

ArcVoyager Special Edition Training Tasks

Introduction to Training Tasks

Training Tasks (listed in recommended sequence)

TASK W1: Create a black and white outline map of the world

TASK W2: Create a choropleth map of the world

TASK W3: Create a choropleth map of the world with many layers

TASK U1: Create a black and white outline map of US & Canada

TASK U2: Create a choropleth map of the 50 states

TASK U3: Create a choropleth map of the 48 states by counties

TASK S1: Create a black and white county outline map of a state

TASK S2: Create a choropleth map of a state

TASK S3: Create a choropleth map of a state with many layers

These documents provide novice users of ArcVoyager Special Edition software some basic tasks, through which users can learn the fundamentals of how ArcView 3 software looks and operates. (Users must have ArcVoyager Special Edition and its data set installed in order to use these.)

The documents were exported using Adobe Acrobat software. They may be printed from the original “.PDF” files, or viewed on-screen using the Adobe Acrobat Reader. If viewed onscreen, there are “hyperlinks” from each task title above to the corresponding section of the document. Each section’s title box on the first page is a hyperlink back to this page.

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Introduction to Training Tasks

Think about photography. Professional photographers take splendid pictures. They work creatively with multiple cameras and lenses, tinkering endlessly with characteristics of film and F-stops and shutter speed and the angle and intensity of light. Most people, however, sidestep these complexities and rely instead on cameras with pre-programmed settings and restricted capacities. Avid amateur photographers seek to add the complexities, hoping to learn techniques to make their pictures more powerful.

This analogy has value for those interested in using geographic information systems (GIS) in schools and libraries. Not satisfied with the restrictions placed by other computer mapping packages, GIS users seek to craft their own maps. But, just as the budding photographer adds knowledge and skill only through study and practice, the budding GIS user develops understanding and technique only through exploration and exercise. ArcVoyager Special Edition has made some of this easier, but users still need to know how to manipulate the software and why to do certain activities using specific steps.

The accompanying series of tasks will help novice ArcVoyager Special Edition users learn the basic steps. Each task is designed as a stand-alone item, though some use a previously completed task as a starting point. They are listed on the Contents page in the order that will probably be the easiest for the widest range of users.

The tasks are not powerful exercises in geography nor complex cartographic presentations. They are “beginning exercises” which teach new users how to work with generic “out of the box” ArcVoyager Special Edition, in order to meet typical needs. Each task relies on basic skills. It is important to get comfortable with the fundamentals of ArcVoyager Special Edition so that these multi-step operations become second nature. Once this has been accomplished, a user can spend time and energy focused on the analytical powers of GIS, rather than getting bogged down in which button to click.

Each task is presented in terms of a problem solving sequence. There is an overall title defining the general goal for each task. Meeting the goal involves completing a series of operations. Each operation is presented in the form of “Here is generally what I need to do,” then followed with one or more specific steps detailing the sequence and focus of the step, and how these steps would be accomplished on Macintosh or Windows-based computers.

With a fast computer (see specifications at <http://www.esri.com/base/markets/k-12/bundle.html>) and careful attention to detail, most of these tasks can be completed in just a few minutes. By attempting these tasks, users can gain practical experience in creating maps for various purposes at a variety of scales. Users completing these tasks should have the background needed to start exploring on their own, like the amateur photographer venturing out into the world.

<p align="center">ArcVoyager Special Edition Task W1</p> <p align="center">Create a black and white outline map of the world</p>		
To accomplish this task Do these steps using ArcVoyager Special Edition for either Windows or Macintosh...	
	... or do these special steps in Windows	... or do these special steps in Macintosh

Set up the computer for these directions.	(Win) Start ArcVoyager Special Edition, assuming data is in C:\VOYAGER\DATA.	(Mac) Start ArcVoyager Special Edition, assuming data is in HD:\VOYAGER\DATA.
<i>“I need a place to make the map.”</i>		
1. Create a place for the map to be displayed. (Maps are shown in “View” windows.)	Having just started ArcVoyager Special Edition, use the help file to engage the "TURN ME LOOSE/ Creating New Worlds: Startup Project." It opens with "View1" as a map space.	
<i>“I need to get some data to map.”</i>		
2. Indicate that you want to add a "Theme" (a mapable layer of geographic features).	Click the Add Theme button (looks like a “plus” sign).	
<i>“I need to go find the data.”</i>		
3. Navigate into the directory containing the needed data. (You need to know where to find the data and how to get there.)	(Win) In the central column of the Add Theme window, use the directory and drive pickers to click into the directory DATA\GEO\WORLD.	(Mac) In the left column of the Add Theme window, use the folder picker to click into the folder DATA\GEO\WORLD.
<i>“I need to make sure I’m getting the right type of data.”</i>		
4. Ensure that the data type sought is the correct format. (ArcView can display different kinds of data.)	In the bottom of the Add Theme window, click and hold on the Data Source Type and choose Feature Data Source.	
<i>“I need to choose the right piece of data from the many available.”</i>		
5. Select the proper data source. (The correct item here will insert country boundaries.)	(Win) In the left column, click the item called country.shp , then click OK. The theme will be added to the top of the Table of Contents window in the View.	(Mac) In the right-hand column, click the item called country.shp , then click Add. The theme will be added to the top of the Table of Contents window in the View.

<i>“I need to see what the stuff I added looks like.”</i>		
6. Display the map. (Themes do not display until they are turned on.)	In the Table of Contents , click the little checkbox at the left of the theme Country.shp , making a black check mark appear.	
<i>“I need to add another layer to the map.”</i>		
7. Add a background layer for the countries.	Click the Add Theme button again.	
<i>“I need to go find the data.”</i>		
8. Navigate to the proper directory.	You should already be in the correct directory, which is DATA\GEO\WORLD .	
<i>“I need to make sure I’m getting the right type of data.”</i>		
9. Ensure that the data type sought is the correct format.	You should already have the right kind of data identified. In the bottom of the Add Theme window, the Data Source Type should show Feature Data Source .	
<i>“I need to choose the right piece of data from the many available.”</i>		
10. Select the proper data source. (This will create areas of 30 degrees longitude by 30 degrees latitude in the map.)	(Win) In the left-hand column, click the item called world30.shp , then click OK . The theme will be added to the top of the Table of Contents window in the View.	(Mac) In the right-hand column, click the item called world30.shp , then click Add . The theme will be added to the top of the Table of Contents window in the View.
<i>“I need to see what the stuff I added looks like.”</i>		
11. Display the theme. (Turn on the newly added feature.)	In the Table of Contents , click the little checkbox at the left of World30.shp , making a black check mark appear.	
<i>“I need to shuffle the layers into proper display order.”</i>		
12. Adjust the order of theme display so the layers are properly visible. (ArcView draws themes according to their order in the Table of Contents.)	In the Table of Contents , click and hold directly on the name World30.shp and drag the theme down below the theme Country.shp , then let go. The map will re-draw.	
<i>“I need to adjust the ocean color.”</i>		
13. Adjust the ocean symbol. Start by calling up the Legend Editor. (This process will provide many choices, thus entail many steps.)	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme World30.shp .	

