

## Using QuickCapture as a survey counter

This document contains step-by-step instructions on how to prepare a counter tool for data collection in the field using ArcGIS QuickCapture.

In school assessment, counting and recording specific types of data can be common occurrence or requirement. For instance, students may be required to:

- Count and record the different types of vehicles (e.g. car, truck, van, motorcycle) passing through a particular intersection
- Count and record different types of invasive weed species along a transect line
- Count and record the number of people entering and exiting a precinct over a five-minute duration

Teachers can use [ArcGIS QuickCapture](#) to build a simple digital form that allows students to collect this data at the touch of a button. Results can then be viewed and analysed in ArcGIS Online, in a map viewer.

### Overview of step-by-step guide

This guide will address the following actions, which will take you through the process from start to finish.

**Part One** – Prepare feature layers (types of data to be collected in the field) in ArcGIS Online.

**Part Two** – Create a map in ArcGIS Online for your feature layers to appear in after the data has been collected. Customise the symbology of your feature layers (point data).

**Part Three** – Prepare your QuickCapture data collection form and share it with your class / students / fieldworkers.

**Part Four** – Collect data in the QuickCapture application (phone or tablet) in the field.

### Context for training

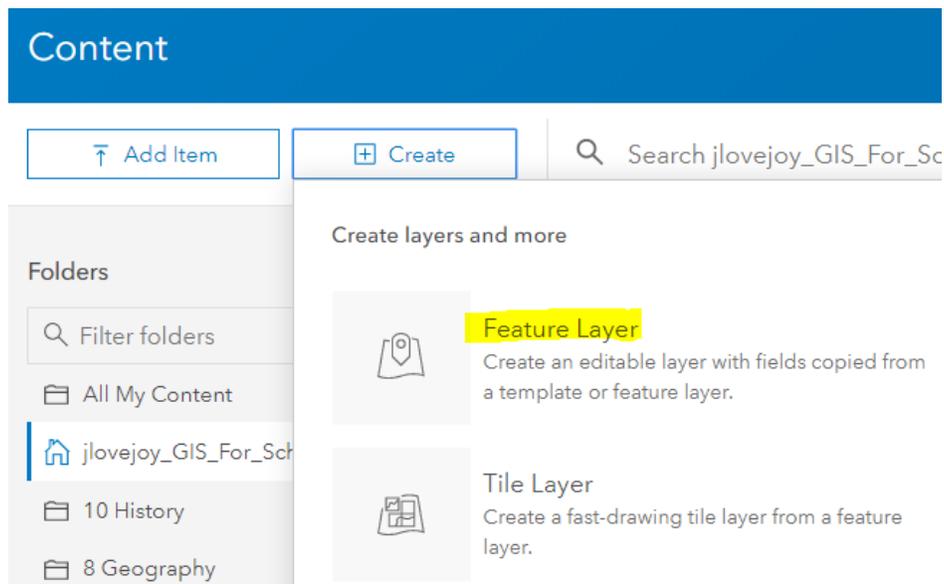
For this guide, you will prepare a map and form that will allow the data collectors (students) to count and record the different types of vehicles. The form will be designed with the following data collection process in mind:

- Students will visit 3 different intersections to count and record vehicles using each intersection (quantity and type)
- Students will count and record these vehicles for a five-minute duration at each intersection
- Students will count and record at these intersections over 3 consecutive days at the same time to reduce variables (i.e., traffic conditions should be similar)

Alternatively, if you had a specific objective in mind, you could apply the steps in this document to your needs (e.g., counting and recording invasive weed species).

## Part 1: Plan and create your feature layers

1. Sign into your ArcGIS organisational account in [ArcGIS Online](#).
2. Go to **Content**. In **My Content**, click **Create** and choose **Feature Layer** to open the **Create a feature layer** form.



3. Select the **Build a layer** category. Choose **Points** (as you are collecting point data at a single location) and click **Create**.

Create a feature layer ×

From Template **From Existing Layer** From URL

What do you want to do? Select a template

Show All

**Build a layer**

Agriculture

Electric Utilities

Environment

Forestry

Gas Utilities

General

Natural Resources

Petroleum

Public Safety

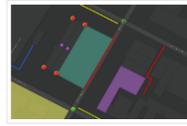
Telecommunications



Lines



**Points**



Points, lines, and polygons



Polygons



Table



**Points**

Build a feature layer for collecting point data. After creating the empty layer, define fields and domains as needed then start collecting data.

