Deliverance of Dancing Bears - Using GIS in a Primary Classroom

GIS (Geographic Information Systems) was first introduced to me when I visited a local high school with a group of students. It was used extensively within the Geography program and I wondered about its possibilities for primary classrooms through cross curriculum activities. This task was designed to provide stimulus through an area of immediate relevance to primary students, that of Animal Rights. Consider the SASCA outcome statements, science in particular and the areas of Earth and Space and Life Systems while working through this activity. As you work you will see that the ideas explored could be a one off lesson and equally a year long exploration.

Some related websites

http://animal.discovery.com/news/afp/20050905/dancingbears.html
http://www.animalsvoice.com/PAGES/archive.html
http://www.captiveanimals.org/news/2000/bears.htm
http://news.bbc.co.uk/1/hi/sci/tech/2681021.stm
http://www.scambustersusa.com/articles/Animal_Cruelty/

Starting Points
Read "Deliverance of Dancing Bears" by Elizabeth Stanley and think about the way that some bears have been treated by humans.

1. Create a folder to hold your work. Name your folder so that you can identify it easily
Look at the following web sites to find out some information about where bears live, what they eat….
http://www.idahoptv.org/dialogue4kids/bears/facts.html
http://www.americanbear.org/Kids'%20questions.htm
http://www.americanbear.org/Habitat%20-%20Home%20Range.htm
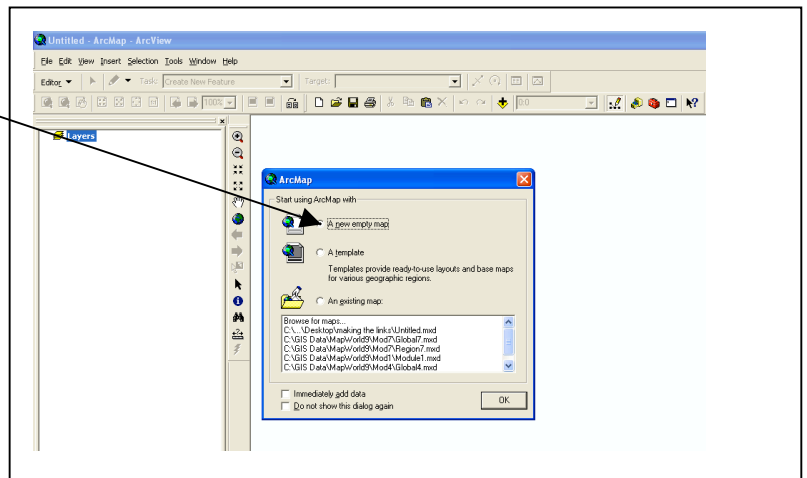
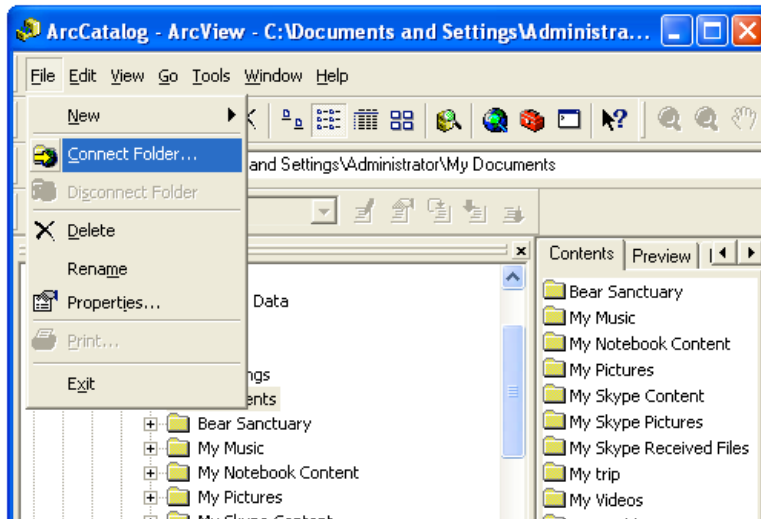2. Open ArcMap
Open a new empty map

Open ArcCatalog

ArcCatalog

We are going to use ArcCatalog to connect the folder that you created and store the shape files that you will use to create your Bear Sanctuary.