14. Adjust the ocean symbol. Continue by calling up the symbol palette. (The symbol palette allows you to define many different elements of symbols.)	In the Legend Editor window, double click the color box shown for the ocean layer (bottom part of window, first box, left-hand column). The Symbol Palette will appear, with the Fill Palette option visible.
15. Adjust the ocean symbol. Continue by specifying the color palette window.	In the Fill Palette window, in the first row of icons, click the paintbrush to bring up the Color Palette window.
16. Adjust the ocean symbol. Continue by selecting a color.	In the choices of colors, click on the lightest gray box. Close the Color Palette window.
17. Adjust the ocean symbol. Finish by applying the change.	In the Legend Editor , click Apply . Close the Legend Editor window. The map will re-draw.
<i>“I need to adjust the countries color.”</i>	
18. Adjust the countries symbol. Start by calling up the Legend Editor.	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme Country.shp .
19. Adjust the countries symbol. Continue by calling up the symbol palette.	In the Legend Editor window, double click the color bar shown for the countries layer (bottom part of window, first box, left-hand column). The Symbol Palette will appear, with the Fill Palette option visible.
20. Adjust the countries symbol. Continue by specifying the color palette window.	In the first row of icons, click the paintbrush to bring up the Color Palette .
21. Adjust the countries symbol. Continue by selecting a color.	In the choices of colors, click on the white box (top row, second column). Close the Color Palette window.
22. Adjust the countries symbol. Finish by applying the change.	In the Legend Editor , click Apply . Close the Legend Editor window. The map will re-draw.
<i>“It’s all done!”</i>	

ArcVoyager Special Edition Task W2

Create a choropleth map of the world

To accomplish this task Do these steps using ArcVoyager Special Edition for either Windows or Macintosh...	
	... or do these special steps in Windows	... or do these special steps in Macintosh

Set up the computer for these directions.	(Win) Start ArcVoyager Special Edition, assuming data is in C:\VOYAGER\DATA.	(Mac) Start ArcVoyager Special Edition, assuming data is in HD:\VOYAGER\DATA.
<i>“I need a base map to start with.”</i>		
1. Create a base map.	Create a base map following the directions for Task W1 .	
<i>“I need to adjust the ocean color.”</i>		
2. Adjust the ocean symbol. Start by calling up the Legend Editor. (This process will provide many choices, thus entail many steps.)	In the Table of Contents , doubleclick directly on the name itself (not on the checkbox) for the theme World30.shp .	
3. Adjust the ocean symbol. Call up the symbol palette. (The symbol palette allows you to define many different elements of symbols.)	In the Legend Editor window, double click the color bar shown for the ocean layer (bottom part of window, first box, left-hand column). The Symbol Palette will appear, with the Fill Palette option visible. Move the Fill Palette window to the side of the Legend Editor window.	
4. Adjust the ocean symbol. Specify the color palette window.	In the Fill Palette window, in the first row of icons, click the paintbrush to bring up the Color Palette .	
5. Adjust the ocean symbol. Specify foreground.	In the pull-down menu beside Color: , select Foreground .	
6. Adjust the ocean symbol. Select foreground color.	In the color boxes, choose royal blue (fourth row, third column).	
7. Adjust the ocean symbol. Specify outline.	In the pull-down menu beside Color: , select Outline .	
8. Adjust the ocean symbol. Select outline color.	In the color boxes, choose cyan (fifth row, third column). Close the Color Palette window.	
9. Adjust the ocean symbol. Apply the change.	In the Legend Editor , click Apply . Close the Legend Editor window. The map will re-draw.	

<i>“I need to see if a layer contains data I can map.”</i>	
10. Select a theme, to focus the computer’s attention on that layer. (This is now the “active” theme.)	In the Table of Contents , click one time directly on the name Country.shp . The theme will look “raised” within the Table of Contents .
11. Bring up the active theme’s data table.	Click one time on the Open Theme Table button (looks like a page with a series of columns and rows).
12. Explore the table. (This table contains the information about the features. It is formally called a Feature Attribute Table.)	At the bottom of the table document Attributes of Country.shp , click on the right scroll arrow several times to explore all the columns of available data. Leave the table scrolled all the way to the right.
<i>“I need to add to the feature table some data to map.”</i>	
13. Indicate you want to add a data table.	Click the Add Table button.
<i>“I need to find the data to add.”</i>	
14. Navigate to the proper directory.	Navigate to the directory DATA\TABLE\WORLD .
<i>“I need to identify the correct type of data.”</i>	
15. Choose the proper type of file.	In the bottom of the window, click on the List Files of Type: pull-down menu. Choose dBASE (*.dbf) .
<i>“I need to add the correct data table.”</i>	
16. Choose the proper table.	In the left-hand column file picker, double click the item demog.dbf .
<i>“I need to join the new data table to the existing feature table.”</i>	
17. Select the matching field in the source table.	In the table demog.dbf , click one time on the field name Fips_code . The field name will appear darkened. Click and hold on the menu bar for this table and slide the table off to the side, so the other windows are visible.
18. Select the window for the target table	Click on the Window menu and select Attributes of Country.shp
19. Select the matching field in the target table.	In the table Attributes of Country.shp , click one time on the field name Fips_code . The field name will appear darkened.
20. Join the source data to the target feature table.	Click the Join Table button (looks like two tables kissing). The data from the source table will be appended to the appropriate records in the target table. The source table will disappear. Close the table Attributes of Country.shp .

<i>“I need to edit the legend for the newly joined theme.”</i>	
21. Adjust the country symbol. Start by calling up the Legend Editor.	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme Country.shp .
22. Adjust the country symbol. Continue by defining a mapping method.	In the second pull-down menu, called Legend type , choose Graduated color .
23. Adjust the country symbol. Continue by defining the mapped theme.	In the Legend Editor window, click the pull-down menu for Classification Field: and scroll down the list to select Gnp_cap . The computer will automatically divide the data into five categories, with breaks where they fit best.
24. Adjust the country symbol. Continue by excluding "no data" items.	Near the bottom of the Legend Editor , above the Color Ramps choices, click the slashed Zero. Set the field as Gnp_cap , type -99 in the Null value bar, and click the Display no data class button. Click OK .
25. Adjust the country symbol. Change the classification scheme.	Click the Classify... button. In the Classification window, change the Type: to Quantile , then change Number of Classes: to 4 . Change the Round values at: to "ddd". Click OK . The computer will re-divide the data.
26. Adjust the country symbol. Set the color scheme.	Click on the Color Ramps: button and choose Green monochromatic . Then click Apply . Close the Legend Editor window. The map will re-draw.
27. Modify the theme name in the Table of Contents.	With Country.shp still selected (looks “elevated”) in the Table of Contents , click on the Theme menu item and choose Properties... to bring up the Theme Properties window.
28. Modify the theme name. Specify new name. Choose to display the field being mapped.	In the top row, next to Theme Name: , erase “Country.shp” and type “Countries”. In the box at the top right, next to Use Suffix , click the box to place an “x” within it. Click OK .
<i>“I need to change the map projection.”</i>	
29. Indicate the need to change the characteristics of the View.	From the View menu, click Change Map Projection... and select Robinson .
<i>“It’s all done!”</i>	

