

Monitoring COVID-19: A Dashboard

The [Centers for Disease Control and Prevention \(CDC\)](#) has asked your GIS company to configure a dashboard using the live feed from John Hopkins University. The feature layer contains the most up to date COVID-19 cases. It covers China (in province level), the US, Canada, Australia (in city level), and the rest of the world (in country level). The feature layer has been created by [The Center for Systems Science and Engineering John Hopkins University](#).

Operations Dashboard is a configurable web app that provides location-aware data visualization and analytics for a real-time operational view of people, services, assets, and events.

[View Final Dashboard](#)

ArcGIS Requirements

- ArcGIS Online account (get a [free trial](#))

Time Required

1 hour

Lesson Overview

Builds skills in

- Adding and styling layers from Living Atlas to build a map.
- Configuring custom pop-ups
- Creating a dashboard with the following elements:
 - Map
 - List
 - Indicators
 - Chart
 - Filtering
 - Header

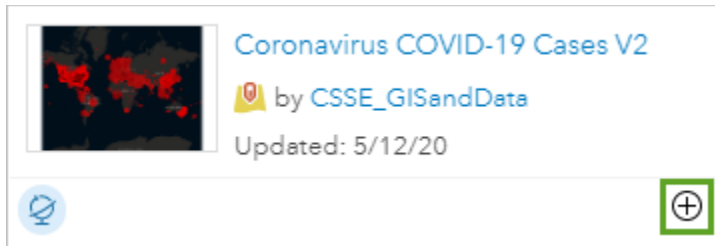
Exercise

Step 1: Create the map

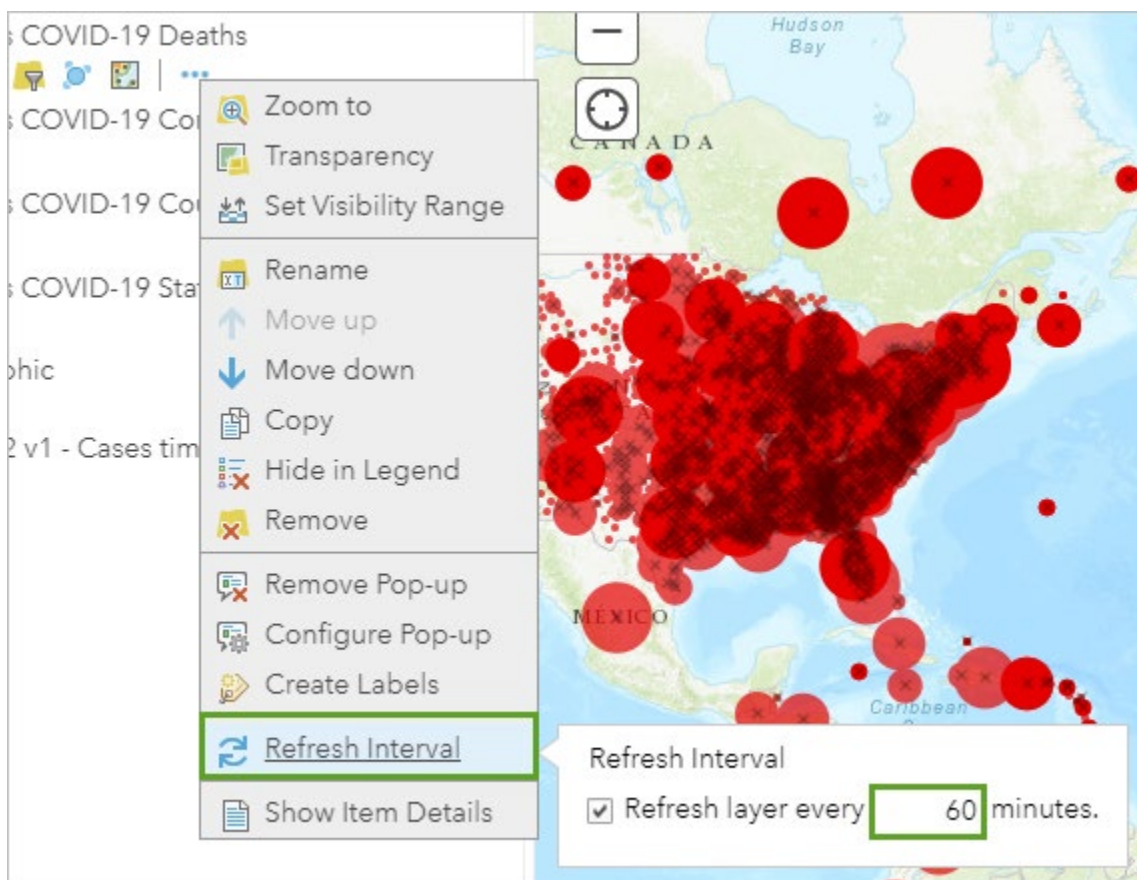
1. Sign in to [ArcGIS.com](https://www.arcgis.com).
2. Click **Map**.
3. Click **Add** and choose **Browse Living Atlas Layers**.
4. Search for *Coronavirus COVID-19 Cases* owner: *CSSE_GISandData*.

