become transparent if they are lighter than the overlapping colors in the background layer, allowing the background layer to show through completely.
Color Burn	Intensifies the dark areas in all layers. The Color Burn blend mode increases the contrast between the top and background layers by tinting colors in overlapping areas toward the top color. To do this, Color Burn inverts the colors of the background layer, divides the result by the colors of the top layer, and inverts the results.
Multiply	Emphasizes the darkest parts of overlapping layers by multiplying colors of the top layer and the background layer. Midrange colors from top and background layers are mixed more evenly.

Contrast

Contrast blend modes increase the contrast and saturation to make the colors in the layers more vibrant. The following blend modes create contrast by both lightening the lighter areas and darkening the darker areas in the top layer.

Blend mode	Description
Overlay	Uses a combination of the Multiply and Screen blend modes to darken and lighten colors in the top layer, with the background layer always shining through. This results in darker color values in the background layer intensifying the top layer, while lighter colors in the background layer wash out overlapping areas in the top layer.

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Blend mode	Description
Hard Light	Multiplies or screens the colors, depending on the colors of the top layer. The effect is similar to shining a harsh spotlight on the top layer.
Soft Light	Applies a half-strength Screen blend mode to lighter areas and half-strength Multiply blend mode to darker areas of the top layer. The Soft Light blend mode is a softer version of the Overlay blend mode.
Vivid Light	Uses a combination of the Color Burn and Color Dodge blend modes by increasing or decreasing the contrast, depending on the colors in the top layer.

Component

Component blend modes use primary color components—hue, saturation, and luminosity—to blend top and background layers.

Blend mode	Description
Color	Creates an effect with the hue and saturation of the top layer and the luminosity of the background layer. This blend mode is the opposite of the Luminosity blend mode.
Saturation	Creates an effect with the saturation of the top layer and the hue and luminosity of the background layer. This blend mode produces no change when the background layer is 50 percent gray with no saturation.
Luminosity	Creates an effect with the luminosity of the top layer and the hue and saturation of the background layer. This blend mode is the opposite of the Color blend mode.
Hue	Creates an effect with the hue of the top layer and the luminosity and saturation of the background layer.

Composite

Composite blend modes mask the contents of the top layer, the background layer, or both layers. Destination modes mask the data of the top layer with the data of the background layer. Source modes mask the data of the background layer with the data of the top layer.

Blend mode	Description
Destination Over	The destination (background) layer covers the top layer. The top layer is drawn under the destination layer, and the top layer shows through wherever the background layer is transparent or has no data.
Destination Atop	The destination (background) layer is drawn only where it overlaps the top layer. The top layer is drawn under the background layer, and the top layer shows through wherever the background layer is transparent or has no data.
Destination In	The destination (background) layer is drawn only where it overlaps the top layer. Everything else is made transparent.
Destination Out	The destination (background) layer is drawn where it doesn't overlap the top layer. Everything else becomes transparent.
Source Atop	The source (top) layer is drawn only where it overlaps the background layer. The background layer shows through where the source layer is transparent or has no data.
Source In	The source (top) layer is drawn only where it overlaps the background layer. Everything else becomes transparent.

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Blend mode	Description
Source Out	The source (top) layer is drawn where it doesn't overlap the background layer. Everything else becomes transparent.
XOR	The top and background layers become transparent where they overlap. Both layers are drawn normally everywhere else.

Invert

Invert blend modes either invert or cancel out colors depending on the colors in the background layer. These blend modes identify variations between top and background layers.

Blend mode	Description
Invert	Inverts the background colors wherever the top and background layers overlap. The Invert blend mode inverts the layer similar to a photographic negative.
Reflect	Creates the appearance of shiny objects or areas of light added to the layer. Black pixels in the background layer are ignored as though they were transparent.
Average	Takes the mathematical average of the top and background layers. The result of this blend mode is often similar to the effect of setting the layer's opacity to 50 percent.
Difference	Subtracts the darker of the overlapping colors from the lighter color. When two pixels with the same value are subtracted, the result is black. Blending with black produces no change; blending with white inverts the colors. This blend mode is useful for aligning layers with similar content.
Exclusion	Similar to the Difference blend mode, except that the resulting image is lighter overall. Overlapping areas with lighter color values are lightened, while darker overlapping color values become transparent.
Minus	Subtracts the colors of the top layer from the colors of the background layer, making the blend result darker. In the case of negative values, black is displayed.