<i>ArcVoyager Special Edition Task W3</i> <i>Create a choropleth map of the world with many layers</i>		
To accomplish this task Do these steps using ArcVoyager Special Edition for either Windows or Macintosh...	
	... or do these special steps in Windows	... or do these special steps in Macintosh

Set up the computer for these directions.	(Win) Start ArcVoyager Special Edition, assuming data is in C:\VOYAGER\DATA.	(Mac) Start ArcVoyager Special Edition, assuming data is in HD:\VOYAGER\DATA.
<i>“I need a base map to start with.”</i>		
1. Create a base map.	Create a base map following the directions for Task W2.	
<i>“I need to get some data to map.”</i>		
2. Indicate that you want to add a theme (a mapable layer of geographic features).	Click the Add Theme button (looks like a “plus” sign).	
<i>“I need to go find more data.”</i>		
3. Navigate into the directory containing the needed data. (You need to know where to find the data and how to get there.)	(Win) In the central column of the Add Theme window, use the directory and drive pickers to click into the directory DATA\GEO\WORLD.	(Mac) In the left column of the Add Theme window, use the folder picker to click into the folder DATA\GEO\WORLD.
<i>“I need to make sure I’m getting the right type of data.”</i>		
4. Ensure that the data type sought is the correct format. (ArcView can display different kinds of data.)	In the bottom left of the Add Theme window, click and hold on the Data Source Type and choose Feature Data Source.	

<i>“I need to choose the right pieces of data from the many available.”</i>		
5. Select multiple sources. (The correct items here will add lakes, rivers, and cities.)	(Win) In the left-hand column, click one time on the icon for w_lakes.shp . Hold down the Shift key on the keyboard to permit multiple selection. In the left-hand column, click one time on the icon for w_rivers.shp , and one time on w_cities.shp , highlighting all three items. Click OK .	(Mac) In the right-hand column, click one time on the icon for w_lakes.shp . Hold down the Command key on the keyboard to permit multiple selection. In the left-hand column, click one time on the icon for w_rivers.shp , and one time on w_cities.shp , highlighting all three items. Click Add .
<i>“I need to see what the stuff I added looks like.”</i>		
6. Display the map. (Turn on the newly added features.)	In the Table of Contents , click the little checkboxes at the left of the themes W_lakes.shp , W_rivers.shp , and W_cities.shp , making a black check mark appear for each.	
<i>“I need to adjust the color of the lakes.”</i>		
7. Adjust the lakes symbol. Start by calling up the Legend Editor. (This process will provide many choices, thus entail many steps.)	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme W_lakes.shp .	
8. Adjust the lakes symbol. Continue by calling up the symbol palette. (The symbol palette allows you to define many different elements of symbols.)	Double click the color bar shown for the lakes layer (bottom half of window, first box, left-hand column). The Symbol Palette will appear, with the Fill Palette option visible. Move the Fill Palette window to the side of the Legend Editor window.	
9. Adjust the lakes symbol. Continue by specifying the color palette window.	In the first row of icons in the Fill Palette window, click the paintbrush to bring up the Color Palette .	
10. Adjust the lakes symbol. Continue by specifying foreground.	In the pull-down menu beside Color: , select Foreground .	
11. Adjust the lakes symbol. Continue by selecting foreground color.	In the color boxes, choose royal blue (fourth row, third column).	
12. Adjust the lakes symbol. Continue by specifying outline.	In the pull-down menu beside Color: , select Outline .	
13. Adjust the lakes symbol. Continue by selecting no outline.	In the color boxes, choose empty (top row, left column). Close the Color Palette window.	

14. Adjust the lakes symbol. Finish by applying the change.	In the Legend Editor , click Apply . Close the Legend Editor window. The map will re-draw.
<i>“I need to adjust the color of the rivers.”</i>	
15. Adjust the river symbol. Start by calling up the Legend Editor.	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme W_rivers.shp .
16. Adjust the river symbol. Continue by calling up the symbol palette.	Double click the color zigzag shown for the river layer (bottom half of window, first box, left-hand column). The Symbol Palette will appear, with the Pen Palette option visible. Move the Pen Palette window to the side of the Legend Editor window.
17. Adjust the river symbol. Continue by specifying the color palette window.	In the first row of icons in the Pen Palette window, click the paintbrush to bring up the Color Palette .
18. Adjust the river symbol. Continue by specifying foreground.	In the pull-down menu beside Color , select Foreground .
19. Adjust the river symbol. Continue by selecting foreground color.	In the color boxes, choose royal blue (fourth row, third column). Close the Color Palette window.
20. Adjust the river symbol. Finish by applying the change.	In the Legend Editor, click Apply . Close the Legend Editor window. The map will re-draw.
<i>“I need to adjust the color of the cities.”</i>	
21. Adjust the cities symbol. Start by calling up the Legend Editor.	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme W_cities.shp .
22. Adjust the cities symbol. Continue by calling up the symbol palette.	Double click the color dot shown for the cities layer (bottom half of window, first box, left-hand column). The Symbol Palette will appear, with the Marker Palette option visible. Move the Marker Palette window to the side of the Legend Editor window.
23. Adjust the cities symbol. Continue by specifying the symbol size.	Below the icons in the Marker Palette window, click the Size: menu’s pull-down arrow. Select size 4 .
24. Adjust the cities symbol. Continue by specifying the color palette window.	In the first row of icons in the Marker Palette window, click the paintbrush to bring up the Color Palette .
25. Adjust the cities symbol. Continue by specifying foreground.	In the pull-down menu beside Color: , select Foreground .
26. Adjust the cities symbol. Continue by selecting foreground color.	In the color boxes, choose bright red (second row, third column). Close the Color Palette window. Click Apply . Close the Legend Editor window. The map will re-draw.

<i>“I need to zoom in to focus on one area.”</i>		
27. Select the “zoom in” tool.	From the tool bar, choose the Zoom In tool (magnifying glass with a plus sign).	
28. Zoom in to a defined area.	Using the mouse, click and hold with the mouse in the mid-Atlantic, north and west of Africa. Keep holding the mouse button as you move the mouse south and east, defining a box around Africa. (If you are not happy with the result, do Step29. If you are happy with the result, skip to Step30.)	
29. Zoom all the way back out before trying again.	Click the Zoom To Full Extent button (looks like an arrow pushing down on three blank sheets of paper). Then return to Step28.	
<i>“I need to see the table of information about the countries.”</i>		
30. Select the theme to explore.	Click one time on the theme Countries in the Table of Contents . The theme will appear slightly elevated in the column.	
31. Bring up the table.	Click on the Table button (looks like a document of rows and columns of information).	
32. Turn off some of the unneeded fields.	From the menu bar, choose Table\Properties... . The bottom half of the window includes a listing of the available items in the table. Click the black checkmarks to toggle between visible and invisible. Make the first six fields invisible. The visible fields should start again with the second Abbrevname , and continue. Click OK and return to see the changes in the table. Close the table.	
<i>“I need to select a few countries for closer investigation.”</i>		
33. Select some geographic features from the view.	The theme Country should still be selected (looks “raised”). Click and hold on the Select Features tool and choose the box. Using the tool in a fashion similar to the Zoom In tool, click and drag a low but wide box through portions of the five northernmost countries in Africa. The map will re-draw, with the five countries displaying in yellow.	
34. Bring up the table.	Click on the Table button again.	
35. Make the selected countries’ information visible.	Click the Promote button (right of the hammer, looks like two lines merging into an upward pointing arrow). Scroll right in the table to explore the information.	
36. Unselect one of the set.	(Win) In the table, hold down the SHIFT key on the keyboard and click one time on one of the selected countries. Then let go of the SHIFT key. The country will return to its original color.	(Mac) In the table, hold down the COMMAND key on the keyboard and click one time on one of the selected countries. Then let go of the COMMAND key. The country will return to its original color.