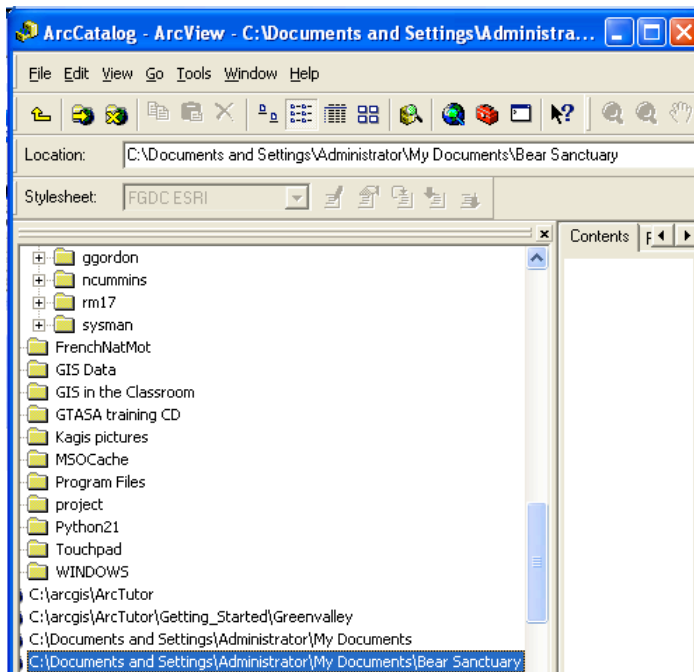When you open ArcCatalog you may find that it covers ArcMap

3. Bring your cursor to the side until you see the two way arrows and narrow ArcCatalog until you can only see the two columns
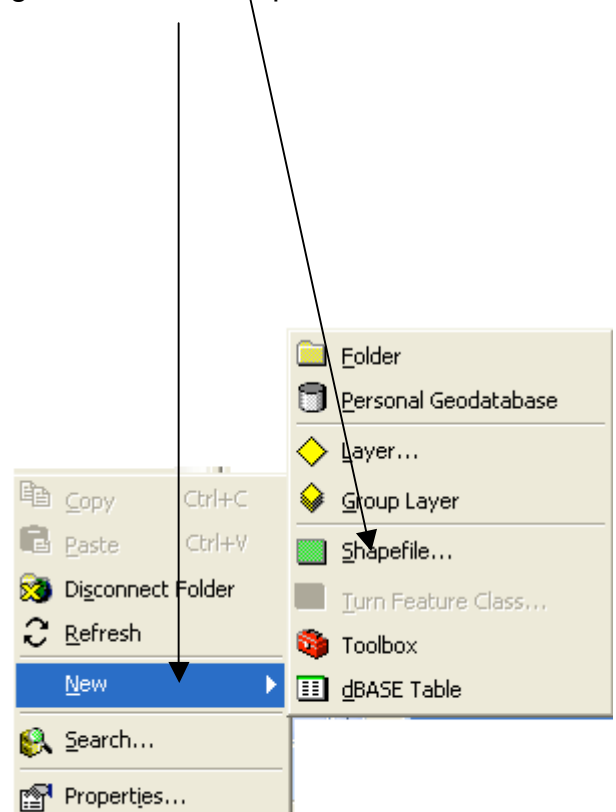4. Go to
  • File
  • Connect Folder
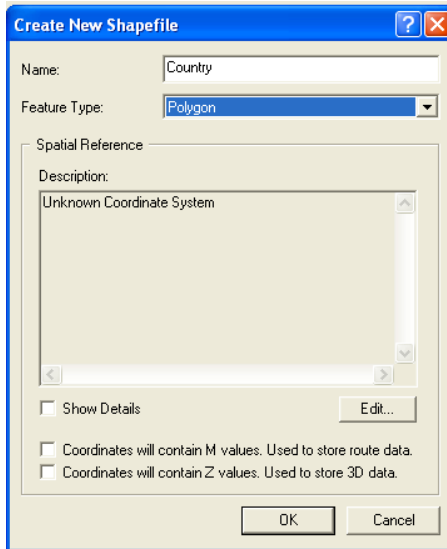 • Follow the pathway to the folder that you created

