

How to Create a Layer & Digitize Features in ArcGIS 10

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Note: This tutorial assumes basic familiarity with ArcGIS software.

First, create a new, empty shapefile.

1. In ArcCatalog, right-click in the folder where you want to put the new shapefile and select **New | Shapefile**.
2. Name it based on what it will contain (e.g., water if you will be digitizing hydrologic features, roads if you will be digitizing roads, site_area if you will be digitizing a study area boundary, etc).
3. Choose the appropriate **Feature Type**.
 - a. *Polygon* features are for polygons (such as lakes, buildings, study area boundary, etc),
 - b. *Line* features are for lines (such as road centerlines, transects, etc), and
 - c. *Point* features are for points (such as station locations, bike racks, bus stops, etc).
4. Click the **Edit** button to select projection and coordinate system for the new shapefile.
 - a. In the pop-up window, click on the **Import** button to select the projection and coordinate system from an existing dataset.
 - b. Find an existing dataset with the coordinate system and projection that you want the new shapefile to be in. Click Add when you are done.
 - c. If you don't have another dataset with an existing coordinate system, click on the **Select** button. Go to **Geographic Coordinate Systems | World | WGS 1984.prj**. Click Add when you are done.
 - d. Click OK to apply the selected coordinate system.
5. Click OK when you have filled out the above information.

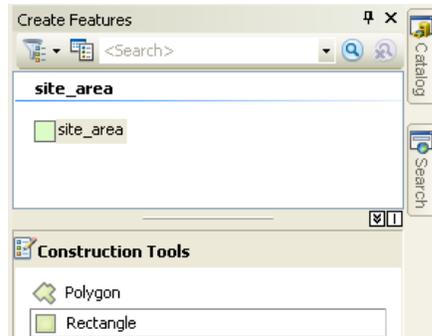
The new, empty shapefile will appear in your folder. Next, you need to edit it to add features.

1. Open **ArcMap** and add the new shapefile that you just created to your map.
2. Add aerial photos or the **Imagery basemap** (click on the drop-down menu by the **Add Data** button and select **Add Basemap**) to your map, as well as any other layers that will help you determine where to digitize new features.
 - a. If the basemaps aren't working, go to Add Data and select Look in: GIS Servers. Double-click Add ArcGIS Server. Click Next, and in the second screen type <http://services.arcgisonline.com/arcgis/services>. Click Finish. Open the server and add ESRI_Imagery_World_2D to your map.
3. Before you begin digitizing, it will be helpful to make the new shapefile slightly transparent so that you can see what you're doing. Open the layer's properties, click on the **Display** tab, and change the **Transparent** field to **30%**. Click OK—you may want to adjust this value once you start digitizing.
4. Now you're ready to digitize! Zoom to the area you want to digitize, using the imagery background as a guide. Right-click on the shapefile in the TOC (table of contents) and select **Edit Features | Start Editing**.
5. Make sure that the Editor toolbar is visible. If it isn't, go to **Customize | Toolbars | Editor** and make sure that it is checked.



6. Click on shapefile in the **Create Features** panel. A set of **Construction Tools** will become active in the window; choose the appropriate tool. For example, if you are creating new polygon features, the

Polygon tool allows you to draw a free form polygon and Rectangle allows you to draw a rectangular feature.



- a. If you don't see a template for your layer in the Create Features panel, you will need to create one. Click on the **Organize Templates** button . In the pop-up window, select your layer from the list on the left and then click **New Template**. Click **Finish** in the next pop-up window. You should now see a template for the layer. Click **Close** to close the Organize Templates window.
7. Draw your new features on the map. If you are digitizing polygons or lines, double-click to finish a line or polygon. If you are digitizing points, you only need to click once to add a single point.
8. If you make a mistake, select the offending polygon/line/point using the Edit Tool  and press the Delete key on your keyboard.
9. Save your edits regularly, especially if you are digitizing many features! To save your edits, go to **Editor | Save Edits** in the Editor Toolbar. When you have finished digitizing new features, go to **Editor | Stop Editing**.

For more information about additional options, check out the ArcGIS 10 Help about editing:

http://help.arcgis.com/en/arcgisdesktop/10.0/help/index.html#/A_quick_tour_of_editing/001t000000200000/