37. Close the table.	Close the table. Notice that now only four countries are listed as selected.
<i>“I need to zoom to the selected region.”</i>	
38. Zoom to the scale of the selected items.	Click on the Zoom to Selected button (looks like a diagonal arrow pointing to a small set of boxes). The map will re-draw, zoomed in to the scale of the selected countries.
<i>“I need to unselect all countries.”</i>	
39. Unselect all records.	Click on the Clear Selected Features button (looks like a blank 3-ring loose leaf note page). The countries will re-draw in their original color.
<i>“I need to label some items.”</i>	
40. Select the label tool.	Click the Label tool (looks like a luggage tag, just left of the text tool).
41. Label desired countries	One by one, click one time in the center of the four countries which had been selected. The country name will appear. The little boxes around the names indicate these are movable and scalable graphic elements.
<i>“I need to move some labels.”</i>	
42. Select the graphic selection tool.	Click the graphic selection tool (second tool, looks like a simple arrow).
43. Move the graphics.	One by one, click and hold on the center of each graphic element (do not hold onto the handles themselves, but between the handles) and move the name to a suitable spot. It is best to just click and select the graphic first, then click and drag it in a second action. Unselect graphics by clicking in the view outside the graphics.
<i>“It’s all done!”</i>	

ArcVoyager Special Edition Task U1
Create a black and white outline map of the US

To accomplish this task Do these steps using ArcVoyager Special Edition for either Windows or Macintosh...	
	... or do these special steps in Windows	... or do these special steps in Macintosh

Set up the computer for these directions.	(Win) Start ArcVoyager Special Edition, assuming data is in C:\VOYAGER\DATA.	(Mac) Start ArcVoyager Special Edition, assuming data is in HD:\VOYAGER\DATA.
<i>“I need a place to make the map.”</i>		
1. Create a place for the map to be displayed. (Maps are shown in “View” windows.)	Having just started ArcVoyager Special Edition, use the help file to engage the "TURN ME LOOSE/ Creating New Worlds: Startup Project." It opens with "View1" as a map space.	
<i>“I need to get some data to map.”</i>		
2. Indicate that you want to add a "Theme" (a mapable layer of geographic features).	Click the Add Theme button (looks like a “plus” sign).	
<i>“I need to go find the data.”</i>		
3. Navigate into the directory containing the needed data. (You need to know where to find the data and how to get there.)	(Win) In the central column of the Add Theme window, use the directory and drive pickers to click into the directory DATA\GEO\US.	(Mac) In the left column of the Add Theme window, use the folder picker to click into the folder DATA\GEO\US.
<i>“I need to make sure I’m getting the right type of data.”</i>		
4. Ensure that the data type sought is the correct format. (ArcView can display different kinds of data.)	In the bottom of the Add Theme window, click and hold on the Data Source Type and choose Feature Data Source.	
<i>“I need to choose the right piece of data from the many available.”</i>		
5. Select the proper data source. (The correct item here will insert US states.)	(Win) In the left column, click the item called us_state.shp , then click OK. The theme will be added to the top of the Table of Contents window in the View.	(Mac) In the right-hand column, click the item called us_state.shp , then click Add. The theme will be added to the top of the Table of Contents window in the View.

<i>“I need to see what the stuff I added looks like.”</i>		
6. Display the map. (Themes do not display until they are turned on.)	In the Table of Contents , click the little checkbox at the left of the theme Us_state.shp , making a black check mark appear.	
<i>“I need to add another layer to the map.”</i>		
7. Add a context layer for the countries.	Click the Add Theme button again.	
<i>“I need to go find the data.”</i>		
8. Navigate to the proper directory.	Navigate to the correct directory, which is DATA\GEO\NAMERICA .	
<i>“I need to make sure I’m getting the right type of data.”</i>		
9. Ensure that the data type sought is the correct format.	You should already have the right kind of data identified. In the bottom of the Add Theme window, the Data Source Type should show Feature Data Source .	
<i>“I need to choose the right piece of data from the many available.”</i>		
10. Select the proper data source. (This will create the provinces of Canada.)	(Win) In the left-hand column, click the item called canada.shp , then click OK . The theme will be added to the top of the Table of Contents window in the View.	(Mac) In the right-hand column, click the item called canada.shp , then click Add . The theme will be added to the top of the Table of Contents window in the View.
<i>“I need to see what the stuff I added looks like.”</i>		
11. Display the theme. (Turn on the newly added feature.)	In the Table of Contents , click the little checkbox at the left of the theme Canada.shp , making a black check mark appear.	
<i>“I need to zoom out to see everything.”</i>		
12. Adjust the scale of display so the themes are properly visible.	Click the Zoom to All Themes button (looks like an arrow pushing down on three blank layers). The map will re-draw.	
<i>“I need to adjust the province color.”</i>		
13. Adjust the province symbol. Start by calling up the Legend Editor. (This process will provide many choices, thus entail many steps.)	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme Canada.shp .	

14. Adjust the province symbol. Continue by calling up the symbol palette. (The symbol palette allows you to define many different elements of symbols.)	In the Legend Editor window, double click the color box shown for the province layer (bottom part of window, first box, left-hand column). The Symbol Palette will appear, with the Fill Palette option visible.
15. Adjust the province symbol. Continue by specifying the color palette window.	In the Fill Palette window, in the first row of icons, click the paintbrush to bring up the Color Palette window.
16. Adjust the province symbol. Set the color	In the choices of colors, click on the top row, fourth column, which is light grey. Close the Color Palette window.
17. Adjust the province symbol. Finish by applying the change.	In the Legend Editor , click Apply . Close the Legend Editor window. The map will re-draw.
<i>“I need to adjust the states color.”</i>	
18. Adjust the states symbol. Start by calling up the Legend Editor.	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme States.shp .
19. Adjust the states symbol. Continue by calling up the symbol palette.	In the Legend Editor window, double click the color bar shown for the states layer (bottom part of window, first box, left-hand column). The Symbol Palette will appear, with the Fill Palette option visible.
20. Adjust the states symbol. Continue by specifying the color palette window.	In the first row of icons, click the paintbrush to bring up the Color Palette .
21. Adjust the states symbol. Continue by selecting white.	In the choices of colors, click on the top row, second column, which is white. Close the Color Palette window.
22. Adjust the states symbol. Finish by applying the change.	In the Legend Editor , click Apply . Close the Legend Editor window. The map will re-draw.
<i>“I need to rename the display.”</i>	
23. Open the View Properties and change the View name	Click the menu item for View\Properties . In the View Properties window, inside the line for Name , erase “View 1” and type “Outline”. Click OK .
<i>“It’s all done!”</i>	