**CREATE**

CLOSE

4. Click on **Point layer**. Rename it to **Vehicles**. Click **Save**. Click **Next**.



5. Set the map extent for your new hosted layer. This is the portion of area that will show in a map by default. If you are only collecting data in a local area, then it may be a good idea to tighten the map extent on a specific location. Click **Next** once you are happy with the map extent.

Create a feature layer

Pan and zoom this map to set the map extent for the new hosted layer.



Left:

Right:

Top:

Bottom:

- Enter a title, tags and summary for your feature layer. Click **Done**.

## Create a feature layer ×

Specify a title, tags, and summary for the new hosted layer.

**Title:**

Vehicle Count (QuickCapture Counter tutorial)

**Tags:**

Data Collection ×

Add tags

**Summary:** (Optional)

This feature layer contains point data. It has been created to count and record the quantity and types of vehicles passing through points of interest (e.g. intersections)

Your **Vehicles layer** is now created, and its item page opens. In the following steps you will create the fields (e.g. van, truck, car, etc.) that will define the data collection form for the **Vehicles (points)** layer, which is currently selected in the image below.

- Go to the **Data** tab of the item page and go to **Fields**. If you created layers for points, lines and polygons, verify that **Park services** (points) is selected.



- Click **Add** in the top-left corner.

An input box will appear. In Field Name, type **VehicleType**. In Display Name, enter **Vehicle Type**. Note that field names cannot have spaces between words. However, display names will be what data collectors see.

Choose **Integer** for Type. Accept the other defaults and click **Add New Field**.

### Add Field ×

Field Name:

Display Name:

Type:

Default Value: (Optional)

Allow Null Values:

9. You will see this newly created field – **Vehicle Type** – which you can find under the **Display Name** heading. Click on **Vehicle Type** to create a more specific vehicle list.
10. Click **Create List**.

Vehicle Type ✕

---

Description ✎ Edit

A brief summary of the item is not available.

Field Value Type ✎ Edit

Create List  
Delete

Details

11. Type a label of **Car** with a code of **0**.

Label	Code
Car	0 <span style="float: right;">✎</span>
+ Add <span style="color: red; font-size: 2em;">↶</span>	

12. Click **Add**. Add entries for **Truck** (code **1**), **Van** (code **2**) and **Motorcycle** (code **3**). Add any other types you may require data collectors to count.

Label	Code
Car <span style="float: right;">✎</span>	0 <span style="float: right;">✎</span>
Truck	1 <span style="float: right;">✎</span>
Van	2 <span style="float: right;">✎</span>
Motorcycle	3 <span style="float: right;">✎</span>

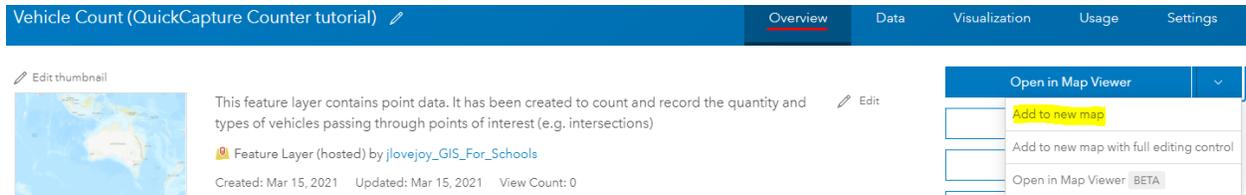
13. Click **Save**.

