***Activity One***

– GIS development using ArcGIS (Exploring some basic concepts and skills)

 (After ESRI: Intro. to GIS I)

\*If at any point you get stuck please read the instructions and/or review the lecture slides and your notes then another then give it a second try, if you get stuck again please ask for help. ArcGIS is a massive software package half of the fun and frustration is playing with it and learning how to make it work for you! This course was designed to give you the tools/skills needed to start playing, learning, and building GIS it into your curriculum.

Please write your answers on the answer sheet at the end of this activity…

Step 1: Insert your IGEIN USB Jump Drive

 \*All of your work will be saved on your USB drive, please take of it…

Step 2: Start ArcMap

A) *Start > Programs > ArcGIS > ArcMap*

B) You should know see a dialog box asking you to open a new map or select an existing map

C) Please choose the existing map from your USB Drive: *Data\_IGEIN\_Workshop > My IGEIN Projects > IowaCountyBase*

You are now looking at the ArcMap interface window. ArcMap allows you to view maps in Data view or Layout View. Data view enables you to examine, query, edit, symbolize, and prepare your data for map output. Layout view provides tools for creating your final map (e.g. inserting a scale bar, adding a legend, north arrow, title, and much more!)

When you work in ArcMap, you are working with a map document (.mxd). This document contains data frames, layers, and many map elements including symbols.

Skill 1: Setting/changing the display scale

A) If you look to the right on the status bar you will see a numbers with a spatial unit…

**Questions: The current display unit is in…? If you move the cursor with your mouse around Iowa what happens to the numbers exhibited within the status bar?**

B) Please change the current units to degrees, minutes, seconds…

C) To change the units use the *Power of Right Click on the Data frame > Properties > General > Units > Display… and change…*

D) While we are thinking about the data frame lets change the name from Layer to IA\_Activity1

E) To change this name slowly left click the word Layers twice, this should highlight that word and allow you to change it to *IA\_Acivity1*

F) Questions: The longitude of the northwest corner of Iowa is…

 The longitude of the northeast corner of Iowa is…

Skill 2: Adding data

A) Please add two data layers to the existing counties of Iowa…

B) To do this click… File < Add data < (Find your USB drive) < IGEIN Workshop < Data IGEIN Workshop < Iowa GIS data < Landform < Landform.shp

\*Notice that the icon for add data is a yellow square with a black plus sign in the center, another way to add data is to click this icon on the standard tool bar.

C) Now please add the Public Prairie layer to your map, following the same linking method described in B)

**Question: The majority of Iowa’s public prairies are located near...?**

Skill 3: Changing symbol properties

A) First you see that there are boxes with checkmarks to the layers you have just added.

B) Please uncheck the box for landform this should make the public prairie layer a bit easier to see…

C) Now please Left click the colored box for the public prairie layer to open the symbol properties box, then *change the color to Green and the line width to 2* and click OK. This should make it much easier to see the prairies…

Skill 4: Using the Tools toolbar 

A) Take some time and play with the zoom in and out magnifying glasses, the Pan (hand), the zoom to full extend (earth symbol), the information button (blue circle with a white i)...

**Questions: - Name all of the public prairies in Bremer County**

**- How many miles is it from the eastern most part of Iowa to the western most part (From Jackson County to western Monroe or Woodbury County)?**

If you don’t know where Bremer County is then it’s time to also learn skill 5…

Skill 5: Labeling map layers

A) Label the 99 Iowa Counties

B) Power of Right Click < Counties < Label features

 Not helpful? Then try this Power of Right Click < Counties < Properties < Labels < Label field, select Counties\_ and click OK

**Question: The name of the county in Iowa’s far southwest corner is…**

Skill 6: Bookmarks

A) Please set a bookmark for the Readlyn RR Row Public Prairie (SE Bremer County)

B) From the Menu bar View < Bookmarks < Create

 Please test your new bookmark by zooming out then selecting the bookmark

 Did it work? Let me know either way…

Skill 7: Expanding the power of symbols

A) Please uncheck the box by the public prairies layer and check the box by the landform layer

B) You should see new lines and a new color over the state of Iowa, if not please say so…

C) Please remove the labels for the county names

D) Time for some fun… Use the Power of Right Click on the Landforms layer < Properties < Symbology < Categories < Value field < choose Name < click Add All Values < click OK

**Question: What is the name of the most extensive landform region in Iowa?**

Answer sheet

1) Skill 1A = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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2) Skill 1F = Longitude of northwest Iowa = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Longitude of northeast Iowa = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) Skill 2C = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4) Skill 4A = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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5) Skill 5B = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ County

 5B = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Miles

6) Skill 7D = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.