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View and edit data

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Show tables

To see information about features or records in a layer, you can display an interactive table at the bottom of the map. Seeing a tabular view of the data can be a quick way to analyze information and start making decisions. You can sort and filter the attribute data and hide fields to help you focus on specific feature data.

You can also access information about each field in the table to understand what the data represents, and get more information about the layer by viewing related data tables, photos, or other file attachments. If you have privileges to edit the layer, you can edit or delete attribute values and attach additional related photos and files. See Edit tables for more information.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Show a table in Map Viewer Beta

Showing tables in Map Viewer Beta can be a useful way to see the information associated with the features in your map. Once you determine what type of data is stored with the features, you can set up a more focused display of the layer by applying filters if the layer contains features or data that aren't important to your audience.

Show a feature layer's table

Follow these steps to show a table for a feature layer in Map Viewer Beta:

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.
3. In the **Layers** pane, click the **Open** button ··· next to the layer and click **Show table**.
   The layer's table opens at the bottom of the map.
4. You can click the up arrows in the table header to show more rows. Click the down arrows in the table header to show fewer rows.
5. Click the close button in the table header to close the table.

Show a table layer

When you add a table layer to Map Viewer Beta, the table opens automatically.

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.

   The table opens at the bottom of the map.
3. You can click the up arrows in the table header to show more rows. Click the down arrows in the table header to show fewer rows.
4. Click the close button in the table header to close the table. When you need to reopen the table, click the **Open** button ··· next to the layer and click **Show table**.

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Explore the data

You can view information about a field, such as the data type and description, and see statistics about the contents of the field. Once you know what the data in each field represents, sort the data and fields to focus on the data in which you're interested.

1. Open the table and view information about the fields using one of the following methods:
   - Select the field (column), click the **More options** button ···, and click **Information**.
   - Click the tools button in the table header and click the information button next to the field. To return to the list of fields, click the back arrow. Click **Done** to close the pop-up window.

   The field name, data type, alias, field description, value description, and statistics appear in a separate pop-up window. The information available for each field depends on values the layer owner has set, and the statistics vary depending on the field's data type.
2. Optionally search for a specific field.
   a. Click the tools button in the table header and type a field name in the search box or click the sort button to change the order that the fields appear in this window.
   If you type a field name, the list of fields dynamically changes as you type.
   b. Check the desired field or uncheck it to hide it from the table, or you can view the field information.
3. To group the data in a way that is easier for you to view it, use one of the following methods to sort the records in each field:
   - Click the up or down arrow for the field to sort values in ascending or descending order, respectively.
   - Select the field, click the **More options** button ···, and click either **Sort ascending** or **Sort descending**.
   - To change the order of the fields, click the field name and drag it to a new place in the table.

   This does not change the order of the fields stored in the table, only your view of the fields in the map.
4. To hide fields you don't need, do one of the following:
   - To hide one field, select the field, click the **More options** button ···, and click **Hide field**.
   - To hide multiple fields, click the tools button in the table header and uncheck the fields that you want to hide. Click **Done** to close the pop-up window.
5. To unhide a field or fields, click the tools button in the table header and check the fields that you want to show (unhide) in the table. Click **Done** to close the pop-up window.

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Edit tables

If the owner of an editable feature layer shares the layer with you, you can show the layer's table in Map Viewer Beta and edit the attribute values.

Note:
Some functionality is not yet supported in Map Viewer Beta. See the compatibility guide for more information, and use Map Viewer Classic as needed for unsupported workflows.

Edit field values

Follow these steps to edit values in a feature layer's attribute table in Map Viewer Beta:

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.
3. If you're editing table values for a feature layer, open the layer's table.
4. Click inside the cell that contains the value you want to edit and type a value, or, if the field is configured to provide a list of values, choose the correct value from the drop-down list. To delete the value when there is a list, choose **empty**.
5. Press `Enter` to save your changes.

Add related photos and files

Feature and table layers can include related photos or other files as attachments. If the layer owner has enabled attachments on the layer and you have privileges to edit the layer, you can attach related photos and files to records in the table.

Beta:
Adding attachments to table layers is not supported at this time.