**If you are creating your own list:**

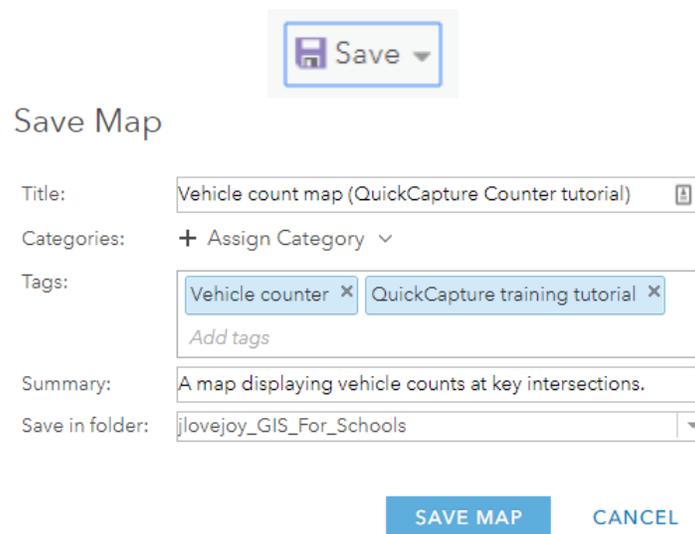
- Still follow the process above (Part 1 – Steps 1 – 13)
- However, build your list to reflect the types of data you require your students to collect
  - E.g. If you were building a person counter to count how many people entered or exited a precinct, you would still need to build a list (i.e. Entering vs exiting. This could be more specific by building a list for ‘Males entering’ and ‘Males exiting’ etc.).

## Part 2: Make a map

- Once you have finished creating your new fields, click on **Overview**. In the drop-down list for **Open in Map Viewer**, select **Add to new map** to start making your map.



- Save your map. Give it an appropriate title and tag so that it is easily identifiable.



**Save Map**

Title: Vehicle count map (QuickCapture Counter tutorial)

Categories: + Assign Category

Tags: Vehicle counter, QuickCapture training tutorial

Summary: A map displaying vehicle counts at key intersections.

Save in folder: jlovejoy\_GIS\_For\_Schools

**SAVE MAP** CANCEL

- In the **Contents** pane, hover over the *Vehicle Count* layer, click **More Options** , choose **Rename**, and rename the layer if you need to shorten it (as shown below).

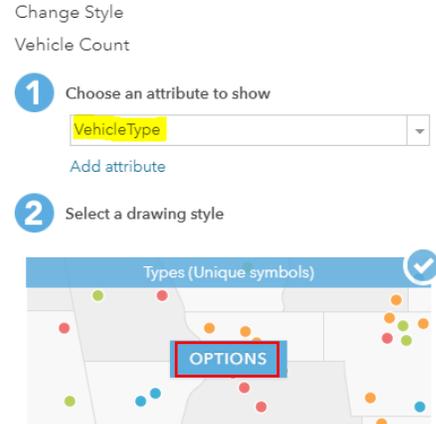


- Hover over the layer. Click **Change Style** .



- Choose to show the **Vehicle Type** attribute.
- Click **Options** for the **Counts and Amounts (Size)** drawing style.

You may wish to choose a different way to display your data. There are a number of drawing style options to choose from.



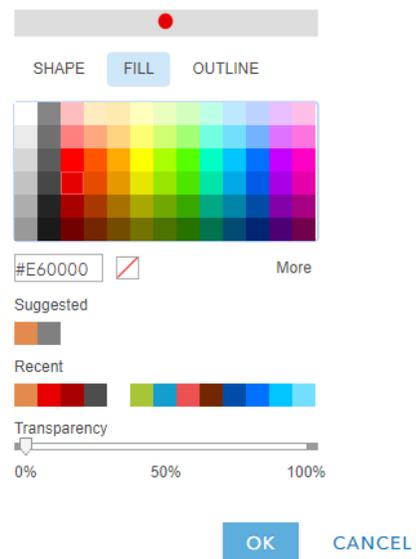
- Default symbol colours will be assigned to each type of vehicle. If you are happy with these default symbols you can leave it as is and press **OK** and **DONE**. Note: the colours/symbols you select here will appear on your QuickCapture data collection form later. If you would like to change these colours or choose your own symbols, follow the instructions below:

Click the symbol next to **Car**. Click **Fill** and select another colour. Alternatively, you can click **Shape** and look through the available categories to find an appropriate icon if one exists.

## VehicleType

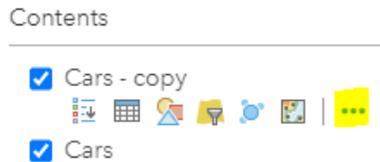
Click to edit symbol or label.

