

Creating and Editing Shapefiles

1. Creating a New Shapefile (Points, Polylines, and Polygons)

1. Open ArcCatalog
 2. Highlight the folder that will contain your new shapefile.
 3. Right-click on the folder and select New > Shapefile.
 4. The Create New Shapefile dialog box opens.
 - a. Name the shapefile and select the feature type (Point, Poly, or Polygon) from the drop-down menu.
 - b. Set the Spatial Reference (Projection/Datum) by clicking the Edit button. This opens the Spatial Reference Properties dialog box. Below are two methods to set the spatial reference.
 1. Choose Select > Projected Coordinate Systems > UTM folder > NAD1927 > NAD 1927 UTM Zone 11N.prj > click the Add button > click OK in the Spatial Reference Properties dialog box > click OK in the Create New Shapefile dialog box.
- OR
2. Choose Import > navigate to your folder that contains data with the coordinate system already defined (preferably the dem) > click on the dataset > click the Add button > click OK in the Spatial Reference Properties dialog box > click OK in the Create New Shapefile dialog box.

2. Adding the New Shapefile to the ArcMap Project

1. Open your ArcMap project.
 2. Add the new (empty) shapefile to your project by:
 1. File > Add Data
- OR
2. Click-on the Add Data icon on the Standard Toolbar in ArcMap.

3. Starting, Saving, and Stopping the Editing Session

1. Open the Editor Toolbar from View > Toolbars > Editor.
2. From the Editor drop-down menu select Start Editing. This opens the Start Editing dialog box.
3. Highlight the folder path of the shapefile/s that you will be editing > Click OK to close the dialog box.
4. Save your edits during the edit session by selecting Save Edits from the drop-down menu on the editor toolbar.
5. Stop the editing session by selecting Stop Editing from the drop-down menu on the editor toolbar. The Save edits dialog box opens. Select Yes, No, or Cancel.

Note: It's best to edit one shapefile at a time and remember to save your edits often.

3. Point Shapefiles

1. Create a new point

- a) Editor Toolbar > Task: Create New Feature; Target: point shapefile
- b) Choose the Sketch Tool (Pencil) from the tool palette
- c) Click once to enter a point on your map.

2. Edit a point

- a) Editor Toolbar > Task: Modify Feature; Target: point shapefile
- b) Choose the Edit Tool (Arrow) on the Editor Toolbar.
- c) Click on the point to modify. The point is now highlighted.
- d) Hit the delete key to delete the point
- e) Drag the point to a new location

3. Move a point to an X,Y location

- a) Editor Toolbar > Task: Modify Feature; Target: point shapefile
- b) Double-click the point you want to move.
- c) Right-click on the point and select Move To...
- d) Type the new coordinates in the dialog box.
- e) Click anywhere on the map to complete move.

4. Polyline Shapefiles

1. Create a new polyline

- a) Editor Toolbar > Task: Create New Feature; Target: polyline shapefile
- b) Choose the Sketch Tool (Pencil) from the tool palette
- c) Click once to start the polyline; click once to add each vertex; double-click to finish the polyline.

2. Edit a polyline

- a) Editor Toolbar > Task: Modify Feature; Target: polyline shapefile
- b) Choose the Edit Tool (Arrow) on the Editor Toolbar.
- c) Click on the line to modify. The line is now highlighted with the vertices shown.
- d) Hit the delete key to delete the line.
- e) Click-n and drag a vertex to a new location to move a vertex.
- f) Right-click on the line to add a vertex.
- g) Mouse-over and right-click on a vertex to delete the vertex.
- h) Click somewhere on the map (not on the line) to deselect the line

3. Flip a polyline

- a) Editor Toolbar > Task: Modify Feature; Target: polyline shapefile
- b) Choose the Edit Tool (Arrow) on the Editor Toolbar.
- c) Click on the line to modify. The line is now highlighted with the vertices shown.
- d) Right-click on the line and select Flip.
- e) Click somewhere on the map (not on the line) to deselect the line.

5. Polygon Shapefiles

1. Create a new polygon

A. Single Polygon

1. Editor Toolbar > Task: Create New Feature; Target: polygon shapefile
2. Choose the Sketch Tool (Pencil) from the tool palette
3. Click once to start the polygon; click once to add each vertex; double-click to finish the polygon.

B. Auto-Complete Polygons

1. Editor Toolbar > Task: Auto-Complete Polygon; Target: polygon shapefile
2. Choose the Sketch Tool (Pencil) from the tool palette
3. Click inside or on the boundary of the existing polygon to start the new polygon; click once to add each vertex; double-click inside or on the boundary of an existing polygon to finish the polygon.

C. Clipped polygon (donut)

1. Editor Toolbar > Task: Create New Feature; Target: polygon shapefile
2. Click once to start the polygon; click once to add each vertex; double-click to finish the polygon.
3. Sketch another polygon inside the polygon you just created. The inside polygon should now be highlighted.
4. Editor Tool drop-down menu > Clip. The Clip dialog box opens > Choose Select area that intersects > Hit the delete key. The inside polygon should now be removed.

D. Polygon within a polygon

1. Editor Toolbar > Task: Create New Feature; Target: polygon shapefile
2. Click once to start the polygon; click once to add each vertex; double-click to finish the polygon.
3. Sketch another polygon inside the polygon you just created. The inside polygon should now be highlighted.
4. Editor Tool drop-down menu > Clip. The Clip dialog box opens > Choose Select area that intersects > Hit the delete key. The inside polygon should now be removed.