Add related files to a feature layer

Follow these steps to add related photos and files to a feature layer:

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.
3. Click **Edit** on the **Settings** (light) toolbar.
4. In the **Editor** pane that appears on the map, click **Edit feature**.
5. Select the feature on the map to which you want to attach a photo or other file.
   The fields and values for the selected feature appear in the pane.
6. If necessary, scroll down to the **Attachments** section.
7. Click **Add** and click **Select file**.
8. Browse to the file you want to attach, and click **Open**.
9. Click **Add**.

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Supported attachment formats

The following file formats are supported as attachments:

7Z, AIF, AVI, BMP, CSV, DOC, DOCX, DOT, ECW, EMF, EPS, GEOJSON, GIF, GML, GTAR, GZ, IMG, J2K, JP2, JPC, JPE, JPEG, JPF, JPG, JSON, M4A, MDB, MID, MOV, MP2, MP3, MP4, MPA, MPE, MPEG, MPG, MPV2, PDF, PNG, PPT, PPTX, PS, PSD, QT, RA, RAM, RAW, RMI, SID, TAR, TGZ, TIF, TIFF, TXT, VRML, WAV, WMA, WMF, WMV, WPS, XLS, XLSX, XLT, XML, and ZIP.

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Edit features

Map authors build their maps to include the layers and configurations needed to achieve the purpose of the map. When one of the purposes of a map is to gather community or organizational input, the map author includes editable feature layers in the map. For example, an author might include an editable feature layer that allows the birding community to post their bird sightings directly on the map and attach media files—such as photographs, audio files, and video files—to the specific observation points. Because these features are part of the layer, any changes made to the layer in the map are immediately viewable by everybody who has access to the layer, even when the layer is part of a different map.

The publisher of the feature layer or the administrator in your organization decides whether a feature layer is editable and sets an editing level. Editing levels determine whether you can add features, delete features, update feature attributes only, or update feature geometry.

Edit a feature layer

Open the editable hosted feature layer, hosted feature layer view, or ArcGIS Server feature layer in Map Viewer Beta to edit it. All edits you make to the layer are automatically saved to the layer once you click **Add**, **Update**, or **Delete**.

To edit a feature layer in Map Viewer Beta, complete the following steps:

1. Confirm that you are signed in and, if you want to save your changes, that you have privileges to create content.
2. In Map Viewer Beta, open the map containing the layer or add the layer directly.
3. Click **Edit** on the **Settings** (light) toolbar.
   The **Editor** pane appear. The available editing options depend on the level of editing that is allowed on the feature layer.
4. To edit the attributes or geometry of an existing feature, click **Edit feature** in the **Editor** pane and select the feature on the map.
   - To edit an attribute, double-click in the attribute field and type a new value. Press the `Tab` key when you finish editing and click **Update**.
   - To edit the geometry of a line or polygon feature, double-click the feature. The nodes appear in the line or polygon. Drag a node to a new location to reshape the geometry. When you finish, click **Update**.
   - To move a feature, select the feature on the map, drag it to a new location, and click **Update**.
5. Do the following o add a feature to a layer:
   a. Click **Add feature**.
      A list of all the layers in the map appears to which you can add a feature.
   b. Click **New Feature** under the layer you want to edit or choose a template feature.
   c. Pan and zoom to the correct location on the map, and draw the feature on the map.
      - To draw a point, click the location on the map where you want to add the point.
      - To draw a line, click the location on the map where you want the line to start. The drawing tool continues with a straight line until you click a new location. When you need the line to curve or change directions, click the map in those locations to add a node. When you get to the end of your new line, double-click that location on the map to complete the drawing.
      - To draw a polygon, click the location on the map where you want to start drawing the polygon. To create the correct shape for the polygon, click the map locations where you need the polygon outline to change

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directions. Continue clicking locations to create the correct polygon shape. When you reach the starting point, double-click to close the polygon and complete the drawing.

Once the feature exists on the map, the attributes for the feature appear in the **Editor** pane.

d. Type or choose values for each attribute. When you finish, click **Add**.
Fields that require a value appear with a pink outline. You must provide values for those attributes before you can click **Add**.

6. To delete a feature, click **Edit feature** in the **Editor** pane, select the feature on the map, and click **Delete**. Click **Delete** again to confirm the deletion.

Caution:

This action cannot be undone.

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Map Viewer Beta web map compatibility guide

This functionality matrix and compatibility guide outline common workflows and tools that are available in both map viewers. Use this table to identify the expected behavior of specific functionality across Map Viewer and Map Viewer Beta. See the legend below and the compatibility notes about specific workflows and intended behaviors.