Note: This layer is frequently updated. Its name may have changed. It is owned and managed by [The Center for Systems Science and Engineering Johns Hopkins University](#).

5. Find the global layer **Coronavirus COVID-10 Cases V2** and click the **Add** button to add the layer to the map.



6. Click the **Back** arrow and click **Content**. Four new Coronavirus feature layers and a table have been added to the map.
7. Point to **Coronavirus COVID-19 Cases V2 - Deaths** and click the **More Options** button. Rename the layer to *Coronavirus COVID-19 Deaths*.
8. Rename **Coronavirus COVID-19 Cases V2 - Cases** to *Coronavirus COVID-19 Confirmed*.
9. Rename **Coronavirus COVID-19 Cases V2 - Cases country** to *Coronavirus COVID-19 Country*.
10. Rename **Coronavirus COVID-19 Cases V2 - Cases state** to *Coronavirus COVID-19 State*.
11. For each of the Coronavirus layers, click **More Options** again and choose **Refresh Interval**. Change the Refresh Interval to *60* minutes.

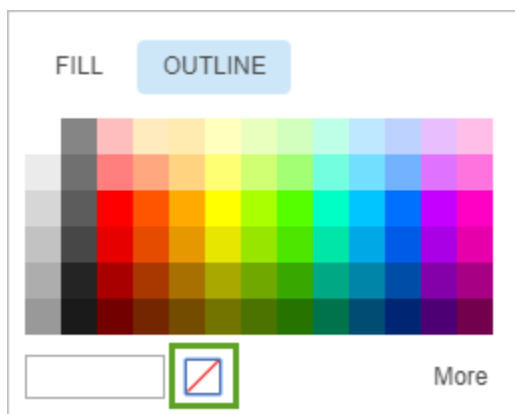


If you don't set a refresh interval, the data will not be updated.

12. Click **Add** and choose **Browse Living Atlas Layers**.
13. Search for *World Countries (Generalized)* and add the layer owned by Esri.
14. Search for *USA States (Generalized)* and add the layer owned by Esri.
15. Click the **Back** arrow. Rename the new layers *World Countries*, and *USA States*.
16. Click **Basemap** and click **Dark Gray Canvas**.
17. In the **Contents** pane, drag your layers to reorder them so **Coronavirus COVID-19 Confirmed** is the first layer, followed by **USA States** and **World Countries**.



18. Point to **World Countries** and click the **Change Style** button.
19. Click **Options** and click **Symbols**.
20. Change the fill and the outline to **No color**.



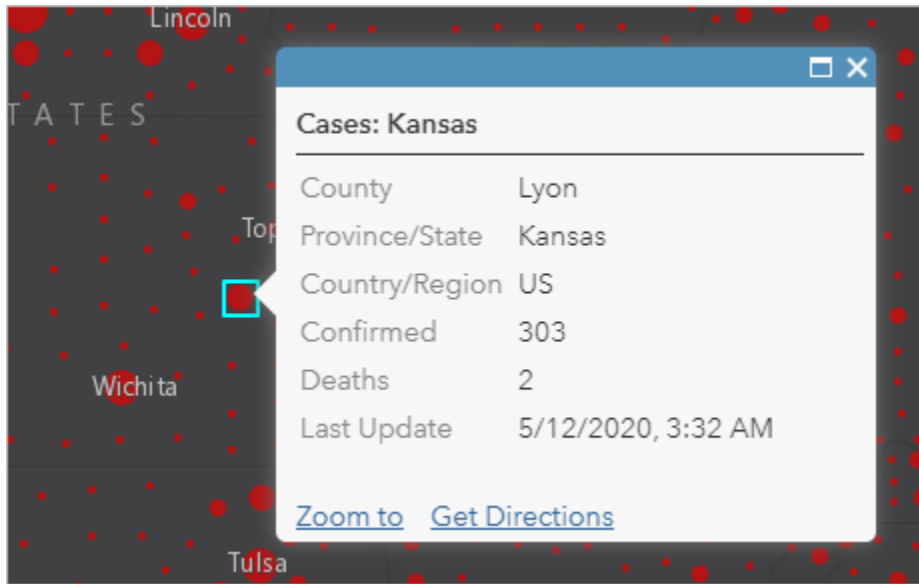
21. Click **OK** and **OK** and **Done**.
22. Apply the same symbology to the **USA States** layer.
23. Save the map. For **Title**, type *Coronavirus Map_(your initials)*.
24. Fill out the metadata fields. Optionally, choose a folder in which to save the map.
25. Click **Save Map**.