ArcVoyager Special Edition Task U2
Create a choropleth map of the US

To accomplish this task Do these steps using ArcVoyager Special Edition for either Windows or Macintosh...	
	... or do these special steps in Windows	... or do these special steps in Macintosh

Set up the computer for these directions.	(Win) Start ArcVoyager Special Edition, assuming data is in C:\VOYAGER\DATA.	(Mac) Start ArcVoyager Special Edition, assuming data is in HD:\VOYAGER\DATA.
“I need a base map to start with.”		
1. Create a base map.	Create a base map following the directions for Task U1 .	
“I need to see if a layer contains data I can map.”		
2. Select a theme, to focus the computer’s attention on that layer. (This is now the “active” theme.)	In the Table of Contents , click one time directly on the name Us_state.shp . The theme will look “raised” within the Table of Contents .	
4. Bring up the active theme’s data table.	Click one time on the Open Theme Table button (looks like a page with a series of columns and rows).	
5. Explore the table. (This table contains the information about the features. It is formally called a Feature Attribute Table.)	At the bottom of the table document Attributes of Us_state.shp , click on the right scroll arrow to explore all the columns of available data.	
“I need to add to the feature table some data to map.”		
6. Indicate you want to add a data table.	Click the Add Table button.	
“I need to find the data to add.”		
7. Navigate to the proper directory.	Navigate to the directory DATA\TABLE\US .	
“I need to identify the correct type of data.”		
8. Choose the proper type of file.	In the bottom of the window, click on the List Files of Type: pull-down menu. Choose dBASE (*.dbf) .	
“I need to add the correct data table.”		
9. Choose the proper table.	In the left-hand column file picker, double click the item st_data.dbf .	

<i>“I need to join the new data table to the existing feature table.”</i>	
10. Select the matching field in the source table.	In the table st_data.dbf , click one time on the field name State_fips . The field name will appear darkened. Click and hold on the menu bar for this table and slide the table off to the side, so the other windows are visible.
11. Select the window for the target table.	Click on the Window menu and select Attributes of Us_state.shp
12. Select the matching field in the target table.	In the table Attributes of Us_state.shp , click one time on the field name State_fips . The field name will appear darkened.
13. Join the source data to the target feature table.	Click the Join Table button (looks like two tables kissing). The data from the source table will be appended to the appropriate records in the target table. The source table will disappear. Close the table Attributes of Us_state.shp .
<i>“I need to edit the legend for the newly joined theme.”</i>	
14. Adjust the states symbol. Start by calling up the Legend Editor.	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme Us_state.shp . This will bring up the Legend Editor window.
15. Adjust the states symbol. Continue by defining a mapping method.	In the second pull-down menu, called Legend type , choose Graduated color .
16. Adjust the states symbol. Continue by defining the mapped theme.	In the Legend Editor window, click the pull-down menu for Classification Field: and scroll down the list to select P_65_up . The computer will automatically divide the data into five categories, with breaks where they fit best.
17. Adjust the states symbol. Change the classification scheme.	Click the Classify... button. In the Classification window, change the Type: to Quantile , then change Number of Classes: to 4 . Leave the Round values at: as d.ddd . Click OK . The computer will re-divide the data.
18. Adjust the states symbol. Set the color scheme.	Click on the Color Ramps: button and choose Purple monochromatic . Then click Apply . Close the Legend Editor window. The map will re-draw.
19. Modify the theme name in the Table of Contents.	With Us_state.shp still selected (looks “elevated”) in the Table of Contents , click on the Theme menu item and choose Properties... to bring up the Theme Properties window.
20. Modify the theme name. Specify new name. Choose to display the field being mapped.	In the top row, next to Theme Name: , change “Us_state.shp” to just “States”. In the box at the top right, next to Use Suffix , click the box to place an “x” within it. Click OK .
<i>“I need to change the map projection.”</i>	
21. Indicate the need to change the characteristics of the View.	From the View menu, click Properties... . In the View Properties window, click the button for Projection...

22. Choose the desired projection.	Click the Category: pull-down menu to select “Projections of the US.” Click the Type: pull-down menu to select “Albers Equal Area (North America).” Click OK .
23. Change the View name	Back in the View Properties window, inside the line for Name: , erase “Outline” and type “Percent Age 65 and Up”. Click OK .
24. Change the map extent.	Back in the View window, click the Zoom to Full Extent button.
<i>“It’s all done!”</i>	

<i>ArcVoyager Special Edition Task U3</i> <i>Create a choropleth map of the 48 states by counties</i>		
To accomplish this task Do these steps using ArcVoyager Special Edition for either Windows or Macintosh...	
	... or do these special steps in Windows	... or do these special steps in Macintosh

Set up the computer for these directions.	(Win) Start ArcVoyager Special Edition, assuming data is in C:\VOYAGER\DATA.	(Mac) Start ArcVoyager Special Edition, assuming data is in HD:\VOYAGER\DATA.
“I need a base map to start with.”		
1. Create a base map.	Create a base map following the directions for Task U2 .	
“I need to get some data to map.”		
2. Indicate that you want to add a theme (a mapable layer of geographic features).	Click the Add Theme button (looks like a “plus” sign).	
“I need to go find more data.”		
3. Navigate into the directory containing the needed data. (You need to know where to find the data and how to get there.)	(Win) In the central column of the Add Theme window, use the directory and drive pickers to click into the directory DATA\GEO\US .	(Mac) In the left column of the Add Theme window, use the folder picker to click into the folder DATA\GEO\US .
“I need to make sure I’m getting the right type of data.”		
4. Ensure that the data type sought is the correct format. (ArcView can display different kinds of data.)	In the bottom left of the Add Theme window, click and hold on the Data Source Type and choose Feature Data Source .	
“I need to choose the right pieces of data from the many available.”		
5. Select the proper data source (The correct items here will add counties.).	(Win) In the left-hand column, double-click the item us_cnty.shp .	(Mac) In the right-hand column, double-click the item us_cnty.shp
“I need to see what the stuff I added looks like.”		
6. Display the map. (Turn on the newly added feature.)	In the Table of Contents , click the little checkbox at the left of the theme Us cnty.shp , making a black check mark appear.	