- LABEL
- ⋮ ● Car
  - ⋮ ● Motorcycle
  - ⋮ ● Truck
  - ⋮ ● Van



- Click **OK** at the bottom of the **Change Style** pane. Then click **DONE**.

- In the **Content** pane, hover over your **Cars** layer and select **More Options** .
- Select **Copy**. A copy of your **Cars** layer will appear.

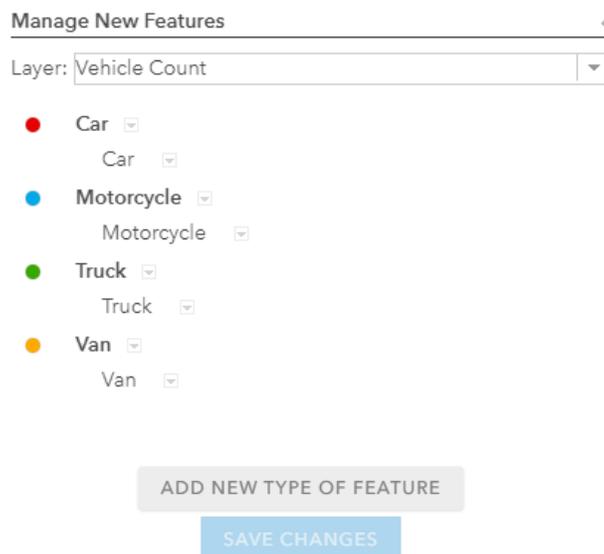


- Click **Edit**, then **Manage**.



- Then click **Save Changes**. You must save these changes to apply the symbology alterations you made.

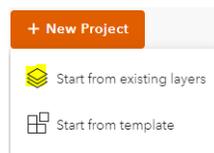
Alternatively, you may wish to add an additional type of vehicle. For example, you may wish to be able to count and record buses too. Note, you can revisit the **Edit** function at any time to manage (delete and add) more features in a layer.



13. If you want others to be able to access this map, set your share settings appropriately.

### Step 3: Design your QuickCapture data collection form

1. Go to [ArcGIS QuickCapture](#) and **sign in with ArcGIS Online**.
2. Select **New Project** in the top-right corner of the webpage. Choose **Start from existing layers**.



3. Under **My Layers**, select the feature layer you previously prepared in ArcGIS Online. In this case, it should be the most recent option: **Vehicle Count (Quick Capture Counter tutorial)**.



4. Ensure the checkbox for **Create buttons from layer symbology** is selected. Press **Next**.



5. Enter a title for your QuickCapture project, check that your email is correct and choose a folder on your ArcGIS Online account to save your project in. If you do not have folders, save it in **Root**. Click **Create**.

Title  
Vehicle Count (QuickCapture Counter tutorial)

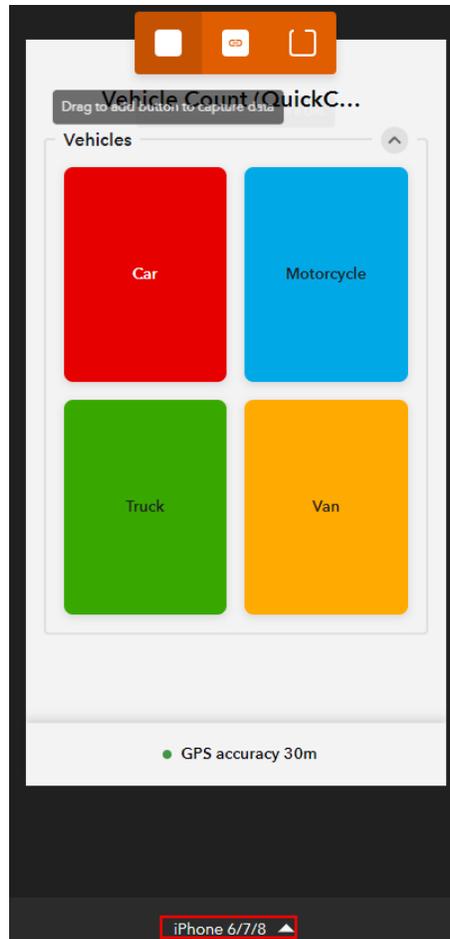
Data recovery email  
jlovejoy@esriaustralia.com.au

Save in folder  
Root

Create

- Your project will be created. A smartphone or tablet display will load, which will show you what data collectors will see on the devices they collect data on.