Step 2: Configure custom pop-ups

1. In the **Contents** pane, uncheck the boxes for all layers except **Coronavirus COVID-19 Confirmed** to turn them off.
2. For **Coronavirus COVID-19 Confirmed** click **More Options** and choose **Configure Pop-up**.
3. Click **Configure Attributes**.
4. Turn off all fields except for the following:
 - County
 - Province/State
 - Country/Region
 - Confirmed
 - Deaths
 - Last Update
5. Use the arrow buttons to reorder the fields. The order should match the list shown above.
6. Click **OK** and click **OK** again to close the **Configure Pop-up** window.

Next, you'll test your popup.

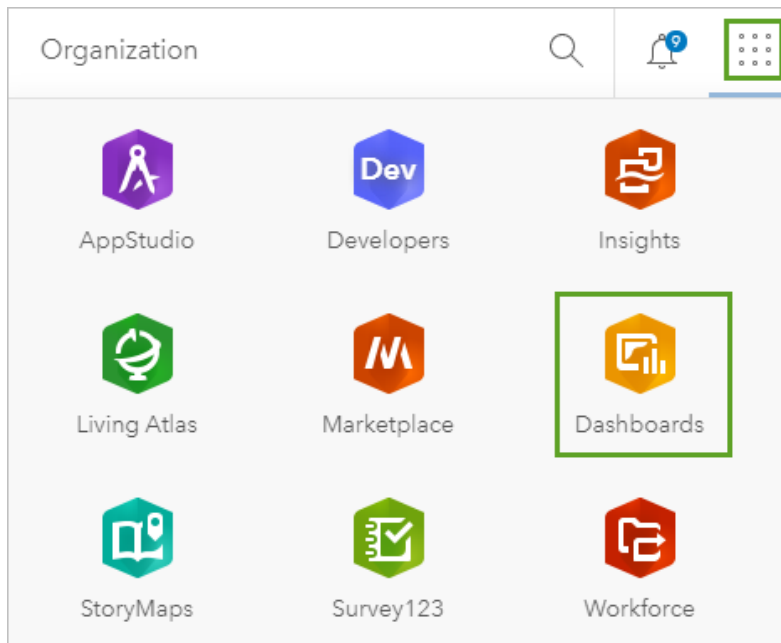
7. Zoom to the United States and click one of the circles.



8. Save the map.

Step 3: Create and configure the dashboard

1. At the top of the map click the **Home** button.
2. Click on the app gallery button next to your username and click **Dashboards**. (Or **Operations Dashboard**.)



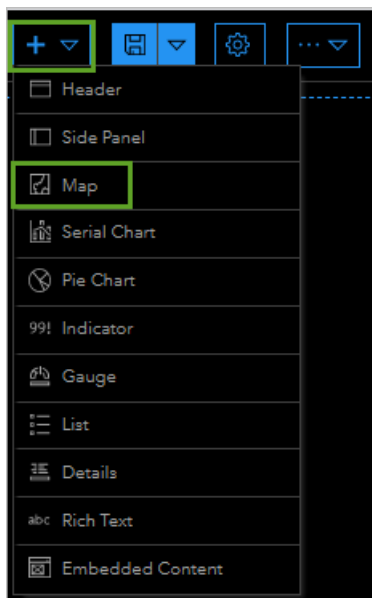
3. Click **Create Dashboard**.
4. In the **Title** box, type *Coronavirus Dashboard (your initials)*.
5. Add tags and a summary. Optionally, choose a folder for the dashboard. Click **Create Dashboard**.
6. At the top of the page, click the gear button to configure the dashboard.



