Labeling Features

In this Chapter you will learn

- How to label points, lines and polygons.
- How to set visibility scales on labels
- How to create and move around annotation

1. Creating labels for points, lines and polygons

Exercise 1: Labeling points

- 1. Open Exercise1_Labeling_Points.mxd in the Topic3_4 folder. You will see a map of Idaho showing historical earthquakes. In this exercise we will label those points in a number of different ways.
- 2. Click Bookmarks near the top of your screen and go to Custer County.
- 3. Open the properties for the Earthquakes layer and go to the Labels tab. Set up labeling as shown on the right. Examine the labels on your map. Do you like your labels?
- 4. Next we will ensure that the labels are placed below the points. Open the Layer Properties again and go back to the Labels tab.







ISTC Topic:

3.4

3.4 Labeling Points

Layer Pro 1. Check the box to make labels visible	ns & Relates Time HTML Popup
Method: Label all the features the same way. All features will be labeled using Text String Label Eid: MAG	Set font to Cambria
Text Symbol AaBbYyZz B Z U Symbol	4. Set font size to 12
Other Options Pre-defined Label Sty Piscement Properties Scale Range Label Sty 5. Click	te des

- 6. Click OK and OK again to view the labels on your map.
- Go back to the Label tab of the Earthquakes Layer Properties. Click on Placement Properties and then on "Place the labels at specified angles". Complete the Point Placement Angles as shown on the right.
- 8. Finally place the labels on top of the point by choosing "Place label on top of the point". Experiment more with the placement of a label if you wish.



9. There are a number of predefined Symbols and Label Styles. Click "Symbol" on the Labels tab in the Layer Properties. Follow the directions in the figure below.

Layer Properties	Symbol Selector
General Source Selection Display Symbology Fields Definition Query Labels Joins & Relates Time HTML Popup	Type here to search 👻 🍳 🔬 🚆 🗸 Current Symbol
Label features in this layer	Search: O All Styles O Referenced Styles
Method:	(55) ^ (419)
All features will be labeled using the options specified.	State Route HWY
Tex String 1. Click on	66 Color:
Label Beld: MAG "Symbol"	County Route HWY
AaBbYyZz	§ize: 8 ▼
Other Octions	other Route HWY 2. Scroll down and click
Bacement Properties Scale Range Label Styles	on Block Number
	Block Number Save As Reset
	ABDYYZZ 3 Click OK
OK Cancel Apply	OK Cance

- 10. Click the Placement Properties and make sure the label is placed on top of the point. If you like this type of symbology you may consider setting the symbol to "No Color" (on the Symbology tab) so that only the labels are visible.
- 11. This shapefile has information on both Earthquake magnitudes as well as the time this Earthquake took place. Next we will label each earth quake with both the magnitude and the year as shown on the right.

Magnitude is 4.6 Year is1983

12. Open the Labels tab in the Layer Properties. Follow the directions below to set up the following VB Expression:



roperties	8 ×	Label Expression	() X
ral Source Selection Display Symbology Fields Defin	ation Query Labels Joins & Relates Time HTML Popup	Expression	
abel features in this layer	1. Click on	Ejelds	
	"Expression"	Double-click to add a field into the expression	Show Type -
features will be labeled using the options specified.	Empression	FID	<u> </u>
Text String		DEPTH	=
abel Beld: MAG	Expression	MMI	
Test Seebal		LOCATION	
Cambria	▼ 12 ▼	YEAR	-
AaBbYyZz	/ U Symbol		
	Oyneetin	Append Show Values V Dis	play coded value description
Other Options	Pre-defined Label Style	Expression	
Placement Properties Scale Range	Label Styles	Write the expression in the language of the self	ected parser. Advanced
		"Magnitude is " & [MAG] & vbcrlf & " Year is"	& [YEAR]
		2 Duild aumnagaia	n
		2. Build expressio	nas
	OK Cancel Apply	shown here	
		Shown here	
			+
		Verify Reset Help	Load Save
3.	Ensure Parser is		
		Parser: VBSCript •	

- 13. Click OK and view your labels on the map. When you are zoomed out you may notice that many of the labels are not placed to avoid overlaps. Go back to the Labels tab in the Layer Properties and click on Placement Properties. Follow the direction on the right to place overlapping labels.
- 14. Zoom in and out to experiment with this label setting. You will probably find that the labels work best when you are fairly closely zoomed in, for example to a scale greater than 1:100,000.
- 15. To make labels only visible when you are zoomed in closer than 1:100,000, click on "Scale Range" and set the Scale Range as shown below.