<i>“I need to see if a layer contains data I can map.”</i>	
7. Select a theme, to focus the computer’s attention on that layer. (This is now the “selected” or “active” theme.)	In the Table of Contents , click one time directly on the name Us_cnty.shp . The theme will look “raised” within the Table of Contents
8. Bring up the active theme’s data table.	Click one time on the Table button (looks like a page with a series of columns and rows).
9. Explore the table. (This table contains the information about the features. It is formally called a Feature Attribute Table.)	At the bottom of the table document Attributes of Us_cnty.shp , click on the right scroll arrow to explore all the columns of available data.
<i>“I need to add to the feature table some data to map.”</i>	
10. Indicate you want to add a data table.	Click the Add Table button.
<i>“I need to find the data to add.”</i>	
11. Navigate to the proper directory.	Navigate to the correct directory, which is DATA\TABLE\US
<i>“I need to identify the correct type of data.”</i>	
12. Choose the proper type of file.	In the bottom of the window, click on the Show Files of Type: pull-down menu. Choose dBASE (*.dbf) .
<i>“I need to add the correct data table.”</i>	
13. Choose the proper table.	In the left-hand column file picker, double click the item county.dbf .
<i>“I need to join the new data table to the existing feature table.”</i>	
14. Select the matching field in the source table.	In the table county.dbf , click one time on the field name Fips . (Make sure the column shows 5 characters per cell.) The field name will appear darkened. Click and hold on the menu bar for this table and slide the table off to the side, so the other windows are visible.
15. Navigate to the target table.	From the Window menu, choose Attributes of Us_cnty.shp .
16. Select the matching field in the target table.	In the table Attributes of Us_cnty.shp , click one time on the field name Fips . (Make sure the column shows 5 characters per cell.) The field name will appear darkened.
17. Join the source data to the target feature table.	Click the Join Table button (looks like two tables kissing). The data from the source table will be appended to the appropriate records in the target table. The source table will disappear. Close the table Attributes of Us_cnty.shp .

<i>“I need to edit the legend for the newly joined theme.”</i>	
18. Adjust the county symbol. Start by calling up the Legend Editor.	In the view’s Table of Contents , double click directly on the name itself (not on the checkbox) for the theme Us_cnty.shp . This will bring up the Legend Editor window.
19. Adjust the county symbol. Define the map style.	In the Legend Editor window, click the pull-down menu for Legend type: and choose Graduated color .
20. Adjust the county symbol. Define the mapped field.	In the Legend Editor window, click the pull-down menu for Classification field: and scroll down the list to select Age_65_up . The computer will automatically divide the data into five categories.
21. Adjust the county symbol. Change the classification scheme.	Click the Classify... button. In the Classification window, change the Type to Equal Interval , change Number of Classes to 4 , and leave Round values at as d.ddd . Click OK . The computer will re-divide the data, into four classes that cover the same size range of numbers.
22. Adjust the county symbol. Change from absolute numbers to decimal portion.	From the Normalize by: pull-down menu, choose Pop_1990 .
23. Adjust the county symbol. Omit the outline around counties.	One by one, double click the color boxes. When the symbol palette appears, use the Outline pull-down menu at the bottom to select None . Close the Symbol palette window. Click Apply . Close the Legend editor window.
<i>“I need to adjust the color of the states.”</i>	
24. Adjust the states symbol. Start by calling up the Legend Editor. (This process will provide many choices, thus entail many steps.)	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme States.shp .
25. Adjust the state symbol. Specify no field to map.	Click the Legend type: pull-down menu and choose "Single symbol".
26. Adjust the states symbol. Continue by calling up the symbol palette.	Double click the color bar shown for the states layer (bottom half of window, first box, left-hand column). The Symbol Palette will appear, with the Fill Palette option visible. Move the Fill Palette window to the side of the Legend Editor window.
27. Adjust the states symbol. Continue by specifying the color palette window.	In the first row of icons in the Fill Palette window, click the paintbrush to bring up the Color Palette .
28. Adjust the states symbol. Continue by specifying foreground.	In the pull-down menu beside Color: , select Foreground .

29. Adjust the states symbol. Continue by selecting foreground color.	In the color boxes, click any color, then choose "empty" (top left box, with an "X" in it). Close the Color palette window. Click Apply . Close the Legend editor window. The map will re-draw.
<i>“I need to change the order of the layers.”</i>	
30. Rearrange the order in which the themes display.	In the Table of Contents , click and hold on the name States and drag the theme upward to be above Us_cnty.shp .
<i>“It’s all done!”</i>	

<i>ArcVoyager Special Edition Task S1</i> <i>Create a black and white county outline map of a state</i>		
To accomplish this task Do these steps using ArcVoyager Special Edition for either Windows or Macintosh...	
	... or do these special steps in Windows	... or do these special steps in Macintosh

Set up the computer for these directions.	(Win) Start ArcVoyager Special Edition, assuming data is in C:\VOYAGER\DATA.	(Mac) Start ArcVoyager Special Edition, assuming data is in HD:\VOYAGER\DATA.
<i>“I need a place to make the map.”</i>		
1. Create a place for the map to be displayed. (Maps are shown in “View” windows.)	Having just started ArcVoyager Special Edition, use the help file to engage the "TURN ME LOOSE/ Creating New Worlds: Startup Project." It opens with "View1" as a map space.	
<i>“I need to get some data to map.”</i>		
2. Indicate that you want to add a "Theme" (a mapable layer of geographic features).	Click the Add Theme button (looks like a “plus” sign).	
<i>“I need to go find the data.”</i>		
3. Navigate into the directory containing the needed data. (You need to know where to find the data and how to get there.)	(Win) In the central column of the Add Theme window, use the directory and drive pickers to click into the directory DATA\GEO\US .	(Mac) In the left column of the Add Theme window, use the folder picker to click into the folder DATA\GEO\US .
<i>“I need to make sure I’m getting the right type of data.”</i>		
4. Ensure that the data type sought is the correct format. (ArcView can display different kinds of data.)	In the bottom of the Add Theme window, click and hold on the Data Source Type and choose Feature Data Source .	
<i>“I need to choose the right piece of data from the many available.”</i>		
5. Select the proper data source. (The correct item here will insert counties.)	(Win) In the left column, click the item called us_cnty.shp , then click OK . The theme will be added to the top of the Table of Contents window in the View.	(Mac) In the right column, click the item called us_cnty.shp , then click Add . The theme will be added to the top of the Table of Contents window in the View.

<i>“I need to see what the stuff I added looks like.”</i>	
6. Display the map. (Themes do not display until they are turned on.)	In the Table of Contents , click the little checkbox at the left of the theme Us_cnty.shp , making a black check mark appear. With over 3100 counties, it may take a while for them to draw.
<i>“I need to restrict the features being displayed.”</i>	
7. Modify the theme properties. Call up the theme properties window.	From the Theme menu, choose Properties...
8. Modify the theme properties. Make a definition.	The left column of the Theme Properties window contains several large buttons. Highlight Definition , then click the Query Builder button (hammer with question mark).
9. Modify the theme properties. Construct the definition.	In the Query Builder window, in the left-hand column showing Fields , double click [State_name] . In the central column, click the equals sign ("="). Scroll down the right-hand column, find “Michigan” , and double click it. (Using the mouse to select items, rather than typing, helps ensure proper syntax.)
10. Modify the theme properties. Check the definition.	The box in the bottom of the Query Builder window should read ([State_name] = “Michigan”) . Note the presence and positions of parentheses, brackets, and quote marks. These need to be exact. If the statements don’t match, close the Query Builder and return to Step9. When everything is correct, click OK .
11. Modify the theme properties. Apply the definition.	Back in the Theme Properties window, click OK . The computer will think for a second, sorting counties, and then close the Theme Properties window. The map will re-draw.
<i>“I need to zoom in to see everything.”</i>	
12. Adjust the scale of display so the theme is properly visible.	Click the Zoom to Active Themes button (looks like an arrow pushing down on three layers arranged as light-dark-light). The map will re-draw.
<i>“I need to adjust the county color.”</i>	
13. Adjust the county symbol. Call up the Legend Editor. (This process will provide many choices, thus entail many steps.)	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme Us_cnty.shp .