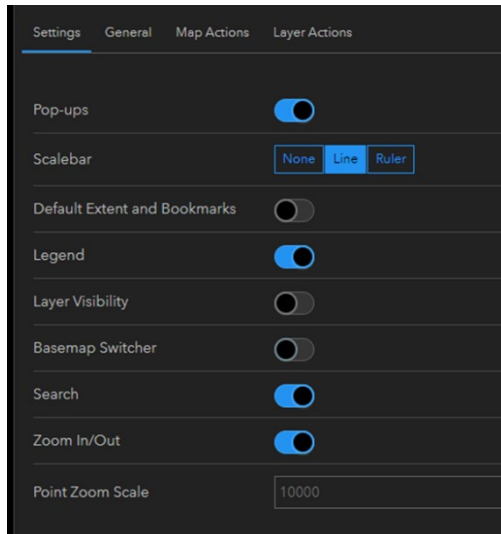
7. Click **Dark** to change the theme from Light to Dark.
8. In the upper right, click the **X** to close the **Dashboard Settings** pane.

Step 4: Add the map

1. At the top of the page, click the **Add** button and choose **Map** from the menu.



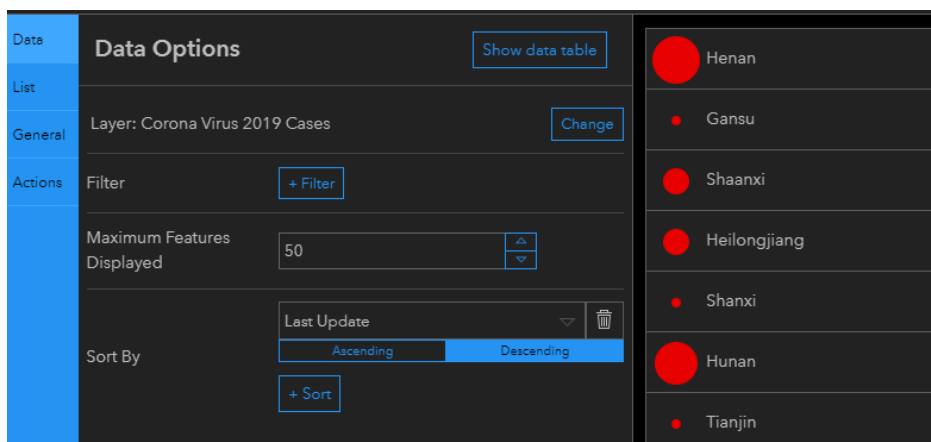
2. Click the Coronavirus map that you created earlier.
3. For **Scalebar**, click **Line**.
4. Click the switches to turn on **Legend**, **Search**, and **Zoom In/Out**.