Scale Range			? X
You can specify th	e range of scales	at which la	bels will be shown.
 Use the same s Don't show lab 	cale range as the	feature lay	er.
Out beyond:	1:100.000	•	(minimum scale)
In beyond:	<none></none>	•	(maximum scale)
		ок	Cancel





Exercise 2: Labeling lines

- 1. Open a new map document and add the Roads shapefile from the Topic3_4 folder.
- 2. Open the attribute table and note that the roads names can be found in the FULLNAME attribute.
- 3. Open the Layer Properties and go to the Labels tab. Use the instructions on the right to label the roads with their names.
- 4. There are a number of options for aligning labels along lines. Open the Layer Properties again and go to the Labels tab.
- 5. Click on Placement options.
- 6. Go to the Placement tab. Notice that you have different options to orient your labels (i.e. Horizontal, Parallel, Curved and Perpendicular) as well as a choice to place your labels above, on or below the lines. Experiment with different combinations of Orientation and Position, for example Curved and Below the line.





Exercise 3: Labeling polygons

- 1. Start ArcMap and open a new map document. Add the Countied_2008_Pop_Founded shapefile from the Topic3_4 folder.
- 2. Open the attribute table and note the attributes for the name of the county (NAME) and the year it was founded (FOUNDED). We will use both attributes to label your map.
- 3. First let's take a look at the options available to you when you symbolize polygons. Follow the instructions below to display the name for each county.

Layer Properties 1. Check box to General Sector Label features ry Labels Joins & Relates Time HTML Popu	Placement Properties
All features will be labeled using the 2. Set to NAME Text String Label Edd: NAME Text Symbol Text Sym	Polygon Settings
AsBbY/Zz B Z U Symbol Other Options Pre-defined Label Syle Elscement Properties Scale Range	4. Note different options for label alignment. Set to "Try horizontal first, then straight".
3. Click "Placement Properties"	Bemove duplicate labels Place one label per feature Place one label per feature gat 5. Click OK
OK Cancel Apply	OK Cancel Apply

- 4. Click Apply in the Layer Properties dialog box and view the orientation of the labels on your map.
- 5. Next we want to label each County with their name and founding date in the following format: "Ada County was founded in 1864".
 - a. Go to labels tab and click "Expression"
 - b. Set expression to: [NAME] & " County" & vbcrlf& " was founded in " & [FOUNDED]
 - c. Click OK and OK again to view you map.
- 6. Change the placement properties of your labels so labels are always displayed horizontally.





Exercise 4: Using different labels for different classes

- 1. Open the Exercise4_Labeling_Categories map document. Notice that there are two different road types displayed on the map: "M' for the minor roads and "U" for the major roads. We want to apply different labels to each group.
- 2. Open the Layer Properties and go to the Labels tab. Follow the instructions below to set up labeling





Exercise 5: Creating and using annotation

- 1. Open the Exercise5_Using_Annotation map document in the Topic3_4 folder.
- 2. Open the properties for the Earthquakes layer and go to the Labels tab. Label each earthquake with the MAG (for magnitude) attribute. While on the Labels tab, click on Placement Properties and go to the Conflict Detection tab. Check the box in front of "Place overlapping labels".
- 3. Take a look at your map. While the placement of the labels is not bad, you may want to click and drag some of the labels to a better location on your map. Unfortunately, your labels are currently in a format that does not allow you to do that. Annotation does give you that flexibility.
- 4. Right-click on the Earthquakes layer in your table of contents and select "Convert Labels to Annotation". Complete the dialog box as shown on the right.



- 5. In ArcMap click on the Select Elements Tool and then click on a label. You should be able to grab that label and move it around. (Hint: you need to be in Data View since you cannot select labels in Layout View).
- Double click on one label with the Select Element Tool to open up its properties. Note that you can change the Text as well as the Symbol (i.e. font type and size) for your label. Close the Properties box.
- 7. You can turn annotation on and off by right-clicking on the word "Layers" in the table of contents and going to the Data Frame Properties > Annotation Groups tab. By checking or unchecking the box in front of the annotation layer you just created you can turn the annotation on or off.
- 8. Creating an annotation layer as we did in this exercise works well when you need to produce a one-time map, or if you are working with static data. A drawback of the annotation we just created is that any future changes made to the earthquakes attribute table, for example an updated magnitude value, is not automatically updated in the annotation layer you just created. If you are using ArcGIS Standard (formerly ArcEditor) or ArcGIS Advanced (formerly ArcInfo) you can consult ISTC topic 3.5 titled "Intermediate labeling" to learn about feature linked annotation that does update every time a change to the underlying attribute table is made.

	1. Select "In	
Convert Labels to Annotat	the Map"	? ×
Store Annotation In a database Create Annotation For 	In the <u>m</u> ap	leference Scale 1:450,000
 Al features 3. Check ' in curren 	• Features in current extent 'Features t extent"	2. Note the Ann Reference Ical Scale
4. Click "Convert" Destination: Annotation group stored in the map document Image: Convert unplaced labels to unplaced annotation Convert Cancel		