14. Adjust the county symbol. Call up the symbol palette. (The symbol palette allows you to define many different elements of symbols.)	In the Legend Editor window, double click the color box shown for the county layer (bottom part of window, first box, left-hand column). The Symbol Palette will appear, with the Fill Palette option visible.
15. Adjust the county symbol. Specify the color palette window.	In the Fill Palette window, in the first row of icons, click the paintbrush to bring up the Color Palette window.
16. Adjust the county symbol. Set the color.	In the choices of colors, click on the top row, second column, which is white. Close the Color Palette window.
17. Adjust the county symbol. Apply the change.	In the Legend Editor , click Apply . Close the Legend Editor window. The map will re-draw.
<i>"I need to change the map projection."</i>	
18. Indicate the need to change the characteristics of the View.	From the View menu, click Properties... . In the View Properties window, click the button for Projection...
19. Choose the desired projection.	Click the Category: pull-down menu to select State Plane - 1983 . Click the Type: pull-down menu to select Michigan, Central . Click OK .
20. Change the View name	Back in the View Properties window, inside the line for Name: , erase View1 and type Michigan . Click OK .
<i>"It's all done!"</i>	

ArcVoyager Special Edition Task S2
Create a choropleth map of a state

To accomplish this task Do these steps using ArcVoyager Special Edition for either Windows or Macintosh...	
	... or do these special steps in Windows	... or do these special steps in Macintosh

Set up the computer for these directions.	(Win) Start ArcVoyager Special Edition, assuming data is in C:\VOYAGER\DATA.	(Mac) Start ArcVoyager Special Edition, assuming data is in HD:\VOYAGER\DATA.
<i>“I need a base map to start with.”</i>		
1. Create a base map.	Create a base map following the directions for Task S1.	
<i>“I need to see if a layer contains data I can map.”</i>		
2. Select a theme, to focus the computer’s attention on that layer. (This is now the “active” theme.)	In the Table of Contents , click one time directly on the name Us_cnty.shp . The theme will look “raised” within the Table of Contents .	
3. Bring up the active theme’s data table.	Click one time on the Open Theme Table button (looks like a page with a series of columns and rows).	
4. Explore the table. (This table contains the information about the features. It is formally called a Feature Attribute Table.)	At the bottom of the table document Attributes of Us_cnty.shp , click on the right scroll arrow to explore all the columns of available data.	
<i>“I need to add to the feature table some data to map.”</i>		
5. Indicate you want to add a data table.	Click one time on the Add Table button.	
<i>“I need to find the data to add.”</i>		
6. Navigate to the proper directory.	Navigate to the directory DATA\TABLE\US .	
<i>“I need to identify the correct type of data.”</i>		
7. Choose the proper type of file.	In the bottom of the window, click on the List Files of Type: pull-down menu. Choose dBASE (*.dbf) .	
<i>“I need to add the correct data table.”</i>		
8. Choose the proper table.	In the left-hand column file picker, double click the item county.dbf .	

<i>“I need to join the new data table to the existing feature table.”</i>	
9. Select the matching field in the source table.	In the table county.dbf , click one time on the field name Fips (the field has 5 digits). The field name will appear darkened. Click and hold on the menu bar for this table and slide the table off to the side, so the other windows are visible.
10. Select the window for the target table.	Click on the Window menu and select Attributes of Us_cnty.shp
11. Select the matching field in the target table.	In the table Attributes of Us_cnty.shp , click one time on the field name Fips (the field has 5 digits). The field name will appear darkened.
12. Join the source data to the target feature table.	Click the Join Table button (looks like two tables kissing). The data from the source table will be appended to the appropriate records in the target table. The source table will disappear. Close the table Attributes of Us_cnty.shp .
<i>“I need to edit the legend for the newly joined theme.”</i>	
13. Adjust the counties symbol. Start by calling up the Legend Editor.	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme Us_cnty.shp . This will bring up the Legend Editor window.
14. Adjust the counties symbol. Continue by defining a mapping method.	In the second pull-down menu, called Legend type , choose Graduated color .
15. Adjust the counties symbol. Continue by defining the mapped theme.	In the Legend Editor window, click the pull-down menu for Classification Field: and scroll down the list to select Age_65_up . The computer will automatically divide the data into five categories, with breaks where they fit best.
16. Adjust the counties symbol. Continue by normalizing the mapped theme	In the pull-down menu for Normalize by: , choose Pop_1990 . This will convert an absolute number to a decimal portion.
17. Adjust the counties symbol. Change the classification scheme.	Click the Classify... button. In the Classification window, change the Type: to Quantile , then change Number of Classes: to 4 . Leave the Round values at: as d.ddd . Click OK . The computer will re-divide the data.
18. Adjust the counties symbol. Set the color scheme.	Click on the Color Ramps: button and choose Purple monochromatic . Then click Apply . Close the Legend Editor window. The map will re-draw.
19. Modify the theme name in the Table of Contents.	With Us_cnty.shp still selected (looks “elevated”) in the Table of Contents , click on the Theme menu item and choose Properties... to bring up the Theme Properties window.

<p>20. Modify the theme name. Specify new name. Choose to display the field being mapped.</p>	<p>In the top row, next to Theme Name:, change “Us_cnty.shp” to just “Counties”. In the box at the top right, next to Use Suffix, click the box to place an “x” within it. Click OK.</p>
<p><i>“It’s all done!”</i></p>	

<i>ArcVoyager Special Edition Task S3</i> <i>Create a choropleth map of a state with multiple layers</i>		
To accomplish this task Do these steps using ArcVoyager Special Edition for either Windows or Macintosh...	
	... or do these special steps in Windows	... or do these special steps in Macintosh

Set up the computer for these directions.	(Win) Start ArcVoyager Special Edition, assuming data is in C:\VOYAGER\DATA.	(Mac) Start ArcVoyager Special Edition, assuming data is in HD:\VOYAGER\DATA.
“I need a base map to start with.”		
1. Create a base map.	Create a base map following the directions for Task S2 .	
“I need to get some data to map.”		
2. Indicate that you want to add a theme (a mapable layer of geographic features).	Click the Add Theme button (looks like a “plus” sign).	
“I need to go find the data.”		
3. Navigate into the directory containing the needed data. (You need to know where to find the data and how to get there.)	(Win) In the central column of the Add Theme window, use the directory and drive pickers to click into the directory DATA\GEO\US .	(Mac) In the left column of the Add Theme window, use the folder picker to click into the folder DATA\GEO\US .
“I need to make sure I’m getting the right type of data.”		
4. Ensure that the data type sought is the correct format. (ArcView can display different kinds of data.)	In the bottom left of the Add Theme window, click and hold on the Data Source Type and choose Feature Data Source .	
“I need to choose the right pieces of data from the many available.”		
5. Select the proper data source (The correct items here will add cities.).	(Win) In the left-hand column, double-click the item us_city.shp .	(Mac) In the right-hand column, double-click the item us_city.shp
“I need to see what the stuff I added looks like.”		
6. Display the theme. (Turn on the newly added feature.)	In the Table of Contents , click the little checkbox at the left of the theme Us city.shp , making a black check mark appear.	