5. Click **Done**.
6. At the top of the Dashboard click **Save**.

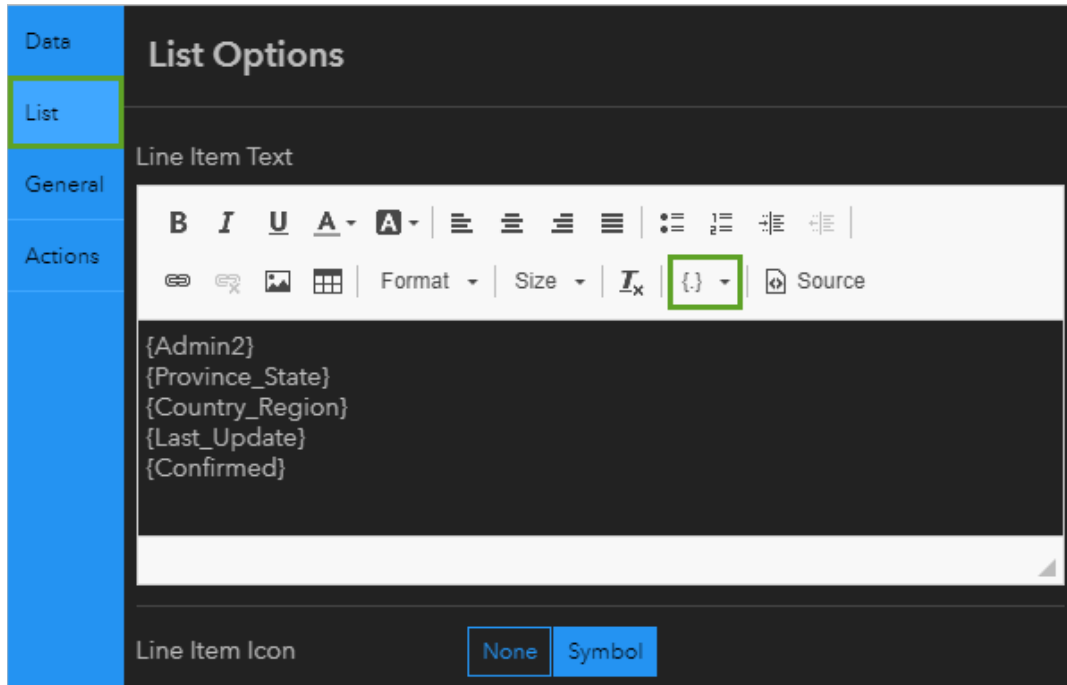
Step 5: Add a list with an action

1. Click the **Add** button again and this time choose **List**.
2. Click the **Coronavirus COVID-19 Confirmed** layer.
3. Change the **Maximum Features Displayed** to 50.
4. Under **Sort By**, click **+Sort**.
5. For the **Sort By** field, choose **Last Update** and **Descending**.



6. Click **List**.
7. On the **Line Item Text** formatting bar, click the curly braces "{.}", and choose **County**. Press Enter to add a new line.

8. Use the same technique to add **Province/State**, **Country_Region**, **Last_Update**, and **Confirmed**, adding a new line after each.



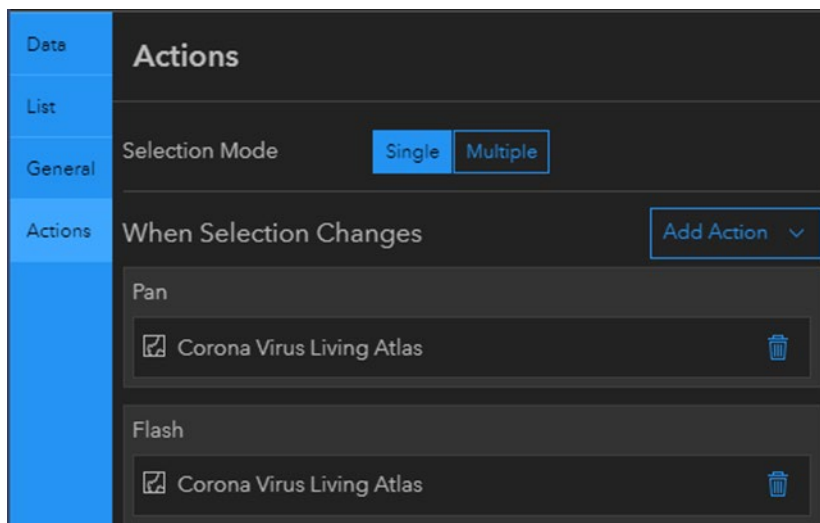
9. Click **Actions**.

10. Click **Add Action** and click **Pan**.

11. Click **Add Target** and choose your Coronavirus map.

12. Click **Add Action** and click **Flash**.

13. Click **Add Target** and choose your Coronavirus map.



14. Click **Done**.

15. A list is added to the dashboard. Click an item in the list. The maps should pan to that location and flash.
16. Resize the list on the left side of the dashboard so the map takes up most of the room on the screen.

