

Designing Maps with ArcGIS®

STUDENT EDITION

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Course introduction

- Introduction
- Course goals
- Additional resources
- Installing the course data
- Icons used in this workbook
- Understanding the ArcGIS Platform

1 The cartographic planning process

- Lesson introduction
- The cartographic workflow
- What decisions must you make before creating a map?
- How will your map be used?
- What data will you use?
- How will you symbolize your data?
- How will you design your map layout?
- How will you publish your map?
- What types of maps will you create?
- Exercise 1: Begin designing a map
 - Set a folder connection to the course data
 - Add a basemap from ArcGIS Online
 - Specify map orientation, size, and scale
- Lesson review

2 Evaluating data

- Lesson introduction
- The cartographic workflow: Data
- Choosing data
- Does your data support good cartography?
- Evaluating geometry and attributes
- Evaluating map scale
- Organizing your data
- Selecting a projected coordinate system
- Exercise 2A: Organize data for the wall map
 - Add basemap layers
 - Add operational layers
 - Choose a coordinate system
- Generalizing data
- Methods of generalization
- Exercise 2B: Organize data for web access
 - Organize basemap layers
 - Apply generalization techniques to smaller scales
 - Configure the larger-scale group layers
 - Organize operational layers

Lesson review

3 Cartographic design concepts

Lesson introduction

The communication channel

Creating a pattern of reading

How are these map designs different?

Reference and thematic maps

Controlling visual weight

Examples of visual weight

Using contrast to enhance legibility

Examples of contrast

Building levels of visual information

Focus and balance

Examples of focus and balance

Working with color

Components of color

Specifying color

Visual variables

Designing symbols to create categories

Designing symbols to show quantities

Designing color schemes

Design considerations for print and web

Lesson review

4 Advanced symbology techniques

Lesson introduction

The cartographic workflow: Symbology

Creating and organizing symbols

Improving map symbology

Working with symbol level drawing

Cartographic representations

Working with cartographic representations

Symbology considerations for web services

Exercise 4A: Symbolize data for the Corvallis wall map

- Set a reference scale

- Symbolize using grouped values

- Create a custom outline color

- Create a custom polygon fill

- Symbolize a layer using cartographic representations

- Symbolize operational layers

Exercise 4B: Symbolize data for web use

- Symbolize basemap layers for small scales

- Symbolize basemap layers for 24k - 12k scale range

- Symbolize basemap layers for the largest scales
- Symbolize operational layers
- Lesson review

5 Adding text to features

- Lesson introduction
- The cartographic workflow: Symbology
- Evaluating text placement
- Text placement for point features
- Text placement for line features
- Text placement for polygon features
- Using text to create a visual hierarchy
- Visual variables for text symbols
- Type basics for cartography
- Choosing between labels and annotations
- Creating map labels using the Maplex Label Engine
- Exercise 5A: Label features using the Maplex Label Engine
 - Use the Maplex Label Engine to label parks
 - Apply feature weights
 - Set label properties for Major Roads
 - Set label properties for Minor Roads
 - Label the 24k - 12k Parks tile layer intended for web use
 - Label the 24k - 12k Streets tile layer intended for web use
 - Create labels for Bike Shops intended for web use
- Creating and editing annotations
- Exercise 5B: Create and edit annotations
 - Convert labels to annotations
 - Edit park annotations
 - Create and edit feature-linked annotations
 - Create map document annotation
 - Create splined annotation
- Lesson review

6 Creating a map for the web

- Lesson introduction
- The cartographic workflow: Layout and output
- Design considerations for web services
- What are web maps?
- Coordinate system considerations
- Online basemaps
- Increasing legibility of web services
- Workflow: Create and share a web map
- Best practices for designing map services

- Exercise 6: Create a web map
 - Create separate map documents for publishing
 - Publish tile layers
 - Publish feature layers
 - Create an ArcGIS Online web map
- Lesson review

7 Creating a map layout and map series

- Lesson introduction
- The cartographic workflow: Layout and output
- Map elements
- Creating a balanced map layout
- Coordinate system and map elements
- Indicating scale
- Working with dynamic map elements
- Displaying coordinate grids
- Quality control for printed maps
- Publishing a map book
- Exercise 7A: Create and publish a map series
 - Specify map orientation, position, size, and scale
 - Add a grid
 - Add dynamic text
 - Add a dynamic legend
 - Add a scale bar and north arrow
 - Create an index layer
 - Create data-driven pages
 - Create a locator map
 - Arrange map elements
 - Publish a .pdf document
- Exercise 7B: Create a map layout
 - Position a map element
 - Add a title
 - Add a legend
 - Create a scale bar and scale text
 - Add a north arrow
 - Insert paragraph text
 - Add a picture
 - Position map elements
- Lesson review

Appendixes

- Appendix A: Esri data license agreement
- Appendix B: Answers to lesson review questions

Lesson 1: The cartographic planning process

Lesson 2: Evaluating data

Lesson 3: Cartographic design concepts

Lesson 4: Advanced symbology techniques

Lesson 5: Adding text to features

Lesson 6: Creating a map for the web

Lesson 7: Creating a map layout and map series