As you prepare the appearance of this form you may wish to change the device view. This can be done by selecting the arrow at the bottom of the image below.

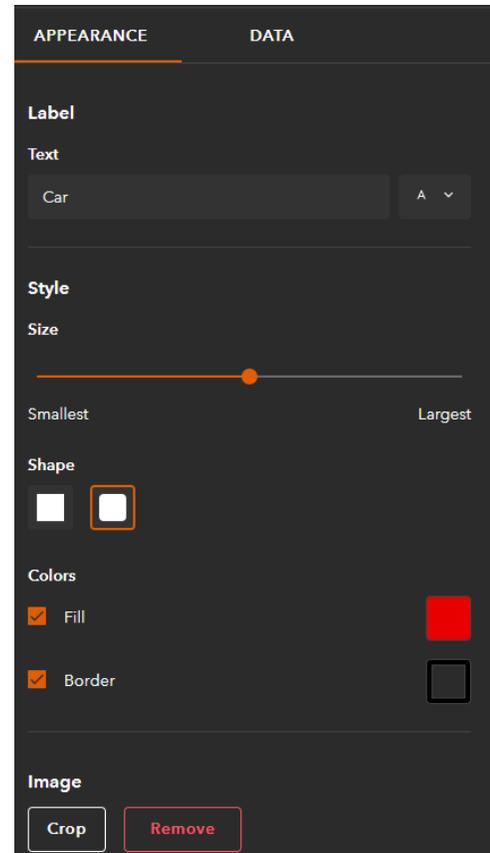


- Click on the first button displayed. In the case of this example, **Car** appears first. By selecting a button, you will notice that additional options for editing the **Appearance** and **Data** of each button shows up.

- Under the **Appearance** tab, you can modify the label, add images (e.g. car), change the size and shape of buttons and change the colours and borders of the buttons.

When making changes, consider the size of the devices most fieldworkers will be collecting data on. For example, some labels may be too long and need to be shortened *i.e.* 'bicycle' may need to become 'bike'.

Making the size of the buttons smaller or larger may also help.

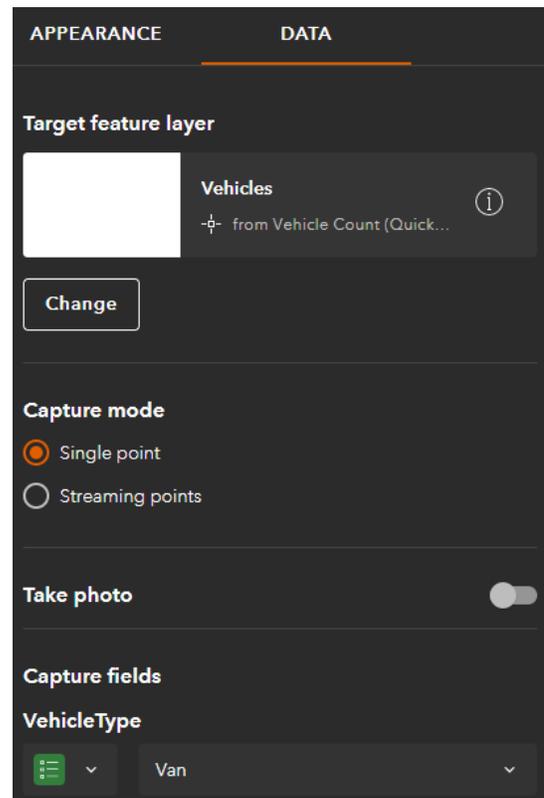


9. Under the **Data** tab, you can enable extra user functions.

For point data, keep **Single point** selected under **Capture mode**.

You may require students to take photos of points collected. If this is the case turn on the **Take photo** button. Select whether a photo is required or not by checking / unchecking the checkbox.