Status	Definition
Full support	Full functionality—including saving, authoring, and modifying—is available. Example: Adding and symbolizing feature layers in Map Viewer Beta is supported.
No support	The capability is not supported in the specified version of Map Viewer. There is no authoring support, and if a web map is created using the other map viewer, you cannot view the capability saved in a Map Viewer web map. Example: If a web map is authored in Map Viewer with WFS layers, the WFS layers are not included in the map when it's opened in Map Viewer Beta and error appears.
Partial: view only	You cannot author web maps with the mentioned capability in Map Viewer Beta. If a web map is created using Map Viewer, you can view the capability. Example: If a web map containing map notes authored in Map Viewer is opened in Map Viewer Beta, map notes appear in Map Viewer Beta but cannot be modified.
Partial: limited layer authoring	Layers of a specific layer type are partially supported. Layers can be added to the map when authored in Map Viewer and have transparency and scale range modified in Map Viewer Beta. You cannot change symbology or modify pop-ups for these layer types. Example: A map created in Map Viewer with ArcGIS Living Atlas demographics map image layer can be opened in Map Viewer Beta. The scale range and transparency can be modified, but the symbols and pop-ups cannot.

Compatibility guide

Category	Functionality	Map Viewer	Map Viewer Beta
Common workflows	Printing	Full support	Full support
	Stand-alone tables	Full support	Full support
	Add layer from file	Full support	No support
	Analysis	Full support	No support
	Bookmarks	Full support	Full support
	Map notes	Full support	Partial support: view only
	Add layer from URL	Full support	Partial support: some layer types
	Layer authoring support for all layer types*	Full support	Partial: details below*

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Category	Functionality	Map Viewer	Map Viewer Beta
	Share from map	Full support	Full support
	Editing	Full support	Full support
	Measure	Full support	Full support
*Layer types (currently supported by Map Viewer)	Feature layers (hosted feature layers, hosted feature layer views, and ArcGIS Server services)	Full support	Full support
	Map image layers	Full support	Partial: limited layer authoring
	OGC WMTS, WMS	Full support	Partial: limited layer authoring
	Imagery layers	Full support	Partial: limited layer authoring
	Tile layers	Full support	Partial: limited layer authoring
	Vector tile layers	Full support	Partial: limited layer authoring
	OGC WFS	Full support	No support
	Table layers	Full support	Full support
	Feature collections	Full support	Partial: view only
	Streaming feature layers	Full support	Partial: limited layer authoring
Mapping capabilities	Heat mapping	Full support	Full support
	Smart mapping: dot density	No support	Full support
	Pop-ups: related records	Full support	Partial: view only
	Smart mapping: other	Full support	Full support
	Point symbols	Full support	Full support (selected galleries)
	Refresh interval	Full support	Partial: view only
	Labels including Arcade	Full support	Full support

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Category	Functionality	Map Viewer	Map Viewer Beta
	Configure charts in pop-ups	Full support	Full support
	Switch between basemaps with different projections	Full support	Partial support
	Time animation	Full support	Full support
	Reorder layers (regardless of layer type)	No support	Full support
	Filtering	Full support	Full support
	Interactive filter/prompt for values	Full support	No support
	Arcade authoring for pop-ups	Full support	Full support
	Clustering	Full support	Full support
	Arcade: Visualizations	Full support	Full support
Other	Localized in all supported languages	Full support	Full support
	Organization and user defaults	Full support	Partial support
	Browser: Microsoft Edge	Full support	Full support
	Browser: Internet Explorer 11	Full support	No support (not on roadmap)
	Mobile design	Full support	No support

Forward and backward compatibility

To create production-ready web maps with new features, you can open maps created in Map Viewer Beta in Map Viewer, and vice versa. This provides flexibility in how you author your maps. There are differences in functionality between the two map viewers, and it is recommended that you ensure that new functionality, such as dot density maps, can be viewed. Both Map Viewer and Map Viewer Beta provide notifications of these circumstances. In most cases, the unsupported content doesn't appear. It is recommended that you use the **Save as** option when saving web maps that are authored in both Map Viewer and Map Viewer Beta. For more information regarding backward compatibility for specific functionality in Map Viewer, see Backward compatibility with Map Viewer.

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