You will see that the folder that you will now use to store your shape files has been placed in your menu

5. Right click on your folder and go to new and shape file

You will find a dialog box appear asking you to create a new shape file
The first part of the map that you will need to create is your background or the country in which you will place your bear sanctuary.
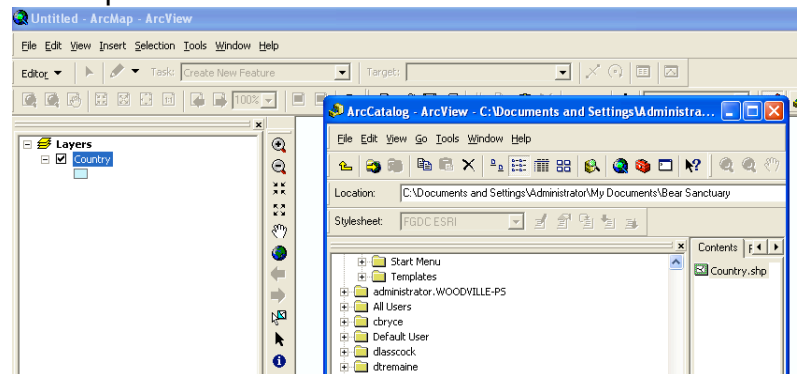

6. Rename the Name of your shapefile to **country** and in the drop down box of the feature type choose **polygon**
7. Click OK
You will notice that in the contents of your folder you will find that your country shapefile has appeared.
You are now able to drag your shapefile into ArcMap

The country has appeared in the table of contents but you will now need to create it.

You will need the editor tool bar

8. If this does not appear on your map go to
- View
- View toolbars
- And click editor toolbar

You will be able to move this to the place that is most convenient for you on your map
In the dropdown box for editor click start editing.
You will notice that the editor toolbar is no longer grey and that you will have a number of options

You are going to create a new feature and your target will be country because that is what you are creating.

9. Click on the pencil

While there are a number of tools you are going to work with the pencil.
Use the pencil to draw the shape of your country in your map.
Make it large because you will be creating your Bear Sanctuary within the country and this is the main feature of your map
To create the shape you will need to put your cursor in the map area and click. As you drag you will notice the polygon shape forming.

Each time you click you will be able to move your edge in a different direction to create the shape. When you have completed your country shape you will need to double click.

10. Go to editor and choose   save edits and stop editing
You can change the colour of the country by double clicking on the box in your table of contents and choosing a new colour.

Creating your Bear Sanctuary
11. Go back to ArcCatalog and right click on your folder
Use the same process as we used before to create a new shapefile but this time call it Bear Sanctuary. Make sure that you have chosen polygon
When you drag it into the table of contents on your map look carefully at your map.
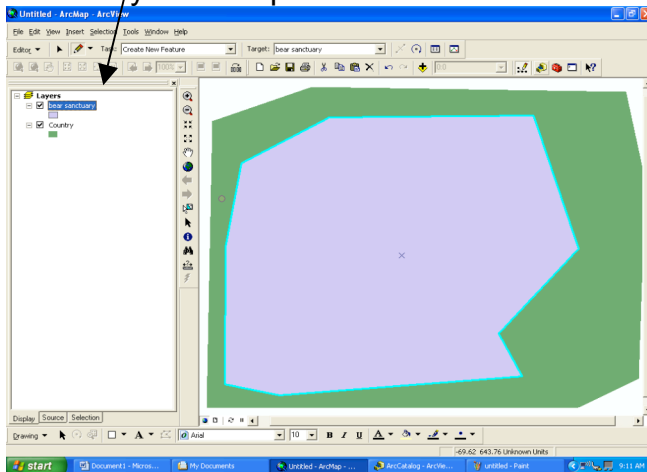When you edit this time you will
   • Use the pencil
   • Create a new feature
   • Have a target of bear sanctuary
If the target is not on bear sanctuary use the drop down arrow