Step 6: Add indicators

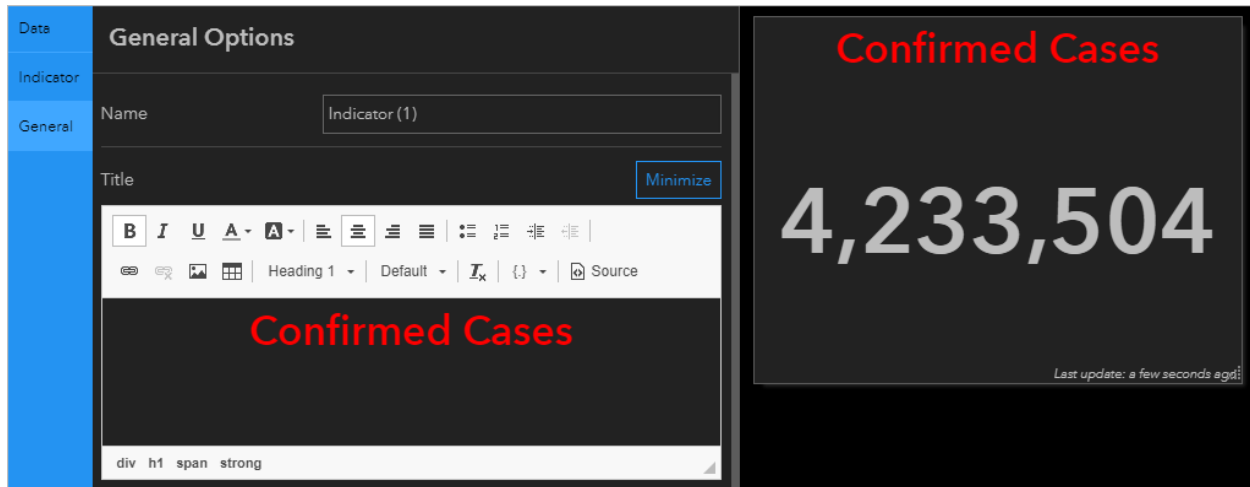
In this section you will add indicators to keep track of the virus outbreak; one indicator for confirmed cases and one for deaths.

1. Click the **Add** button and choose **Indicator**.
2. Click **Coronavirus COVID-19 Confirmed** to relate the indicator to that layer.
3. For **Statistic**, choose **Sum**.
4. For **Field**, choose **Confirmed**.

The screenshot shows the 'Data Options' configuration panel. The 'Indicator' tab is active. The 'Value' field is empty. The 'Layer' is set to 'Coronavirus COVID-19 Confirmed'. The 'Filter' field has a '+ Filter' button. The 'Value Type' has two buttons: 'Statistic' (selected) and 'Feature'. The 'Statistic' dropdown is set to 'Sum'. The 'Field' dropdown is set to 'Confirmed' with a 'number' sub-selector.

5. Click the **General** tab.
6. For **Title**, click **Edit** and type *Confirmed Cases*.
7. Center the text, make it bold, and change the format to **Heading 1**.

8. Change the text color to red.



9. Click **Done**.

10. Click the **Add** button and choose **Indicator** again.

11. Click **Coronavirus COVID-19 Deaths** to relate the indicator to that layer.

12. For **Statistic**, choose **Sum**.

13. For **Field**, choose **Deaths**.

14. Click the **General** tab.

15. For **Title**, click **Edit** and type *Deaths*.

16. Center the title, make it bold, and change the format to **Heading 1**. Change the text color to white.

17. Click **Done**.

18. Hover your mouse near the top left of each indicator. From the blue option menu, choose **Drag item**. Dock the indicators as a column on the right side of the dashboard.

Step 7: Add a serial chart

Add a serial chart to show the number of cases reported each day.

1. Click the **Add** button and choose **Serial Chart**.

2. Click **Coronavirus COVID-19 Confirmed** to relate the serial chart to that layer.

3. For **Categories From**, click **Fields**.

4. For **Category 1 Field**, choose **Confirmed**.

5. For **Category 2 Field**, choose **Deaths**.

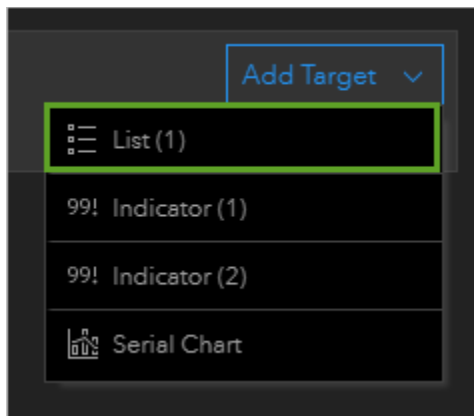
6. Click the **General** tab.

7. For Title, click Edit and type **Total Cases**.
8. Center the title, make it bold, and change the format to **Heading 1**.
9. Click the **Series** tab. For **Bar Colors**, choose **By Category**.
10. Change Recovered to Green and Deaths to Red.
11. Click **Done**.
12. Drag and dock the serial chart under the indicators.
13. Click **Save**.