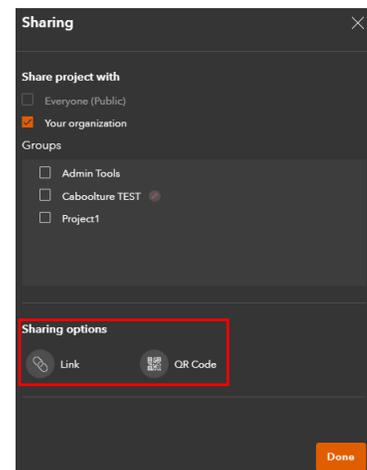
As this example requires students to count multiple vehicles passing through an intersection, the photo option would hinder and jeopardise student ability to keep up with the traffic. Therefore, it will remain **off**.



10. You will need to format each button's appearance and data collection tools. Repeat steps 8 and 9 for each button as required.
11. Once you are happy with the data collection form (appearance, data collection), click **Save**.

12. Choose your share settings by clicking on **Share** and selecting **Your organisation** or a specific group if you have created one *e.g. Mr Smith's Year 7 Geography class*.

13. Once you have shared the QuickCapture form appropriately, you will be able to share this with your class / fieldworkers via a link or QR code. Note: at this stage, students will need to have QuickCapture downloaded on their personal devices or school devices by visiting the app / android store. It is free to download.



## Part 4: Capture data in public parks using QuickCapture

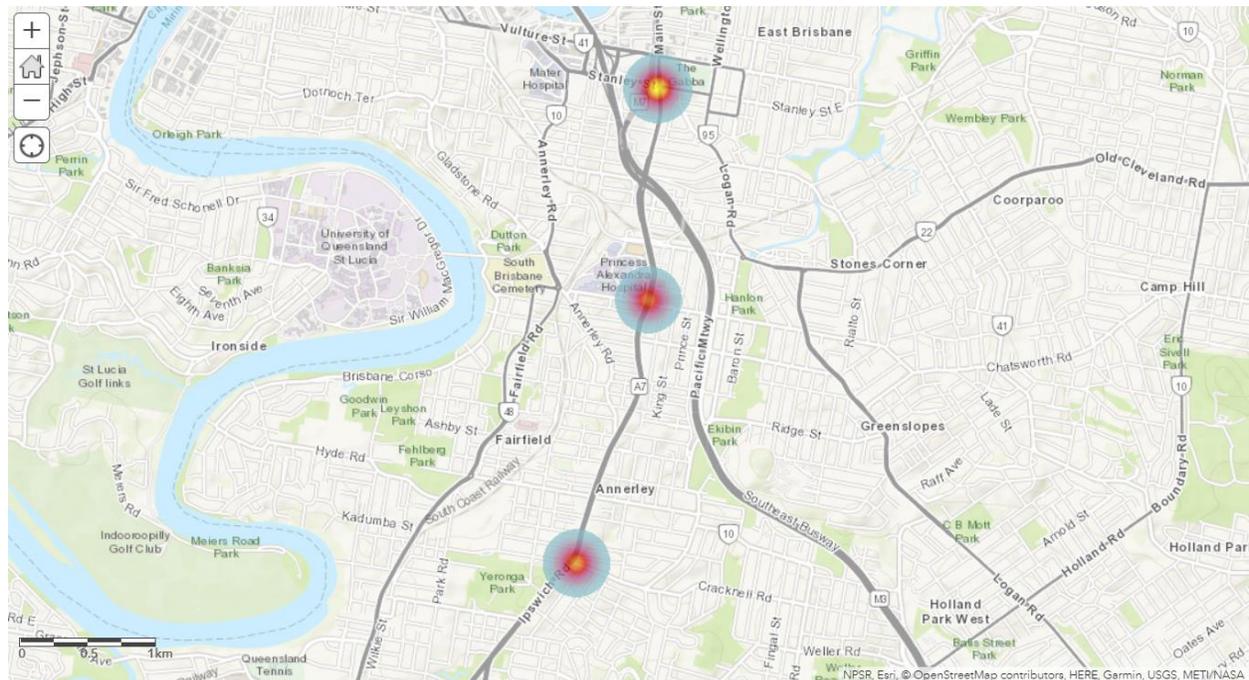
This particular guide assumes that the user has some knowledge of the QuickCapture application, and its data collection processes.

