HOW MAPS WORK

a cartographic introduction

Kenneth Field and Wes Jones

An introduction to some fundamental cartography…

- Importance of design
- The purpose of making a map
- Aspects of map design:
  - hierarchy : contrast : figure-ground : projections
  - symbols : generalization: colour : typography
- Putting the pieces together
- Review / iterate / improve

…to help you become a smarter cartographer

Importance of Design

C ompromise
A
R
T
O pportunity
G
R
A
P
H
Y why?

Design is crucial to communication

Large database

Equal Treatment

No inherent design

Design

Data Processing

Function

Meaning

The design process

Why make the map?

Speaking in graphical tongues

Written/spoken word: SERIAL

Graphics: PARALLEL

- Audience
- Media resolution
- Viewing distance
- Output medium
- Anticipated level of understanding
- Conditions of use
- One map or multiple maps
- What areal extent to show
- Insets/multiscale

Demo: Requirement

Aspects of Map Design

Hierarchy, contrast and figure-ground

Demo: Hierarchy

Projections

WGS 1984 Web Mercator (Auxiliary Sphere)

ArcGIS Online

Bing

OSM

Google

Demo: Projections

Symbol palette

Symbol meaning

Demo: Symbols

Feature generalization

1:147,914,382

1:577,791

1:72,224

Large scale

Small scale

1:18,489,298

1:144,448

1:4,514

	No generalization	Generalized
Simplify		
Smooth		
Aggregate		
Amalgamate		
Collapse		

	No generalization	Generalized
Merge		
Refine		
Exaggerate		
Enhance		
Displace		

Classification

Demo: Generalization

Colour – qualitative

Colour – sequential

Colour – diverging

UNITED STATES
TEXAS
Gulf of Mexico
Mexico Basin
Chihuahua
Toronto
Louisiana
Havana
BAHAMAS
CUBA
TURKS AND CAICOS ISLANDS
Nebraska Plain

Demo: Colour

Typography

Size

5 point 7 point

10 point 12 point

18 point

24 point

CITIES

Tow ns

villages

Position

Conflict

Style

sans serif

serif

Demo: Typography

Putting pieces together

Demo: 2D/3D layout

Review the outcome

One more thing

Actually…a few more things

carto.maps.arcgis.com

cartonerd.com

mapdesign.icaci.org

Cartography. (April 2017)

By Kenneth Field and Damien Saunder

Other sessions

How maps work (KF/WJ)	Tue 13:30 | Wed 08:30
Cartographic Design Thinking (KF)	Thu 12:45 (UI/UX hub)
Inspiring maps in ArcGIS (KF/JN)	Tue 10:15 | Wed 13:30
Thematic map design (KF/JN)	Wed 10:15 | Thu 15:15
3D Cartographic Techniques (NS/KF)	Tue 08:30 | Wed 15:15
Map Design for relief representation (KF/PK)	Tue 15:15 | Thu 08:30

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