<i>“I need to restrict the features being displayed.”</i>	
7. Select a theme, to focus the computer’s attention on that layer. (This is now the “selected” or “active” theme.)	In the Table of Contents , click one time directly on the name Us_city.shp . The theme will look “raised” within the Table of Contents .
8. Modify the theme properties. Call up the theme properties window.	From the Theme menu, choose Properties...
9. Modify the theme properties. Make a definition.	The left column of the Theme Properties window contains several large buttons. Highlight Definition , then click the Query Builder button (hammer with question mark).
10. Modify the theme properties. Construct the definition.	In the Query Builder window, in the left-hand column showing Fields , double click [State_name] . In the central column, click = . Scroll down the right-hand column, find “Michigan” , and double click it. (Using the mouse to select items, rather than typing, helps ensure proper syntax.)
11. Modify the theme properties. Check the definition.	The box in the bottom of the Query Builder window should read ([State_name] = “Michigan”) . Note the presence and positions of parentheses, brackets, and quote marks. These need to be exact. If the statements don’t match, close the Query Builder and return to Step9. When everything is correct, click OK .
12. Modify the theme properties. Apply the definition.	Back in the Theme Properties window, click OK . The computer will think for a second, sorting cities, and then close the Theme Properties window. The map will redraw.
<i>“I need to see if a layer contains data I can map.”</i>	
13. Bring up the active theme’s data table.	Click one time on the theme Us_city.shp , then click one time on the Table button (looks like a page with a series of columns and rows).
14. Explore the table. (This table contains the information about the features. It is formally called a Feature Attribute Table.)	At the bottom of the table document Attributes of Us_city.shp , click on the right scroll arrow several times to explore all the columns of available data. Close the table Attributes of Us_city.shp .
<i>“I need to edit the legend for the theme.”</i>	
15. Adjust the city symbol. Engage the Legend Editor.	In the view’s Table of Contents , double click directly on the name itself (not on the checkbox) for the theme Us_city.shp .
16. Adjust the city symbol. Define the map style.	In the Legend Editor window, click the pull-down menu for Legend type: and choose Graduated symbol .
17. Adjust the city symbol. Define the mapped theme.	In the Legend Editor window, click the pull-down menu for Classification field: and scroll down the list to select Pop1990 . The computer will automatically divide the data into five categories.

18. Adjust the city symbol. Change the classification scheme.	Click the Classify... button. In the Classification window, leave the Type as Natural Breaks , and Number of Classes as 5 . Change Round values at to d,ddd . Click OK . The computer will re-divide the data, into five classes, each rounded to the nearest thousand	
19. Adjust the city symbol. Engage the symbol palette.	Near the bottom of the Legend Editor window, double-click the colored dot symbol to bring up the symbol palette.	
20. Adjust the city symbol. Set the color.	When the symbol palette appears, click the colored paintbrush to open the Color Palette . Select bright red. Close the Symbol palette window. Click Apply . Close the Legend editor window. The map will re-draw.	
21. Modify the theme name in the Table of Contents.	With Us_city.shp still selected (looks “elevated”) in the Table of Contents , click on the Theme menu item and choose Properties... to bring up the Theme Properties window.	
22. Modify the theme name. Specify new name. Choose to display the field being mapped.	In the top row, next to Theme Name: , change Us_city.shp to just Cities . In the box at the top right, next to Use Suffix , click the box to place an x within it. Click OK .	
<i>“I need to add more data.”</i>		
23. Indicate that you want to add a theme.	Click the Add Theme button (looks like a “plus” sign).	
<i>“I need to go find the data.”</i>		
24. Navigate into the folder containing the needed data.	Navigate into the directory DATA\GEO\US .	
<i>“I need to make sure I’m getting the right type of data.”</i>		
25. Ensure that the data type sought is the correct format.	In the bottom left of the Add Theme window, click and hold on the Data Source Type and choose Feature Data Source .	
<i>“I need to choose the right pieces of data from the many available.”</i>		
26. Select the proper data source (The correct items here will add interstates.).	(Win) In the left-hand column, double-click the item us_route.shp .	(Mac) In the right-hand column, double-click the item us_route.shp
<i>“I need to see what the stuff I added looks like.”</i>		
27. Display the map. (Turn on the newly added feature.)	In the Table of Contents , click the checkbox at the left of the theme Us_route.shp , making a black check mark appear.	
<i>“I need to edit the legend for the new theme.”</i>		
28. Adjust the interstates symbol. Start by calling up the Legend Editor.	In the Table of Contents , double click directly on the name itself (not on the checkbox) for the theme Us_route.shp .	
29. Adjust the interstates symbol. Specify no classification.	Click the Legend type: pull-down menu and choose Single symbol .	

30. Adjust the interstates symbol. Continue by calling up the symbol palette.	Double click the colored line shown for the interstates layer (bottom half of window, first box, left-hand column). The Symbol Palette will appear, with the Pen Palette option visible. Move the Pen Palette window to the side of the Legend Editor window.	
31. Adjust the interstates symbol. Continue by specifying the line width.	In the Pen Palette window, click Size pull-down menu and choose 2 .	
32. Adjust the interstates symbol. Continue by specifying the color palette.	In the first row of icons in the Pen Palette window, click the paintbrush to bring up the Color Palette .	
33. Adjust the states symbol. Continue by specifying foreground.	In the pull-down menu beside Color: , select Foreground .	
34. Adjust the states symbol. Continue by selecting foreground color.	In the color boxes, choose darkest red (second row, rightmost column). Close the Color palette window. Click Apply . Close the Legend editor window. The map will re-draw.	
<i>“I need to add a context layer to the map.”</i>		
35. Indicate that you want to add a theme.	Click the Add Theme button (looks like a “plus” sign).	
<i>“I need to go find the data.”</i>		
36. Navigate into the folder holding the needed data.	You should already be in the correct directory, which is DATA\GEO\US .	
<i>“I need to make sure I’m getting the right type of data.”</i>		
37. Ensure that the data type sought is the correct format.	In the bottom of the Add Theme window, click and hold on the Data Source Type and choose Feature Data Source .	
<i>“I need to choose the right piece of data from the many available.”</i>		
38. Select the proper data source. (The correct item here will insert state boundaries.)	(Win) In the left column, double-click the item called us_state.shp . The theme will be added to the top of the Table of Contents window in the View.	(Mac) In the right column, double-click the item called us_state.shp . The theme will be added to the top of the Table of Contents window in the View.
<i>“I need to see what the stuff I added looks like.”</i>		
39. Display the theme.	In the Table of Contents , click the checkbox at the left of the theme Us_state.shp , making a black check mark appear.	
<i>“I need to change the order of the layers.”</i>		
40. Rearrange the order in which the themes display.	In the Table of Contents , click and hold on the name States and drag the theme down to the bottom of the list and let go.	
<i>“It’s all done!”</i>		