12. Draw your bear sanctuary in the same way as you drew your country.
If your bear sanctuary does not appear on your map it may be due to the order of features on your table of contents. You may need to click and drag the bear sanctuary to the top of the table

Don't forget that the same will be true for other features such as trees, mountain areas and streams.

Think about what else you will need to make your bear sanctuary an area where the bears can live and peace and humans can support them.

Will you need
- Fences
- Access roads
- Streams
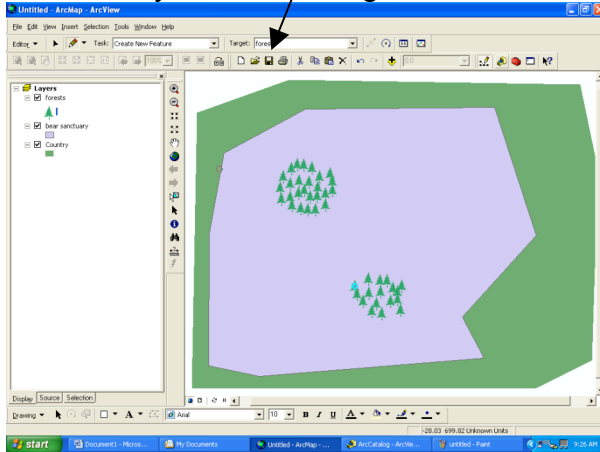- Forests
- Mountain areas in which they can create dens

……

Don't forget that some of these features won't be polygons they will be points or lines.

13. Adding Forests

Go back to ArcCatalog and right click on your folder. This time when you create a new shapefile call it forests and make the feature type file type point. Drag this shapefile into your table of contents.

14. Make sure that you put your forests to the top of the table of contents

15. When you start editing make sure that your selected target is forests.

You will see that your forests are represented as a point in your table of contents and you might like to make this point a tree shape.

16. To do this you will need to
- Double click on the point in your table of contents

A symbol selector will appear. You can
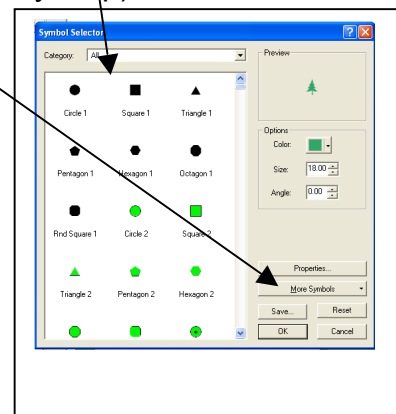- Choose a symbol from those shown or
- Add more symbols (forestry or environmental may help)

Now each time you click on your map you can add trees to make your forests.

Don't forget to save edits and stop editing when you have finished.

You are now ready to complete your map

If you would like to label parts of your map don't forget that you can use the labeling tool in the bottom toolbar by clicking on the drop down box by the A and choosing the label.

This activity has obvious extensions. Some of the things that you might like to consider with your class might include

- How do animal care workers use behavioural enrichment to teach animals the types of behaviours that might be more appropriate for natural environments?
- If the park is to be self sustaining how would you organise the production of
  Food?
- What type of area might you need for the bear population with which you are working?