You can learn about the data collection or data capture process by visiting our [Introduction to ArcGIS QuickCapture](#) professional development resource. Visit pages 15 – 18 for further details.

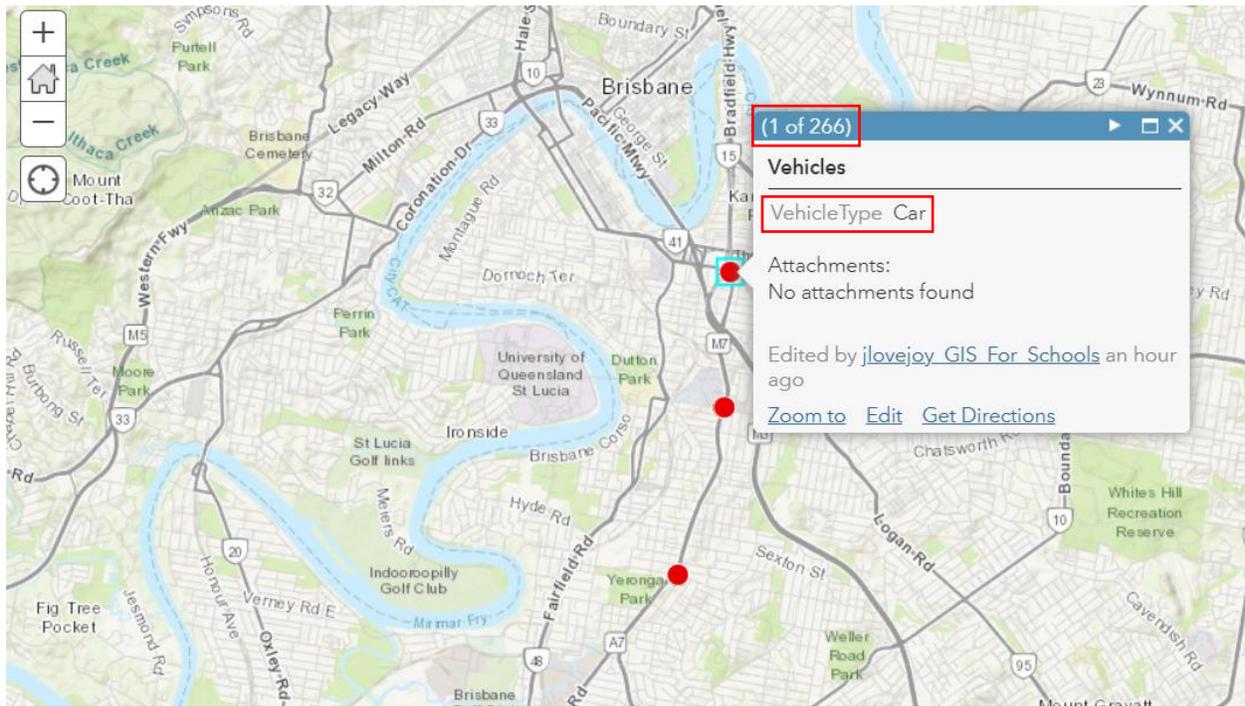
### Viewing the data:

Once you have finished collecting data on the QuickCapture application, you will be able to view your data on the map you created in ArcGIS Online (Part Two). If you reopen your ArcGIS Online map and zoom into the intersections you just collected data at, you will now see your data.

For example, the total vehicle count at each of the three intersections is displayed below. The northernmost intersection saw the highest number of vehicles pass through it during the data collection period.



Alternatively, you can set filters on your feature layers to show only one type of vehicle (e.g. car only) at a time on the map. You can also click on the symbol on the map to bring up a pop-up box that has the total count of that vehicle type.



---

## Next Steps:

---

### *Request a free ArcGIS Online Account for your school:*

Australian schools can request a free ArcGIS Online account as part of Esri Australia's Classroom GIS Initiative. A school subscription provides additional map layers, content, features and privacy. Learn more about ArcGIS Online, and apply for your ArcGIS Online School subscription at <http://esriaustralia.com.au/education>

### *Speak to Esri Australia's Education Program Manager:*

Australian schools can seek additional support or speak to our Education Program Manager by emailing [education@esriaustralia.com.au](mailto:education@esriaustralia.com.au).