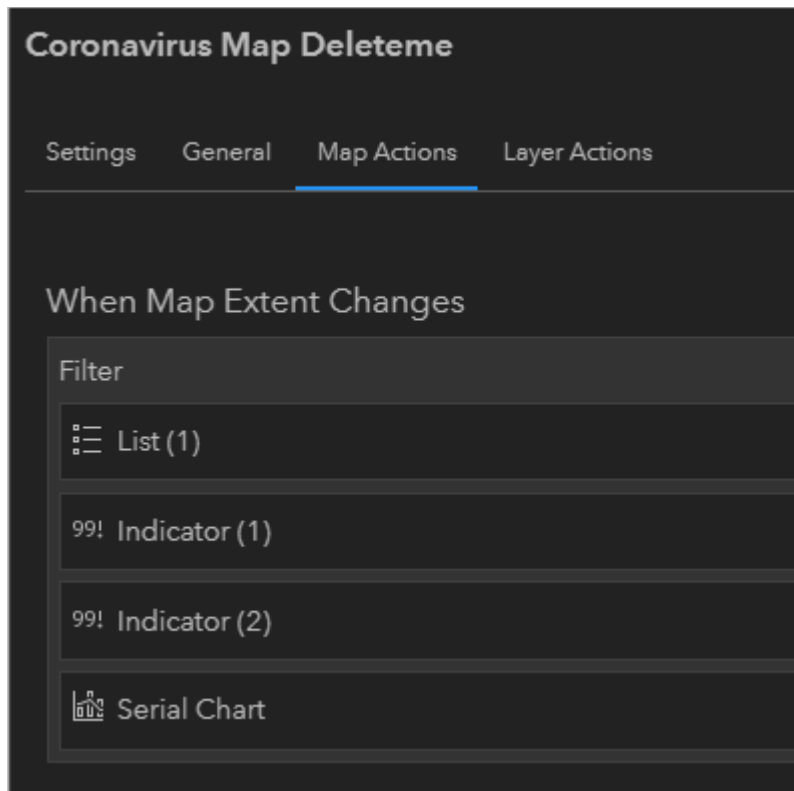
Step 8: Filter to the map extent

You can filter the indicators, so they show data based on the current map extent.

1. In the map, hover over the blue icons in the top left. From the options that appear, choose **Configure**.
2. Click the **Map Actions** tab. You will configure the map so that when the extent changes, the indicators will change accordingly.
3. Click **Add Target** and click **List**.



4. Use the same method to add **Indicator (1)**, **Indicator (2)**, and **Serial Chart**.



5. Click **Done** and **Save**.
6. Zoom in and out of the map to test the actions.

Step 9: Add a header

1. Click the **Add** button and click **Header**.
2. For **Title**, type *COVID- 19 Outbreak*.
3. For **Subtitle**, type *2019-2020*.
4. For **Logo Type**, select **Icon** and choose an appropriate icon. Change its color to white.
5. Click **Done**.
6. Resize the dashboard elements to your taste and click **Save**.

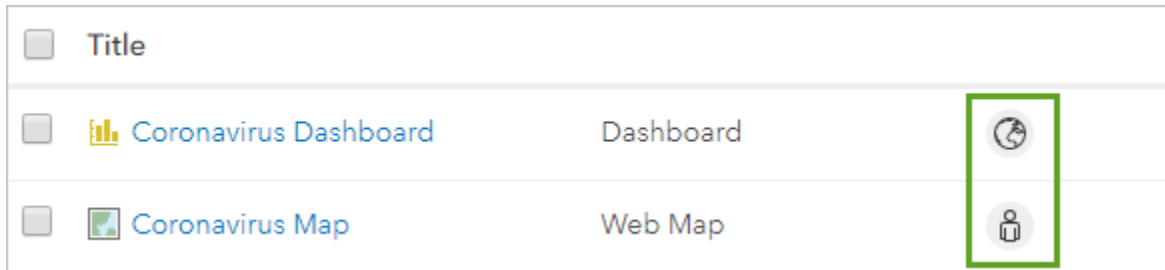


Step 10: Share the dashboard and the map

Update the sharing settings of the Dashboard and the map.

1. In the top left corner, click **Home** and click **Content**.
2. Find your Coronavirus Dashboard. Click the **Sharing Level** button next to it and choose **Everyone (public)**. Click **Save**.

The icon changes to a globe to indicate it is shared with everyone.



3. Find your Coronavirus Map and updated its sharing to **Everyone (public)** as well.
4. Click the name of your Coronavirus Dashboard to open its item details page.
5. Click **View Dashboard**.

Your dashboard is complete.

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380 New York Street

Redlands, California 92373 – 8100 USA

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